ITSC 2181 Introduction to Computer Systems

Module 06 - Unit 2 Lab #1
Write Two C programs for RISC-V Assembly Programming

- In this lab, you will write two C programs that will be used in future labs.
- You may use your course Virtual Machine (VM) or https://repl.it/languages/c

Part 1

Implement a C program to accumulate integer numbers from 1 to 100:

1. Write a program in C that accumulates (sums) the integers from 1 to 100 together using a **`for`** loop.

2. The program should print the result (using **`printf`**) and also return the value of the accumulation (**`return`**).

3. Execute the program and make sure it produces the expected output (5050).

Part 2

Implement a C program to find the average of 100 integers that are randomly generated. The C program MUST follow these steps:

1. Declare an **`int`** array of 100 elements.
2. Use a **`for`** loop to generate 100 random integers and store them in the array.
    a. Use the **`rand()`** function to generate an **`int`** between 0 and 100.
    b. How to use the **`rand()`** function to generate random numbers can be found at the following resource: C library function - rand().

3. Use another **`for`** loop to accumulate those numbers by reading them from the array and adding up to a variable.

4. Calculate the average by dividing the accumulated sum by 100.

5. Print the average and return it.

6. You must use two separate loops. Do NOT generate and accumulate in a single loop.

Submission: Upload the two source (**`.c`**) files on canvas.