C Programming Laboratory
Assignment 1

Assgn No.	Assignment
1.	Take 2 numbers and swap their values by using a third variable.
2.	Now perform the swapping without using a third variable.
3.	Take the length and breadth of a rectangular wire as input from user. Print its area and perimeter. Now the same wire is bent to form a circle. Calculate the radius of the circle.
4.	Check whether a year is leap year or not. Example: 2000 is a leap year; 2012 is a leap year. 1900 is not a leap year.
5.	Take 3 numbers and print the highest.
6.	Input the Cost Price (CP) and Selling Price (SP) of an article. Now calculate the gain or loss percentage.
7.	Calculate the average of all the numbers between m and n. m, n will be given by user as input through the keyboard.
8.	Print the multiplication table of a number n. Take n as input from user.
9.	Take a number and print its factorial. Example: 4!= 24 (4*3*2*1=24)
10.	Take a number and calculate the sum of its digits. Example: 148 (1+4+8=13)
11.	Take a number and calculate the number of digits present in it. Example: 716. (No. of digits=3)
12.	Take a number and reverse it. Now check whether the original number and the reversed number are equal or not. If they are equal, print "**Palindrome**". Otherwise print "Not Palindrome". Example: 121 is a Palindrome Number.
13.	Take a and b as input from user. Now calculate a^b. Example: a=3, b=2. Output: $3^2=9$.
14.	Generate **Fibonacci** numbers up to n terms. n will be entered by user. 0,1,1,2,3,5,8,13,21…….
15.	Take a number and check whether it is **Armstrong** or not. Example: 153. ($1^3+5^3+3^3=153$))
16.	Take a number and check whether it is **Peterson** or not. Example: 145. (1!+4!+5!=145)
17.	Check whether a number is **perfect square** or not. Example: $25=5^2$,$121=11^2$.
18.	Print all the **Prime** numbers within a given range. The range will be taken as input by the user.
19.	Take a number and check whether it is a **power of 2** or not. Example: 2,4,16,64,256.
20.	Take a number and find the sum of all the factors of it. Now check whether the sum is equal to the original number or not. If equal print "**Perfect Number**". Otherwise print "Not Perfect". Example: 6. Factors of 6 are 1,2 and 3. 1+2+3=6.
21.	Take a number in binary and convert it to decimal. Example: $(1100)_2= (12)_{10}$ 123=Not in Binary.

Assgn No.	Assignment
22.	Find the GCD (**Greatest Common Divisor**) of 2 numbers. Hence find their **LCM**. GCD(10,15)=5. LCM(10,15)=30
23.	Take a number and check whether it belongs to the Fibonacci series or not. Example: 8 belongs to Fibonacci series. 10 does not belong to Fibonacci series.
24.	Find the sum of the following series. i) 1+4+9+16+…….. n terms. ii) 1+(1+2)+(1+2+3)+(1+2+3+4)+……. n terms. iii) 2+4+8+16+32+64+…… n terms. iv) 1.2+2.3+3.4+4.5+…… n terms v) $x-x^2/2!+x^3/3!-x^4/4!+x^5/5!-$…… n terms. n will be given by user in each case.
25.	Print the following patterns by writing C programs. i) 1 21 321 4321 54321 ii) 54321 4321 321 21 1 iii) ***** **** *** ** * iv) 1 212 32123 4321234 543212345 v) 101010101 1010101 10101 101 1 vi) 12345 1234 123 12 1 12 123 1234 12345 vii) * viii) 1 2 3 4 5 6 7 8 9 10 ix) 5 5 5 5 5 4 4 4 4 3 3 3 2 2 1 x) 5 545 54345 5432345 543212345 5432345 54345 545 5 xi) 123454321 1234321 12321 121 1 121 12321 1234321 123454321 xii) 1 2 3 4 5

CO1: Realize the basics of C programming, variables, data types, operators.
CO2: Develop programs using the basic programming constructs: if-else, switch-case, loops.