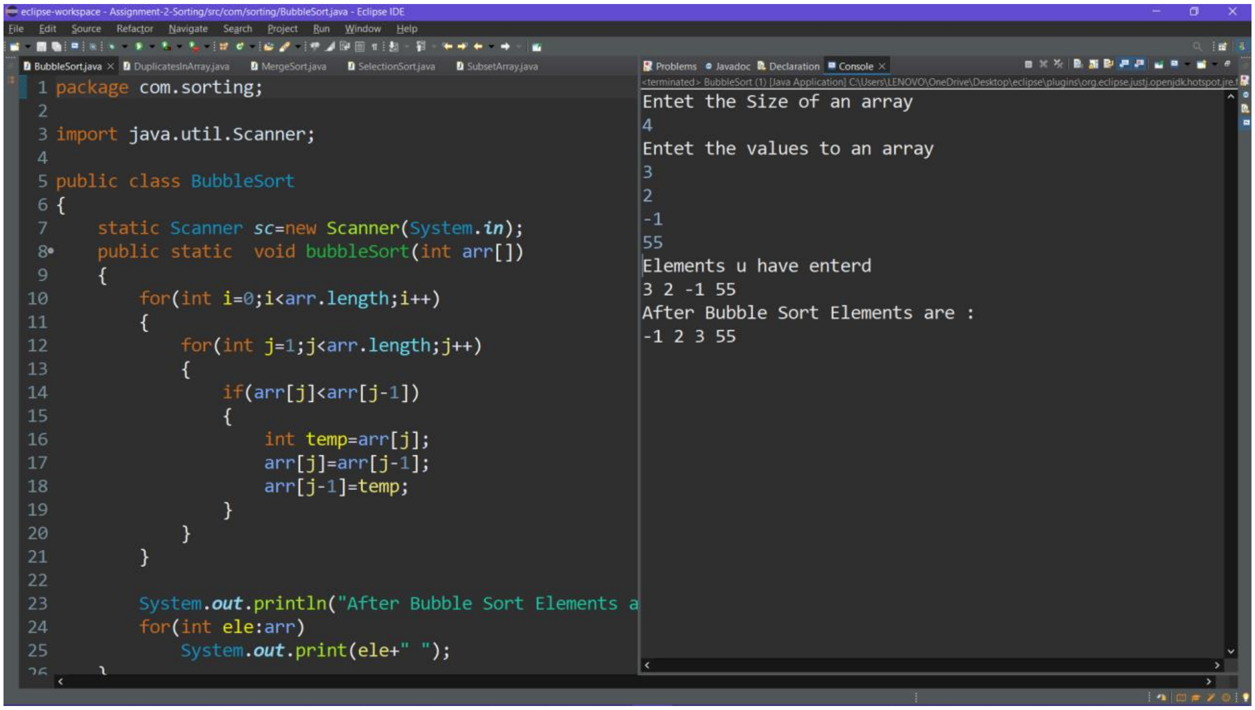
SORTING OUTPUTS

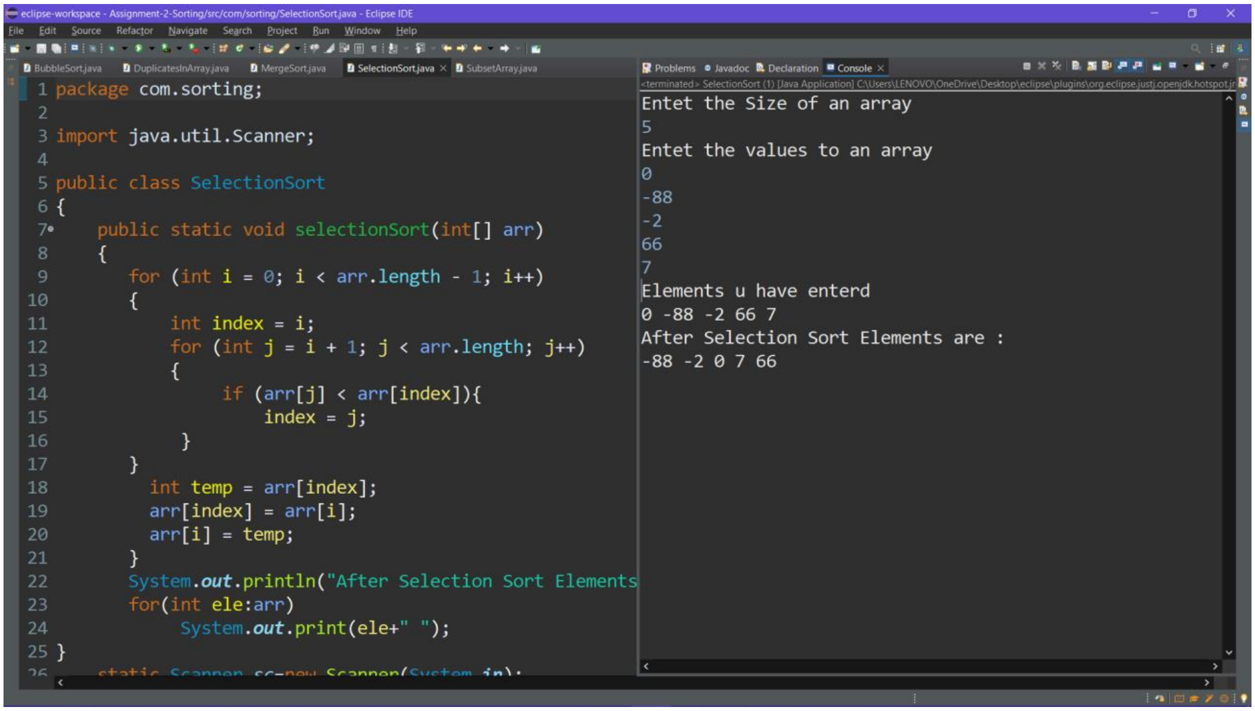
BUBBLE SORT


eclipse-workspace - Assignment-2-Sorting/src/com/sorting/BubbleSort.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
BubbleSort.java
DuplicatesInArray.java
MergeSort.java
SelectionSort.java
SubsetArray.java
Problems
Javadoc
Declaration
Console

```java
package com.sorting;

import java.util.Scanner;

public class BubbleSort
{
    static Scanner sc=new Scanner(System.in);
    public static  void bubbleSort(int arr[])
    {
        for(int i=0;i<arr.length;i++)
        {
            for(int j=1;j<arr.length;j++)
            {
                if(arr[j]<arr[j-1])
                {
                    int temp=arr[j];
                    arr[j]=arr[j-1];
                    arr[j-1]=temp;
                }
            }
        }

        System.out.println("After Bubble Sort Elements a
        for(int ele:arr)
            System.out.print(ele+" ");
    }
```

```
<terminated> BubbleSort (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.f
Entet the Size of an array
4
Entet the values to an array
3
2
-1
55
Elements u have enterd
3 2 -1 55
After Bubble Sort Elements are :
-1 2 3 55
```

