Assignment No:-19

Name:-Suryawanshi Sangramsingh Sambhaji

Batch: - Delta - DCA (Java) 2024 Date:-29/5/2024

Q4.You are given two arrays, A and B, of equal size N. The task is to find the minimum value of A[0] * B[0] + A[1] * B[1] + ... + A[N-1] * B[N-1], where shuffling of elements of arrays A and B is allowed.

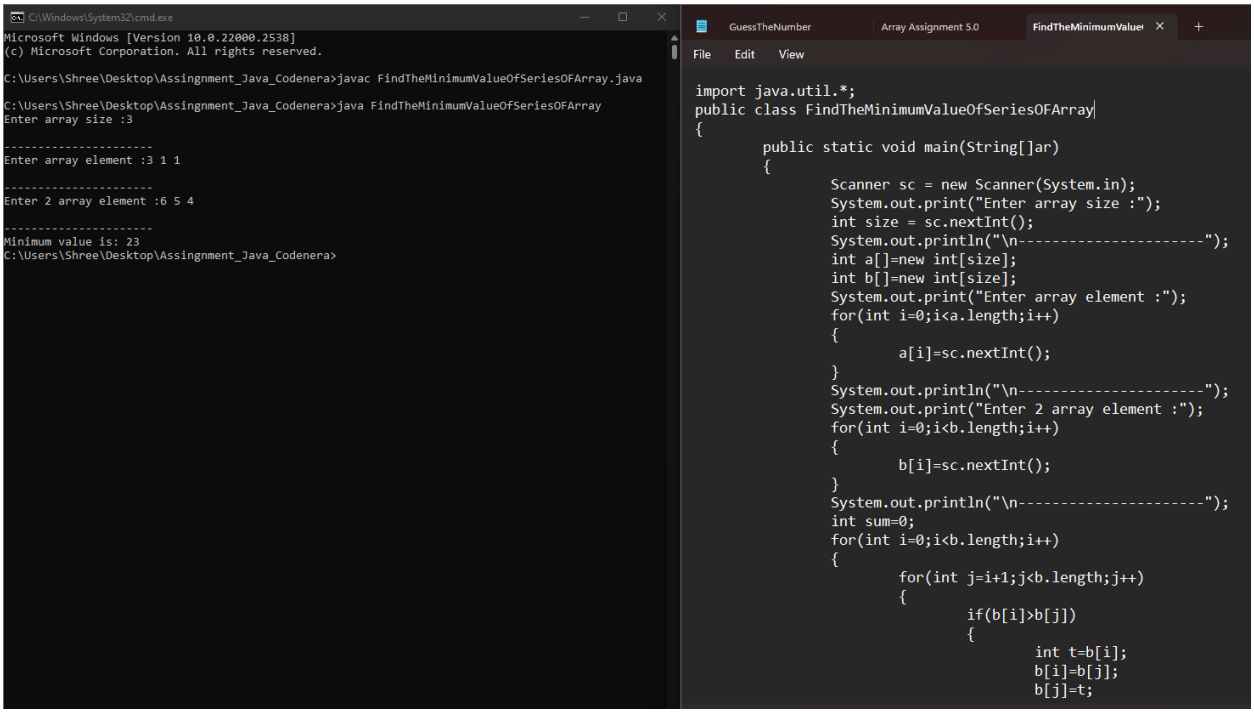
Example 1:

Input:N = 3

A[] = {3, 1, 1}

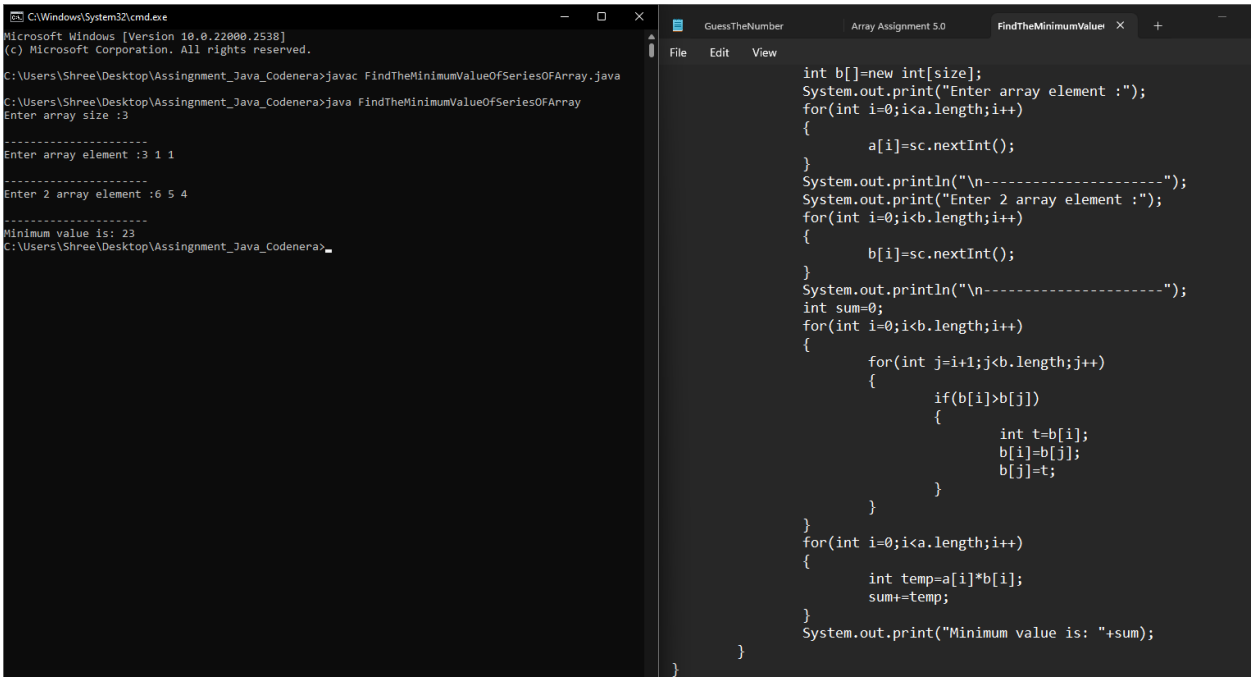
B[] = {6, 5, 4}

Output: 23.



