

# 2D Arrays-1

## Lecture- 14

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# What and Why?

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# Representation of 2D array

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# Declaration of a 2-Dimensional Array

```
int arr[4][2];
```

While initializing a 2D array it is necessary to mention the second (column) dimension, whereas the first dimension (row) is optional.

**Correct**

```
int arr[2][3];
```

```
int arr[ ][3];
```

**Incorrect**

```
int arr[2][ ];
```

```
int arr[ ][ ];
```

# Initialisation of a 2-Dimensional Array

```
int arr[4][2] = { { 1234, 56 }, { 1256, 43 }, { 1434, 32 }, { 1312, 96 } } ;
```

```
int arr[4][2] = { 1234, 56 , 1256, 43 , 1434, 32 , 1312, 96 } ;
```

```
int arr[2][3] = { 12, 34, 56, 78, 91, 23 } ;
```

```
int arr[ ][3] = {12, 34, 56, 78, 91, 23 } ;
```

# Traversal through 2D array

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# Taking 2D array as input from the user

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# Array of arrays

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**Ques** : Write a program to store roll number and marks obtained by 4 students side by side in a matrix.

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

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**Ques** : Write a program to print sum of all the elements of a 2D matrix.

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**Ques** : Write a program to add two matrices.

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**Ques** : Write a program to print the transpose of the matrix entered by the user and store it in a new matrix.

**Ques** : Write a program to change the given matrix with its transpose.  
[Leetcode 867]

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**Ques** : Write a program to rotate the matrix by 90 degrees clockwise.

[Leetcode 48]

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# Thank you !!

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