Minesweeper Program Plan

* Grid has different sizes depending on difficulty:
  + Easy:
    - 8 high by 8 wide grid (or 9x9 or 10x10)
    - 10 mines
  + Medium:
    - 16 high by 16 wide grid
    - 40 mines
  + Hard:
    - 16 high by 30 wide grid
    - 99 mines
* Each cell of the grid has the following properties:
  + Does it contain a mine/bomb?
  + How many adjacent cells (vertically, horizontally, and diagonally) have mines?
  + Has the cell been revealed yet?
  + Has the cell been marked with a flag?
  + Has the cell been marked with a question mark?
  + Has the cell been reserved? (See initial grid generation.)
* Grid generation and initial grid reveal works as follows:
  1. At the start of the game, the grid is entirely blank.
  2. Player selects the first cell to be revealed.
  3. The selected cell and its 8 adjacent neighbours are flagged internally as *reserved*, meaning they cannot be changed to mines during grid generation.
  4. Mines are randomly placed around the grid, up to the maximum amount allowed by the current difficulty level.
     + The neighbours of the cell containing the mine then receive an update to their record of the number of neighbouring cells containing a mine.
  5. Starting with the selected cell, a recursive function is used to reveal all mine-free connected cells.
     + For each neighbouring cell, check whether it’s been revealed yet.
       - If it hasn’t, check whether it contains a mine.
         * If it does, move on to the next neighbour of the current cell.
         * If there is no mine, call the recursive function again, passing it the current neighbour.