

FLORAL MAZE



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Final Project DSA Presentation



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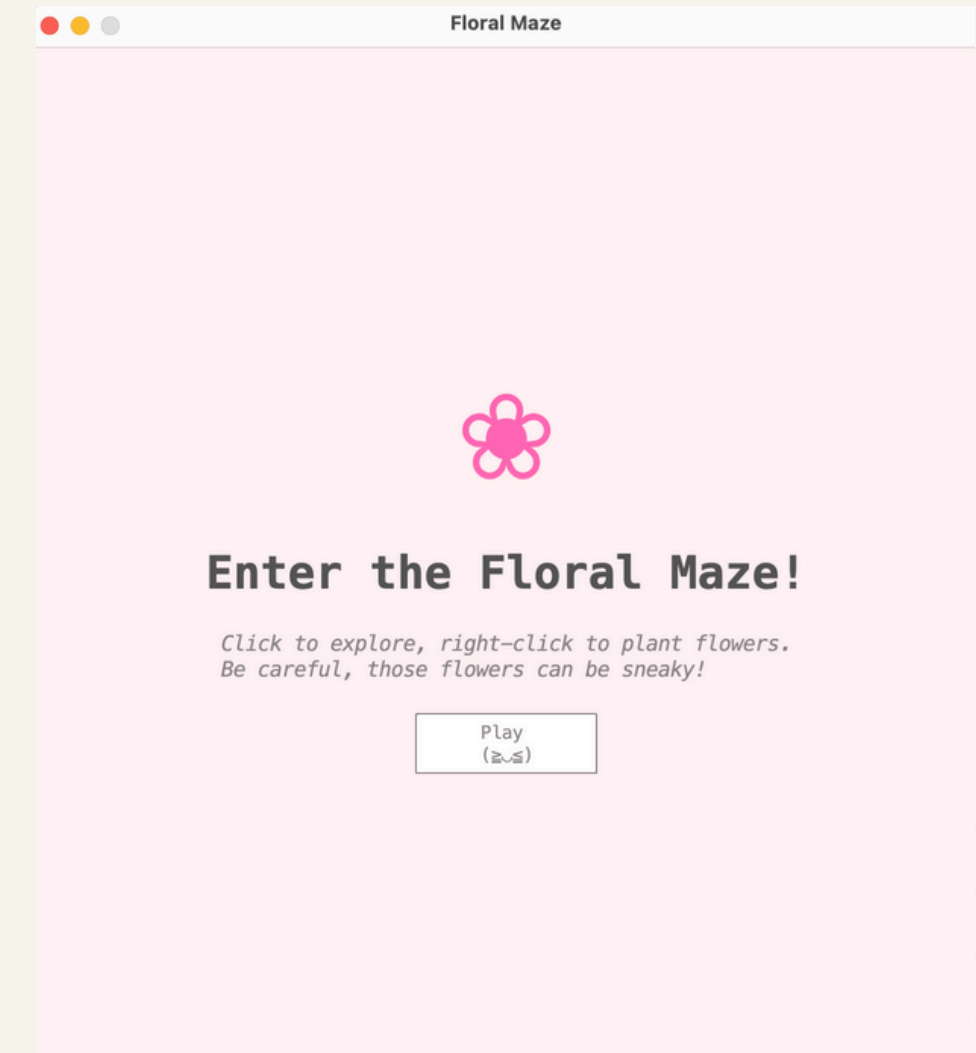
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INTRODUCTION

- **Game Name:** Floral Maze (Minesweeper-style game)
- **Overview:** A fun and interactive Minesweeper game with a floral theme where players uncover tiles and avoid hidden traps (flowers).
 - Explore the grid, avoid flower traps, and reveal safe tiles to win.



PROGRAM STRUCTURE

- **Key components:**

1. Home screen: Displays instructions and allows users to start the game

Enter the Floral Maze!

*Click to explore, right-click to plant flowers.
Be careful, those flowers can be sneaky!*

