

Program Name: move.cpp

Input File: move.dat

In the popular game of solitaire, there are three areas from which cards can be played. The first is the deck from which cards are turned over and played on one of the seven field piles or on one of the four stacks. The field piles are piled such that cards are played in descending rank and alternate between red (hearts and diamonds) and black (spades and clubs). A field pile that has no cards on it can be played upon only with a king. There are four stacks (one for each suit) and cards are played in ascending rank. A stack that has no cards on it can be played upon only with an ace. Aces have the lowest rank, followed in order by the 2-10, jack, queen, and king. Figure 1 shows a solitaire game in progress.

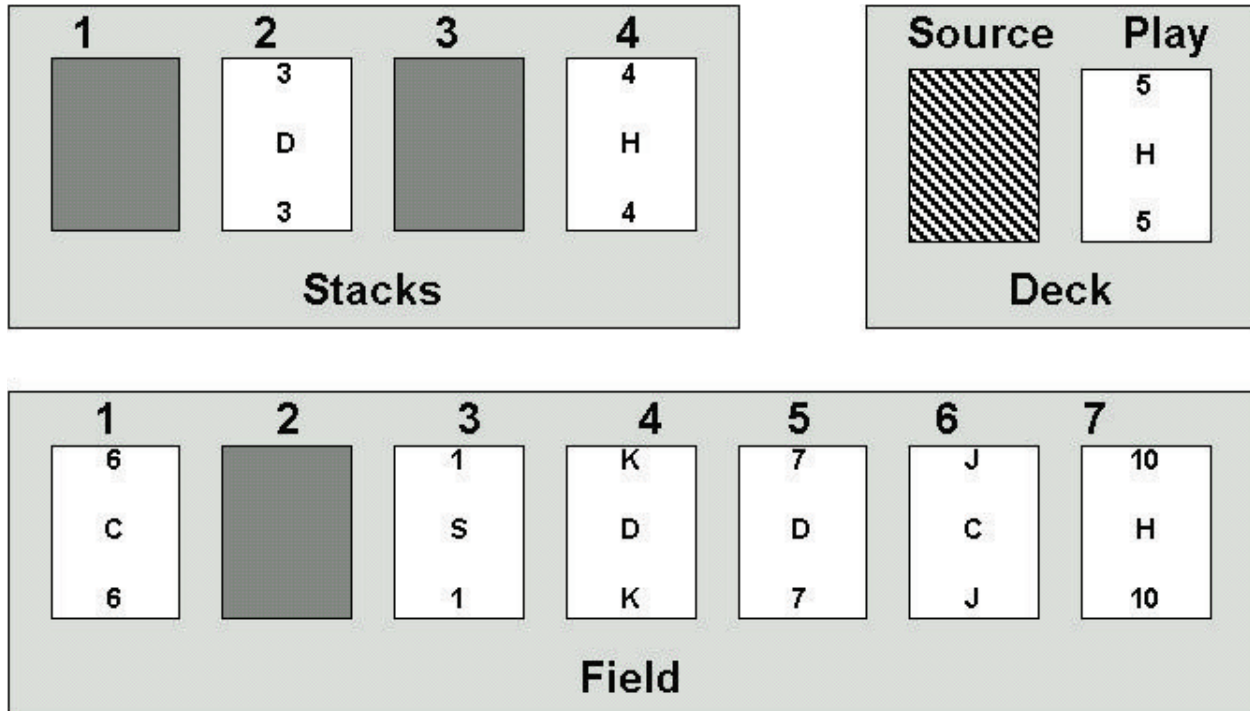


Figure 1: Sample Solitaire Game

Many solitaire card games for computers have an auto-play feature in which the computer will automatically move cards from the field or deck onto the stacks. You are to write an auto-play feature that simply warns the user that a move exists at any given point in the game. Specifically, your program should give an indication (in the order of preference below) if any of the following moves exist. (*Examples for Figure 1 are in italics.*)

1. Move to the stack. A move to the stack exists if:
 - A card is on the play pile of the deck or on any of the field piles such that the rank of the card is exactly one higher than the rank on one of the stacks and the suit is the same for both cards. *5 of hearts can be played on the 4 of hearts on the 2nd stacks pile.*
 - An ace is on the play pile of the deck or on any of the field piles. *Ace of spades from the 3rd field can be played on one of the empty stack piles.*
2. Move to the field. A move to the field exists if:
 - A card is on the play pile of the deck such that the rank of the card is exactly one less than the rank on the target field pile and the suit is of the opposite color (red played on black or black played on red). *5 of hearts can be played on the 6 of clubs in the 1st field pile.*
 - A card is on any of the field piles such that the rank of the card is exactly one less than the rank on the target field pile and the suit is of the opposite color (red played on black or black played on red). *The 10 of hearts in the 7th field pile can be played on the Jack of clubs in the 6th field pile. The 6 of clubs in the 1st field pile can be played on the 7 of diamonds in the 5th field pile.*

- A king is on the play pile of the deck or on any of the field piles and there is an empty field pile. *The king on the 4th field pile can be played on the 2nd field pile.*

Your program is to use the card rank/suit combinations given to it for the top of each of the 12 piles (1 deck, 4 stack, and 7 field) and determine if there is a move to the stack, a move to the field, or no move available. Input to the program will be given with the rank of the card as a one or two digit number from 1 to 13. (Aces are represented by 1, jacks by 11, queens by 12, and kings by 13.) The suit of the card is given as a single letter (“S” for spades, “H” for hearts, “D” for diamonds, and “C” for clubs). Empty piles will be given as “0 N”.

Input

Input to your program consists of a series of game snapshots with descriptions of the top card of each of the 12 piles of cards in the game. The first 4 rank/suit pairs are the contents of the 4 piles in the stacks area. The next rank/suit pair is the contents of the play pile of the deck. The last 7 rank/suit pairs are the contents of the 7 piles in the field area. Each rank/suit pair is given as an integer (0-13 for the rank) followed by a single space followed by the suit as a single character (S,H,D,C,N). Each snapshot is on a single line of input.

Output

For each snapshot, your program should determine which move to recommend to the player. If one or more moves to the stacks exist, your program should print the message “Move to Stacks” on a line by itself. If a move to the stacks does not exist, but there are one or more moves to the field that exist, your program should print the message “Move to Field” on a line by itself. If there are no moves to the stacks or to the field, your program should print the message “No Valid Move” on a line by itself.

Example: Input File

```
0 N 3 D 0 N 4 H 5 H 6 C 0 N 1 S 13 D 7 D 11 C 10 H
1 S 0 N 2 C 8 D 11 D 0 N 7 C 9 S 12 H 3 H 5 S 9 C
0 N 0 N 0 N 0 N 9 S 10 H 4 H 2 C 7 C 8 S 12 S 1 D
1 D 0 N 0 N 0 N 9 S 10 H 4 H 2 C 7 C 8 S 12 S 9 C
```

Output to screen

```
Move to Stacks
No Valid Move
Move to Stacks
Move to Field
```