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22000.2538]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac FindTheMinimumValueOfSeriesOFArray.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindTheMinimumValueOfSeriesOFArray
Enter array size :3

----------------------
Enter array element :3 1 1

----------------------
Enter 2 array element :6 5 4

----------------------
Minimum value is: 23
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>
```

```
GuessTheNumber   Array Assignment 5.0   FindTheMinimumValue
File  Edit  View

import java.util.*;
public class FindTheMinimumValueOfSeriesOFArray
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.print("Enter array size :");
                int size = sc.nextInt();
                System.out.println("\n----------------------");
                int a[]=new int[size];
                int b[]=new int[size];
                System.out.print("Enter array element :");
                for(int i=0;i<a.length;i++)
                {
                        a[i]=sc.nextInt();
                }
                System.out.println("\n----------------------");
                System.out.print("Enter 2 array element :");
                for(int i=0;i<b.length;i++)
                {
                        b[i]=sc.nextInt();
                }
                System.out.println("\n----------------------");
                int sum=0;
                for(int i=0;i<b.length;i++)
                {
                        for(int j=i+1;j<b.length;j++)
                        {
                                if(b[i]>b[j])
                                {
                                        int t=b[i];
                                        b[i]=b[j];
                                        b[j]=t;
```


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22000.2538]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac FindTheMinimumValueOfSeriesOFArray.java
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindTheMinimumValueOfSeriesOFArray
Enter array size :3

Enter array element :3 1 1

Enter 2 array element :6 5 4

Minimum value is: 23
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>
GuessTheNumber
Array Assignment 5.0
FindTheMinimumValue
File
Edit
View
int b[]=new int[size];
System.out.print("Enter array element :");
for(int i=0;i<a.length;i++)
{
a[i]=sc.nextInt();
}
System.out.println("\n----------");
System.out.print("Enter 2 array element :");
for(int i=0;i<b.length;i++)
{
b[i]=sc.nextInt();
}
System.out.println("\n----------");
int sum=0;
for(int i=0;i<b.length;i++)
{
for(int j=i+1;j<b.length;j++)
{
if(b[i]>b[j])
{
int t=b[i];
b[i]=b[j];
b[j]=t;
}
}
}
for(int i=0;i<a.length;i++)
{
int temp=a[i]*b[i];
sum+=temp;
}
System.out.print("Minimum value is: "+sum);
}
}

Q5.Given two sorted arrays arr1 and arr2 of size N and M respectively and an element K. The task is to find the element that would be at the k'th position of the final sorted array.

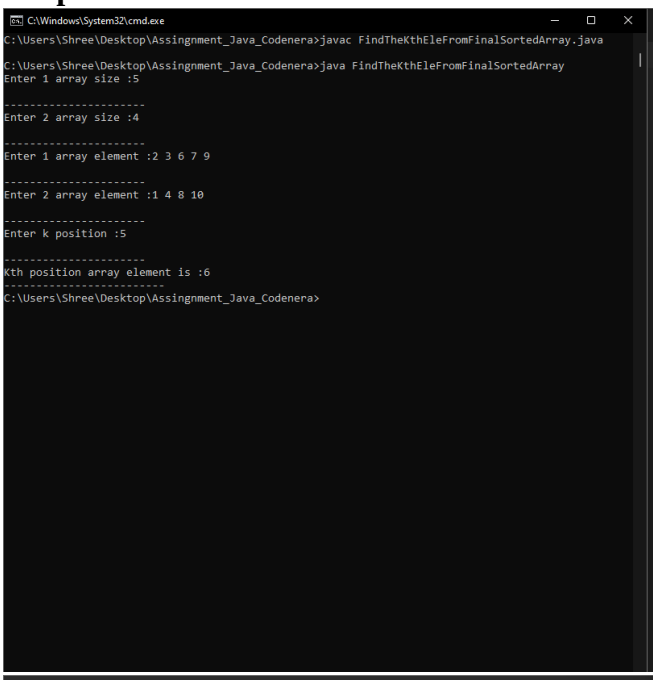
Example 1:

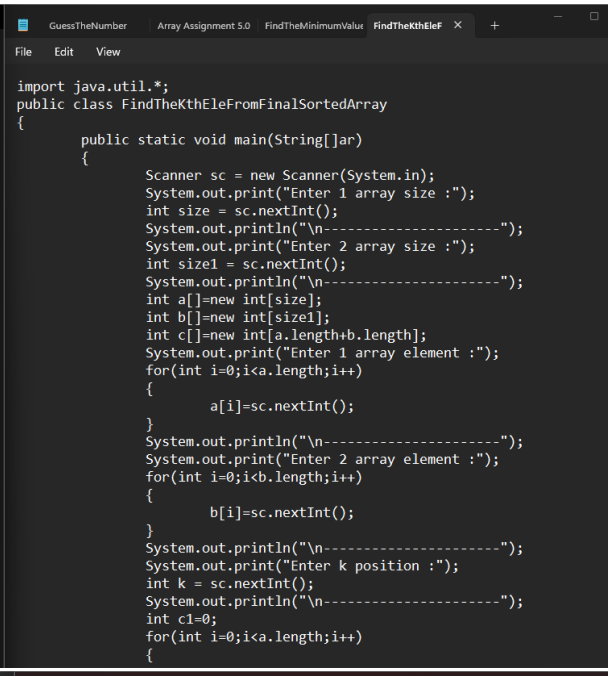
Input: arr1[] = {2, 3, 6, 7, 9}

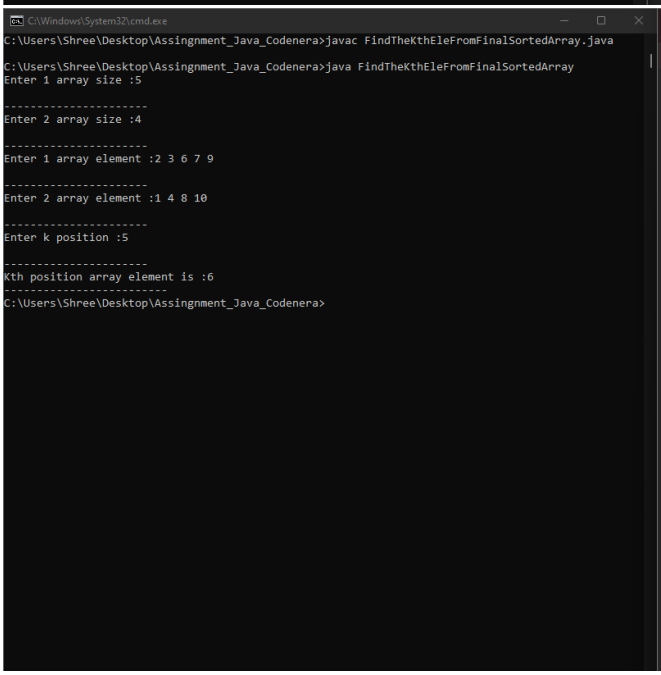
arr2[] = {1, 4, 8, 10}

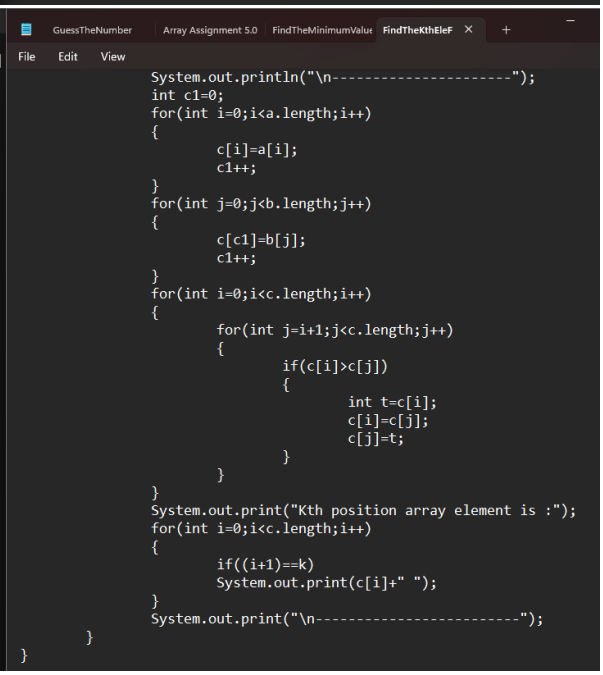
k = 5

Output:6







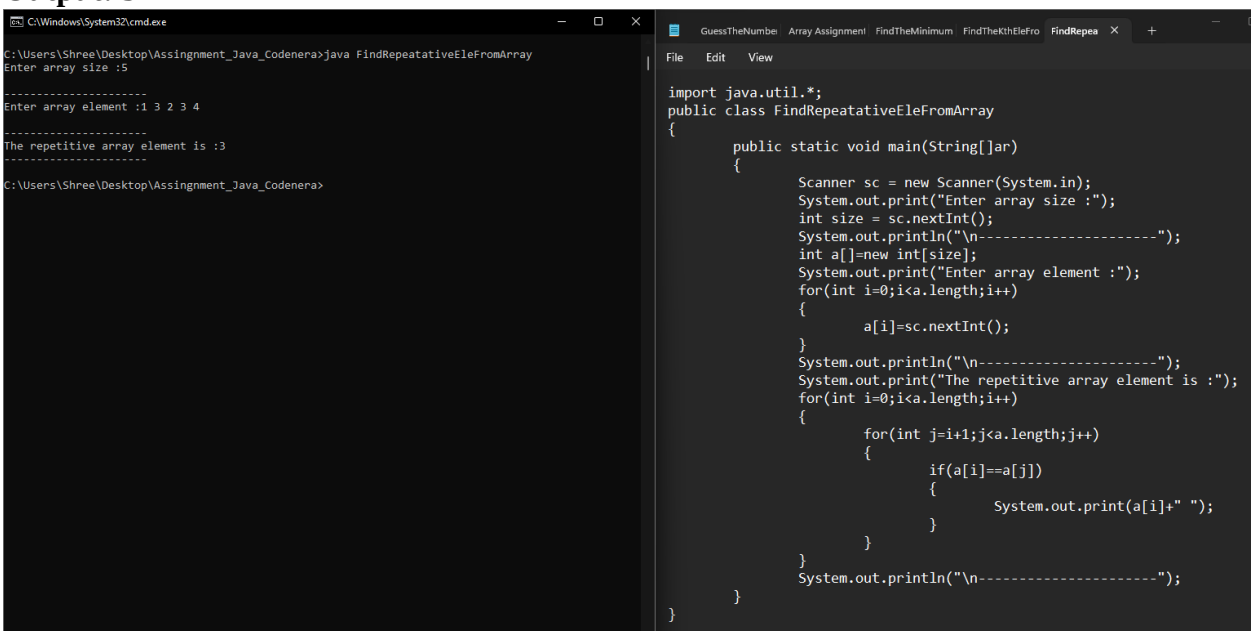


Q6.Given an array of size N filled with numbers from 1 to N-1 in random order. The array has only one repetitive element. The task is to find the repetitive element.

Examples:

Input: a[] = {1, 3, 2, 3, 4}

Output: 3



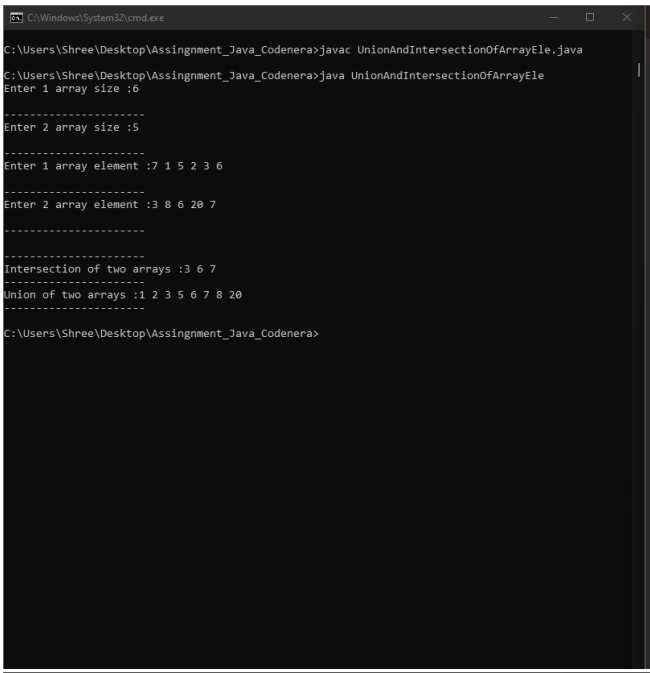
```
C:\Windows\System32\cmd.exe

