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A2 Batch

KODOZJ3LI

The Arrays Class

The Arrays class in **java.util** package is a part of the Java Collection Framework. This class provides static methods to dynamically create and access Java arrays. It consists of only static methods and the methods of Object class. The methods of this class can be used by the class name itself. These methods help programmers expanding horizons with arrays for instance there are often times when loops are used to do some tasks on an array like:

Fill an array with a particular value.

Sort an Array.

Search in an Array.

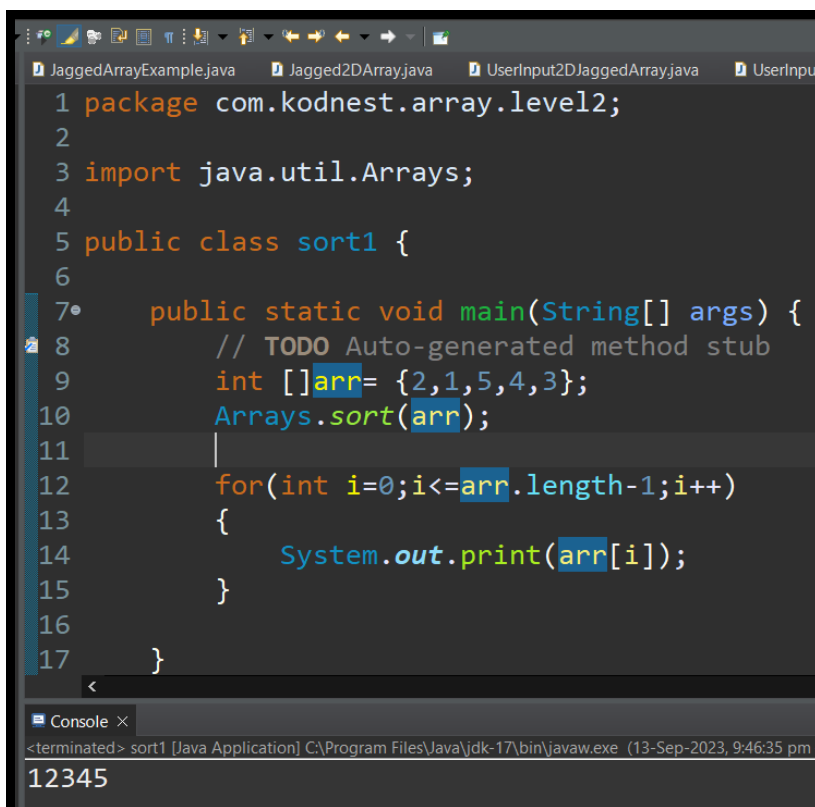
And many more.

Arrays class provides several static methods that can be used to perform these tasks directly without the use of loops, hence forth making our code super short and optimized.

Methods in Arrays Class:

Following are some of the methods in class Arrays-

1. `sort()`: Sorts the complete array in ascending order.

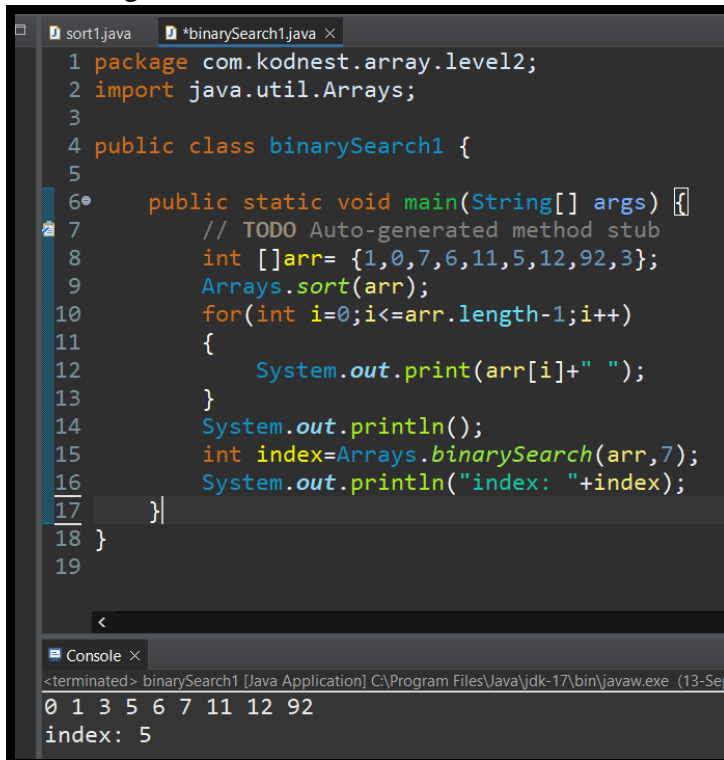


```
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class sort1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr= {2,1,5,4,3};
10        Arrays.sort(arr);
11        |
12        for(int i=0;i<=arr.length-1;i++)
13        {
14            System.out.print(arr[i]);
15        }
16
17    }
```

