



# CodeWars 2007

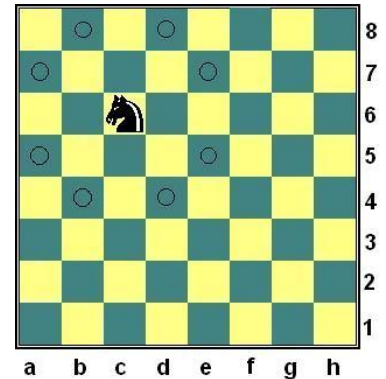
## Problem #14 -- Chess Knight

### 18 Points

**JAVA programmers: your program name must be: Prob14.class**  
**C programmers: your program name must be: prob14.exe**

### Task Description

In the game of chess, the knight moves in an interesting and unique way. It can only move in a "L"-shaped path, moving two spaces horizontally or vertically, then moving one space perpendicular to the first two. In the picture on the right, the standard 8x8 chess board is shown, with a knight in square c6. From this position, the knight can move to eight possible locations on the board, shown as circles.



Your task is write a program that will determine the shortest path a knight would take from one position on the chessboard to another. But unlike the actual game, you cannot land on squares containing other chess pieces (we'll call these "blockers"), but must go around them. Note that the knight can move over blocking pieces during its 3-square move, but must finish each move on an unoccupied space.

### Program Input

Your program will prompt for the starting location of the knight, and the desired finish location, specified by the column and row. For example, the upper left corner of the chess board is location a8, and the lower right corner is h1. You may assume that all letters will be lower case.

Then, your program will prompt for one or more blocking pieces, specified by their location on the chess board. Continue prompting for more blocking pieces until you see "xx". There will be at most 31 blockers, and you can assume all input will be valid.

### Program Output

Your program will output to the screen the knight's shortest path from the starting location to the finish location, with each move along the path. You must also state the total number of moves required. Note that there may be several correct (shortest) paths to the finish.

### Sample Input/Output

```
The knight starts at: c6
The knight finishes at: c5
Enter blocking piece (xx to quit): b3
Enter blocking piece (xx to quit): a6
Enter blocking piece (xx to quit): b7
Enter blocking piece (xx to quit): d7
Enter blocking piece (xx to quit): xx

The knight's shortest path is 3 moves: c6 e5 d3 c5
```