Design Document for Lab01

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### Algorithm

For determining the winner of the game, I will keep track of the amount of tiles that each player has marked in each row, column, and diagonal. This will be stored in an 8 integer array, 3 for the rows, 3 for the columns, and 2 for the diagonals. This is a trade in memory for efficiency compared to the tactic of iterating through every column, row and diagonal in the 2d array. To use less memory, instead of having an array for each player I can simply increment if the player is 1 and decrement if the player is 2. That way, if any element in the score array is 3, I know player 1 is the winner, and if any element is negative 3 I know that player 2 is the winner. For determining a draw, I can keep track of the total number of moves; if there have been 9 total moves and there is no winner, the board is full and it is a draw.

### UML