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindRepeatativeEleFromArray
Enter array size :5

----------------------
Enter array element :1 3 2 3 4

----------------------
The repetitive array element is :3
----------------------

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>
```

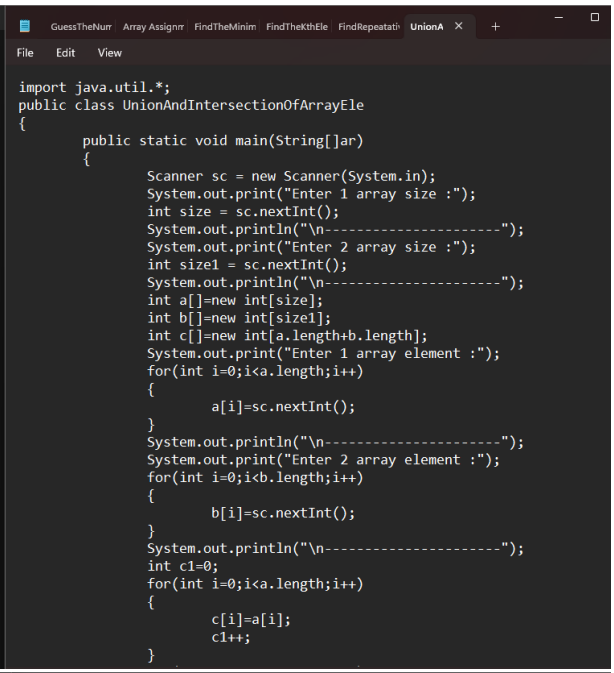
```
GuessTheNumbe | Array Assignment | FindTheMinimum | FindTheKthEleFro | FindRepea
File  Edit  View

