Started on	Wednesday, 3 January 2024, 9:18 AM
State	Finished
Completed on	Wednesday, 3 January 2024, 10:34 AM
Time taken	1 hour 15 mins

Question **1**

Correct

Marked out of 25.00

Given an array nums containing n distinct numbers in the range [0, n], return the only number in the range that is missing from the array.

Example 1:

Input:

3

3 0 1

Output: 2

Explanation: n = 3 since there are 3 numbers, so all numbers are in the range [0,3]. 2 is the missing number in the range since it does not appear in nums.

Example 2:

Input:

2

0 1

Output: 2

Explanation: n = 2 since there are 2 numbers, so all numbers are in the range [0,2]. 2 is the missing number in the range since it does not appear in nums.

Example 3:

Input:

9

9 6 4 2 3 5 7 0 1

Output: 8

Explanation: n = 9 since there are 9 numbers, so all numbers are in the range [0,9]. 8 is the missing number in the range since it does not appear in nums.

Constraints:

n == nums.length

1 <= n <= 10^4

0 <= nums[i] <= n

All the numbers of nums are unique.

For example:

Input	Result
3 3 0 1	2
2 0 1	2
9 9 6 4 2 3 5 7 0 1	8

Answer: (penalty regime: 0 %)

```
import java.util.*;
public class UniqueNums
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        ArrayList<Integer> a = new ArrayList<Integer>();
        HashMap<Integer,Integer> hm = new HashMap<Integer,Integer>();
        for(int i=0;i<n;i++)
        {
            a.add(sc.nextInt());
        }
        }
        for(int i=0;i<=n;i++)
        {
            hm.put(i,Collections.frequency(a,i));
        }
        for(int i=0;i<=n;i++)
        {
            if(hm.getOrDefault(i,0)==0)
            {
                System.out.print(i);
                break;
            }
        }
    }
}
```

	Input	Expected	Got	
✓	3 3 0 1	2	2	✓
✓	2 0 1	2	2	✓
✓	9 9 6 4 2 3 5 7 0 1	8	8	✓

Passed all tests! ✓

Question **2**

Correct

Marked out of 25.00

Given an integer array arr, count how many elements x there are, such that x + 1 is also in arr. If there are duplicates in arr, count them separately.

Example 1:

Input:

3

1 2 3

Output: 2

Explanation: 1 and 2 are counted cause 2 and 3 are in arr.

Example 2:

Input:

8

1 1 3 3 5 5 7 7

Output: 0

Explanation: No numbers are counted, cause there is no 2, 4, 6, or 8 in arr.

Constraints:

1 <= arr.length <= 1000

0 <= arr[i] <= 1000

For example:

Input	Result
3 1 2 3	2
8 1 1 3 3 5 5 7 7	0

Answer: (penalty regime: 0 %)

```java
import java.util.*;
public class Count
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n=sc.nextInt();
        int c=0;
        ArrayList<Integer> a=new ArrayList<Integer>();
        for(int i=0;i<n;i++)
        {
            a.add(sc.nextInt());
        }
        HashMap<Integer,Integer> hm=new HashMap<Integer,Integer>();
        for(int i=0;i<n;i++)
        {
            hm.put(i,a.get(i));
        }
        //System.out.print(hm);
        for(int i=0;i<n;i++)
        {
            int val=hm.get(i);
            val++;
            if(hm.containsValue(val))
            {
                c+=1;
            }
        }
        System.out.print(c);
    }
}
```

```
}
```

	Input	Expected	Got	
✓	3 1 2 3	2	2	✓
✓	8 1 1 3 3 5 5 7 7	0	0	✓

Passed all tests! ✓

Question **3**

Correct

Marked out of 25.00

Create a map with name as key and roll number as value. Search for a name and replace it’s value with a new value.

Input Format :

The first line of the input consists of the value of n.

Next input is the n names and roll numbers.

The third input is the key to be searched.

The fourth input is the value to be replaced.

Output Format :

The first line of the output prints the map with original values.

The next output prints the map with replaced values.

Sample testcases :

Testcase 1 Input

2

Alice

8

Mary

12

Alice

14

Testcase 1 Output

{Alice=8, Mary=12}

{Alice=14, Mary=12}

For example:

Input	Result

2
Alice
8
Mary
12
Alice
14
	{Alice=8, Mary=12}
	{Alice=14, Mary=12}

Answer: (penalty regime: 0 %)

```
import java.util.*;
public class Replace
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n=sc.nextInt();
        HashMap<String,Integer> hm = new HashMap<String,Integer>();
        for(int i=0;i<n;i++)
        {
            hm.put(sc.next(),sc.nextInt());
        }
        String s=sc.next();
        int val=sc.nextInt();
        System.out.println(hm);
        hm.put(s,val);
        System.out.print(hm);
    }
}
```

	Input	Expected	Got	

✓	2
	Alice
	8
	Mary
	12
	Alice
	14
		{Alice=8, Mary=12}
		{Alice=14, Mary=12}
			{Alice=8, Mary=12}
			{Alice=14, Mary=12}
				✓

Passed all tests! ✓

Question **4**

Correct

Marked out of 25.00

Create a map with name as key and roll number as value. Search for a name and remove it.

Input Format :

The first line of the input consists of the value of n.

Next input is the n names and roll numbers.

The last input is the name to be removed.

Output Format :

The output prints the original list and the list after modification.

Sample testcases :

Testcase 1 Input

2

Alice

8

Mary

12

Alice

Testcase 1 Output

{Alice=8, Mary=12}

{Mary=12}

For example:

Input	Result

2
Alice
8
Mary
12
Alice
	{Alice=8, Mary=12}
	{Mary=12}

Answer: (penalty regime: 0 %)

```
import java.util.*;
public class Remove
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        HashMap<String,Integer> hm = new HashMap<String,Integer>();
        for(int i=0;i<n;i++)
        {
            hm.put(sc.next(),sc.nextInt());
        }
        System.out.println(hm);
        String s = sc.next();
        hm.remove(s);
        System.out.print(hm);
    }
}
```

	Input	Expected	Got	

✓	`2`
	`Alice`
	`8`
	`Mary`
	`12`
	`Alice`
		`{Alice=8, Mary=12}`
		`{Mary=12}`
			`{Alice=8, Mary=12}`
			`{Mary=12}`
				✓

Passed all tests! ✓