

# Smart Programming : YouTube Channel

An investment in Knowledge pays the best interest....

**Smart Programming**  
We Educate - We Develop

+91 62838-30308  
Call us to Learn  
Latest Technologies  
City : Mohali (Punjab),  
& Chandigarh  
(India)

 **WEBSITE :** <http://www.smartprogramming.in>

 **BUY COURSES ON :** <https://courses.smartprogramming.in>

 **YOUTUBE CHANNEL :** Smart Programming (<https://www.youtube.com/c/SmartProgramming>)

 **ANDROID APP :** Smart Programming  
(<https://play.google.com/store/apps/details?id=com.smartprogramming>)

 <https://www.facebook.com/smartprogramming.india>

 [https://www.instagram.com/smart\\_programming](https://www.instagram.com/smart_programming)



## Two Dimensional Array in Java

## **=> Types of Arrays :-**

### **1. Single Dimensional Array**

-> 1D Array

### **2. Multi-Dimensional Array**

-> 2D Array

-> 3D Array

-> 4D, 5D, 6D.... Array

-> Zic-Zac Array

### **3. Anonymous Array**

**Smart  
Programming**

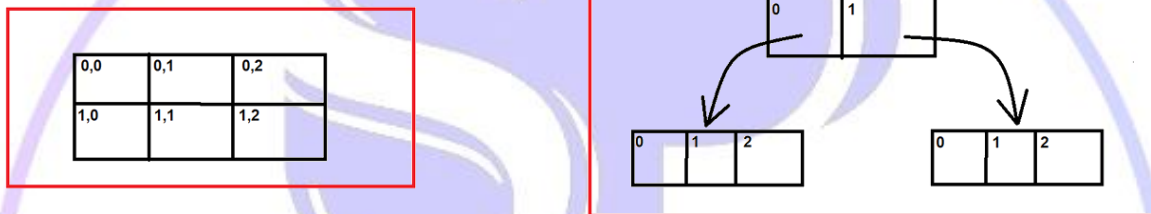
---

We Educate  
We Develop



## => 2D Array :-

2 Dimensional Array Representation



### -> Following points for 2D array :-

#### = Declaration

-> For declaring 2D array, we have to use double square braces

#### = Creation :-

-> When we create 2D array, we have to provide the size of an array

-> a=new int[2][3]; // there are 2 rows and 3 columns

-> Whenever we create an array by using new keyword, then default values will be initialized in the array blocks

-> We can declare and create 2D array in a single line

```
int[][] a=new int[2][3];
```

= Initialization

-> a[0][1]=100; //will initialize 100 value at 0,1 index position

-> We can declare, create and initialize an array in single line

```
int[][] a={{10,20,30}, {40,50,60}};
```

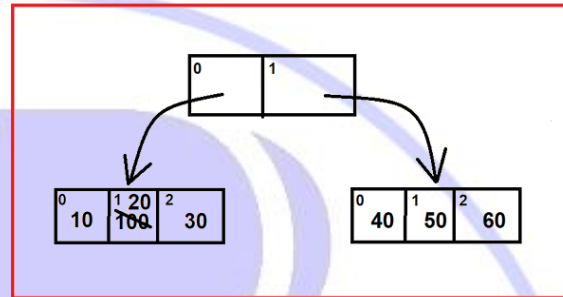
int[][] a=new int[2][3];  
a[0][1]=100;

int[][] a={{10, 20, 30},{40, 50, 60}};

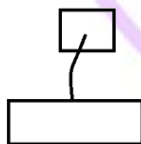
0,0	0	0,1	100	0,2	0
1,0	0	1,1	0	1,2	0

0	1	2
	100	

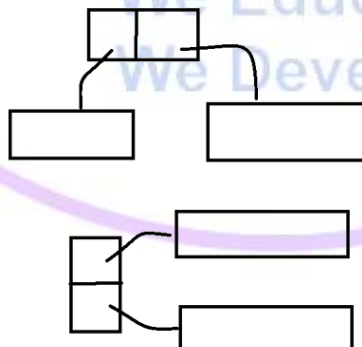
a[1]=100;  
int[] a={10,20,30};



