DSA I : LAB ASSIGNMENT 2
SY(COMP) COEP

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1. Write a program to find sum of natural numbers using

a)   while Loop   b)   for loop

(Take a positive integer (let say n) as an input from the user and calculates the sum up to n.)

2. Write a C program to print the ASCII value of all alphabets (both lower and upper case) using loop.

3. Write a C Program to find sum of digits at even location in a given number. Digits are numbered from 0 to n-1 from right to left. (For e.g., user entered 54823 so sum of 5+8+3 = 16)

4. Write a C program to accept a decimal number (Base 10) and convert it to binary and count the number of 1's in the binary number.
 (For eg : user enters 54, $(54)_{10} = (110110)_2$,
 Number of 1's = 4)

5. Write a C program to change the case of an alphabet. (Upper case <-> Lower Case)

6. Write a C Program to print following triangle patterns using nested loop. [Take the number of rows in the pattern as input from user. All asterisks (*) should be printed by a single printf statement of the form printf("%s", "*"); .Use printf(" "); for blank space]

``` * * * * * * * * * * * * * * * * * * * * * * * * * * *```	```1 2 3 4 5 6 7 8 9 10``` (Floyd's Triangle)
```0 0 01 01 010 010 0101 0101 0101001010```	``` 1 1 1 1 2 1 1 3 3 1 1 4 6 4 1 1 5 10 10 5 1``` (Pascal's Triangle)

7. Write a C program to find GCD and LCM of two numbers.

8. Write a C program to generate prime number series from 1 to 100.

9. Write a C program to compute the following series: (Convert degree to radian for sine and cosine series as below. Let x=30,

$$x = 30 * \frac{\pi}{180} = 30 * \frac{3.14159}{180} = 0.52359$$

a)	$\cos x = 1 - \dfrac{x^2}{2!} + \dfrac{x^4}{4!} - \dfrac{x^6}{6!} + \dots$
b)	$\sin x = x - \dfrac{x^3}{3!} + \dfrac{x^5}{5!} - \dfrac{x^7}{7!} + \dots$
c)	$e^x = 1 + x + \dfrac{x^2}{2!} + \dfrac{x^3}{3!} + \dots$