ASSIGNMENT # 2
CSC103- PROGRAMMING FUNDAMENTALS

DUE DATE: 21-03-2022 TOTAL MARKS: 30

Instructions:

- Assignment should be hand written/typed on A4 page size, with front page having the following details. **(Note: Failing to attach the front page with the following details will result in deduction of 5 marks)**
  Reg. # :_____
  Name : _____
  Course Title : _____
  Section : _____
  Assignment # : _____
  Submitted to : _____
  Date : _____
  (Font size 16, Times New Roman)
- No marks for late submission.
- Assignment should be well formatted.

Question # 01: [CLO-2] **[5]**

What is the output of the following code? Represent the output of the code against each iteration.

```
int x = 5068;
int i;
int y = 5;
for (i = x; i >= 1; i = i / 40)
   ++y;
cout << "x = " << x << ", y = " << y << endl;
```

Question # 02: [CLO-2] **[25]**

Problem Statement:

The Fibonacci sequence is a series of numbers in which each number is the sum of the two preceding numbers. The basic Programming Example of finding nth Fibonacci Number is already demonstrated in Chapter 5. You are required to re-write the code for calculating nth Fibonacci series by considering the following conditions.

a) Displays your registration No., Name, Assignment No. and the course name according to the following format at the start of program.

```
*****************************************************
***      PROGRAMMING FUNDAMENTALS             ***
***            ASSIGNMENT NO. 2               ***
***              SP22-BCS-132                 ***
***              AHMAD ALI                    ***
*****************************************************
```

b) The inputs: **first number**, **second number** and **nth position** should be greater than 0. If the user enters the wrong input, ask the user to re-enter.

c) The second number of the series entered by the user should be greater or equal to first number. If the user enters the wrong input, ask the user to re-enter

d) Output the result according to the following sample. Properly add the prompt messages displayed against the wrong input and adjust them accordingly into this sample input.

```
*********************************************************************
***                  PROGRAMMING FUNDAMENTALS                     ***
***                      ASSIGNMENT NO. 2                         ***
***                        SP22-BCS-051                           ***
***                         HIRA AFZAL                            ***

*****************************INPUT************************************

 Enter the first Fibonacci number: 1
 Enter the second Fibonacci number: 3

 Enter the position of the desired Fibonacci number: 8

****************************oUTPUT************************************

 The first two Fibonacci numbers are 1 and 3

 The complete Fibonacci series till nth position is
1 3 4 7 11 18 29 47

The Fibonacci number at position 8 is 47
```

Instructions:

- The output should be according to the sample output provided. Use output manipulators for maintaining the same.
- Follow program style instructions such as indentation, meaningful variables names, comments etc.
- Test your program by running it five times, using the following data and add the screen shot of each output screen in your assignment.

1st data for input:

	First Number	*Second Number*	*Nth Position*
Actual input	*2*	*3*	*0*
Re-enter			*4*

2nd data for input:

	First Number	*Second Number*	*Nth Position*
Actual input	*5*	*2*	
Re-enter		*4*	
Re-enter		*5*	*8*

3rd data for input:

	First Number	*Second Number*	*Nth Position*
Actual input	*3*	*0*	
Re-enter		*2*	
Re-enter		*4*	*0*
Re-enter			*6*

4th data for input:

	First Number	*Second Number*	*Nth Position*
Actual input	*0*		
Re-enter	*1*	*1*	*6*

5th data for input:

	First Number	*Second Number*	*Nth Position*
Actual input	*0*		
Re-enter	*3*	*0*	
Re-enter		*2*	
Re-enter		*6*	*15*