MCA-1 C programming Lab Assignment

1. Write a program to convert any centigrade temperature value to Fahrenheit and vice-versa. Write a menu driven program.

2. In a banking system, there are the following denomination of notes: Rs. 10, Rs. 20. Rs. 50. Rs. 100. Write a program that will accept an amount and find the minimum number of each note required to pay the amount.

3. In a hotel, a professor lives in a room no. X. The room number are sequentially numbered from 1 to n (n can be any integer). The sum of the room numbers left to X is equal to the sum of the room numbers to the right of X. Write a program to find X.

4. Write a program to convert an 8-digit number into words (consider both the Indian and International number system).

5. Write a program to find the value of one number raised to the power of the another number without using the library function pow()

6. Write a program to compute GCD of two number. Implement the program using the Euclid Algorithm and the factorization method.

7. Write a program to compute LCM of n integers.

8. Write a program to compute following series

A. 1/1!+2/2!+3/3!+.....upto 10 terms.
B. Sine(x)
C. Cos(x)
D. Log(1+x)

9. W.A.P. to print all prime numbers between 1 and *n*. (*n* will be given as input).

10. Write a program to find the reverse of any number & check whether the number is a palindrome or not.

11. Write a program to generate the n-th Fibonacci number where n will be taken as input. There is a formula for computing the n-th Fibonacci number:

$$F_n = \frac{1}{\sqrt{5}}\left(\frac{1+\sqrt{5}}{2}\right)^n - \frac{1}{\sqrt{5}}\left(\frac{1-\sqrt{5}}{2}\right)^n$$

Compute n-th Fibonacci number without using the formula and using the formula, and compare these two. Are they same?

12. Write a program to compute an union of two sorted list of integers so that the resultant list remain sorted.

13. Consider that M is a n x n square matrix whose each row contains real numbers or 0 such that sum of each row is 1. If R is a n-dimensional column vector whose each component is 1/n. Use random number generator to create the matrix M. Write a program to compute: $R = (M^p)R$, where p should be taken as input.