

# Assignment-3

## REARRANGE THE GIVEN SORTED ARRAY

### CODE:

```
1 package Assignment3;
2 import java.util.Scanner;
3 public class Rearrangearrayelements {
4     public static void main(String[] args) {
5         Rearrangearrayelements rearrangeArrayElements = new Rearrangearrayelements();
6         rearrangeArrayElements.inputAcceptor();
7     }
8
9     // Accept inputs from the console and trigger validation and rearranging
10    public void inputAcceptor() { 1 usage
11        Scanner scanner = new Scanner(System.in);
12        System.out.print("Enter the size of the array: ");
13        int size = scanner.nextInt();
14        if (inputArraySizeValidator(size)) {
15            int[] inputArray = new int[size];
16            System.out.println("Enter the elements of the array in sorted order:");
17            for (int i = 0; i < size; i++) {
18                inputArray[i] = scanner.nextInt();
19            }
20            if (inputArrayValidator(inputArray)) {
21                int[] rearrangedArray = computeRearrangedArray(inputArray);
22                displayResult(rearrangedArray);
23            } else {
24                displayResult( outputArray: null);
25            }
26        } else {
27            displayResult( outputArray: null);
28        }
29    }
```

```
30    public boolean inputArraySizeValidator(int size) { 1 usage
31        return size > 0;
32    }
33
34    @
35    public boolean inputArrayValidator(int[] input) { 1 usage
36        for (int i = 1; i < input.length; i++) {
37            if (input[i] < input[i - 1]) {
38                return false;
39            }
40        }
41        return true;
42    }
43
44    // Rearrange the elements of the array alternately
45    @
46    public int[] computeRearrangedArray(int[] inputArray) { 1 usage
47        int[] rearrangedArray = new int[inputArray.length];
48        int left = 0, right = inputArray.length - 1;
49        for (int i = 0; i < inputArray.length; i++) {
50            if (i % 2 == 0) {
51                rearrangedArray[i] = inputArray[right];
52                right--;
53            } else {
54                rearrangedArray[i] = inputArray[left];
55                left++;
56            }
57        }
58        return rearrangedArray;
59    }
```

```

59
60
61     public void displayResult(int[] outputArray) { 3 usages
62         if (outputArray == null) {
63             System.out.println("Give proper input.");
64             return;
65         }
66         System.out.println("Rearranged array:");
67         for (int num : outputArray) {
68             System.out.print(num + " ");
69         }
70     }
71 }
72
73

```

## Output1:

```

"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61788:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bin\java" -Dfile.encoding=UTF-8
Enter the size of the array: 7
Enter the elements of the array in sorted order:
1 2 3 4 5 6 7
Rearranged array:
7 1 6 2 5 3 4
Process finished with exit code 0
|

```

## Output2:

```

"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61798:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bin\java" -Dfile.encoding=UTF-8
Enter the size of the array: 1
Enter the elements of the array in sorted order:
4
Rearranged array:
4
Process finished with exit code 0
|

```

## Output3:

```

"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61804:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bin\java" -Dfile.encoding=UTF-8
Enter the size of the array: 0
Give proper input.
Process finished with exit code 0
|

```