1. Write a menu driven C++ program to do following operation on two dimensional array A of size m x n. You should use user-defined functions which accept 2-D array A, and its size m and n as arguments. The options are:

- **To input elements into matrix of size m x n**
- **To display elements of matrix of size m x n**
- **Sum of all elements of matrix of size m x n**
- **To display row-wise sum of matrix of size m x n**
- **To display column-wise sum of matrix of size m x n**
- **To create transpose of matrix B of size n x m**

2. Write user defined functions for square matrix to calculate

1. **Left diagonal sum**
2. **Right diagonal sum**

3. Write a user-defined function in C++ to display the multiplication of row element of two-dimensional array A[4][6] containing integer.

4. Write a user defined function named Upper-half() which takes a two dimensional array A, with size N rows and N columns as argument and prints the upper half of the array.

e.g.,

2 3 1 5 0
7 1 5 3 1
2 5 7 8 1
0 1 5 0 1
3 4 9 1 5

Output will be:

2 3 1 5 0
1 5 3 1
1 7 8
0 1
5

5. Write a function in C++ which accepts a 2D array of integers and its size as arguments and displays the elements of middle row and the elements of middle column.

[Assuming the 2D Array to be a square matrix with odd dimension i.e. 3x3, 5x5, 7x7 etc...]

Example, if the array contents is

3 5 4

7 6 9

2 1 8

Output through the function should be :

Middle Row : 7 6 9

Middle column : 5 6 1

6. Write a program to add two array A and B of size m x n.

7. Write a program to multiply array A and B of order NxL and LxM