**Practice 04:**

**Implementation of Counting Sort**

Code:

import java.util.\*;

class Solution {

//Function for counting sort

static void countSort(int[] arr)

{

int max = Arrays.stream(arr).max().getAsInt();

int min = Arrays.stream(arr).min().getAsInt();

int range = max - min + 1;

int count[] = new int[range];

int output[] = new int[arr.length];

for (int i = 0; i < arr.length; i++) {

count[arr[i] - min]++;

}

for (int i = 1; i < count.length; i++) {

count[i] += count[i - 1];

}

for (int i = arr.length - 1; i >= 0; i--) {

output[count[arr[i] - min] - 1] = arr[i];

count[arr[i] - min]--;

}

for (int i = 0; i < arr.length; i++) {

arr[i] = output[i];

}

}

//Function for printing the array elements

static void printArray(int[] arr)

{

for (int i = 0; i < arr.length; i++) {

System.out.print(arr[i] + " ");

}

System.out.println("");

}

// Main Function

public static void main(String[] args)

{

int[] arr = { -5, -10, 0, -3, 8, 5, -1, 10 };

countSort(arr);

printArray(arr);

}

}