

# Arrays class

Assignment: 11

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## Arrays Class:

- The Arrays class belong to java.util package which is a part of the Java Collection Framework.

## Uses:

- The Array class provides static methods to dynamically create and access Java arrays.
- These methods can be used to fill, sort, search, etc in arrays.

## Class Declaration:

- public class Arrays  
extends Object
- In order to use Arrays - Arrays.<function name>;

## Methods in Arrays class:

Methods	Action Performed
<b>binarySearch()</b>	Searches for the specified element in the array with the help of the Binary Search Algorithm
<b>sort(originalArray)</b>	Sorts the complete array in ascending order.
<b>equals(array1, array2)</b>	Checks if both the arrays are equal or not.
<b>mismatch(array1, array2)</b>	Finds and returns the index of the first unmatched element between the two specified arrays.
<b>toString(originalArray)</b>	It returns a string representation of the contents of this array. The string representation consists of a list of the array's elements, enclosed in square brackets

	(“[]”). Adjacent elements are separated by the characters a comma followed by a space. Elements are converted to strings as by String.valueOf() function.
<b>copyOf(originalArray, newLength)</b>	Copies the specified array, truncating or padding with the default value (if necessary) so the copy has the specified length.
<b>fill(originalArray, fillValue)</b>	Assigns this fill value to each index of this arrays.

## binarySearch( ):

```

Demo.java ×
1 import java.util.Arrays;
2 import java.util.Scanner;
3
4 public class Demo {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         Scanner scan=new Scanner(System.in);
9         System.out.println("Enter size of array");
10        int arr[]=new int[scan.nextInt()];
11        for(int i=0;i<=arr.length-1;i++)
12        {
13            System.out.println("Enter an element");
14            arr[i]=scan.nextInt();
15        }
16        System.out.println("contents of array are....");
17        for(int i=0;i<=arr.length-1;i++)
18        {
19            System.out.print(arr[i]+" "+"|");
20        }
21        System.out.println();
22        System.out.println("Enter a key to search");
23        int key=scan.nextInt();
24        System.out.println(key+ " found at index = "+ Arrays.binarySearch(arr, key));
25    }
26

```

```

Console ×
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 9:24:00 pm – 9:24:16 pm) [pid:
Enter an element
90
contents of array are....
12 |34 |56 |78 |90 |
Enter a key to search
34
34 found at index = 1

```

## sort(originalArray):

```
Demo.java X
1 import java.util.Arrays;
2 import java.util.Scanner;
3
4 public class Demo {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         Scanner scan=new Scanner(System.in);
9         System.out.println("Enter size of array");
10        int arr[]=new int[scan.nextInt()];
11        for(int i=0;i<=arr.length-1;i++)
12        {
13            System.out.println("Enter an element");
14            arr[i]=scan.nextInt();
15        }
16        System.out.println("contents of array are....");
17        for(int i=0;i<=arr.length-1;i++)
18        {
19            System.out.print(arr[i]+" "+"|");
20        }
21        System.out.println();
22        Arrays.sort(arr);
23        System.out.println("Array after sorting "+ Arrays.toString(arr));
24    }}
25
26
```

```
Console X
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:25:24 pm - 10:25:43)
Enter an element
68
Enter an element
12
contents of array are....
90 |87 |34 |68 |12 |
Array after sorting [12, 34, 68, 87, 90]
```

## **equals(array1, array2)**

```
Demo.java X
4 public class Demo {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         Scanner scan=new Scanner(System.in);
9         System.out.println("Enter size of array");
10        int arr1[]=new int[scan.nextInt()];
11        for(int i=0;i<=arr1.length-1;i++)
12        {
13            System.out.println("Enter an element");
14            arr1[i]=scan.nextInt();
15        }
16        System.out.println("Enter size of array");
17        int arr2[]=new int[scan.nextInt()];
18        for(int i=0;i<=arr2.length-1;i++)
19        {
20            System.out.println("Enter an element");
21            arr2[i]=scan.nextInt();
22        }
23        System.out.println("contents of array1 are....");
24        for(int i=0;i<=arr1.length-1;i++)
25        {
26            System.out.print(arr1[i]+" "+"|");
27        }
28        System.out.println();
29        System.out.println("contents of array2 are....");
30        for(int i=0;i<=arr2.length-1;i++)
31        {
32            System.out.print(arr2[i]+" "+"|");
33        }
34        System.out.println();
35        System.out.println("Arrays on comparison: " + Arrays.equals(arr1, arr2));
36    }
37 }
```

```
Console X
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:33:21 pm - 10:33:34)
Enter an element
56
Enter an element
78
contents of array1 are....
12 |34 |56 |78 |
contents of array2 are....
12 |34 |56 |78 |
Arrays on comparison: true
```

