

# Rajalakshmi Engineering College

Name: Charan Sundar V  
Email: 241001036@rajalakshmi.edu.in  
Roll no: 2116241001036  
Phone: 7338594456  
Branch: REC  
Department: IT - Section 1  
Batch: 2028  
Degree: B.E - IT

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

### REC\_2028\_OOPS using Java\_Week 4\_MCQ

Attempt : 1  
Total Mark : 15  
Marks Obtained : 13

#### Section 1 : MCQ

1. Predict the output for the following code.

```
class Main {  
    public static void main(String[] fruits) {  
        String fruit1 = new String("apple");  
        String fruit2 = new String("orange");  
        String fruit3 = new String("pear");  
        fruit3 = fruit1;  
        fruit2 = fruit3;  
        fruit1 = fruit2;  
        System.out.println(fruit1);  
        System.out.println(fruit2);  
        System.out.println(fruit3);  
    }  
}
```

**Answer**

appleappleapple

**Status :** Correct

**Marks :** 1/1

2. What will be the output of the following code?

```
class Main {  
    public static void main(String args[]) {  
        char c[] = {'j', 'a', 'v', 'a'};  
        String s1 = new String(c);  
        String s2 = new String(s1);  
        System.out.println(s1);  
        System.out.println(s2);  
    }  
}
```

**Answer**

javajava

**Status :** Correct

**Marks :** 1/1

3. Predict the output for the following code:

```
public class Main {  
    public static void main(String[] args) {  
        float a = 10.0f;  
        String temp = Float.toString(a);  
        System.out.println(temp);  
    }  
}
```

**Answer**

10.0

**Status :** Correct

**Marks :** 1/1

4. What will be the output of the following program?

```
public class Main {  
    public static void main(String[] args) {  
        String str = "1234.34";  
        int a = Integer.parseInt(str);  
        System.out.println(a);  
    }  
}
```

**Answer**

1234.34

**Status :** Wrong

**Marks :** 0/1

5. What will be the output of the following program?

```
class Main {  
    public static void main(String args[]) {  
        String name="Work Hard";  
        name.concat("Success");  
        System.out.println(name);  
    }  
}
```

**Answer**

Work Hard

**Status :** Correct

**Marks :** 1/1

6. What is the output of the following code?

```
class Main  
{  
    public static void main(String args[])  
    {  
        StringBuffer c = new StringBuffer("Hello");  
        c.delete(0,2);  
        System.out.println(c);  
    }  
}
```

```
}
```

**Answer**

llo

**Status :** Correct

**Marks :** 1/1

7. What will be the output of the following program?

```
class Main {  
    public static void main(String[] args) {  
        String s = new String("5");  
        System.out.println(1 + 1111 + s + 1 + 1010);  
    }  
}
```

**Answer**

1112511010

**Status :** Correct

**Marks :** 1/1

8. What will be the output of the following program?

```
class Main {  
    public static void main(String args[]) {  
        StringBuffer sb = new StringBuffer("Hello");  
        System.out.println("buffer = " + sb);  
        System.out.println("length = " + sb.length());  
        System.out.println("capacity = " + sb.capacity());  
    }  
}
```

**Answer**

buffer = Hello  
length = 5  
capacity = 21

**Status :** Correct

**Marks :** 1/1

9. Predict the output for the following code.

```
public class Main {  
    public static void main(String[] args) {  
        String a = "java";  
        char temp = a.charAt(1);  
        System.out.println(temp);  
    }  
}
```

**Answer**

a

**Status :** Correct

**Marks :** 1/1

10. What will be the output of the following program?

```
class Main {  
    public static void main(String[] args) {  
        String greet = "Welcome\n";  
        System.out.print("String: " + greet);  
        int length = greet.length();  
        System.out.print("Length: " + length);  
    }  
}
```

**Answer**

String: WelcomeLength: 8

**Status :** Correct

**Marks :** 1/1

11. What will be the output of the following code?

```
class Main {  
    public static void main(String args[]) {  
        String s1 = "Hello i love java";  
        String s2 = new String(s1);  
        System.out.println((s1 == s2) + " " + s1.equals(s2));  
    }  
}
```

**Answer**

false true

**Status :** Correct

**Marks :** 1/1

12. What will be the output of the following program?

```
class Main {  
    public static void main(String[] args) {  
        String s1 = "EDUCATION";  
        String s2 = new String("EDUCATION");  
        String s3 = "EDUCATION";  
        if (s1 == s2) {  
            System.out.println("s1 and s2 equal");  
        }  
        else {  
            System.out.println("s1 and s2 not equal");  
        }  
        if (s1 == s3) {  
            System.out.println("s1 and s3 equal");  
        }  
        else {  
            System.out.println("s1 and s3 not equal");  
        }  
    }  
}
```

