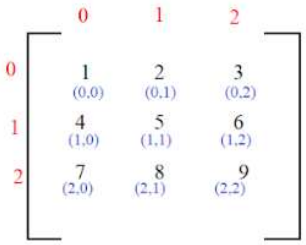
Keypoints in Java Array:

1) Every Array in Java is an Object.
2) Whenever we are decleraing an array we should never specify its size.
   int arr[5]; ⟹ Invalid int arr[]; ⟹ Valid
3) At the time of array instantiation 100% we need to specify the size, otherwise we will be getting an compile time error
   int arr[]=new int[]; ⟹ Invalid int arr[]=new int[5]; ⟹ Valid
4) Whenever we are instantiating an array with a specific size every memory block of that array will be filled with the default value of its data type of the array.
5) We can give **0** also as size of an array.
6) We cant give **negative numbers** as size of an array. [It generates an `NegativeArraySizeException`]
7) We can use int, byte, short, char for specifying the **size** of an array.
8) **Maximum size of an array can be maximum size of int datatype. [2147483647].**



Rules for Array Instantiation:

1. At the time of array initializing an array compulsory we should specify the size otherwise we will get compile time error.
2. We can give array size as zero also.
3. We can't have negative values as array size.
4. The allowed data types to specify array size are byte, short, char, int.
5. The maximum allowed array size in java is maximum value of int size.
6. Whenever we are creating an array every element is initialized with default value automatically

Note: Anonymous array is an array without reference.

Eg: new int[]{10,20,30}.length;

How to access an array element?

- To access an array element, or a part of the array, you use a number called an index or a subscript.

Difference between length Vs length():

length	length()
It is the final variable applicable only for arrays.	It is a final method applicable for String objects.
It represents the size of the array	It returns the number of characters present in the String

int[] rollNumber=new int[30];
Syso(rollNumber.length());//error
Syso(rollNumber.length);//30
	String s="Java";
	Syso(s.length);//error
	Syso(s.length());//4

Multidimensional Array

```
class Testarray3
{
public static void main(String args[])
{

int arr[][]={{1,2,3},{4,5,6},{7,8,9}};

 for(int i=0;i<3;i++)
  {
   for(int j=0;j<3;j++)
    {
     System.out.print(arr[i][j]+" ");
    }
   System.out.println();
  }
}
}
```

```
int[][] a;
int [][]a;
int a[][];
int[] []a;
int[] a[];
int []a[];
```

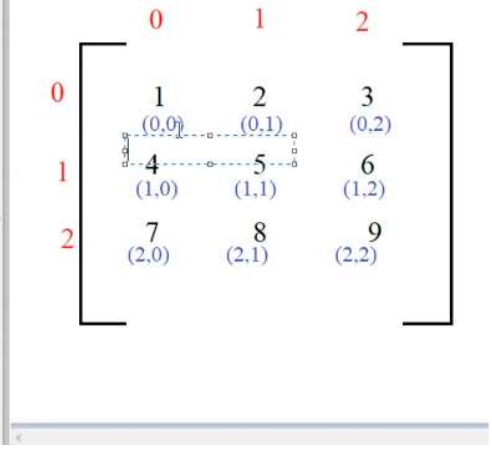
All are valid.(6 ways)

```java
import java.util.Arrays;

public class ClassA
{
    void meth1()
    {
        System.out.println("Implementing Java Array\n");

        String names[]=new String[5];
        names[0]="Sujatha";
        names[1]="Athena";
        names[2]="Fathima";
        names[3]="Lakshmi";
        names[4]="Deepali";

        //names[5]="Sudha";// It generates AIOB Exception

        System.out.println("names : "+Arrays.toString(names));

        System.out.println("\nReteriving the data by using for loop");// works on index positions
        for(int i=1;i<=3;i++)
        {
            System.out.print(names[i]+" ");
        }

        System.out.println("\n----------------");
        for(int i=0;i<names.length;i++)
            System.out.print(names[i]+" ");

        System.out.println("\n----------------");
        for(int i=names.length-1;i>=0;i--)
            System.out.print(names[i]+" ");

        System.out.println("\n\nReteriving the data by using for-each loop");// works on streaming data

        for(String s:names)
        {
            System.out.print(s+" ");
        }

        System.out.println("\n----------------------------------------");

        String arr[]=new String[names.length];
        int count=1;
        for(String s:names)
        {
            System.out.println(count+++" iteration : "+s);
            for(int i=arr.length-1;i>=0;i--)
            {
                arr[i]=s;
```

```
52              }
53              //break;
54          }
55          System.out.println("====>"+Arrays.toString(arr));
56      }
57      void meth2()
58      {
59          System.out.println("meth2() called");
60
61          int arr1[]=new int[0]; // this is allowed but we cant pass any elements n this array
62          System.out.println("arr1 : "+arr1.length);
63
64          //ar1r[0]=100;
65          //System.out.println("arr1[0] : "+arr1[0]); // It generates AIOB Exception
```

```
66
67          //int arr2[]=new int[-5]; //It generates NegativeArraySizeException
68          //System.out.println("arr2 : "+arr2.length);
69
70          boolean flag1[]=new boolean['A'];
71          System.out.println(Arrays.toString(flag1));
72
73          boolean flag2[]=new boolean[2147483647];// max size of an int
74      }
75      public static void main(String[] args)
76      {
77          ClassA aobj=new ClassA();
78          //aobj.meth1();
79          aobj.meth2();
80      }
81  }
```

```
1  package com.pack1;
2
3  public class ClassB
4  {
5      void meth1()
6      {
7          int arr[][]={{1,2,3},{4,5,6},{7,8,9}};
8          for(int i=0;i<3;i++)
9          {
10             for(int j=0;j<3;j++)
11             {
12                 System.out.print(arr[i][j]+" ");
13             }
14             System.out.println();
15         }
16     }
17     public static void main(String[] args)
18     {
19         new ClassB().meth1();
20     }
21 }
```



Core Java Class-46
Key pionts in Java Array