

# C++ Multidimensional Arrays

The multidimensional array is also known as rectangular arrays in C++. It can be two dimensional or three dimensional. The data is stored in tabular form (row \* column) which is also known as matrix.

## C++ Multidimensional Array Example

Let's see a simple example of multidimensional array in C++ which declares, initializes and traverse two dimensional arrays.

```
#include <iostream>
using namespace std;
int main()
{
    int test[3][3]; //declaration of 2D array
    test[0][0]=5; //initialization
    test[0][1]=10;
    test[1][1]=15;
    test[1][2]=20;
    test[2][0]=30;
    test[2][2]=10;
    //traversal
    for(int i = 0; i < 3; ++i)
    {
        for(int j = 0; j < 3; ++j)
        {
            cout<< test[i][j]<<" ";
        }
        cout<<"\n"; //new line at each row
    }
    return 0;
}
```



Output:

```
5 10 0
0 15 20
30 0 10
```

# C++ Multidimensional Array Example: Declaration and initialization at same time

Let's see a simple example of multidimensional array which initializes array at the time of declaration.

```
#include <iostream>
using namespace std;
int main()
{
    int test[3][3] =
    {
        {2, 5, 5},
        {4, 0, 3},
        {9, 1, 8} }; //declaration and initialization
    //traversal
    for(int i = 0; i < 3; ++i)
    {
        for(int j = 0; j < 3; ++j)
        {
            cout<< test[i][j]<<" ";
        }
        cout<<"\n"; //new line at each row
    }
    return 0;
}
```



Output:"

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

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