**Answer**

s1 and s2 not equals1 and s3 equal

**Status :** Correct

**Marks :** 1/1

13. What will be the output of the following code?

```
class Main {  
    public static void main(String args[])  
    {  
        StringBuffer sb = new StringBuffer("Hello");  
    }  
}
```

```

        System.out.println("buffer before = " + sb);
        System.out.println("charAt(1) before = " + sb.charAt(1));
        sb.setCharAt(1, 'i');
        sb.setLength(2);
        System.out.println("buffer after = " + sb);
        System.out.println("charAt(1) after = " + sb.charAt(1));
    }
}

```

**Answer**

buffer before = HellocharAt(1) before = ebuffer after = HicharAt(1) after = i

**Status :** Correct

**Marks :** 1/1

14. What will be the output for the following code?

```

class Main {
    public static void main(String[] args) {
        String languages[] = { "C", "C++", "Java", "Python", "Ruby"};
        for (String sample: languages) {
            System.out.println(sample);
        }
    }
}

```

**Answer**

CC++JavaPythonRuby

**Status :** Correct

**Marks :** 1/1

15. Predict the output for the following code:

```

class Main {
    public static void main(String args[]) {
        StringBuffer sb = new StringBuffer("I Java!");
        sb.insert(5, "like ");
        System.out.println(sb);
    }
}

```

**Answer**

| Java like a!

**Status : Wrong**

**Marks : 0/1**



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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**

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

```
public class Main
```

```
{
```

```
    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 passage = sc.nextLine();
```

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

for (int j = 0; j < passage.length(); j++)
{

    char ch = passage.charAt(j);
    if (ch == ',')

    {

        commas++;

    } else if (ch == '.')
    {

        periods++;

    } else if (ch == '?')
    {

        questions++;

    }

}

System.out.println(commas + " " + periods + " " + questions);

}

sc.close();
```

2116241001036  
}  
}

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**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**

```
import java.util.*;

public class Main
{

    public static void main(String[] args)
    {

        Scanner sc = new Scanner(System.in);

        // Read number of keywords
        int n = sc.nextInt();
        sc.nextLine(); // consume newline

        // Read keywords
        String[] keywords = sc.nextLine().split(" ");

        // Sort alphabetically
        Arrays.sort(keywords);

        // Print sorted keywords
        for (int i = 0; i < n; i++)
        {
```

```
System.out.print(keywords[i]);  
if (i < n - 1)
```

```
{
```

```
    System.out.print(" ");
```

```
}
```

```
}
```

```
sc.close();
```

```
}
```

```
}
```

**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.Scanner;
```

```
public class Main
```

```
{
```

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

```
{
```

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

```
    int T = sc.nextInt();
    sc.nextLine(); // consume newline
```

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

```
{
```

```
String number = sc.nextLine().trim();
```

```
if (isValidMobile(number))
```

```
{
```

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

```
} else
```

```
{
```

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

```
}
```

```
}
```

```
sc.close();
```

```
}
```

```
private static boolean isValidMobile(String s)
```

```
{
```

```
    if (s.length() != 10)
```

```
{
```

```
        return false;
```

```
}  
    for (char c : s.toCharArray())  
    {  
  
        if (!Character.isDigit(c))  
  
        {  
  
            return false;  
  
        }  
  
    }  
    if (s.charAt(0) == '0')  
    {  
  
        return false;  
  
    }  
  
    return true;  
  
}  
  
}
```

**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.*;

public class Main

{

    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 (isValidWord(word))

            {
```

```
        validWords.add(word);
    }

}

if (validWords.isEmpty())
{
    System.out.println("No valid words.");
} else
{
    System.out.println(String.join(" ", validWords));
}

sc.close();
}

private static boolean isValidWord(String word)
{
    // Word must have length >= 2 and only alphabets
    return word.length() >= 2 && word.matches("[a-zA-Z]+");
}
```

}

}

**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**

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

```
class main
```

```
{
```

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

```
    {
```

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

```
        int T = sc.nextInt();
```

```
        sc.nextLine(); // consume the newline after integer input
```

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

```
        {
```

```
            String pin = sc.nextLine().trim();
```

```
        if (isValidPin(pin))
```

```
        {
```

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

```
        } else
```

```
        {
```

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

```
        }
```

```
    }
```

```
    sc.close();
```

```
}
```

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

```
{
```

```
    // Check length
```

```
    if (pin.length() != 4)
```

```
    {
```

```
        return false;
```

```
    }
```

```
// Check if all are digits
for (char c : pin.toCharArray())
```

```
{
```

```
    if (!Character.isDigit(c))
```

```
    {
```

```
        return false;
```

```
    }
```

```
}
```

```
// Check if all digits are not identical
char first = pin.charAt(0);
boolean allSame = true;
for (int i = 1; i < pin.length(); i++)
```

```
{
```

```
    if (pin.charAt(i) != first)
```

```
    {
```

```
        allSame = false;
        break;
```

```
    }
```

```
}
```

```
return !allSame;
```

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}  
}

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**Status :** Correct

**Marks :** 10/10

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