CSCI 1060U - Laboratory #6

Programming Tic-Tac-Toe

Lab Due: Sunday, Nov. 1, 2020 at 11:59pm (Canvas)

Introduction

The main purpose of this lab is to get more experience programming in C++ by extending a tic-tac-toe game.

Activity #1

You should start by downloading the **tictactoe_final.cpp** program (http://www.sqrlab.ca/exercises/tictactoe_final.cpp). This program is finished but the computer player is not very strategic and relies only on random guesses to determine the next move:

```
//Computer's turn
     else {
       bool validMove = false;
       while (!validMove) {
           int row = rand()%SIZE;
           int col = rand()%SIZE;
           if ((board[row][col] != "X")
               && (board[row][col] != "O")) {
                 board[row][col] = "O";
                 validMove = true;
           }
       }
       positionsRemaining--;
       computerWon = currentPlayerWon(board, "O");
       userTurn = true;
     }
```

First, rewrite the above code so that the determination of the next computer move is done in a separate function. After the rewrite the above code should look like:

```
//Computer's turn
      else {
        //The row and col are both passed as
        //call-by-reference
        int row, col;
        generateComputerMove(board, row, col);
        board[row][col] = "O";

        positionsRemaining--;
        computerWon = currentPlayerWon(board, "O");
```

```
        userTurn = true;
    }
```

Next, make the determination of a move in the new **`generateComputerMove()`** function more strategic (*Hint:* you can add rules instead of always just determining a random move).

You should submit your *source file* (.cpp) for Activity #1 through the lab drop box in Canvas.