import java.util.*;
public class FindRepeatativeEleFromArray
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.print("Enter array size :");
                int size = sc.nextInt();
                System.out.println("\n----------------------");
                int a[]=new int[size];
                System.out.print("Enter array element :");
                for(int i=0;i<a.length;i++)
                {
                        a[i]=sc.nextInt();
                }
                System.out.println("\n----------------------");
                System.out.print("The repetitive array element is :");
                for(int i=0;i<a.length;i++)
                {
                        for(int j=i+1;j<a.length;j++)
                        {
                                if(a[i]==a[j])
                                {
                                        System.out.print(a[i]+" ");
                                }
                        }
                }
                System.out.println("\n----------------------");
        }
}
```

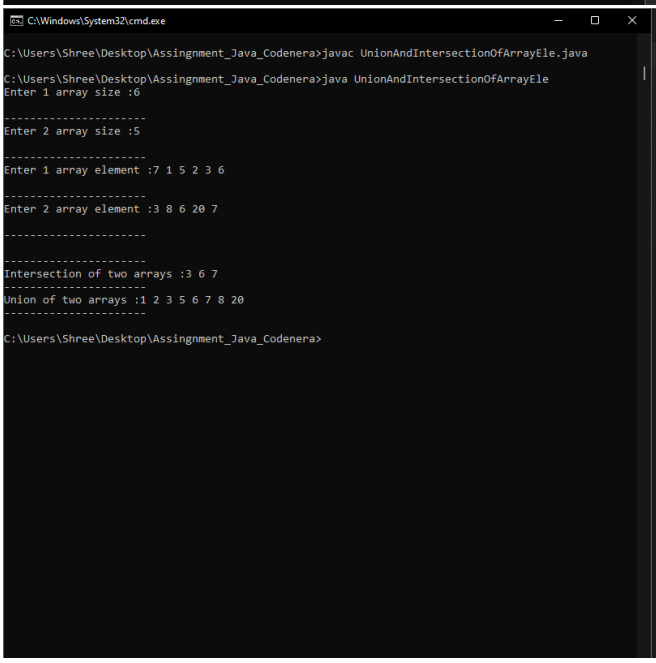
Q7.Given two unsorted arrays that represent two sets (elements in every array are distinct), find the union and intersection of two arrays.

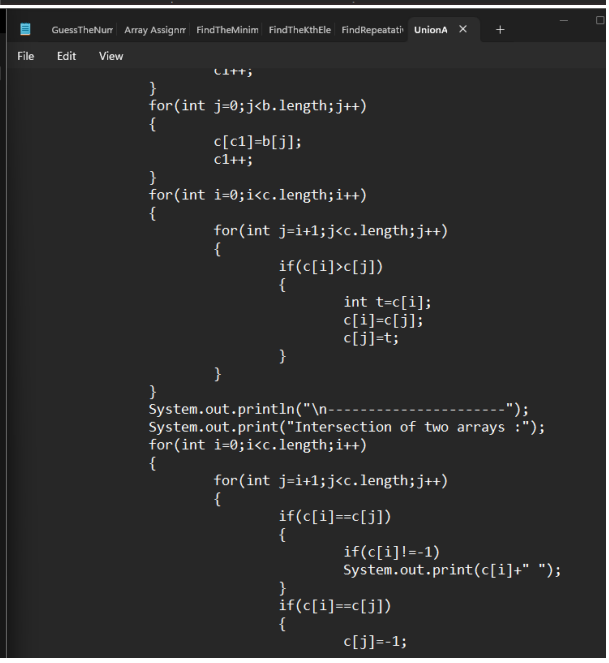
Example: arr1[] = {7, 1, 5, 2, 3, 6} arr2[] = {3, 8, 6, 20, 7}

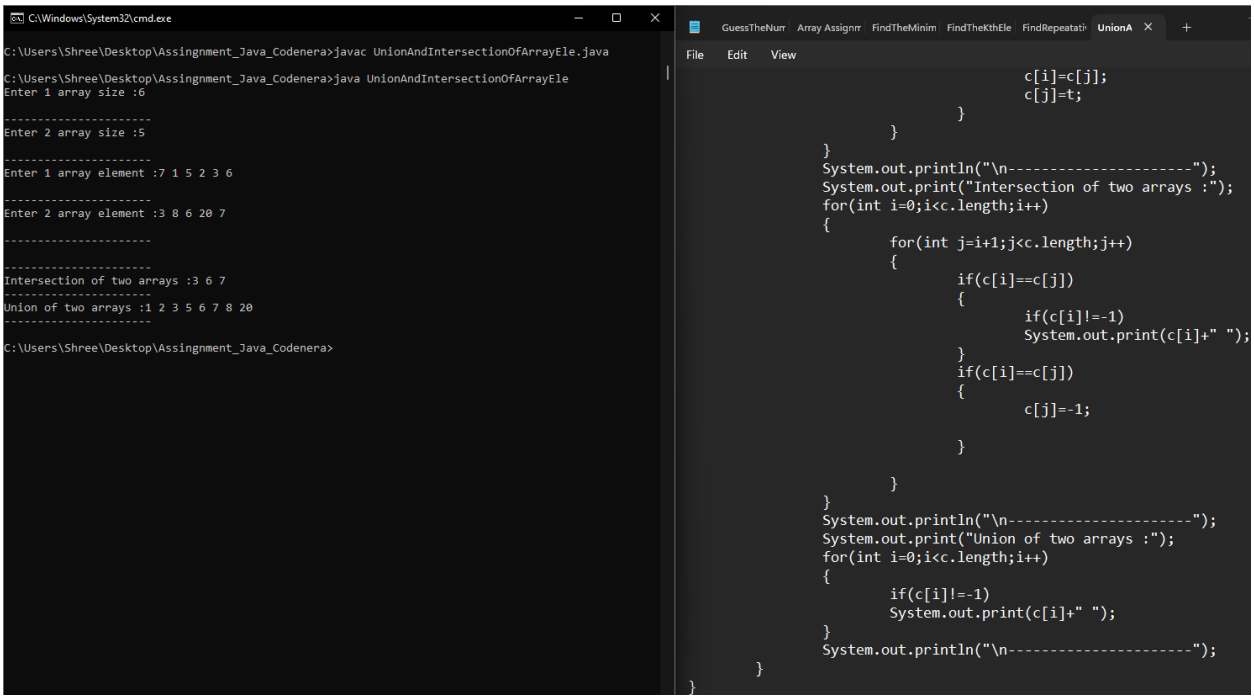
Then your program should print Union as {1, 2, 3, 5, 6, 7, 8, 20} and Intersection as {3, 6, 7}. Note that the elements of union and intersection can be printed in any order.











```
C:\Windows\System32\cmd.exe

C:\Users\Shree\Desktop\Assignment_Java_Codenera>javac UnionAndIntersectionOfArrayEle.java

C:\Users\Shree\Desktop\Assignment_Java_Codenera>java UnionAndIntersectionOfArrayEle
Enter 1 array size :6

----------------------
Enter 2 array size :5

----------------------
Enter 1 array element :7 1 5 2 3 6

----------------------
Enter 2 array element :3 8 6 20 7

----------------------

----------------------
Intersection of two arrays :3 6 7
----------------------
Union of two arrays :1 2 3 5 6 7 8 20
----------------------

C:\Users\Shree\Desktop\Assignment_Java_Codenera>
```

```
GuessTheNum  Array Assignm  FindTheMinim  FindTheKthEle  FindRepeatati  UnionA
File  Edit  View

                                        c[i]=c[j];
                                        c[j]=t;
                                }
                        }
                }
                System.out.println("\n----------------------");
                System.out.print("Intersection of two arrays :");
                for(int i=0;i<c.length;i++)
                {
                        for(int j=i+1;j<c.length;j++)
                        {
                                if(c[i]==c[j])
                                {
                                        if(c[i]!=-1)
                                        System.out.print(c[i]+" ");
                                }
                                if(c[i]==c[j])
                                {
                                        c[j]=-1;