<terminated> sort1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 9:46:35 pm -

12345

2. `binarySearch()`: Searches for the specified element in the array with the help of Binary Search algorithm.



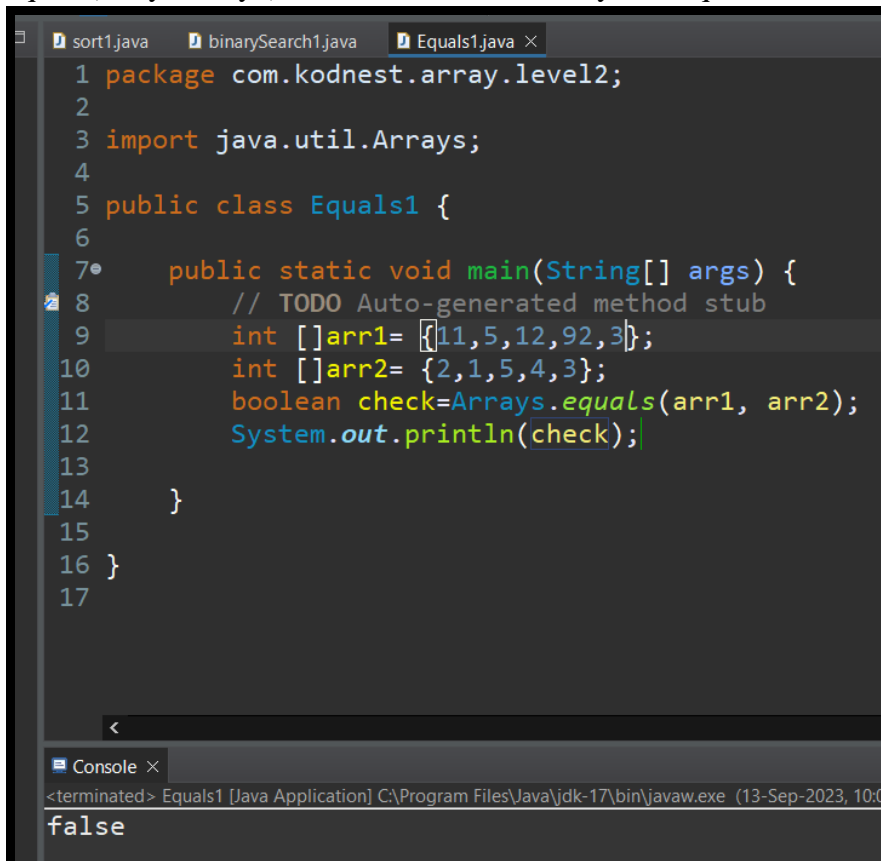
```
1 package com.kodnest.array.level2;
2 import java.util.Arrays;
3
4 public class binarySearch1 {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         int []arr= {1,0,7,6,11,5,12,92,3};
9         Arrays.sort(arr);
10        for(int i=0;i<=arr.length-1;i++)
11        {
12            System.out.print(arr[i]+" ");
13        }
14        System.out.println();
15        int index=Arrays.binarySearch(arr,7);
16        System.out.println("index: "+index);
17    }
18 }
19
```

Console

<terminated> binarySearch1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:00)

0 1 3 5 6 7 11 12 92
index: 5

3. `equals(array1,array2)` : Checks if both the arrays are equal or not.

