```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
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33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
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     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
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10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
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14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
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17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
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25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
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48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
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51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```

```
tsaiwn@magpie % cat -n readin.c
     1  //readin.c  --- fopen/fgets --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  #include <stdio.h>
     3  #include <stdlib.h>
     4  char FNAME[ ] = "abc.txt";
     5  int main( ) {
     6     FILE* fp;
     7     static char buf[99];
     8     double ans, x;
     9     int n;
    10     fp = fopen(FNAME, "rt");    // open for read, text file
    11     if(fp == 0) {
    12         fprintf(stderr, "open file %s ", FNAME);
    13         perror("Error ");
    14         return 38;
    15     }
    16     ans = n = 0;
    17     fgets(buf, sizeof(buf), fp);
    18     while( !feof(fp) ) {
    19         ++n;  x = atof(buf);
    20         ans += x;
    21         printf("%f ", x);
    22         fgets(buf, sizeof(buf), fp);
    23     }
    24     printf("\nTotal %d items. Sum = %f\n", n, ans);
    25     return 0;
    26  }
tsaiwn@magpie % cat abc.txt
1.2
2.3
3.4
tsaiwn@magpie % gcc readin.c
tsaiwn@magpie % ./a.out
1.200000 2.300000 3.400000
Total 3 items. Sum = 6.900000

tsaiwn@magpie % cat -n readin.cpp
     1  //readin.cpp  --- cin.getline --- copyLeft by tsaiwn@csie.nctu.edu.tw
     2  //g++ readin.cpp -Wno-deprecated ;  ./a.out
     3  #include <iostream.h>
     4  #include <fstream.h>
     5  #include <stdlib.h>
     6  char FNAME[ ] = "abc.txt";
     7  int main( ) {
     8     fstream in;     // required <fstream.h>
     9     static char buf[99];
    10     double ans, x;
    11     int n;
    12     in.open(FNAME, ios::in); // open for read, text file
    13     if(in.fail( ) ) {
    14         cerr << " Error open file " << FNAME << endl;
    15         perror("Error ");
    16         return 38;
    17     }
    18     ans = n = 0;
    19     in.getline(buf, sizeof(buf) );    // read first record
    20     while( !in.eof() ) {
    21         ++n;  x = atof(buf);     // need <stdlib.h>
    22         ans += x;
    23         cout << x << " ";
    24         in.getline(buf, sizeof(buf) );
    25     }
    26     cout << "\nTotal "<< n << " items. Sum = ";
    27     cout << ans << endl;
    28     return 0;
    29  }
tsaiwn@magpie % g++ -Wno-deprecated readin.cpp
tsaiwn@magpie % ./a.out
1.2 2.3 3.4
Total 3 items. Sum = 6.9

tsaiwn@magpie % exit
exit
```

```
 1  //testfile.cpp  --- test file i/o -- copyLeft by tsaiwn@csie.nctu.edu.tw
 2  #ifdef unix
 3  #ifndef __unix__
 4  #define __unix__
 5  #endif
 6  #endif
 7  #include <string.h>   /* strlen, str... */
 8  #include <stdio.h>    /** fopen, printf, ... **/
 9  #include <stdlib.h>
10  #include <fcntl.h>    /*** O_CREAT, O_... ***/
11  #ifdef __unix__
12  #include <sys/stat.h> /*** S_IWRITE defined in this file ***/
13  #else
14  #include <sys\stat.h> /*** S_IWRITE defined in this file ***/
15  #endif
16
17  #ifdef __unix__
18  #include <unistd.h>   /* required for new version */
19  #define O_TEXT O_RDWR
20  #else
21  #include <io.h>       /*** open, write, read ***/
22  #include <process.h>  /**** for "system" function calls ****/
23  #endif
24
25  #define crln printf("\n")
26  void test1(void)
27   {
28     long kk=12345678;  /** printf --Ctrl_F1--> data type **/
29       printf("in test1 .. ");
30       printf("\nkk=%d  ??  %ld  ???   %Ld\n",kk, kk, kk);
31       printf(" Correct kk=%ld\n================\n",kk);
32   }
33  int main(void)
34  {
35    int handle;   // an integer for System calls open/read/write/close
36    FILE *in, *out;   // FILE pointer for standard fxxx functions
37    int i,j;
38    char msg[] = "Hello world";
39      printf("\nTest file I/O --- by tsaiwn@csie.nctu.edu.tw\n");
40      printf("\n== call test1 to test printf with wrong %%format ==\n");
41      test1();
42      for(i=1; i <= 9; crln, i++)
43         for(j=1; printf("%5d",i*j), j<=8; j++);
44      if ((handle = open("TEST.del", O_CREAT | O_TEXT,
45                         S_IWRITE | S_IREAD)) == -1)
46      {   // handle should >= 0, if handle is -1 ==> open fail
47         perror("ErRor:");   return 1;
48      }
49      write(handle, "Hey, you!\n",10);   // write out 10 characters
50      write(handle, msg, strlen(msg));   // the length is calculated
51      write(handle, "\n", 1);  close(handle);
52      fprintf(stderr, "TEST.del created!\n");  // always on Screen
53  #ifdef __unix__
54      system("/bin/ls -l  TEST.*");
55  #else
56      system("dir test.*");
57  #endif
58       /****** Now try C standard Library functions fopen, ...******/
59      if ( (in = fopen("TEST.del", "rt"))   /** Read Text **/
60                  == NULL )    /*** NULL == 0 , see stdio.h ***/
61      {
62        fprintf(stderr, "fopen -- Cannot open input file TEST.del\n");
63        return 1;
64      }
65      while (!feof(in))    // Loop till feof(in)
66         fputc(fgetc(in), stdout);  /* fputchar(??) === putchar(??) */
67      fclose(in);
68       /****** then, type out the content of file TEST.del ******/
69  #ifdef __unix__
70      printf("\n%%  cat -n TEST.del\n");
71      system("cat -n  TEST.del");
72  #else
73      printf("\nC:> type test.del\n");
74      system("type TEST.del");
75  #endif
76      printf("\nBye bye!\n");
77      return 0;
78  }
```