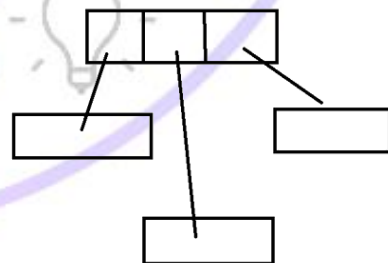
int[][] a={{{}}};

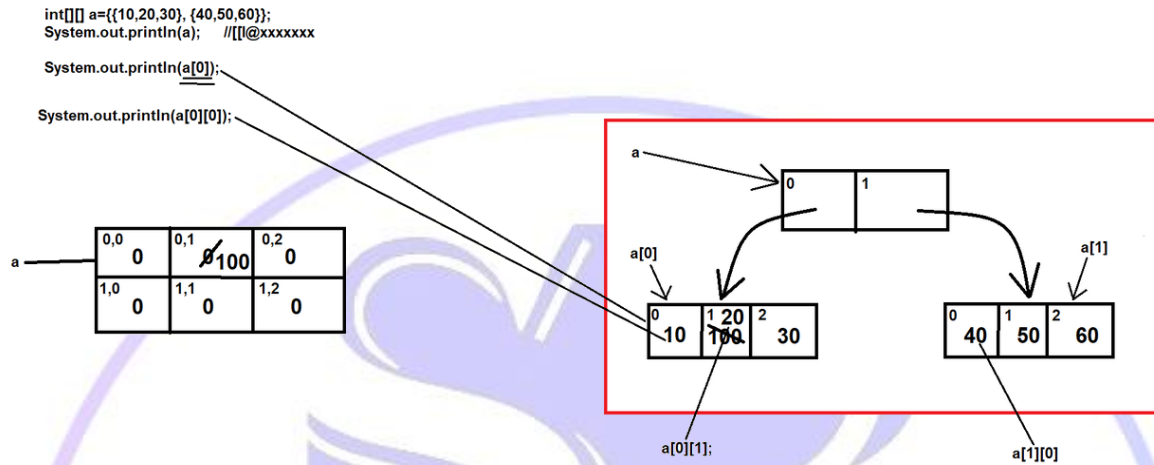


int[][] a={{},{}};



int[][] a={{},{},{}};





= Retrieve

-> We can retrieve elements by using for loop

Smart  
Programming

We Educate  
We Develop





## => Declaration :-

1. `int[][] a;` //preferred way
2. `int [][]a;`
3. `int[][]a;`
4. `int [][] a;`
5. `int []a[];`

---

## => Cases for Declaration :-

1. `int [][]a, b;` //a (2D array); b (2D array)
2. `int a[][], b;` //a (2D array); b (simple variable)
3. `int []a[], b;` //a (2D array); b (1D array)
4. `int []a[], b[];` //a (2D array); b (2D array)

5. `int [][]a, b[];` //a (2D array); b (3D array)

6. `int [][]a, []b;` //compile time error

---

### => Cases for Creation :-

1. `a=new int[2][3];` //correct

2. `a=new int[][];` //compile time error (array dimension missing)

3. `a=new int[2][];` //correct

4. `a=new int[][3];` //compile time error (']' expected)

---



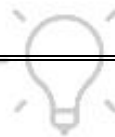
## **=> Cases for creation within single line :-**

1. `int[][] a=new int[2][3]; //correct`
2. `int[][] a=new int[2][]; //correct`
3. `int[][] a=new int[][]; //error`
4. `int[][] a=new int[0][0]; //correct`
5. `int[][] a=new int[-2][3];` //will compile successfully but provides runtime exception saying `java.lang.NegativeArraySizeException`

**Smart  
Programming**

We Educate

We Develop



## **Company Links & Contacts**

**Company Name:** Smart Programming (+91 62838-30308)

**Address :** Chandigarh & Mohali (Punjab), India

**Websites:** <https://www.smartprogramming.in/>  
<https://courses.smartprogramming.in>

**Android App:**  
<https://play.google.com/store/apps/details?id=com.smartprogramming>

**YouTube Channel:**  
<https://www.youtube.com/c/SmartProgramming>