**What is an array?**

An array is an indexed collection of fixed number of homogenous data elements.

Adv: We can represent huge number of values by using single variable.

DisAdv: Fixed in size.

**Possible way to declare an array?**

**int**[] x; //this is recommended

**int** []x1;

**int** x2[];

**Is it possible to specify the size at the time of declarattion?**

Nope int[6] x; is invalid

**Posssible way to declare two-dimensional array?**

int[][] x;

int [][]x1;

int x2[][];

int[] []x3;

int[] x4[];

int x6[][];

**Some important points about declaration**

**int**[] a,b; *//a & b are one dimension*

**int**[] a1[],b1; *//a two dimension, b one dimension*

**int**[] a2[], b2[]; *//a & b are two dimension*

**int**[] []a3, b3; *//a & b are two dimension*

**int**[] []a4, b4[]; *//a two dimension, b three dimension*

*//int[] []a5,[]b5; - this is invalid*

Conclusion: If you want to specify some dimension before the variable that facility is applicable only for the first variable in declaration. If we are trying to apply for next variable onwards, we will get compile time error.

**Possible ways to declare three dimensional array?**

**int** [][][]a1;

**int**[] [][]a2;

**int**[][] []a3;

**int**[][][] a4;

**int** a5[][][];

**int**[] a6[][];

**int**[][] a7[];

**int** []a8[][];

**int** [][]a9[];

**How do you create array?**

Evvery array in java is an object, hence we can create arrays by using ‘new’ operator.

int []a8[][] = new int[1][1][1];

**What is the corresponding class name?**

[[[I

**Is it compulsory to specify size during array creation?**

Yes it is compulsory to specify array size.

*Invalid: int[] x = new int[];*

*int[] x = new int[-1];*

*Valid: int[] x = new int[0]*

***What are the data-types allowed to specify the array size?***

***byte, char, short, int***

***Refer ArrayDataTypeTest.java***

**What is the underlying datastructor of multi-dimensional array?**

**It is array of arrays**

**Way to initialize multidimensional array?**

**1.** *//array of arrays*

x = **new int**[5][];

x[0] = **new int**[1];

x[1] = **new int**[2];

x[2] = **new int**[3];

x[3] = **new int**[4];

x[4] = **new int**[5];

**for** (**int** i = 0; i < x.**length**; i++) {

**for** (**int** j = 0; j < x[i].**length**; j++) {

System.***out***.print(**" \* "**);

}

System.***out***.println(**""**);

}

**2.** To use this shortcut compulsary we should perform all activites in a single line.

x = **new int**[][] { { 0,1,2 }, { 3,4,5,6,7 } };

**What will happen if we use the short-cut way of initialization in two lines?**

**We will get compile time error and which is not allowed.**

**int**[][] x7;

x7 = {{1, 2},{3, 4}}; //not allowed

**What is anonymous arrays?**

System.***out***.println(**new int**[]{1,2});

**Is element level promotion is applicable to array type?**

**Nope**

x = **new int**[] {1, 2, 3};

**char**[] chars = {**'a'**,**'b'**,**'c'**};

**int**[] b5 = x;

*/\*int[] b6 = chars;\*/ //not possible*

Where as this is possible

**char** c = **'a'**;

**int** aa = c;

**Reassigning array?**

**int**[] b6 = {4,5,6};

x = b6;

b6 = x;

System.***out***.println(**"b6 elements \*\*"**);

**for** (**int** i = 0; i < b6.**length**; i++) {

System.***out***.println(b6[i]);

}

System.***out***.println(**"x elements \*\*"**);

**for** (**int** i = 0; i < x.**length**; i++) {

System.***out***.println(x[i]);

}

**What will happen when we assign two dimensional array to single dimensional array?**

We will get compile time error, incompatible type found [][], required []

**How many objects get created and how many objects eligible for GC?**

**int[][] a = new int[4][3]; -> 5 object will get created**

a[0] = new int[4]; -> 1

a[1] = new int[2]; -> 1

**a = new int[3][2]; -> 4**

**=====================**

**Total object created : 11**

**Eligible for GC: 7**

**Refer video tutorial for more reference.**