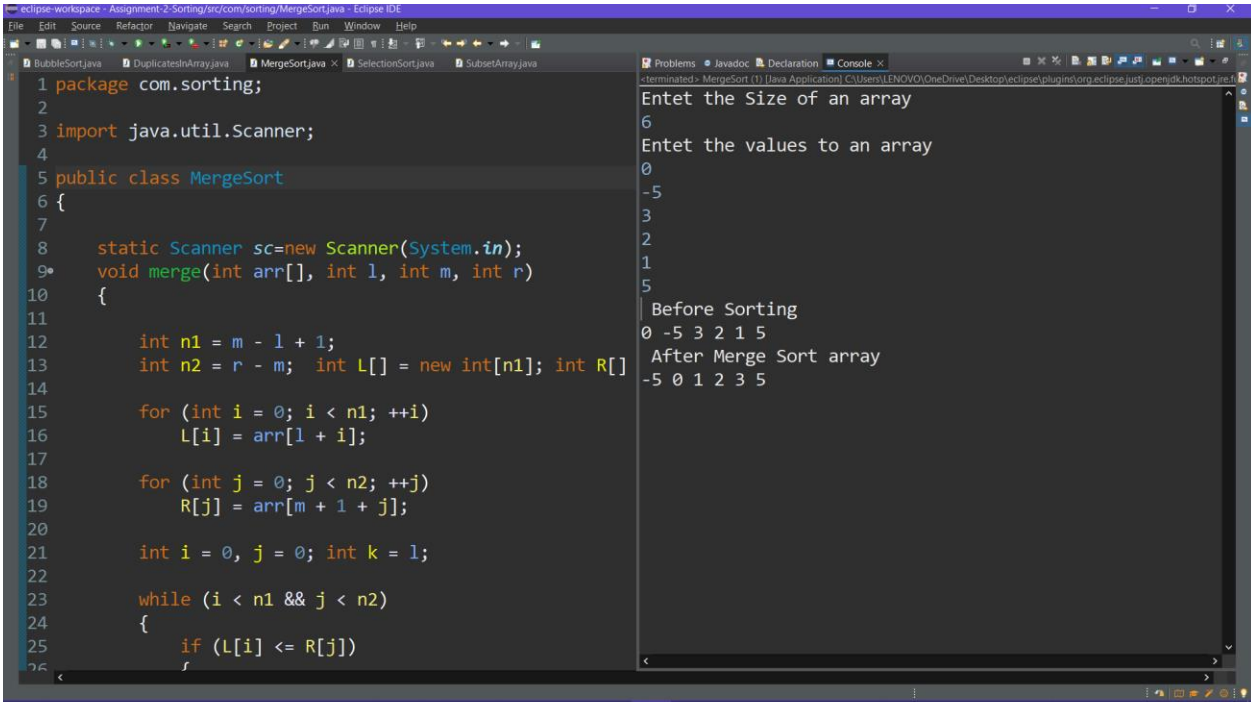
SELECTION SORT:


eclipse-workspace - Assignment-2-Sorting/src/com/sorting/SelectionSort.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
BubbleSort.java
DuplicatesInArray.java
MergeSort.java
SelectionSort.java
SubsetArray.java
Problems
Javadoc
Declaration
Console

```java
package com.sorting;

import java.util.Scanner;

public class SelectionSort
{
    public static void selectionSort(int[] arr)
    {
       for (int i = 0; i < arr.length - 1; i++)
       {
           int index = i;
           for (int j = i + 1; j < arr.length; j++)
           {
                if (arr[j] < arr[index]){
                    index = j;
            }
       }
         int temp = arr[index];
         arr[index] = arr[i];
         arr[i] = temp;
       }
       System.out.println("After Selection Sort Elements
       for(int ele:arr)
            System.out.print(ele+" ");
}
    static Scanner sc=new Scanner(System.in);
```

```
<terminated> SelectionSort (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jr
Entet the Size of an array
5
Entet the values to an array
0
-88
-2
66
7
Elements u have enterd
0 -88 -2 66 7
After Selection Sort Elements are :
-88 -2 0 7 66
```

