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tsaiwn perm% cat -n perm.c
     1  #include<stdio.h>
     2  /*List all permutations of n characters */
     3  /* CopyLeft by tsaiwn@csie.nctu.edu.tw */
     4  /*  輸入 n 個不同字母然後印出該些字母的所有排列 */
     5  int val[99], id=-1, nPerm, n;  /* n characters */
     6  int getLetters();
     7  void visit(), writePerm();
     8  char letters[99];
     9  int main( ) {
    10     while(38) {
    11        n = getLetters();
    12        if(n <= 0) break;
    13        printf("n=%d\n", n);
    14        id = -1; nPerm=0;
    15        visit(0);
    16        printf("===Total %d permutations.\n", nPerm);
    17     } printf("\nBye!\n");
    18  }
    19  void visit(int k) {
    20     int t;
    21     val[k] = ++id;
    22     /*  printf(" id=%d ", id);   /**/
    23     if(id==n) writePerm();
    24     for(t=0; t<n; ++t)
    25        if(val[t] == 0) visit(t);
    26     id--; val[k] = 0;
    27  }
    28  void writePerm( ) {
    29     int i;
    30     for(i=0; i<n; ++i) printf("%c ", letters[val[i] - 1]);
    31     printf("\n"); nPerm++;
    32  }
    33  int getLetters( ) {
    34     static char tmp[99], i, k;
    35     printf("輸入字母群: ");
    36     fgets(tmp, 99, stdin); if(feof(stdin)) return -1;
    37     k=0;
    38     for(i=0; i< strlen(tmp); ++i) {
    39        if(tmp[i] == '\n') break; /* End Of Line */
    40        if(tmp[i] == ' ') continue; /* ignore blank*/
    41        val[k] = 0;
    42        letters[k++] = tmp[i];
    43     }
    44     return k;
    45  }
tsaiwn perm% gcc perm.c
tsaiwn perm% ./a.out
輸入字母群: ab
n=2
a b
b a
===Total 2 permutations.
輸入字母群: ABC
n=3
A B C
A C B
B A C
C A B
B C A
C B A
===Total 6 permutations.
輸入字母群:
Bye!
```