Arrays

1. To search an element in an array using
   i. Linear Search
   ii. Binary Search.
2. To sort array in ascending/descending order
3. To find transpose of a matrix without using another matrix
4. To find transpose of a matrix with using another matrix
5. To print array in reverse using pointers and function (Expt 23)
6. To print pascal triangle (program should ask no of lines to user)

```
                1
            1       1
        1       2       1
    1       3       3       1
1       4       6       4       1
```

7. WAP to check whether entered matrix is symmetric or not
8. To find norm of a square matrix
9. To find trace of a square matrix
10. Write a program to perform addition of two matrices using user defined functions:
    a. read_matrix() b. print_matrix() c. add_matrix()
    b. Print all three matrices.

Strings

11. WAP to count no of vowels, consonants, digits, spaces and special characters in entered string

12. WAP to check whether entered string is palindrome or not

13. WAP using user defined functions xstrlen, xstrcmp, xstrcpy, xstrcat, xstrev. Use switch case.

Structure

14. Create a structure Patient having patientID , Name and diseases as data members. Read details of 5 patients and print details of the patients with a disease 'diabetes'.

15. Create a structure Employee with data members' employee ID, name and salary. Write a program to sort 10 employees according to their salary (in descending order).

16. WAP to print names of students in ascending order of their average marks using structure student. Student structure contains following elements:
Roll No, Name, marks of 3 subjects (array of int size 3), avg_marks

17. To create a structure having following elements:
    i. Employee code
    ii. Employee name
    iii. Employee salary
    iv. Employee date_of_joining

    WAP to read at least 10 records and display them using nested structure.

18. Define a structure "Hockey" consisting of following elements:
    i. Player name
    ii. Name of the country
    iii. Number of matches played
    iv. Number of goals scored

    WAP to read records of N players and to prepare following lists:
    i) List prepared according to players'name
    ii) List prepared according to country's name
    iii) List prepared according to number of matches played
    iv) List prepared according to number of goals scored

19. Tutorial 9 question no 2

20. WAP to add two rational numbers using structure
21. WAP to add two complex numbers using structure
22. WAP to find distance of two points using structure

Functions

23. Write recursive function
    i. To compute factorial of a number
    ii. To compute x^n
    iii. To computer gcd of two numbers using Euclid's algorithm
    iv. To add two numbers
    v. To multiply two numbers
    vi. To add first n natural nos
    vii. To add array elements of array size n
    viii. To print binary equivalent of a number
    ix. To print first n terms of Fibonacci series
24. WAP using functions and switch-case to
    i. Decide whether entered no is odd and even.
    ii. Entered year is leap or not
    iii. Maximum of 3 nos using ternary operator
    iv. Swap two nos.
    v. To find area and perimeter of a circle given radius
    vi. To find area and perimeter of a rectangle given length and breadth
    vii. To find nPr and nCr using fact function
25. WAP to find standard deviation of n numbers inputted by user using function find_mean() , find_variance().