S2 CSE
C- PROGRAMMING LAB
LAB EXERCISES

Cycle - 1

1. Find the roots of a quadratic equation in the form ax^2 + bx + c = 0.
2. Find the GCD and LCM of two numbers.
3. Check whether a particular date(dd-mm-yyyy format) is valid in the range 20-07-1950 to 04-09-2018.
4. Find the largest and smallest of a set of N numbers.
5. Input a binary number and display the decimal equivalent of that number.

6. Read N integers, store them in an array, and search for a number in the array using **linear search**.
7. Sort N integers using **bubble sort** algorithm.
8. Search for a number in a sorted list of numbers using **binary search**.
9. Given two sets (mathematical set) of numbers A and B. Find $A \cup B$, $A \cap B$, $A-B$.
10. Given two sorted list of numbers. Merge these two lists to form a new list such that the resultant list is also in sorted order. (*do the operation without further sorting*).

Cycle - 2

11. Write a **function** to check whether a counting number is prime or not. Using this function display the prime numbers in first N counting numbers.
12. Write a **recursive function** for finding factorial. Using this function find nCr.
13. Write a **recursive function** for finding the binary equivalent of a decimal number (unsigned whole number).
14. Read a **m x n** matrix, find the largest element and its position in the matrix.
15. Write a program for finding the product of two matrices. Write separate functions for Reading matrices, Multiplication of matrices and Display matrix.
16. Input a line of text and display the separate count of lower case letters, upper case letters and digits in it.
17. Input N student names and arrange them in alphabetical order using **selection sort**.
18. Input a line of text and display the **palindrome words** in it. Write a **function** for checking whether a string is palindrome or not.

Cycle - 3

19. Store the regno, name and 4 marks of a set of students in an **array of structure** and display the details along with total marks in the descending order of total marks.
20. Implement the following string library functions using **pointers** :
    1. string length
    2. string copy
    3. string comparison
    4. string concatenation
21. Find the average of a set of numbers using **command line argument**.
22. Display the frequency of each alphabet and each digits in a given text file.
23. Implement **wc** command in UNIX.
24. Using **command line arguments** copy the content of one text file to another after converting all lower case letters to upper case.

25. A text file 'STUDENT.DAT' contains regno, name and 6 marks in the following format

Regno	Name	Mark1	Mark2	Mark3	Mark4	Mark5	Mark6
6	25	3	3	3	3	3	3

Input a register number and display the marklist corresponding to that student.

26. An unformated file "ITEMS.DAT" contains the item code (char[4]), item name (char[20]) and unit price (float) of items in a supermarket. The content of this file is written using fwrite() function. Write a program which accepts the item code and quantity purchased for a list of items and display a bill for the customer showing all the details.