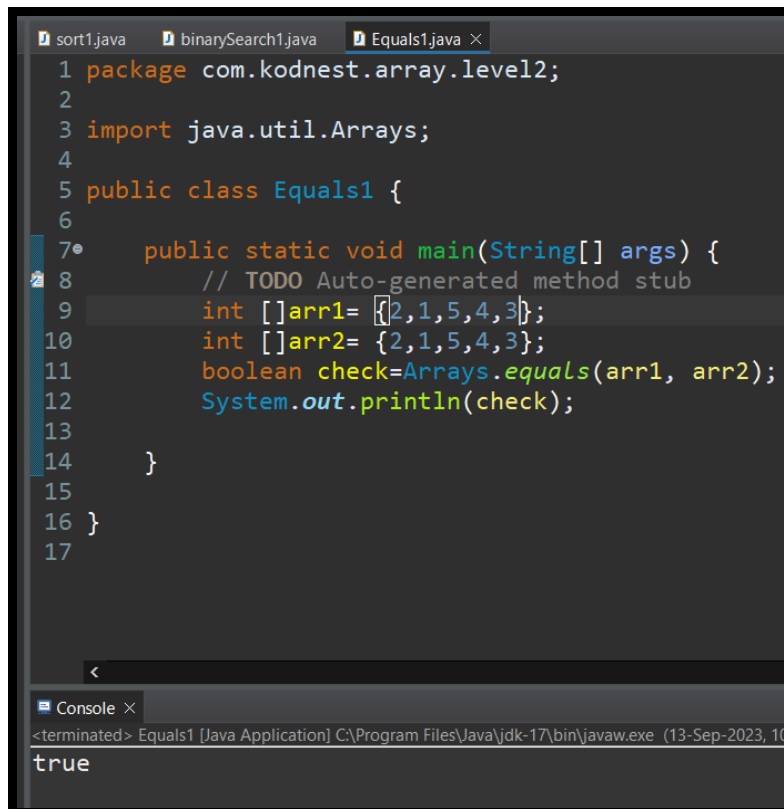


```
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class Equals1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr1= {11,5,12,92,3};
10        int []arr2= {2,1,5,4,3};
11        boolean check=Arrays.equals(arr1, arr2);
12        System.out.println(check);
13    }
14 }
15
16 }
17
```

Console

<terminated> Equals1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:00)

false



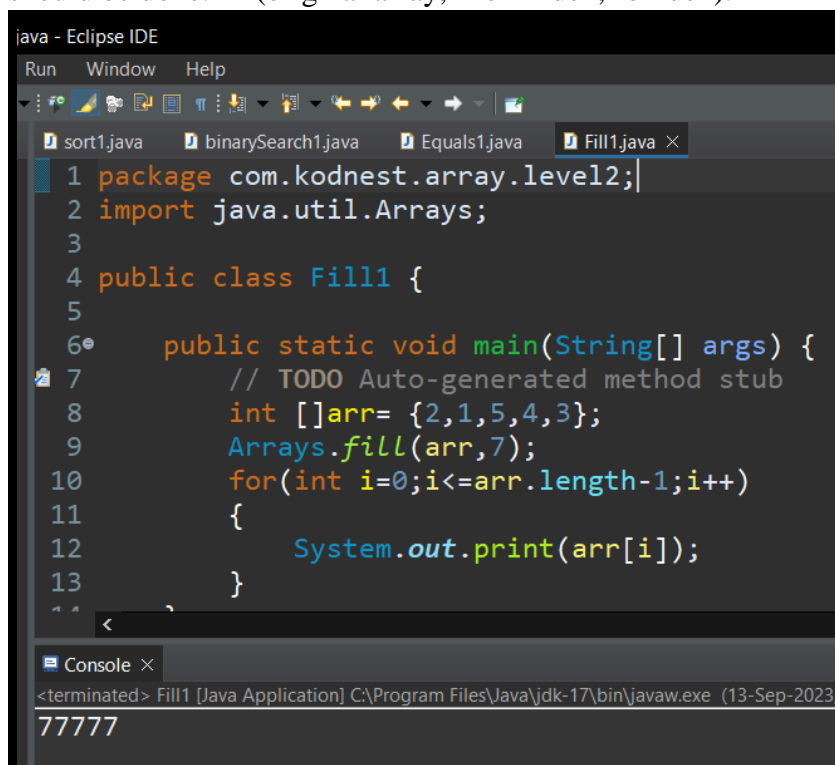
```
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class Equals1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr1= {2,1,5,4,3};
10        int []arr2= {2,1,5,4,3};
11        boolean check=Arrays.equals(arr1, arr2);
12        System.out.println(check);
13    }
14 }
15
16 }
17
```

Console

<terminated> Equals1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 16:00)

true

4. fill(original array, fill value) : Assigns this fill value to each index of this arrays. The parameter may also contain range, from which index to which index the operation should be done. fill(original array, FromIndex,ToIndex).

