PDS LAB (SECTION-17) - ASSIGNMENT-3 - 21 DEC 2020

Iterations and Loops, Continue & Break statements

Instructions:

1. Create a directory named as *<rollno>_A3*, where *<rollno>* is your roll number .
2. Give the name of the programs as *<p>.c* , where *<p>* implies the problem number ,like *1.c , 2.c, 3.c* etc . Store all the programs under this Assignment in the directory *<rollno>_A3* .
3. Zip the entire directory *<rollno>_A3* .
4. You should upload your zipped file *<rollno>_A3.zip* to the Moodle course web page latest by 5 PM (without penalty). The cutoff time will be till 5.30 PM with a penalty of 25% on your secured marks (i.e., if you secured 80 marks, after penalty you will get 60 marks). Beyond 5.30 PM, the moodle system will not allow you to submit, as a result you will get zero.

Part A (15 + 15 = 30 Marks)

1. Write a C program to accept a stream of integers from the user through keyboard, and print the mean of the numbers after each entry. The program should terminate when the input number is -1.

   For eg: Input : 1, 2, 3, 4, 5, -1
   Output : 1, 1.5, 2, 2.5, 3

2. Write a C program to calculate the sum of 10 positive integers entered by the user through the keyboard. If the user enters a negative value, the program should exit and output (display) the sum upto that step. If the input number is greater than 100, it should be ignored in computation of sum.

   Note: Use infinite while loop, Break and Continue statements to solve this problem.

Eg. I/P : 1, 2, 3, 4, -2 O/P : 10
I/P : 1, 2, 3, 200, 4, -2 O/P: 10
I/P : 1, 2, 3, 200, 4, 4, 2, 1, 2, 1, 10 O/P : 30

Part B (30 + 20 + 20 = 70 Marks)

3. Write a program to print Pascal's triangle , take no of rows as input from the user .

Eg

```
          1
        1   1
      1   2   1
    1   3   3   1
  1   4   6   4   1
1  5   10  10   5   1
```

4. Take n as input. Then, take n distinct integers as input. Find the second largest of these n integers. Do not use arrays.

5. Find the first 5 numbers such that the sum of cubes of its digits is the number itself (Armstrong Number).

Eg 153 = $1^3 + 5^3 + 3^3$