Andy Zheng APCS PD 1

Minesweeper

1. Grid Setup: The game begins with a square grid of cells in the form of a rectangular board. Each cell can either be empty or contain a hidden mine. Difficulty selector for size of board. The size of the board determines the number of mines.
2. Initial Cell Selection: The player starts by selecting a cell to uncover. This first selection is safe and will not contain a mine.
3. Numbered Cells: When a cell is uncovered, it will either be empty or reveal a number. The number indicates the count of mines in the adjacent cells (including diagonals).
4. Safe Cell Propagation: If an uncovered cell is empty, it will automatically uncover all the neighboring cells until it reaches cells with adjacent mines (numbered). This process of automatic propagation continues recursively until no more empty cells are left to uncover.
5. Flagging Mines: The player can mark cells they suspect to contain mines by right-clicking or using a flagging mechanism. This helps in keeping track of potential mine locations and strategizing.
6. Mine Detonation: If the player uncovers a cell that contains a mine, the game ends immediately, and the player loses. The location of the mines is revealed, and the player can choose to restart the game.
7. Game Completion: The player wins the game when all the safe cells are uncovered, and the only cells left are the ones containing mines. At this point show time for completion.

Current Functionalities:

- Create a board of specified length and specified width with each cell size 40.
- Associate board with int array that will contain mines.
- Randomly generate a specified number of mines on the array.
- Reveal art of mine if uncover a mine.
- Reveal all mines.

Next Planned Functionalities:

- Input adjacent mine number into array
- Reveal text of number if reveal number.
- Place flag art on cell when right click
- Difficulty selector for board size / mine count.

UML draft