

# **Lecture (6)**

## **" Programming Essentials in C++ "**

### **2D Array**

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# Two Dimensional Array

مصفوفه بداخل مصفوفه `Int a[ ][ ]`

`Int a[ 3 ][ 4 ]`

عدد الصفوف

عدد الأعمدة



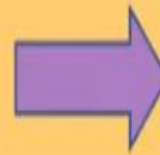
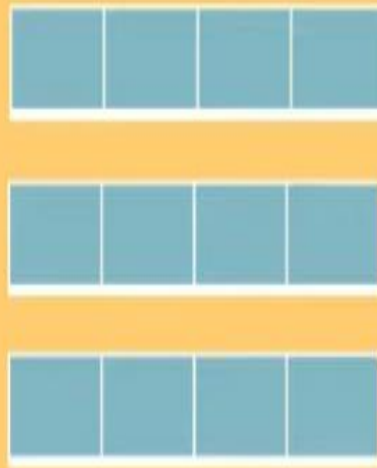
# Two Dimensional Array

مصفوفة بداخل مصفوفة `Int a[ ][ ]`

`Int a[ 3 ][ 4 ]`

عدد الصفوف  
او  
عدد المصفوفات

عدد الاعمدة  
او  
عدد العناصر الى في كل  
مصفوفة



	0	1	2	3
0				
1				
2				

# Writing 2D Array

1:

```
Int a[ 3 ][ 4 ]={1,2,3,4,5,6,8,9,0,16,44,13}
```

	0	1	2	3
0	1	2	3	4
1	5	6	8	9
2	0	16	44	13

```
Int a[ 3 ][ 4 ]={ {1,2,3,4},{5,6,8,9},{0,16,44,13} }
```

1<sup>st</sup> row

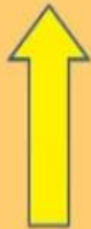
2<sup>nd</sup> row

3<sup>rd</sup> row

# Display the value in 1D array

```
Int y [6]={80,56,92,100,124,0};
```

0	1	2	3	4	5
80	56	92	100	124	0



```
Cout << y[2]<<endl;
```

# Display the value in 2D array

```
Int a[ 3 ][ 4 ]={ {1,2,3,4},{5,6,8,9},{0,16,44,13} }
```

```
Cout <<a[0][0]<<endl;
```



1

```
Cout <<a[0][1]<<endl;
```



2

```
Cout <<a[2][2]<<endl;
```



44

	0	1	2	3
0	1	2	3	4
1	5	6	8	9
2	0	16	44	13

```
8  ****
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15      int a[3][3]={0,1,2},{3,4,5},{6,7,8}};
16      cout<<a[1][1]<<endl;
17
18      return 0;
19  }
```

0	1	2
3	4	5
6	7	8

```
8
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15      int a[3][3]={{0,1,2},{3,4,5},{6,7,8}};
16      cout<<a[2][1]<<endl;
17
18      return 0;
19  }
```

0	1	2
3	4	5
6	7	8



```
8  ****
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15      int a[3][3]={0,1,2},{3,4,5},{6,7,8}};
16      cout<<a[2][2]<<endl;
17
18      return 0;
19  }
```

0	1	2
3	4	5
6	7	8

# Demand 2D Array from the user

```
1  using namespace std;
2
3  int main()
4  {
5      int a[3][3];
6      for(int i=0;i<3;i++)
7      {
8          for(int j=0;j<3;j++)
9          {
10             cin>>a[i][j];
11          }
12      }
13      for(int i=0;i<3;i++)
14      {
15          for(int j=0;j<3;j++)
16          {
17             cout<<"index "<<i<<","<<j<<"="<<a[i][j]<<endl;
18          }
19      }
20
21      return 0;
22  }
```

# Demand 2D Array from the user

The o/p Array

```
1
2
3
4
5
6
7
8
9
index 0,0=1
index 0,1=2
index 0,2=3
index 1,0=4
index 1,1=5
index 1,2=6
index 2,0=7
index 2,1=8
index 2,2=9
```

*Thank  
you*