## mismatch(array1, array2)

```
Demo.java X
5
6 public static void main(String[] args) {
7     // TODO Auto-generated method stub
8     Scanner scan=new Scanner(System.in);
9     System.out.println("Enter size of array");
10    int arr1[]=new int[scan.nextInt()];
11    for(int i=0;i<arr1.length-1;i++)
12    {
13        System.out.println("Enter an element");
14        arr1[i]=scan.nextInt();
15    }
16    System.out.println("Enter size of array");
17    int arr2[]=new int[scan.nextInt()];
18    for(int i=0;i<arr2.length-1;i++)
19    {
20        System.out.println("Enter an element");
21        arr2[i]=scan.nextInt();
22    }
23    System.out.println("contents of array1 are....");
24    for(int i=0;i<arr1.length-1;i++)
25    {
26        System.out.print(arr1[i]+" "+"|");
27    }
28    System.out.println();
29    System.out.println("contents of array2 are....");
30    for(int i=0;i<arr2.length-1;i++)
31    {
32        System.out.print(arr2[i]+" "+"|");
33    }
34    System.out.println();
35    System.out.println("The element mismatched at index: "+ Arrays.mismatch(arr1, arr2));
36 }
37
```

```
Console X
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:38:16 pm - 10:38:58)
Enter an element
56
Enter an element
77
contents of array1 are....
12 |34 |56 |78 |90 |
contents of array2 are....
12 |34 |56 |77 |
The element mismatched at index: 3
```

## toString(originalArray)

```
Demo.java x
4 public class Demo {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         Scanner scan=new Scanner(System.in);
9         System.out.println("Enter size of array");
10        int arr1[]=new int[scan.nextInt()];
11        for(int i=0;i<=arr1.length-1;i++)
12        {
13            System.out.println("Enter an element");
14            arr1[i]=scan.nextInt();
15        }
16
17        System.out.println("contents of array are....");
18        for(int i=0;i<=arr1.length-1;i++)
19        {
20            System.out.print(arr1[i]+" "+"|");
21        }
22        System.out.println();
23        System.out.println("Contents of array "+ Arrays.toString(arr1));
24    }}
25
```

```
Console x
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:44:06 pm - 10:44:13
56
Enter an element
78
contents of array are....
12 |34 |56 |78 |
Contents of array [12, 34, 56, 78]
```

## copyOf(originalArray, newLength)

```
Demo.java X
4 public class Demo {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         Scanner scan=new Scanner(System.in);
9         System.out.println("Enter size of array");
10        int arr1[]=new int[scan.nextInt()];
11        for(int i=0;i<=arr1.length-1;i++)
12        {
13            System.out.println("Enter an element");
14            arr1[i]=scan.nextInt();
15        }
16
17        System.out.println("contents of array are....");
18        for(int i=0;i<=arr1.length-1;i++)
19        {
20            System.out.print(arr1[i]+" "+"|");
21        }
22        System.out.println();
23        System.out.println("Integer Array: "+ Arrays.toString(Arrays.copyOf(arr1, 6)));
24    }
25
```

```
Console X
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:53:14 pm - 10:53:22 pm) [pid: 628]
56
Enter an element
78
contents of array are....
12 |34 |56 |78 |
Integer Array: [12, 34, 56, 78, 0, 0]
Activ
```



## fill(originalArray, fillValue)

```
Demo.java ×
6 public static void main(String[] args) {
7     // TODO Auto-generated method stub
8     Scanner scan=new Scanner(System.in);
9     System.out.println("Enter size of array");
10    int arr1[]=new int[scan.nextInt()];
11    for(int i=0;i<=arr1.length-1;i++)
12    {
13        System.out.println("Enter an element");
14        arr1[i]=scan.nextInt();
15    }
16
17    System.out.println("contents of array are....");
18    for(int i=0;i<=arr1.length-1;i++)
19    {
20        System.out.print(arr1[i]+" "+"|");
21    }
22    System.out.println();
23    System.out.println("Enter a key to fill each index of an array");
24    int key=scan.nextInt();
25    Arrays.fill(arr1, key);
26    System.out.println("Array on filling: "+ Arrays.toString(arr1));
27 }

<

Console ×
<terminated> Demo (22) [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:58:33 pm – 10:58:52)
Enter an element
90
contents of array are....
12 |34 |56 |78 |90 |
Enter a key to fill each index of an array
78
Array on filling: [78, 78, 78, 78, 78]
```