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Three 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

=> 3D Array :-

-> Diagram representation

-> How to declare, create and initialize 3D array

= Declaration :-

-> We can declare 3D array by using 3 square braces.

= Creation :-

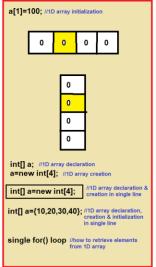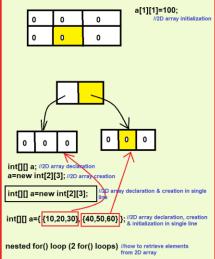-> We can create an array by using new keyword

= Initialization :-
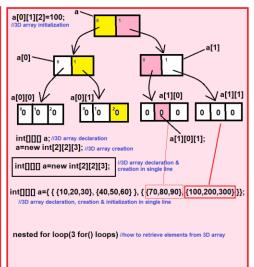
a[0][1][2]=100;

= Retrieve :-

We can retrieve the elements of 3D array by using 3 for loops

1D Array

a[1]=100; //1D array initialization

0	0	0	0

0
0
0
0

int[] a; //1D array declaration
a=new int[4]; //1D array creation

int[] a=new int[4]; //1D array declaration & creation in single line

int[] a={10,20,30,40}; //1D array declaration, creation & initialization in single line

single for() loop //how to retrieve elements from 1D array

2D Array

a[1][1]=100; //2D array initialization

0	0	0
0	0	0

int[][] a; //2D array declaration
a=new int[2][3]; //2D array creation

int[][] a=new int[2][3]; //2D array declaration & creation in single line

int[][] a={ {10,20,30}, {40,50,60} }; //2D array declaration, creation & initialization in single line

nested for() loop (2 for() loops) //how to retrieve elements from 2D array

3D Array

a[0][1][2]=100; //3D array initialization

a[0]   a[1]

a[0][0]   a[0][1]   a[1][0]   a[1][1]

a[1][0][1];

int[][][] a; //3D array declaration
a=new int[2][2][3]; //3D array creation

int[][][] a=new int[2][2][3]; //3D array declaration & creation in single line

int[][][] a={ { {10,20,30}, {40,50,60} }, { {70,80,90}, {100,200,300} }}; //3D array declaration, creation & initialization in single line

nested for loop(3 for() loops) //how to retrieve elements from 3D array

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Declaration :-

1. int[][][] a;

2. int[] [][]a;

3. int [][][]a;

4. int []a[][];

5. int [][]a[];

6. int a[][][];

Cases for Declaration :-

1. int[][][]a, b;   //a & b are 3D array

2. int [][]a[],b;   //a is 3D array & b is 2D array

3. int [][]a[], b[]; //a and b are 3D array

4. int [][][]a, b[]; //a is 3D array & b is 4D array

5. int [][][]a, []b; //error

Cases for creation :-

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

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

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

4. a=new int[][][];   //error

5. a=new int[2][][3];   //error

Company Links & Contacts

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

Address : Chandigarh & Mohali (Punjab), India

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