                                }

                        }
                }
                System.out.println("\n----------------------");
                System.out.print("Union of two arrays :");
                for(int i=0;i<c.length;i++)
                {
                        if(c[i]!=-1)
                        System.out.print(c[i]+" ");
                }
                System.out.println("\n----------------------");
        }
}
```

Q8.Given three arrays sorted in non-decreasing order, print all common elements in these arrays.

Examples:

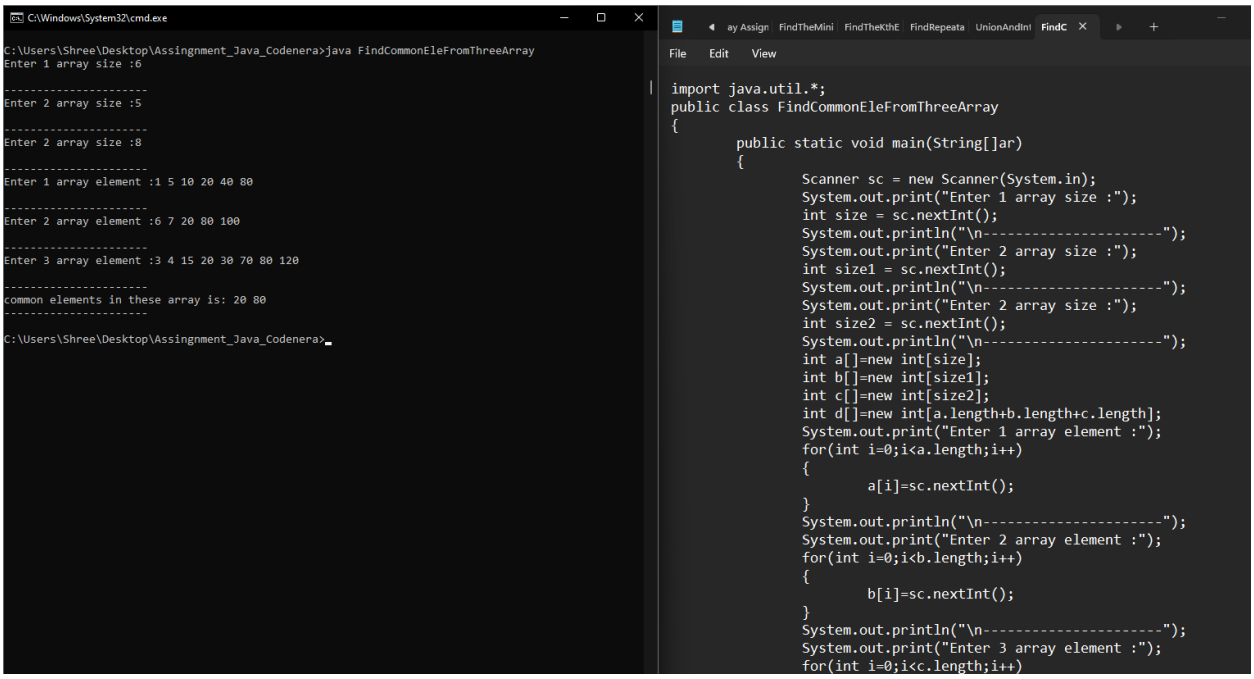
Input:

ar1[] = {1, 5, 10, 20, 40, 80}

ar2[] = {6, 7, 20, 80, 100}

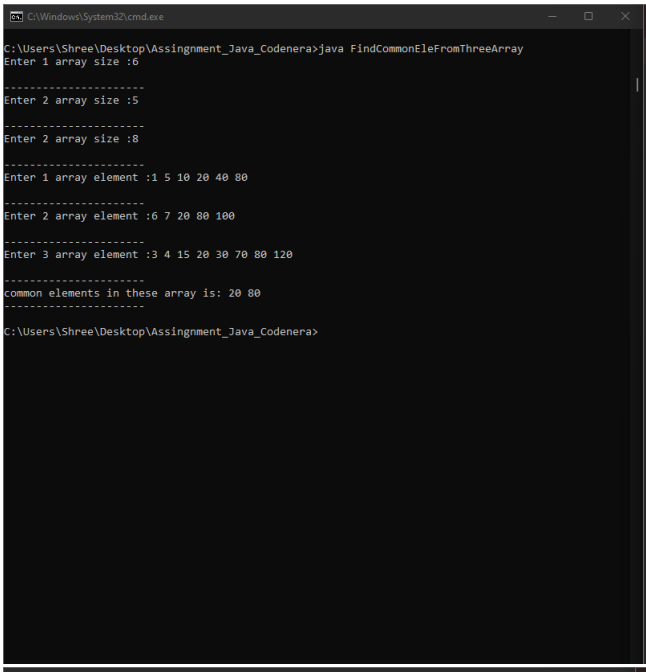
ar3[] = {3, 4, 15, 20, 30, 70, 80, 120}

Output: 20, 80



```
C:\Windows\System32\cmd.exe

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindCommonEleFromThreeArray
Enter 1 array size :6

----------------------
Enter 2 array size :5

----------------------
Enter 2 array size :8

----------------------
Enter 1 array element :1 5 10 20 40 80

----------------------
Enter 2 array element :6 7 20 80 100

----------------------
Enter 3 array element :3 4 15 20 30 70 80 120

----------------------
common elements in these array is: 20 80
----------------------

