



## C++ Assignments | 2D Arrays - 1 | Week 6

Q1: Write a program to store 10 at every index of a 2D matrix with 5 rows and 5 columns.

Write a program to add two matrices and save the result in one of the given matrices.

Input 1:

1 2 3

4 5 6

7 8 9

4 5 8

0 0 8

1 2 0

Output 1:

5 7 11

4 5 14

8 10 9

Q3: Given a matrix 'A' of dimension  $n \times m$  and 2 coordinates  $(l1, r1)$  and  $(l2, r2)$ . Return the sum of the rectangle from  $(l1, r1)$  to  $(l2, r2)$ .

Input 1:

1 2 -3 4

0 0 -4 2

1 -1 2 3

-4 -5 -7 0

$l1 = 1, r1 = 2, l2 = 3, r2 = 3$

Output 1: -4

Input 2:

1 2 -3 4

0 0 -4 2

1 -1 2 3

-4 -5 -7 0

l1 = 1, r1 = 0 , l2 = 0 , r2 = 3

Output 1: 2

Q4: Write a C++ program to find the largest element of a given 2D array of integers.

Input 1:

1 3 4 6

2 4 5 7

3 5 6 8

4 6 7 9

Output 1: 9

Q5: Write a program to print the row number having the maximum sum in a given matrix.

Input 1:

1 3 5 7

3 4 7 8

1 4 12 3

Output 1: 2

Explanation : The 2nd row has the maximum sum i.e.  $1+4+12+3 = 20$

Q6: Write a function 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 dimensions i.e. 3x3, 5x5, 7x7 etc...]

Input 1:

1 2 3 4 5

3 4 5 6 7

7 6 5 4 3

8 7 6 5 4

1 2 3 7 8 0

Output 1:

3

5

7 6 5 4 3

6

*Note:- Please try to invest time doing the assignments which are necessary to build a strong foundation. Do not directly Copy Paste using Google or ChatGPT. Please use your brain 😊.*

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