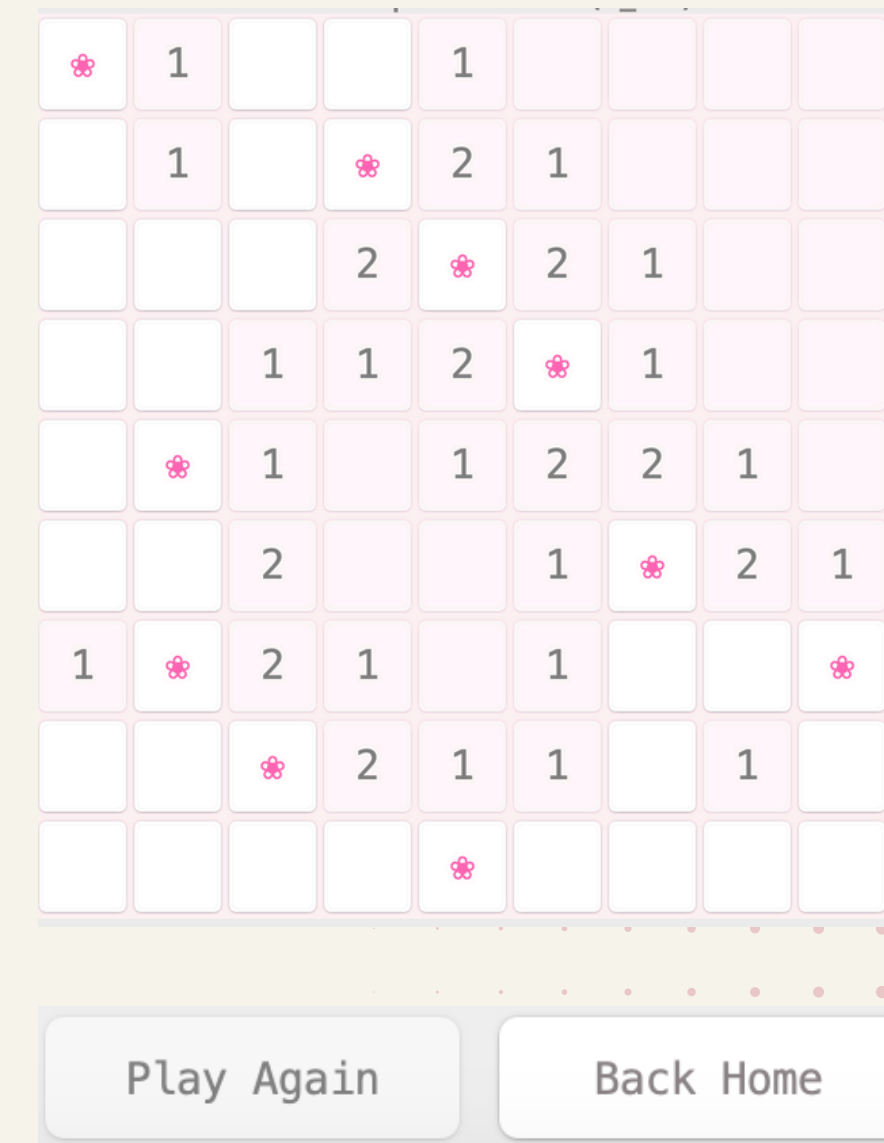
Play
(⌘/⌥)

PROGRAM STRUCTURE

- **Key components:**

- 2. Game screen:**

- + Board: 70x70px
 - + MineTile Class: represent each cell with row and column
 - + Logic: Mines placed randomly, adjacent mines counted
 - + Buttons: “play again” or “return home screen”



PROGRAM STRUCTURE

- **Code Overview:**

```
void setMines() {  
    mineList = new ArrayList<>();  
    int mineLeft = mineCount;  
    while (mineLeft > 0) {  
        int r = random.nextInt(numRows);  
        int c = random.nextInt(numCols);  
  
        MineTile tile = board[r][c];  
        if (!mineList.contains(tile)) {  
            mineList.add(tile);  
            mineLeft--;  
        }  
    }  
}
```

- Randomly generate row and column
- Check if board [r] [c] is already in mineList
- If not, add and reduce mineLeft.

=> Ensures no duplicate mines.

WIN/LOSS CONDITIONS

Win conditions

- Reveal all safe tiles without hitting a flower trap
- Victory messages "Flower Power Unleashed"

Loss Conditions

- Hit flower trap -> game ends
- Defeat message "Flower Trap Activated"

DSA ALGORITHMS APPLIED

- 1 Randomization
- 2 Array Implementation
- 3 Neighbor Checking
- 4 Backtracking

ADVANTAGES & FUTURE DEVELOPMENT

● Advantages

- + Simple, engaging for all ages
- + Use algorithms about randomization and recursion.

● Future Improvements

- + Add difficulty levels
- + Add leaderboard
- + Implement a timer for competitive.

The background features a light cream color. On the left, there are three vertical bars: a wide pink one, a medium blue one, and a narrow beige one. In the top right and bottom right corners, there are decorative patterns of small dots in a light pink color, arranged in a grid-like fashion that fades out towards the edges.

THANK YOU

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