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>
```

```
ay Assign  FindTheMini  FindTheKthE  FindRepeata  UnionAndInt  FindC

File  Edit  View

import java.util.*;
public class FindCommonEleFromThreeArray
{
        public static void main(String[]ar)
        {
                Scanner sc = new Scanner(System.in);
                System.out.print("Enter 1 array size :");
                int size = sc.nextInt();
                System.out.println("\n----------------------");
                System.out.print("Enter 2 array size :");
                int size1 = sc.nextInt();
                System.out.println("\n----------------------");
                System.out.print("Enter 2 array size :");
                int size2 = sc.nextInt();
                System.out.println("\n----------------------");
                int a[]=new int[size];
                int b[]=new int[size1];
                int c[]=new int[size2];
                int d[]=new int[a.length+b.length+c.length];
                System.out.print("Enter 1 array element :");
                for(int i=0;i<a.length;i++)
                {
                        a[i]=sc.nextInt();
                }
                System.out.println("\n----------------------");
                System.out.print("Enter 2 array element :");
                for(int i=0;i<b.length;i++)
                {
                        b[i]=sc.nextInt();
                }
                System.out.println("\n----------------------");
                System.out.print("Enter 3 array element :");
                for(int i=0;i<c.length;i++)
```


C:\Windows\System32\cmd.exe
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindCommonEleFromThreeArray
Enter 1 array size :6

Enter 2 array size :5

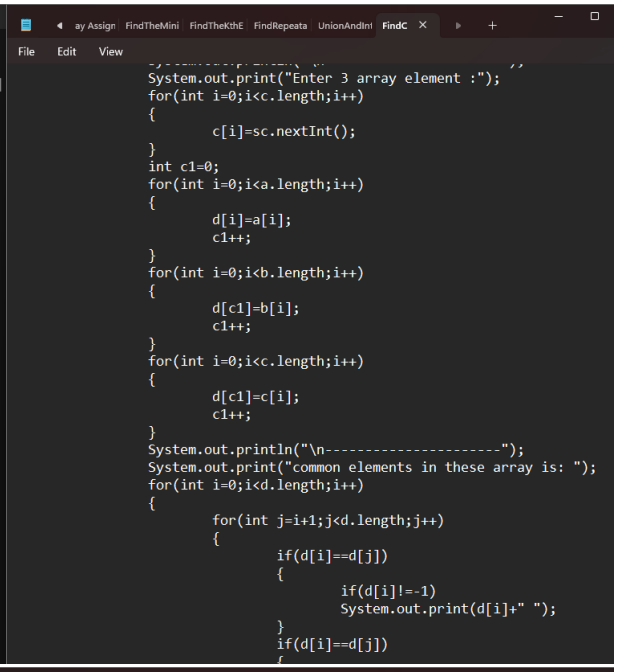
Enter 2 array size :8

Enter 1 array element :1 5 10 20 40 80

Enter 2 array element :6 7 20 80 100

Enter 3 array element :3 4 15 20 30 70 80 120
---
common elements in these array is: 20 80

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>


ay Assign
FindTheMini
FindTheKthE
FindRepeata
UnionAndInt
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File
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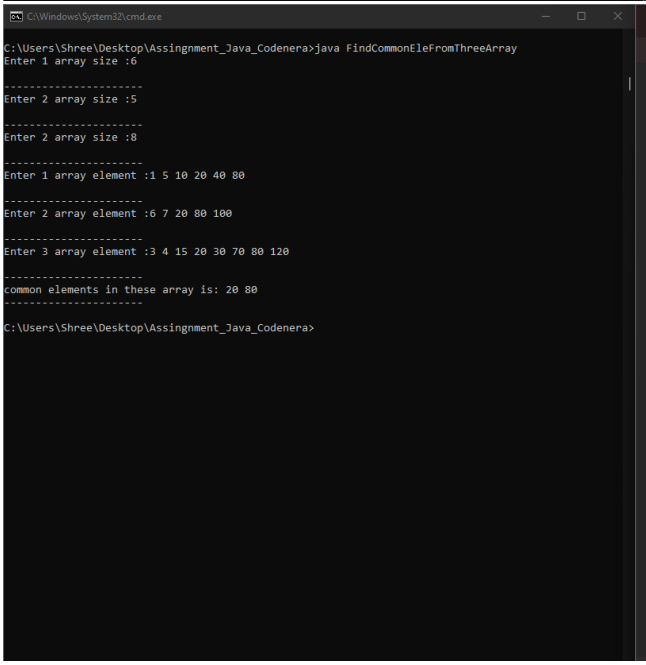
View
System.out.print("Enter 3 array element :");
for(int i=0;i<c.length;i++)
{
c[i]=sc.nextInt();
}
int c1=0;
for(int i=0;i<a.length;i++)
{
d[i]=a[i];
c1++;
}
for(int i=0;i<b.length;i++)
{
d[c1]=b[i];
c1++;
}
for(int i=0;i<c.length;i++)
{
d[c1]=c[i];
c1++;
}
System.out.println("\n----------");
System.out.print("common elements in these array is: ");
for(int i=0;i<d.length;i++)
{
for(int j=i+1;j<d.length;j++)
{
if(d[i]==d[j])
{
if(d[i]!=-1)
System.out.print(d[i]+" ");
}
if(d[i]==d[j])


C:\Windows\System32\cmd.exe
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindCommonEleFromThreeArray
Enter 1 array size :6

Enter 2 array size :5

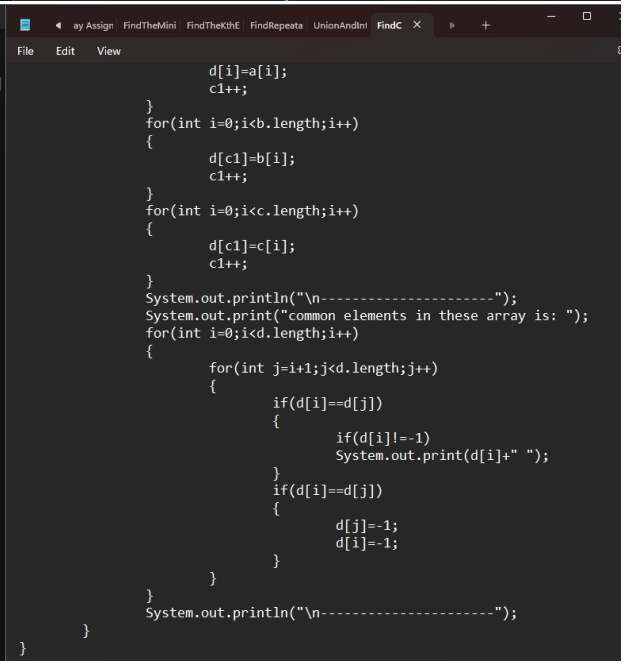
Enter 2 array size :8

Enter 1 array element :1 5 10 20 40 80

Enter 2 array element :6 7 20 80 100

Enter 3 array element :3 4 15 20 30 70 80 120
---
common elements in these array is: 20 80

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>

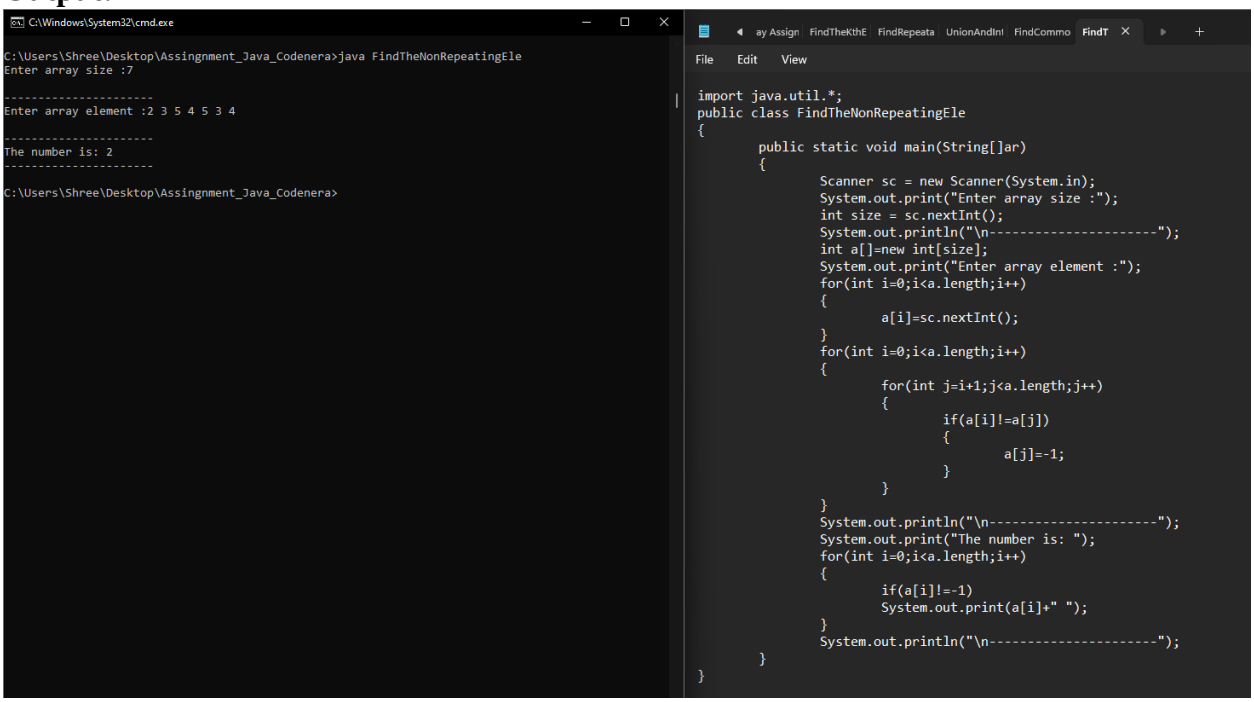

ay Assign
FindTheMini
FindTheKthE
FindRepeata
UnionAndInt
FindC
File
Edit
View
d[i]=a[i];
c1++;
}
for(int i=0;i<b.length;i++)
{
d[c1]=b[i];
c1++;
}
for(int i=0;i<c.length;i++)
{
d[c1]=c[i];
c1++;
}
System.out.println("\n----------");
System.out.print("common elements in these array is: ");
for(int i=0;i<d.length;i++)
{
for(int j=i+1;j<d.length;j++)
{
if(d[i]==d[j])
{
if(d[i]!=-1)
System.out.print(d[i]+" ");
}
if(d[i]==d[j])
{
d[j]=-1;
d[i]=-1;
}
}
}
System.out.println("\n----------");
}
}

Q9.Given an array of integers. All numbers occur twice except one number which occurs once.

Example :

Input: arr[] = {2, 3, 5, 4, 5, 3, 4}

Output: 2



