

# **CS 2133 – Computer Science II**

## **Assignment 4 – GUI**

**Due on 03/22/2023 at 11:59 pm**

### 1. [Tic-Tac-Toe] (30 points)

Write a Java program using GUI to create a game of Tic-Tac-Toe. Your game will be played in single-player mode i.e. your code must play the next move automatically as the opponent. Your code must perform the following functions.

- a. When a user wants to start a new game, you should ask the user their choice between playing as 'X' or 'O'.
- b. On completion of the game print who is the winner in a new window and offer two options (quit and start over) to the user.
- c. On quit close all windows of the application and for start over reset the board and begin a new game.

### 2.. [Sudoku] (30 points)

Write a Java program using GUI to create a game of Sudoku. You will have to fill a 9×9 grid with digits 1 to 9, so that each column, each row, and each of the nine 3×3 boxes contain all the digits from 1 to 9. You can build the interface with using simple textboxes.

### 3. [Calculator] (20 points)

Write a GUI program for a simple calculator. Consider addition, subtraction, multiplication and division as operations on your calculator. Also, your calculator should include clear option.

### 4. [Simple GUI] (5 points)

Create an application that has a text area, a text field and a button. In the text field you can enter a name. When the button is pressed get the name from the text field and create a new window. Use the name as the title of the new window

### 5. [Lock screen] (10 points)

Create a frame with ten buttons, labeled 0 through 9. To exit the program, you must click on the correct combination of three buttons in order, something like 1-2-3. If the wrong combination is used, the frame turns red.