SIENA COLLEGE
30th Annual High School Programming Contest
March 24, 2017

Gold Problem #6: Snakes and Ladders

Background Information: According to the classic board game, Snakes and Ladders, a player, starting at space zero, is attempting to reach square 100, on a board with snakes, that transport a player from square N to square M < N, and ladders, that transport a player from square N to square M > N. A player moves a random number of spaces by rolling a standard six-sided die and then transports if they land at the bottom of a ladder or top of a snake. Given the destination square, the locations of snakes and the location of ladders, can you determine the least number of rolls needed to reach the destination square?

- The Destination Square is the last square on the board.
- A player rolls a die, moves, and then determines if a snake/ladder is involved. The totality of these actions counts as one roll of the die.
- Ladders and Snakes will never intersect at their endpoints.

Programming Problem:

Input: A positive integer P on between 100 and 10,000 inclusive followed by a non-negative S (number of snakes) and a non-negative L (number of ladders) L We are then followed by S + L lines of pairs, where the first S lines are the source square and destination square of the snakes. The next L lines are the source square and destination square of the ladders.

Output: The minimal number of rolls needed to reach the destination. If a solution is not possible, print NOT POSSIBLE.

Example 1:   Input:

```
100  10 9
16 6
49 11
62 19
87 24
47 26
56 53
64 60
93 73
95 75
98 78
1 38
4 14
9 31
21 42
28 84
36 44
51 67
71 91
80 100
```

            Output: 7