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 = []
* TextObj = Text(“”)

Model Structure:

Classes, functions, and variables:

* getMouse()
  + mouseClick – gets the mouse click and sets it as a variable
  + cellNum
  + returns cellNum
* drawX(cellNum)
* drawO(cellNum)
* message(msg)
* 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