Data Structure Design

Grid Coordinate Structure:

The grid will start with (0,0) at the bottom left of the grid and (3,3) at the top right. When a player clicks on a square, the program will get the coordinates of the mouse click. It calculates a custom cell number. It takes each of the coordinates of the mouse click and renders them as integers, multiplies the Y coordinate of the mouse click and adds it to the mouse click of the X coordinate. So, for the bottom row, the cell numbers are 0, 1, and 2. The middle row is 3, 4, and 5. The top row is 6, 7, and 8.

View Structure:

Variables:

* win
* drawnObjects = []

Objects:

* playArea
* messageArea
* grid lines
* Also responsible for drawing X and O based on Model and Controller commands

Model Structure:

Classes, functions, and variables:

* getMouse()
* mouseClick – gets the mouse click and sets it as a variable
* cellNum
* returns cellNum
* playerX(click)
* playerO(click)
* gameWin():
* Returns "X", "O", "tie", or "continue"
* X or O wins the game
* Tie is a draw
* Continue: play continues.
* reset()

Algorithm:

* if cellNum list from the win list equals x, then Player X wins
* if cellNum list from the win list equals o, then Player O wins
* else, game is a tie
* Win list:
* 0, 1, 2
* 0, 4, 5
* 0, 3, 6
* 3, 4, 5
* 6, 7, 8
* 6, 7, 8
* 6, 4, 2