Istanbul Technical University - Computer Engineering
BLG 223E - Data Structures
Homework 2
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Oh baby!
That's why I'm easy
I'm easy like Sunday morning

Easy, Lionel Richie

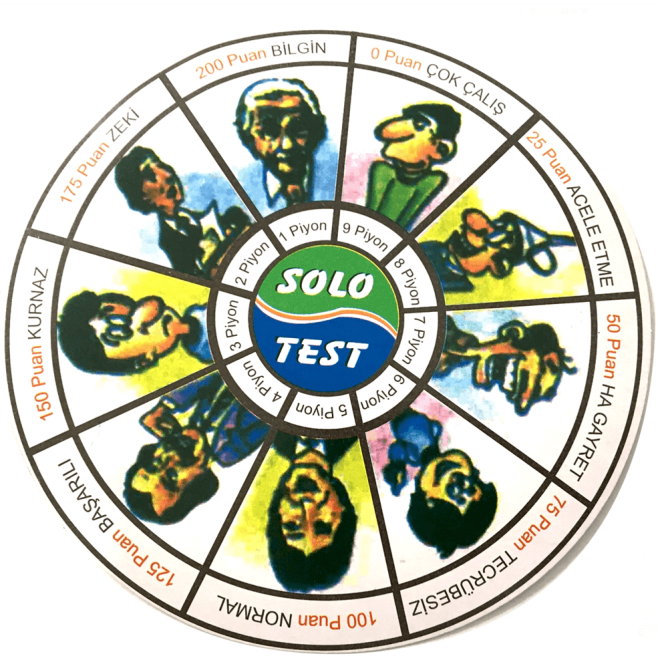

Figure 1: The famous chart of Solo Test! In my time, the ranks were different...

Solo Test (Peg Solitaire), is a classic single-player board game involving pegs and holes. The objective is to remove all pegs from the board except one, ideally ending with only one peg. The standard board has 33 holes arranged in a cross shape. A move consists of jumping one peg over an adjacent peg into an empty hole, in a straight line (vertically or horizontally, not diagonally). The peg that was jumped over is removed from the board. First moves of the standart game are summarized in Figure 2.

The standart gameplay is as given below:

- You start with all pegs placed on the board except the center hole.
- You pick a peg and make a valid jump, removing the peg that was jumped over.

- Continue jumping pegs over each other until no more moves are possible.
- The game ends when there are no valid moves left, or you achieve the goal of a single remaining peg.

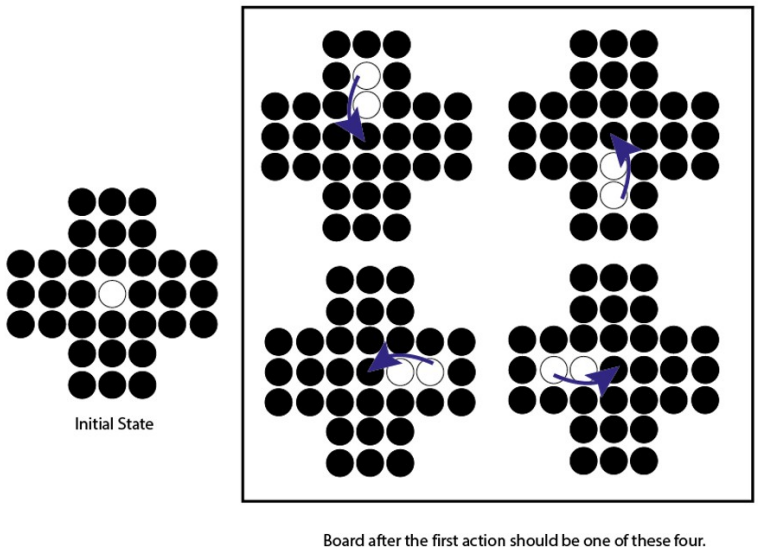

Figure 2: Example first moves for the standart Solo Test

With the homework document, a skeleton code for the game is given. Complete the "solve" function which performs an iterative depth-first search using a stack to explore all possible board states in the game. It should systematically apply valid moves to copied boards and push the resulting states onto the stack. After finding a board with at most three pegs, it should print the solution board. You should also ensure that all allocated memory is freed afterward.

Good luck!