Lab 1 Assignment
EET 340
Introduction to Computer Organization and Architecture
Total Points: 100

Instructions: You need to write and compile C++ programs using Codeblock or online editor.

If-else Statement

1. Write a C++ program to check whether a person is eligible to vote. If the age of the person is greater or equal to 18, it will be considered as an eligible. If it is less than 18, it will be considered as an ineligible. This program asks user to enter the age and displays whether the person is eligible to vote or not. Assume, age is an integer number

Hints:

- Using `cout` and `cin`, prompt for and read in the value of age from the keyboard.
- Using `if else` statement, check whether the entered value is greater than or equal to 18.
- If the age is greater or equal to 18, you should print "`You are eligible to vote`" on the output/console window. Otherwise, you should print "`You are not eligible to vote`" on the output/console window.

You should name this project as `Lab1A`.

Sample Output 1:

```
Enter your age: 89
You are eligible to vote
```

Sample Output 2:

```
Enter your age: 13
You are not eligible to vote
```

While VS for loop

Just like the while loop, for loop repeatedly checks the condition and executes blocks of code or statements until a certain condition is met.

The syntax of a for loop:

```
for (initialization condition; condition; update)
{
   statements
}
```

For example, consider a simple program that prints numbers from 1 to 5 using a while loop.

```
int value=1; //initialization condition
while(value<=5) //termination condition
{
   cout<<value<<endl;
   value++;//update action
}
```

A for loop can implement the same code as follows:

```
for (int value=1; value<=5; ++value)
{
   cout<<value<<endl;
}
```

2. The given program asks user to enter 5 integer numbers and prints the average of the numbers. Program is already written using `while` loop. Try to understand each lines of code and get the intuition of while loop**. You need to modify the code and use `for` loop** instead of `while` loop to obtain same output. You should name this project as Lab1B.

```
#include <iostream>
using namespace std;

int main()
{
    // Variable declaration
    int total_num=5, i=0, element, sum=0, average;

    cout<<"Enter 5 integer number and press enter"<<endl;
    // while loop to calculate the sum
    while (i<total_num)
    {
       cin>>element;
       sum=sum+element;
       i++;
    }

    average=sum/total_num;    // calculation of average
    // Print out the result
    cout<<"The average value is:"<<average<<endl;

    return 0;
}
```

Sample Input/output:

```
Enter 5 integer number and press enter:
30 40 50 60 70
The average value is: 50
```

SUBMISSION PROCEDURE

Now, you can create a folder and name it as `Lab1` and you can simply copy `Lab1A` and `Lab1B` projects on the `Lab1` folder. Then, you will zip the `Lab1` folder. Finally upload the zipped `Lab1` file on the Canvas.

If you use online editor, you can simply copy your code on notepad/text files and name the files as Lab1A and Lab1B. You can simply submit your notepad/text files.