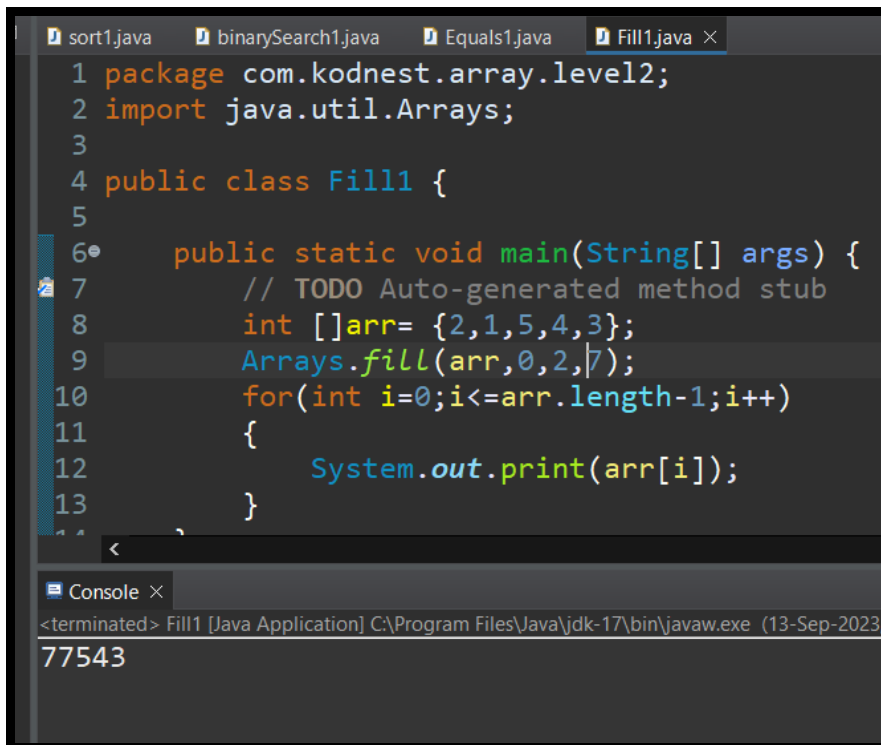


```
1 package com.kodnest.array.level2;
2 import java.util.Arrays;
3
4 public class Fill1 {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         int []arr= {2,1,5,4,3};
9         Arrays.fill(arr,7);
10        for(int i=0;i<=arr.length-1;i++)
11        {
12            System.out.print(arr[i]);
13        }
14    }
15 }
16
```

Console

<terminated> Fill1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 16:00)

77777

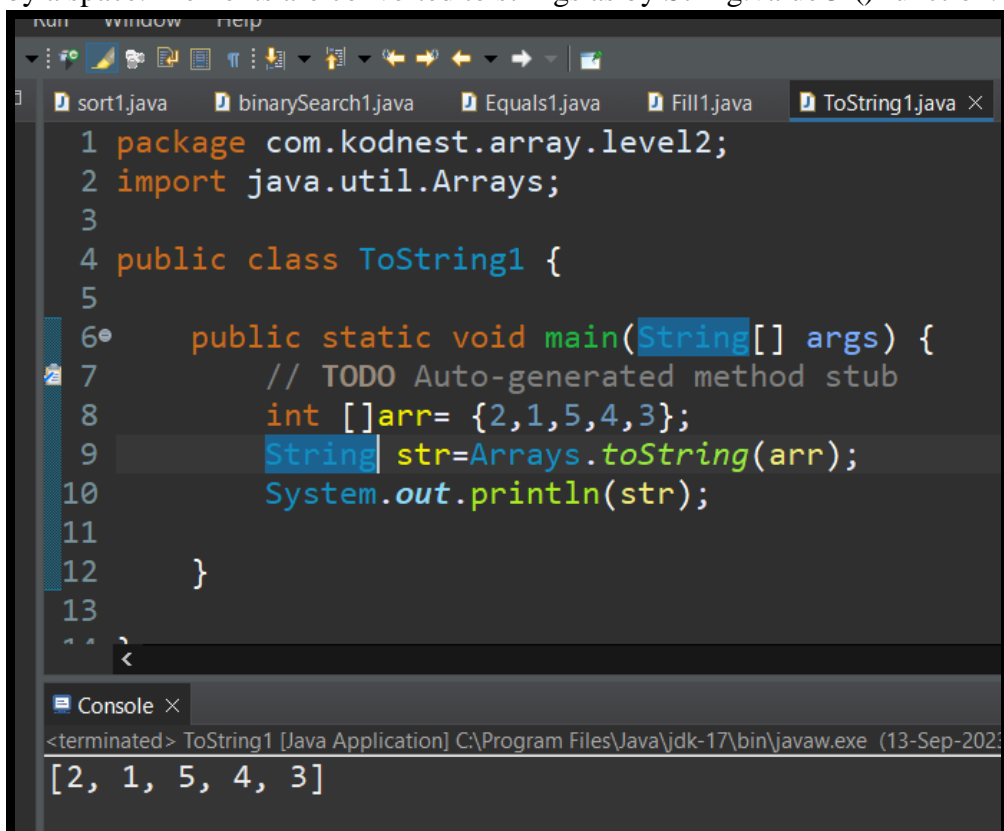


```
1 package com.kodnest.array.level2;
2 import java.util.Arrays;
3
4 public class Fill1 {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         int []arr= {2,1,5,4,3};
9         Arrays.fill(arr,0,2,7);
10        for(int i=0;i<=arr.length-1;i++)
11        {
12            System.out.print(arr[i]);
13        }
14    }
15 }
```

Console ×

<terminated> Fill1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023: 77543

5. toString(original array): 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.

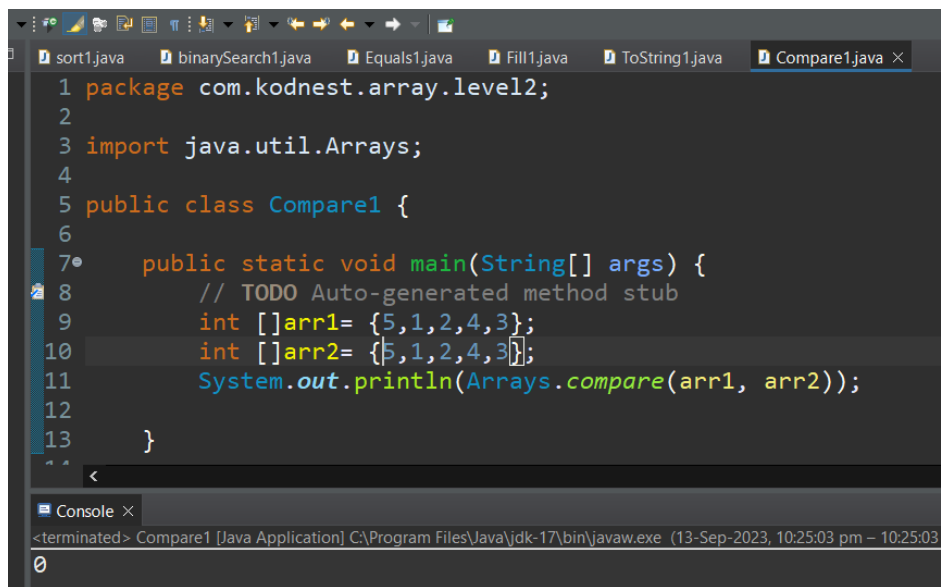


```
1 package com.kodnest.array.level2;
2 import java.util.Arrays;
3
4 public class ToString1 {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         int []arr= {2,1,5,4,3};
9         String str=Arrays.toString(arr);
10        System.out.println(str);
11    }
12 }
13 }
```

Console ×

<terminated> ToString1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023: [2, 1, 5, 4, 3]

6. `compare(array1,array2)`: Compares two arrays passed as parameters lexicographically.



