INDEPENDENT UNIVERSITY, BANGLADESH
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SPRING 2021
ASSIGNMENT 2
DUE: 22-03-2021, 11.59 PM.
TOPIC: IF-ELSE, LOOP
POINT: 100P (10X10:100P)

Name:	**Id:**	**Sec:**	**Point:**

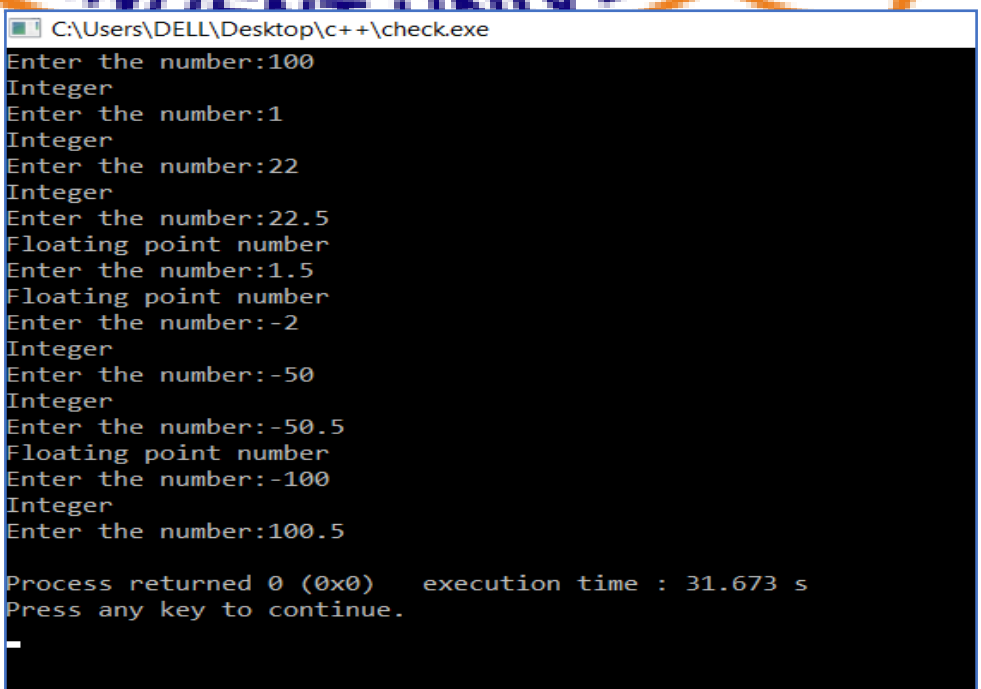
Instructions:

1. **Plagiarism will not be tolerated.**
2. **Do not copy from any source (online/or person).**
3. **If you could not do any problem, leave it blank.**
4. **Partial marks will be given for partially solved questions.**
5. **Do not forget to fill your name, id and section. Please leave the point block as it is. Failure to fill up your name, id and section will invalid the whole assignment.**
6. **You also have to rename the assignment file with your id. For instance, the file name is "ID_ Assignment 2 Spring 2021" and your id is 12345. You have to rename it as "ID_12345_Assignment 2 Spring 2021". Unable to follow this instruction may lead to cancel your assignment.**

Problem Set:

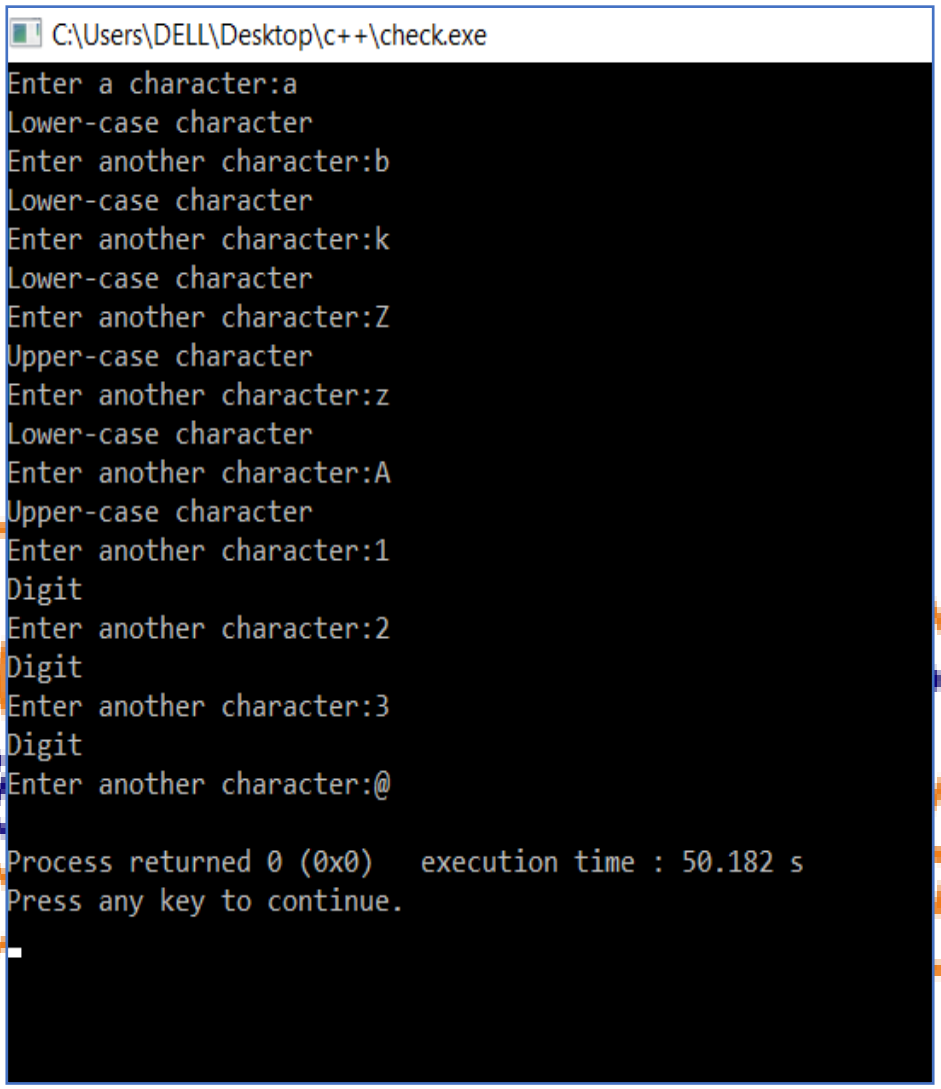
1. i) Write a program that keeps taking input and checks whether it is an integer or floating-point number until the user enters number greater than 100. (Use while or do while loop).

Example:



ii) Write a program that keeps taking input (Character data type, ignore negative digits) and checks whether it is an upper-case or lower-case character or a digit until the user enters a special character (‘@’ / ’#’ / ‘$’ etc). (Use while or do while loop).

Example:



2) Take a number from the user and check if it is a perfect number. A perfect number is a positive integer that is equal to the sum of its positive divisors excluding the number itself. 28 is a perfect number because the sum of its divisors 1+2+4+7+14 is equal to 28.

Input	Output
6	Perfect
10	Not Perfect
496	Perfect

3) Write a program that displays the following number sequences.

i. 1,3,5,7,9,…..99

ii. 3,6,9,……,33

iii. 2,2.25,2.50,2.75,……..,4.00

4) Write a program which takes row number as input and print following patterns.

```
r=4;
*
**
***
****
```

```
r=4

****
***
**
*
```

```
r=3
*
***
*****
```

Input	Output
4	1 1 2 1 2 3

	1 2 3 4
2	1 1 2

Input	Output
4	1 2 2 3 3 3 4 4 4 4
2	1 2 2

5) . Write a program that displays the following series and computes its sum

i)2+4+6+….+100=?

ii)0.25+0.5+0.75+1+…5=?

6) . Write a program that displays the following series and computes its sum:

i)

ii)

7) Write a program that takes an integer number from the user and display sum and average of the digits.

Input	Output
Enter the number: 123	Sum :6 Average:2
Enter the number: 1024	Sum :7 Average:1.75

8)Take two numbers from the user and print all the prime numbers between them.

Input	Output
5 20	5, 7, 11, 13, 17, 19
50 71	53, 59, 61, 67, 71

9) Take a number from the user and check if it is symmetric (palindrome). A number is symmetric if the reverse of the number is equal to the original number.

Input	**Output**
123	Not symmetric
505	symmetric
888	Symmetric
89	Not symmetric

10) Take a decimal number from the user and convert it into a octal number. And print the decimal and binary number.

Input	**Output**
5	Deimal:5 & Octal: 5
11	Deimal:11 & Octal: 13
9	Deimal:9 & Octal: 11