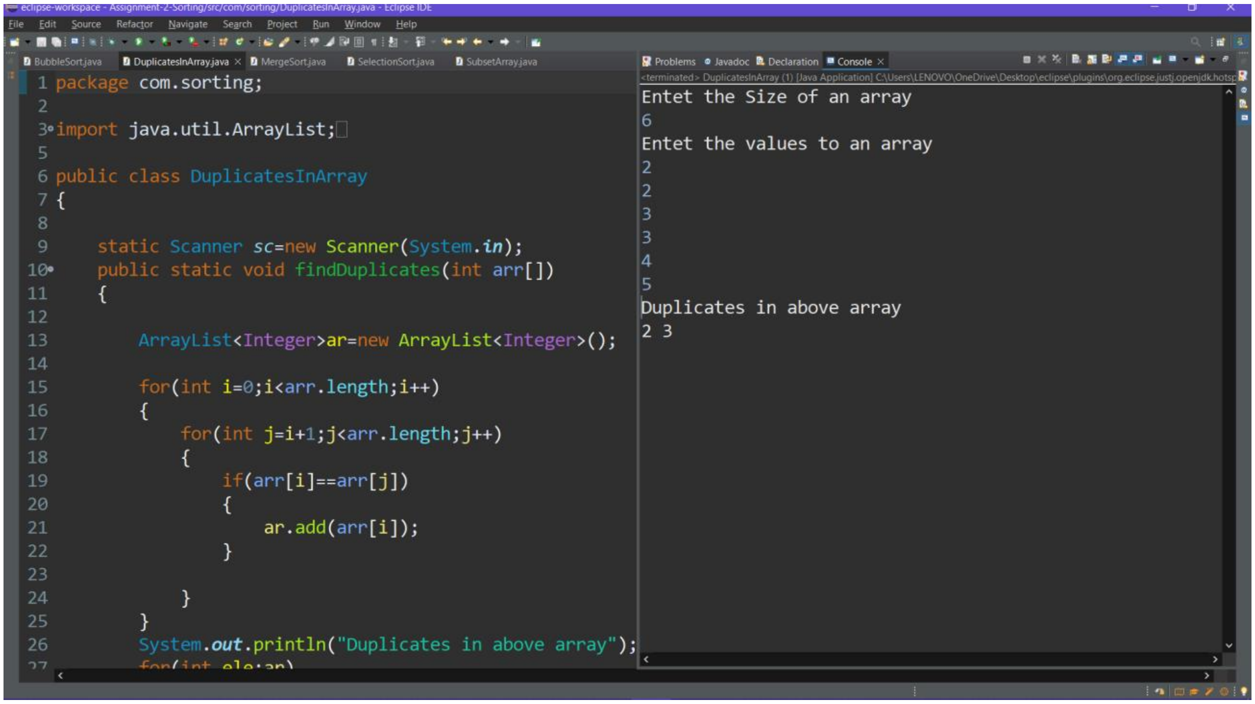
MERGE SORT:


eclipse-workspace - Assignment-2-Sorting/src/com/sorting/MergeSort.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
BubbleSort.java
DuplicatesInArray.java
MergeSort.java
SelectionSort.java
SubsetArray.java
Problems
Javadoc
Declaration
Console

```java
package com.sorting;

import java.util.Scanner;

public class MergeSort
{

    static Scanner sc=new Scanner(System.in);
    void merge(int arr[], int l, int m, int r)
    {

        int n1 = m - l + 1;
        int n2 = r - m;   int L[] = new int[n1]; int R[]

        for (int i = 0; i < n1; ++i)
            L[i] = arr[l + i];

        for (int j = 0; j < n2; ++j)
            R[j] = arr[m + 1 + j];

        int i = 0, j = 0; int k = l;

        while (i < n1 && j < n2)
        {
            if (L[i] <= R[j])
            {
```

```
<terminated> MergeSort (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.f
Entet the Size of an array
6
Entet the values to an array
0
-5
3
2
1
5
 Before Sorting
0 -5 3 2 1 5
 After Merge Sort array
-5 0 1 2 3 5
```