```
C:\Windows\System32\cmd.exe

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindTheNonRepeatingEle
Enter array size :7

----------------------
Enter array element :2 3 5 4 5 3 4

----------------------
The number is: 2
----------------------

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>
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ay Assign | FindTheKthE | FindRepeata | UnionAndInt | FindCommo | FindT

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import java.util.*;
public class FindTheNonRepeatingEle
{
	public static void main(String[]ar)
	{
		Scanner sc = new Scanner(System.in);
		System.out.print("Enter array size :");
		int size = sc.nextInt();
		System.out.println("\n----------------------");
		int a[]=new int[size];
		System.out.print("Enter array element :");
		for(int i=0;i<a.length;i++)
		{
			a[i]=sc.nextInt();
		}
		for(int i=0;i<a.length;i++)
		{
			for(int j=i+1;j<a.length;j++)
			{
				if(a[i]!=a[j])
				{
					a[j]=-1;
				}
			}
		}
		System.out.println("\n----------------------");
		System.out.print("The number is: ");
		for(int i=0;i<a.length;i++)
		{
			if(a[i]!=-1)
			System.out.print(a[i]+" ");
		}
		System.out.println("\n----------------------");
	}
}
```

Q11.Given a sorted array of n distinct integers where each integer is in the range from 0 to m-1 and m > n. Find the smallest number that is missing from the array.

Examples:

Input: {0, 1, 2, 6, 9}, n = 5, m = 10

Output: 3