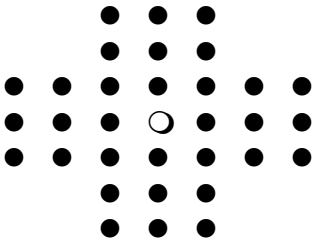
Problem 25: Hi-Q

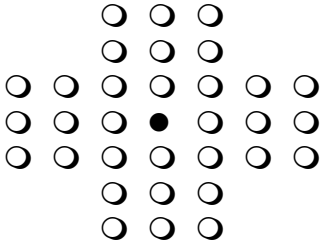
Source filename: `hiq.cpp`
Input filename: `none`
Output filename: `hiq.out`

This puzzle-like game is played with 32 movable pieces that are initially placed on a board as shown below. A piece can move by jumping over its immediate neighbor horizontally or vertically into an empty square opposite; the jump removes the jumped-over neighbor from the board. The goal is to remove 31 pieces to finish with a single piece at the center of the board.

Initial Arrangement



Goal



The output file should display the location of each piece and hole after each move that leads to a solution. Empty holes should be represented with a zero '`0`' character. The position of the pieces should be represented by the digits `1-9` and the letters `A-Y` (skipping capital '`O`', since it is easily confused with '`0`'). The initial arrangement of pieces with the center hole should first be sent to the output file followed by the arrangements after each of the 31 moves. There is more than one solution. Although you may choose any valid solution, see if you can match the one provided.

Sample Output File

```
    1 2 3
    4 5 6
7 8 9 A B C D
E F G 0 I J K
L M N P Q R S
    T U V
    W X Y

    1 2 3
    4 0 6
7 8 9 0 B C D
E F G 5 I J K          ← Note that the piece #5 jumped over piece #A and landed in the center spot.)
L M N P Q R S
    T U V
    W X Y

. . . <29 additional arrangements not shown>

    0 0 0
    0 0 0
0 0 0 0 0 0 0
0 0 0 U 0 0 0          ← Final arrangement after 31 jumps
0 0 0 0 0 0 0
    0 0 0
    0 0 0
```