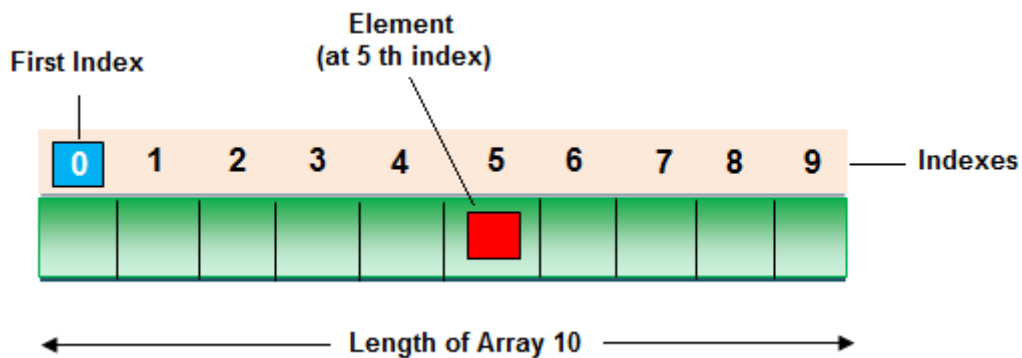


IT-Successwin Technology

Array in Java

Array is a collection of similar type of data. An array is an indexed collection of fixed number of homogeneous data elements.



Advantage of Array

The main advantage of array is we can represent multiple value under the same name.

Code Optimization: No, need to declare a lot of variable of same type data, We can retrieve and short data easily.

Random access: We can get any data located from any index position.

Disadvantage of Array

The main limitation of array is **Size Limit** when once we declare array there is no chance to increase and decrease the size of array according to our requirement, Hence memory point of view array concept is not recommended to use. To over come this limitation in java introduce collection concept.

Types of Array

There are two types of array in java.

- Single Dimensional Array

- Multidimensional Array

Array Declaration

Single dimension array declaration.

1. `int[] a;`
2. `int a[];`
3. `int []a;`

Note: At the time of array declaration we can not specify the size of array. For Example `int[5] a;` this is wrong.

2D Array declaration.

1. `int[][] a;`
2. `int a[][];`
3. `int [][]a;`
4. `int[] a[];`
5. `int[] []a;`
6. `int []a[];`

Array creation

Every array in a java is an object, Hence we can create array by using **new** keyword.

Note:

1) At the time of array creation we must be specify the size of array otherwise get an compile time error. For Example

`int[] a=new int[];` Invalid.

`int[] a=new int[5];` Valid

2) If we specify array size as negative int value, then we will get run-time error, `NegativeArraySizeException`.

3) To specify array size the allowed data types are byte, short, int, char. If we use other data type then we will get a compile time error.

4) The maximum allowed size of array in Java is 2147483647 (It is the maximum value of int data type)

length vs length()

length: It is a final variable and only applicable for array. It represents the size of the array.

Example

```
int[] a=new int[10];
System.out.println(a.length); // 10
System.out.println(a.length()); // Compile time error
```

length(): It is a final method applicable only for String objects. It represents the number of characters present in the String.

Example

```
String s="Java";
System.out.println(s.length()); // 4
System.out.println(s.length); // Compile time error
```

Example of Array

```
public class ArrayEx
{
public static void main(String []args)
{
int arr[] = {10,20,30};
for (int i=0; i < arr.length; i++)
{
System.out.println(arr[i]);
}
}
}
```

}