**Lab 15**

In this lab, we write a program that plays the tic-tac-toe game. The game board of a tic tac toe game is a 3 by 3, two dimensional array of character type. An example game of tic-tac-toe is shown in the "Example Output" section. A partial program has been provided for you to start the project.

Special Requirements

You are required to complete the following five functions:

* InitializeBoard: This function initialize all the elements of the game board to blanks ' '
* Display: This function displays the game board as a 3 by 3 board
* BoardIsFull: This function checks to see if all the elements of the game board have been filled
* Assign: This function assigns character p to location (x, y) on the game board p is either 'X' or 'O'
* CheckWon: This function checks to see if the game is over by checking if any row, column or diagonal has the same character. If 'X' is on all elements of a row, column, or diagonal, 'X' is returned. If 'O' is on all elements of a row, column, or diagonal, 'O' is returned. Otherwise, 'n' is returned.

Here is an example output of the program:

Game Starts!

Current game board:

| |

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| |

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| |

Player X makes the next move.

Enter the x, y location, 0<=x<3, 0<=y<3: 1 1

Current game board:

| |

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| X |

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| |

Player O makes the next move.

Enter the x, y location, 0<=x<3, 0<=y<3: 0 2

Current game board:

| | O

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| X |

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| |

Player X makes the next move.

Enter the x, y location, 0<=x<3, 0<=y<3: 0 0

Current game board:

X | | O

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| X |

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| |

Player O makes the next move.

Enter the x, y location, 0<=x<3, 0<=y<3: 1 2

Current game board:

X | | O

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| X | O

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| |

Player X makes the next move.

Enter the x, y location, 0<=x<3, 0<=y<3: 2 0

Current game board:

X | | O

-----------

| X | O

-----------

X | |

Player O makes the next move.

Enter the x, y location, 0<=x<3, 0<=y<3: 2 2

Current game board:

X | | O

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| X | O

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X | | O

Player O wins!