



SNS COLLEGE OF TECHNOLOGY
(AN AUTONOMOUS INSTITUTION)
COIMBATORE – 35
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



UNIT II

BASIC FEATURES OF JAVA

Static Array in Java

In Java, [array](#) is the most important data structure that contains elements of the same type. It stores elements in contiguous memory allocation. There are two types of array i.e. **static array** and **dynamic array**. In this section, we will focus only on **static array in Java**.

Static Array

An array that is declared with the static keyword is known as static array. It allocates memory at compile-time whose size is fixed. We cannot alter the static array.

If we want an array to be sized based on input from the user, then we cannot use static arrays. In such a case, dynamic arrays allow us to specify the size of an array at run-time.

Static Array Example

For example, `int arr[10]` creates an array of size 10. It means we can insert only 10 elements; we cannot add a 11th element as the size of Array is fixed.

1. `int arr[] = { 1, 3, 4 }; // static integer array`
2. `int* arr = new int[3]; // dynamic integer array`

Advantages of Static Array

- It has efficient execution time.
- The lifetime of static allocation is the entire run time of the program.

Disadvantages of Static Array

- In case more static data space is declared than needed, there is waste of space.
- In case less static space is declared than needed, then it becomes impossible to expand this fixed size during run time.

Declaring a Static Array

The syntax to declare a static array is:

1. `<data type> <variable name> []={<data1>,<data2>,.....<dataN>};`

For example:

1. `String[] suit = new String[] {`
2. `"Japan",`
3. `"India",`
4. `"Austria",`
5. `"Dubai"`
6. `};`

We can also declare and initialize static array as follows:

1. `String[] suit = {`
2. `"Japan",`
3. `"India",`
4. `"Austria",`
5. `"Dubai"`
6. `};`

Static array can also be declared as a List. For example:

1. `List suit = Arrays.asList(`
2. `"Japan",`
3. `"India",`
4. `"Austria",`
5. `"Dubai"`
6. `);`

Static Array Java Program

StaticArrayExample.java

1. `public class StaticArrayExample`
2. `{`
3. `private static String[] array;`

```
4.     static
5.     {
6.     array = new String[2];
7.     array[0] = "Welcome to";
8.     array[1] = "Javatpoint";
9.     }
10.    public static void main(String args[])
11.    {
12.    for(int i = 0; i < array.length; i++)
13.    {
14.    System.out.print(array[i] + " ");
15.    }
16.    }
17.    }
```

Output:

```
Welcome to Javatpoint
```

Let's see another Java program.

StaticArrayExample.java

```
1.     public class StaticArrayExample2
2.     {
3.     //creates a static array of integer type
4.     static Integer[] integerArray;
5.     static
6.     {
7.     integerArray = new Integer[] { new Integer(1), new Integer(2), new Integer(3), new Inte
ger(4), new Integer(5)};
8.     }
9.     public static void main(String args[])
10.    {
11.    //loop iterate over static array
12.    for (int i = 0; i < integerArray.length; i++)
13.    {
14.    //prints array elements
15.    System.out.println(integerArray[i]);
```

```
16.    }
17.    }
18.    }
```

Output:

```
1
2
3
4
5
```

Difference Between Static Array and Dynamic Array

The following table describes the key differences between static array and dynamic

Static Array	Dynamic Array
Static arrays are allocated memory at compile time.	Dynamic array is located at run-time.
The size of static array is fixed.	The size of dynamic array is fixed.
It is located in stack memory space.	It is located in heap memory space.
<code>int array[10]; //array of size 10</code>	<code>int* array = new int[10];</code>

array.