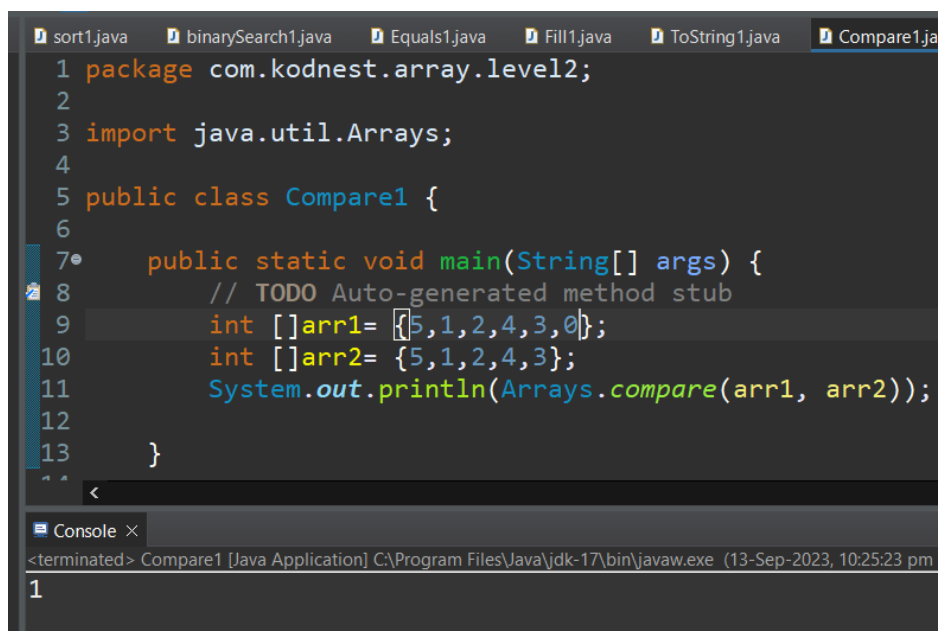
```
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class Compare1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr1= {5,1,2,4,3};
10        int []arr2= {5,1,2,4,3};
11        System.out.println(Arrays.compare(arr1, arr2));
12    }
13 }
```

Console ×

<terminated> Compare1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:25:03 pm – 10:25:03 pm)

0

Returns 0 if both arrays are equal.



```
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class Compare1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr1= {5,1,2,4,3,0};
10        int []arr2= {5,1,2,4,3};
11        System.out.println(Arrays.compare(arr1, arr2));
12    }
13 }
```

Console ×

<terminated> Compare1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:25:23 pm – 10:25:23 pm)

1

Returns 1 if first array is greater than the second array.

```
sort1.java  binarySearch1.java  Equals1.java  Fill1.java  ToString1.java  Compare1.java X
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class Compare1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr1= {5,1,2,4,6};
10        int []arr2= {5,1,2,4,3};
11        System.out.println(Arrays.compare(arr1, arr2));
12
13    }

```

Console X

<terminated> Compare1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:25:38 pm – 10:25:38 pm)

1

Greater Array means greater in the elements lexicographically, and not in the array length.

```
sort1.java  binarySearch1.java  Equals1.java  Fill1.java  ToString1.java  Compare1.java X
1 package com.kodnest.array.level2;
2
3 import java.util.Arrays;
4
5 public class Compare1 {
6
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9         int []arr1= {5,1,2,4,3};
10        int []arr2= {6,1,2,4,3};
11        System.out.println(Arrays.compare(arr1, arr2));
12
13    }

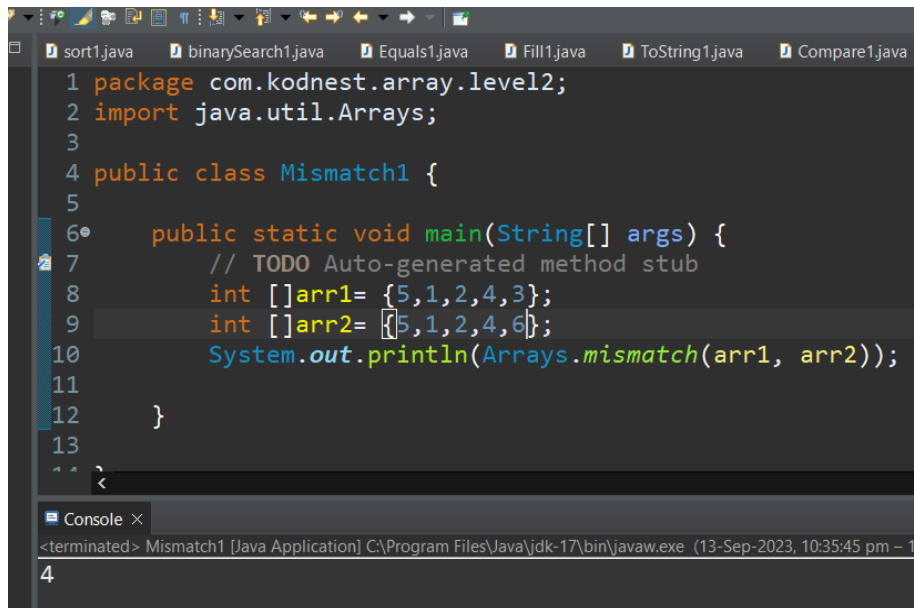
```