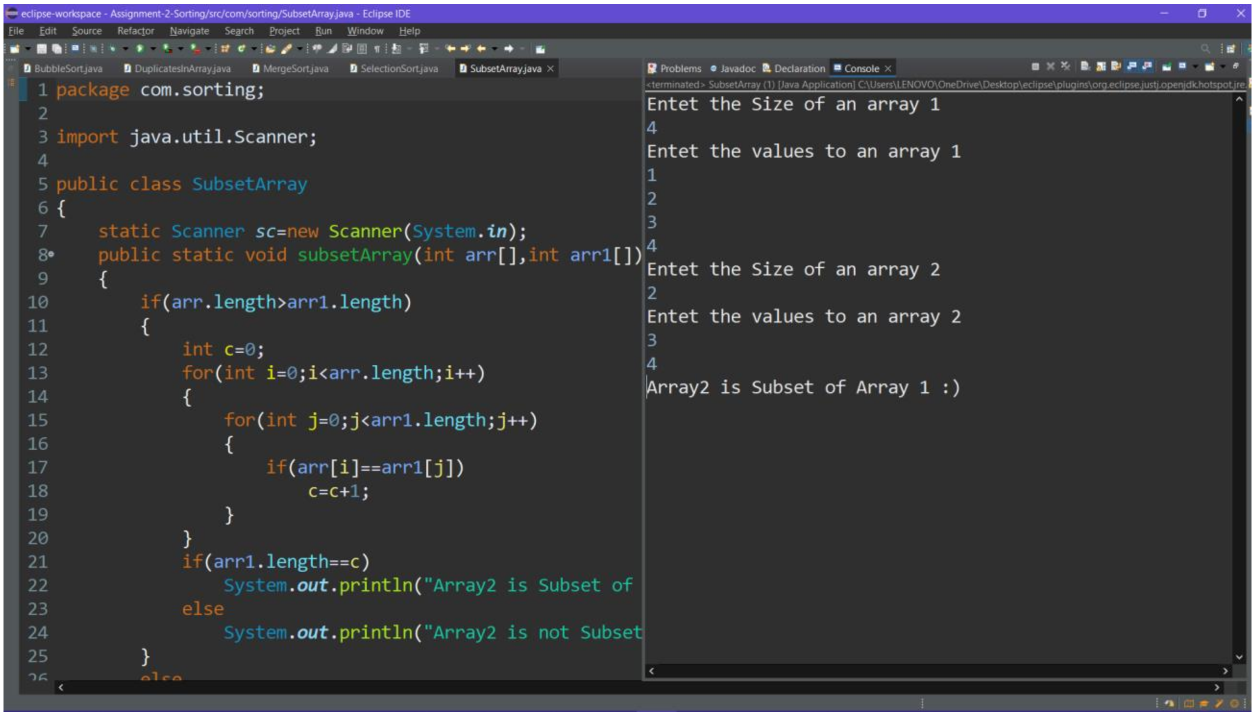
Find Duplicates:


eclipse-workspace - Assignment-2-Sorting/src/com/sorting/DuplicatesInArray.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
BubbleSort.java
DuplicatesInArray.java
MergeSort.java
SelectionSort.java
SubsetArray.java
Problems
Javadoc
Declaration
Console

```java
package com.sorting;

import java.util.ArrayList;

public class DuplicatesInArray
{

    static Scanner sc=new Scanner(System.in);
    public static void findDuplicates(int arr[])
    {

        ArrayList<Integer>ar=new ArrayList<Integer>();

        for(int i=0;i<arr.length;i++)
        {
            for(int j=i+1;j<arr.length;j++)
            {
                if(arr[i]==arr[j])
                {
                    ar.add(arr[i]);
                }

            }
        }
        System.out.println("Duplicates in above array");
        for(int ele:ar)
```

