

# Rajalakshmi Engineering College

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Batch: 2028  
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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 3\_Q5

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Sharon is creating a program that finds the first repeated element in an integer array. The program should efficiently identify the first element that appears more than once in the given array. If no such element is found, it should appropriately display a message.

Help Sharon to complete the program.

##### ***Input Format***

The first line of input consists of an integer  $n$ , representing the number of elements in the array.

The second line consists of  $n$  space-separated integers, representing the array elements.

### **Output Format**

If a repeated element is found, print the first element that appears more than once.

If no repeated element is found, print "No repeated element found in the array".

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 8

12 21 13 14 21 36 47 21

Output: 21

### **Answer**

// You are using Java

import java.util.\*;

```
class FirstRepeatedElement {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int[] arr = new int[n];
        Set<Integer> seen = new HashSet<>();
        int repeated = -1;

        for (int i = 0; i < n; i++) {
            arr[i] = sc.nextInt();
            if (seen.contains(arr[i]) && repeated == -1) {
                repeated = arr[i];
            }
            seen.add(arr[i]);
        }

        if (repeated != -1) {
            System.out.println(repeated);
        } else {
            System.out.println("No repeated element found in the array");
        }
    }
}
```

}  
}  
} **Status : Correct**

**Marks : 10/10**

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 4\_Q1

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

In a publishing company, editors often need to quickly analyze passages of text to check for punctuation usage. To assist them, you are asked to write a program that counts the number of specific punctuation marks in each passage.

The punctuation marks of interest are:

Commas (,) Periods (.) Question marks (?)

##### ***Input Format***

The first line of input contains an integer T, representing the number of test cases (passages).

Each of the next T lines contains a single passage of text.

### **Output Format**

For each test case, print three integers separated by spaces, representing the number of commas, periods, and question marks in the passage.

The first line of output corresponds to the first passage, the second line to the second passage, and so on.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 1

Hello, world. How are you?

Output: 1 1 1

### **Answer**

```
// You are using Java
import java.util.Scanner;
```

```
class PunctuationCounter {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
```

```
        // Read number of test cases
        int T = Integer.parseInt(scanner.nextLine());
```

```
        for (int i = 0; i < T; i++) {
            String passage = scanner.nextLine();
```

```
            int commas = 0;
            int periods = 0;
            int questions = 0;
```

```
            for (char ch : passage.toCharArray()) {
                if (ch == ',') commas++;
                else if (ch == '.') periods++;
                else if (ch == '?') questions++;
            }
        }
    }
}
```

```
// Print counts in required format
System.out.println(commas + " " + periods + " " + questions);
    }
    scanner.close();
}
}
```

**Status :** Correct

**Marks :** 10/10

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 4\_Q2

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Anu is developing a tool for a conference registration system. Participants submit keywords related to their fields of interest. The organizer wants to sort these keywords alphabetically to generate tags for session grouping.

Write a program that accepts at least five keywords as input arguments and outputs them in sorted alphabetical order.

##### ***Input Format***

The first line of input contains an integer n, representing the number of keywords.

The second line of input contains n space-separated keywords (string).

##### ***Output Format***

The output prints n space separated strings representing the sorted keyword in alphabetical order.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 5

Blockchain Cloud AI Data Cybersecurity

Output: AI Blockchain Cloud Cybersecurity Data

### **Answer**

// You are using Java

```
import java.util.*;
```

```
class KeywordSorter {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        int n = Integer.parseInt(sc.nextLine());  
        String[] keywords = sc.nextLine().split(" ");  
        Arrays.sort(keywords);  
        for (int i = 0; i < n; i++) {  
            System.out.print(keywords[i]);  
            if (i < n - 1) System.out.print(" ");  
        }  
    }  
}
```

**Status :** Correct

**Marks :** 10/10



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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 4\_Q3

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Bechan Chacha is seeking help to filter out valid mobile numbers from a list provided by his crush. He can only pick his crush's number if the list contains valid mobile numbers.

A mobile number is considered valid if:

It has exactly 10 digits. It consists only of numeric values (0–9). It does not begin with zero.

Your task is to determine whether each mobile number in the list is valid or not.

##### ***Input Format***

The first line contains an integer T, representing the number of mobile numbers

to check.

The next T lines each contain a string S, representing a mobile number.

### **Output Format**

For each mobile number S, the output print "YES" if it is valid.

Otherwise, print "NO".

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 1  
9876543210

Output: YES

### **Answer**

```
// You are using Java
import java.util.*;
class MobileNumberValidator {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int T = Integer.parseInt(sc.nextLine());
        for (int i = 0; i < T; i++) {
            String number = sc.nextLine();
            if (number.matches("[1-9][0-9]{9}$")) {
                System.out.println("YES");
            } else {
                System.out.println("NO");
            }
        }
    }
}
```

**Status :** Correct

**Marks :** 10/10

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 4\_Q4

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Arjun is learning how to filter words from a sentence based on grammar rules. He wants to identify the valid words in a sentence.

A word is considered valid if it satisfies all these conditions:

The word contains only alphabets (a-z, A-Z). The word length is at least 2 characters. The word should not contain digits or special characters.

Your task is to read a sentence and print all the valid words in it.

##### ***Input Format***

The input contains a single line containing a sentence S.

##### ***Output Format***

The output prints all the valid words separated by spaces.

If no valid word exists, print "No valid words."

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: Hello world1 123 ab" @\$ Hi

Output: Hello Hi

### **Answer**

```
// You are using Java
import java.util.*;
```

```
class ValidWordFilter {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine();
        String[] words = sentence.split(" ");
        List<String> validWords = new ArrayList<>();
        for (String word : words) {
            if (word.matches("[a-zA-Z]{2,}$")) {
                validWords.add(word);
            }
        }
        if (validWords.isEmpty()) {
            System.out.println("No valid words.");
        } else {
            System.out.println(String.join(" ", validWords));
        }
    }
}
```

**Status :** Correct

**Marks :** 10/10

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 4\_Q5

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

In a secure banking system, customers are required to create PIN codes for accessing their accounts. The bank wants to validate these PIN codes before accepting them.

A PIN code is considered valid if:

It consists of exactly 4 digits. All characters must be numeric (0–9). It cannot contain all identical digits (e.g., 1111 is invalid).

Your task is to determine whether each PIN code in the list is valid or not.

##### ***Input Format***

The first line of input contains an integer T, representing the number of PIN codes to check.

The next T lines each contain a string S, representing a PIN code.

### **Output Format**

For each PIN code S, the output print "YES" if it is valid.

Otherwise, the output print "NO".

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 1

1234

Output: YES

### **Answer**

// You are using Java

```
import java.util.Scanner;
```

```
class PinValidator {
```

```
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        int T = Integer.parseInt(sc.nextLine());
```

```
        for (int i = 0; i < T; i++) {
```

```
            String S = sc.nextLine();
```

```
            if (isValidPin(S)) {
```

```
                System.out.println("YES");
```

```
            } else {
```

```
                System.out.println("NO");
```

```
            }
```

```
        }
```

```
    }
```

```
    public static boolean isValidPin(String pin) {
```

```
        if (pin.length() != 4) return false;
```

```
        for (char c : pin.toCharArray()) {
```

```
            if (!Character.isDigit(c)) return false;
```

```
        }
```

```
        char first = pin.charAt(0);
```

```
        boolean allSame = true;
```

```
        for (int i = 1; i < 4; i++) {
```

```
    if (pin.charAt(i) != first) {  
        allSame = false;  
        break;  
    }  
    }  
    return !allSame;  
    }  
}
```

**Status :** Correct

**Marks :** 10/10