Coding Set 2

1D Array

1. **Find Maximum and Minimum**
   Write a program to input n integers in an array and find the maximum and minimum element using a function that takes an array pointer as a parameter.
2. **Reverse an Array**
   Write a program to reverse an array of size n using pointers (do not use indexing like arr[i]).
3. **Sum of Even and Odd Elements**
   Given an array of integers, write a program to find the sum of even elements and odd elements separately using pointer arithmetic.

2D Array

4. **Matrix Addition**
   Input two 2D matrices (size m x n) and find their sum. Pass the 2D arrays to a function using pointers.
5. **Transpose of Matrix**
   Write a program to find the transpose of a given n x n matrix using pointer notation.
6. **Row-wise Maximum**
   Given a 2D array of integers, write a program to find the maximum element of each row using pointers.

3D Array

7. **Sum of All Elements**
   Input elements of a 2 x 2 x 2 3D array and find the sum of all elements using pointer arithmetic.
8. **Display a 3D Matrix**
   Write a program to input and print elements of a 3 x 3 x 3 cube using only pointers (no arr[i][j][k] syntax).

Mixed Pointer + Array Concepts

9. **Pointer to Array of Pointers**
   Create an array of string pointers (e.g., names of 5 students) and print them using pointer notation.
10. **Dynamic Array Allocation**
    Write a program to dynamically allocate memory for an integer array of size n, input elements, and find their average using pointers.