Task . Search for a given element in a sorted array using Binary Search.

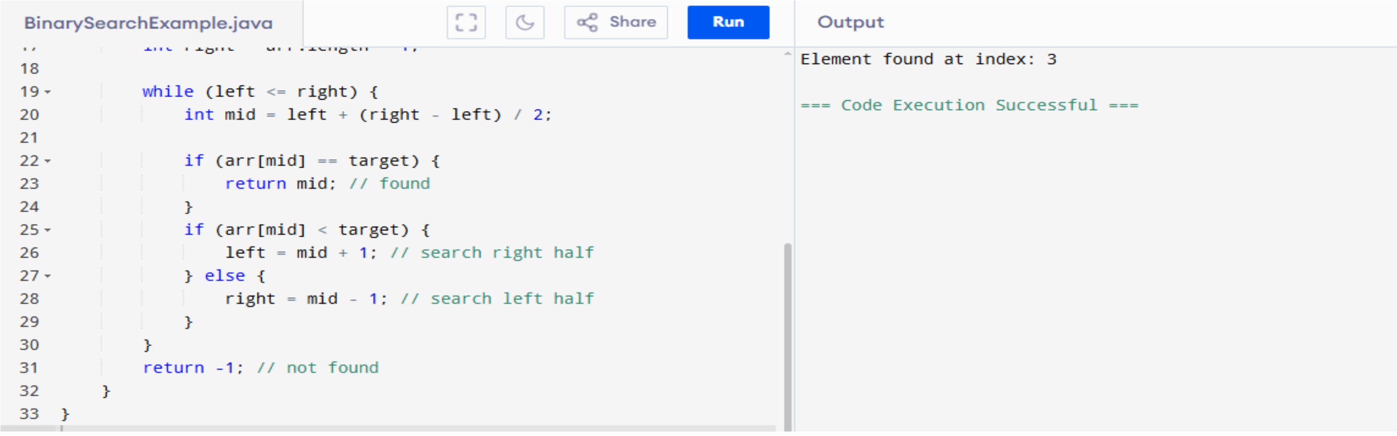
```
public class BinarySearchExample {
    public static void main(String[] args) {
        int[] numbers = {10, 20, 30, 40, 50, 60, 70};
        int target = 40;

        int result = binarySearch(numbers, target);

        if (result == -1) {
            System.out.println("Element not found.");
        } else {
            System.out.println("Element found at index: " + result);
        }
    }
    public static int binarySearch(int[] arr, int target) {
        int left = 0;
        int right = arr.length - 1;

        while (left <= right) {
            int mid = left + (right - left) / 2;

            if (arr[mid] == target) {
                return mid; // found
            }
            if (arr[mid] < target) {
                left = mid + 1; // search right half
            } else {
                right = mid - 1; // search left half
            }
        }
        return -1; // not found
    }
}
```



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                return mid; // found
            }
            if (arr[mid] < target) {
                left = mid + 1; // search right half
            } else {
                right = mid - 1; // search left half
            }
        }
        return -1; // not found
    }
}
```

```
Element found at index: 3

=== Code Execution Successful ===
```