Copy array from 1 array to another

Iterating using For loop

Problem Statement

Write a Java program to copy all elements from a given integer array SourceArray to a new integer array targetArray. The program should use a for loop to iterate over the elements of the SourceArray and copy each element to the corresponding index in the targetArray. This program should then print the elements of the targetArray to the console.

Input:

SourceArray :- An integer array containing the elements to be copied. For example : {1, 2, 3, 4, 5}

Output

targetArray :- An integer array containing the copied elements. For example {1, 2, 3, 4, 5}

```
// Initialize source Array.
int[] sourceArray = {1, 2, 3, 4, 5};

// Initialize target Array.
int[] targetArray = new int[sourceArray.length];

// Copy array using for loop.
for(int i=0; i<sourceArray.length; i++){
    System.out.print(tar
    targetArray[i] = sourceArray[i];
}

// Print target Array.
for( int i : targetArray){
    System.out.print( i + " ");
}
System.out.println();
```

Output.

1 2 3 4 5

This code copies the elements from the sourceArray to targetArray using a for loop.

The loop iterates over the length of the sourceArray & assigns each element to the corresponding index in the targetArray. Finally, it prints the elements of the targetArray to the console.

[Problem Statement 2] Write a Java program to divide a given array into 2 separate arrays, one containing the elements from the start of the original array to the middle index, and another containing the elements from the middle index to end of the original array.

→
```
int arr[] = {100, 30, 500, 10, 1, 80, 30};

int len = arr.length;
int left = 0;
int right = len - 1;

int mid = (right - left) / 2;
System.out.println("mid: " + mid);

// Calculating index of new left array created.
int leftarrayindex = mid - left + 1;

// Create a new left array which will store
// the values of new created array.
int leftarray[] = new int [leftarrayindex];

// copy data to temp arrays.
for(int i=0; i<leftarrayindex; i++){
    leftarray[i] = arr[left + i];
}

// display array.
```

```
System.out.println("Array 1: ");
for(int num : leftarray){
    System.out.print(num + " ");
}
System.out.println();

// Calculating index of right array.
int rightarrayindex = right - mid;

// Create a new left array.
int rightarray[] = new int[rightarrayindex];

// Copy data to temp arrays.
for(int j=0; j<rightarrayindex; j++){
    rightarray[j] = arr[mid+1+j];
}

// display array.
System.out.println("Array 2: ");
for(int num2 : rightarray){
    System.out.print(num2 + " ");
}
System.out.println();
```

#Output.

```
mid : 3
Array 1: 100 30 500 10
Array 2: 1 80 30
```

- The middle index of the original array 'arr' is calculated as 3.
- The left subarray 'leftarray' contains the elements from index 0 to 3 (inclusive) of the original 'arr' array.
- The right subarray 'rightarray' contains the elements from index 4 to 6 (inclusive) of the original 'arr' array.