CSCI 1060U - Laboratory #2
Using Functions in C++
Activity #1 due: <u>by end of lab</u>
Activity #2 due: <u>by midnight, Oct. 3, 2020</u>

Introduction

The main purpose of this lab is to introduce C++ programming concepts related to branching, looping and functions. Please comment your programs.

Activity #1

In this activity you will create a game call **Battleship Lite**. In the game the battleship can occupy any single location in a range of numbered locations. Each round the program selects a random number for the location of the Battleship and then the user has to guess.

In Round 1 the user has to guess a location in [0,9] within 5 tries. If the correct number is not guessed in 5 tries than the game is over. If the correct number is guessed than the user moves onto the next round where they have to guess a location in [0,19] within 5 tries. In each subsequent round the range of numbers is increased by 10 (10, 20, 30, 40, etc.).

In order to program this game you will need to use if-else statements, loops and random number generation using the ctime and stdclib libraries.

Output/Input:

```
_____
Welcome to Battleship Lite!
_____

Round 1
Guess a location of the battleship [0,9]: 1
MISS!

Guess a location of the battleship [0,9]:  3
MISS!

Guess a location of the battleship [0,9]:  5
HIT!

PLAY AGAIN! (Y/N)
Y

Round 2
Guess a location of the battleship [0,19]:  10
MISS!
```

```
Guess a location of the battleship [0,19]: …
```

Activity #2

In this activity you will modify the **Battleship Lite** game to include a computer opponent. In this version of the game there is no limit on number of guess per round (the game ends when one player sinks the other player's battleship). You also cannot see the computer player's board (only your own with the position of your ship).

Output/Input:

```
_____
Welcome to Battleship Lite!
_____

Select the location of your battleship [0,9]: 3
The computer has selected its location.
Ready to begin!

Round 1
Guess a location of the battleship [0,9]: 5
MISS!

Computer's guess: 2
MISS!

Guess a location of the battleship [0,9]: 3
MISS!

Computer's guess: 3
HIT!

PLAY AGAIN! (Y/N)
Y
```

Submission

You should submit your *source file* (lab02_a1.cpp, lab02_a2.cpp) through the lab drop box in Canvas.