Console X

<terminated> Compare1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:27:26 pm – 10:27:26 pm)

-1

7. `mismatch(array1,array2)`: Finds and returns the index of the first unmatched element between the two specified arrays.

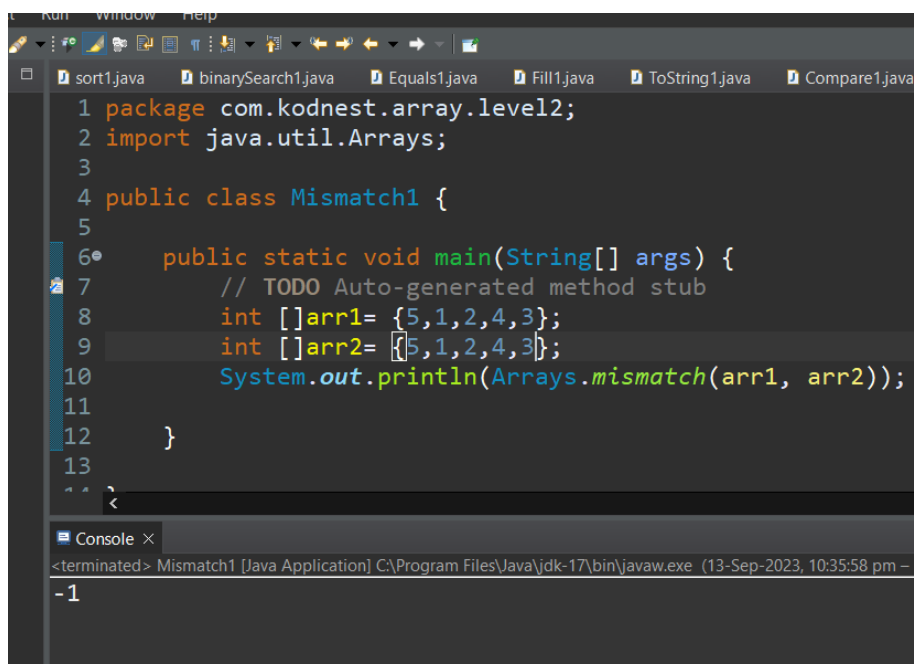


```
1 package com.kodnest.array.level2;
2 import java.util.Arrays;
3
4 public class Mismatch1 {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         int []arr1= {5,1,2,4,3};
9         int []arr2= {5,1,2,4,6};
10        System.out.println(Arrays.mismatch(arr1, arr2));
11    }
12 }
13
```

Console ×

<terminated> Mismatch1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:35:45 pm - 1

4



```
1 package com.kodnest.array.level2;
2 import java.util.Arrays;
3
4 public class Mismatch1 {
5
6     public static void main(String[] args) {
7         // TODO Auto-generated method stub
8         int []arr1= {5,1,2,4,3};
9         int []arr2= {5,1,2,4,3};
10        System.out.println(Arrays.mismatch(arr1, arr2));
11    }
12 }
13
```

Console ×

<terminated> Mismatch1 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Sep-2023, 10:35:58 pm - 1

-1

Returns -1 if arrays are equal.