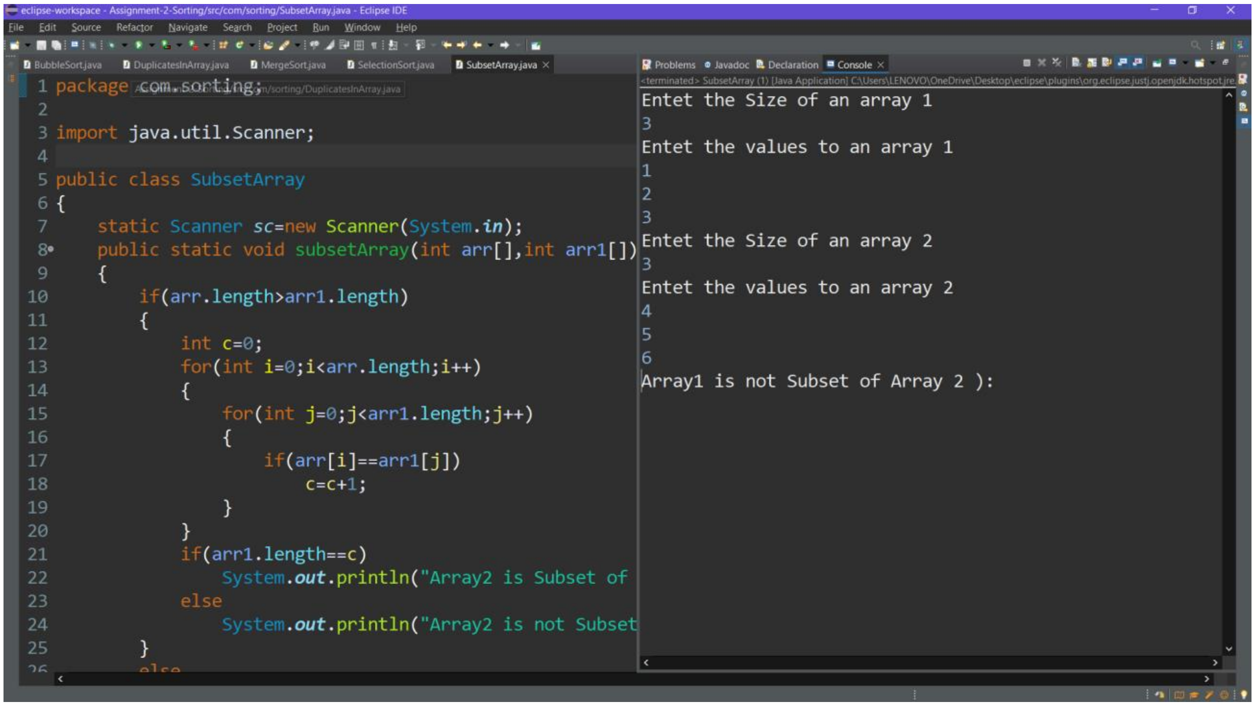
```
<terminated> DuplicatesInArray (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotsp
Entet the Size of an array
6
Entet the values to an array
2
2
3
3
4
5
Duplicates in above array
2 3
```

Check SubsetArray:


eclipse-workspace - Assignment-2-Sorting/src/com/sorting/SubsetArray.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
BubbleSort.java
DuplicatesInArray.java
MergeSort.java
SelectionSort.java
SubsetArray.java
Problems
Javadoc
Declaration
Console
<terminated> SubsetArray (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre

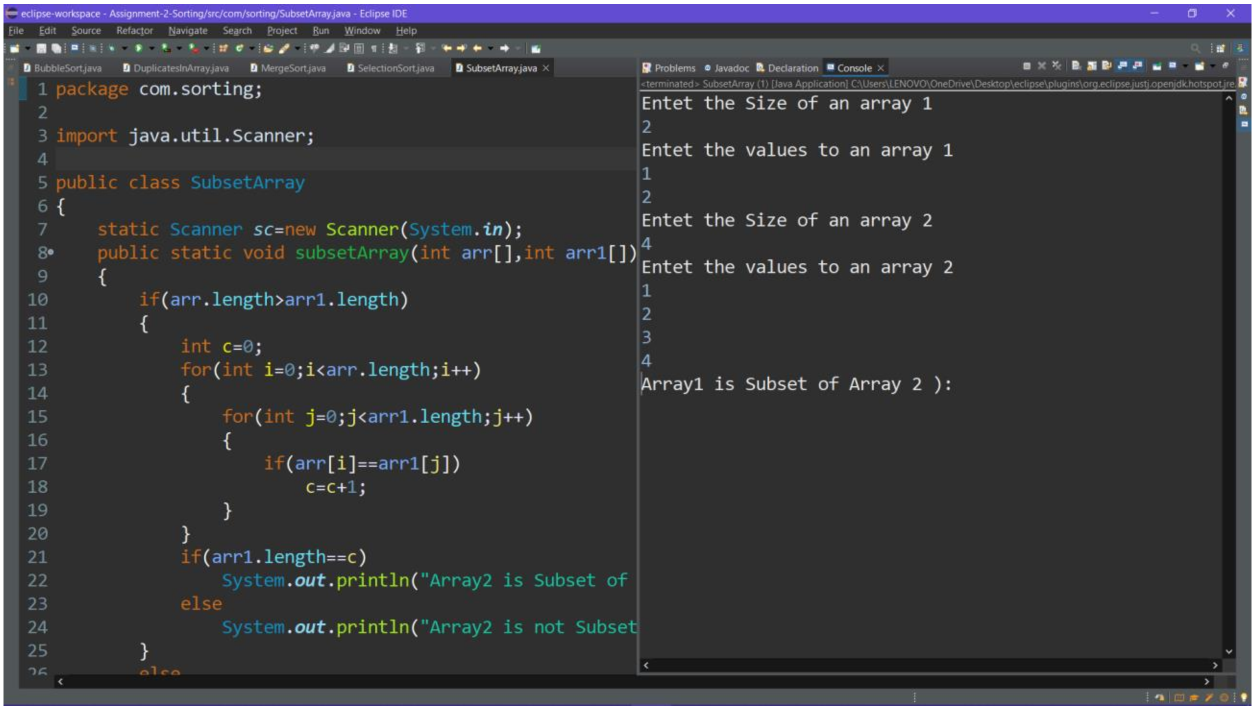
```
package com.sorting;

import java.util.Scanner;

public class SubsetArray
{
    static Scanner sc=new Scanner(System.in);
    public static void subsetArray(int arr[],int arr1[])
    {
        if(arr.length>arr1.length)
        {
            int c=0;
            for(int i=0;i<arr.length;i++)
            {
                for(int j=0;j<arr1.length;j++)
                {
                    if(arr[i]==arr1[j])
                        c=c+1;
                }
            }
            if(arr1.length==c)
                System.out.println("Array2 is Subset of
            else
                System.out.println("Array2 is not Subset
        }
        else
```

```
Entet the Size of an array 1
4
Entet the values to an array 1
1
2
3
4
Entet the Size of an array 2
2
Entet the values to an array 2
3
4
Array2 is Subset of Array 1 :)
```


eclipse-workspace - Assignment-2-Sorting/src/com/sorting/SubsetArray.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
BubbleSort.java
DuplicatesInArray.java
MergeSort.java
SelectionSort.java
SubsetArray.java
Problems
Javadoc
Declaration
Console
<terminated> SubsetArray (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre

```
package com.sorting;

import java.util.Scanner;

public class SubsetArray
{
    static Scanner sc=new Scanner(System.in);
    public static void subsetArray(int arr[],int arr1[])
    {
        if(arr.length>arr1.length)
        {
            int c=0;
            for(int i=0;i<arr.length;i++)
            {
                for(int j=0;j<arr1.length;j++)
                {
                    if(arr[i]==arr1[j])
                        c=c+1;
                }
            }
            if(arr1.length==c)
                System.out.println("Array2 is Subset of
            else
                System.out.println("Array2 is not Subset
        }
        else
```

```
Entet the Size of an array 1
3
Entet the values to an array 1
1
2
3
Entet the Size of an array 2
3
Entet the values to an array 2
4
5
6
Array1 is not Subset of Array 2 ):
```



```java
package com.sorting;

import java.util.Scanner;

public class SubsetArray
{
    static Scanner sc=new Scanner(System.in);
    public static void subsetArray(int arr[],int arr1[])
    {
        if(arr.length>arr1.length)
        {
            int c=0;
            for(int i=0;i<arr.length;i++)
            {
                for(int j=0;j<arr1.length;j++)
                {
                    if(arr[i]==arr1[j])
                        c=c+1;
                }
            }
            if(arr1.length==c)
                System.out.println("Array2 is Subset of
            else
                System.out.println("Array2 is not Subset
        }
        else
```

```
<terminated> SubsetArray (1) [Java Application] C:\Users\LENOVO\OneDrive\Desktop\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre
Entet the Size of an array 1
2
Entet the values to an array 1
1
2
Entet the Size of an array 2
4
Entet the values to an array 2
1
2
3
4
Array1 is Subset of Array 2 ):
```

Quick Sort: