Design Doc

OVERVIEW

My program can make the users to play a sliding puzzle game. It can give a solvable sliding puzzle in size 3x3 to 10x10 and prompt the user his next step.

DATE MODEL

a is the sliding puzzle table, it is a list for string.

n is the size of the puzzle table, an integer.

move is the direction keys; it is for string.

x,y is the position that the free grid, they are integers.

PROGRAM STRUCTURE

As named, the init, solve, start\_new are for every time the users play the game respectively.

Create\_board is to create a new solvable sliding puzzle.

print\_board is to print the board. Change is to move the free grid to next step. Check\_next is to check which steps could go.

Str\_to\_int used to check whether the input direction can go and go to it.

Get is output the steps that can go.

Check\_end is check whether the game is ended.

PROCESSING LOGIC (SPECIFIC)

The init helps input the data and use creat\_board to create a game. And use print\_board to let the user kwon.

In solve, it uses check\_end to check every step.

If it doesn’t come to the end, it uses check\_next and get to prompt the user next steps.

Then it uses str\_to\_int to kwon the next step or let the user input a right direction.

After that, it use the change to move this step, and use print\_board to tell the altered board.

When the game end, start\_new check whether the user want to get another game.

The way my program generate the initial, randomized puzzle is to make a normal table and move it randomly for randomize times.

FUNCTIONAL SPEC

Create\_board is to create a new solvable sliding puzzle.

print\_board is to print the board. Change is to move the free grid to next step. Check\_next is to check which steps could go.

Get is output the steps that can go.

Str\_to\_int used to check whether the input direction can go and go to it.

Check\_end is check whether the game is ended.

Init is to do the initial steps

Solve is to do the interactive steps when the player play.

Start\_new is to check whether the player want to play another time.

SAMPLE OUTPUT

