

# Rajalakshmi Engineering College

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

### **REC\_2028\_OOPS using Java\_Week 4\_CY**

Attempt : 1

Total Mark : 40

Marks Obtained : 40

#### **Section 1 : Coding**

##### **1. Problem Statement**

Riya is preparing for a vocabulary test. Her teacher told her to focus on long words in her practice sentences, specifically words that have at least 5 letters.

Riya wants to write a program that will help her identify such words quickly.

Your task is to help Riya by printing all the words in a given sentence that have a length greater than or equal to 5.

If no such word exists, display "No long words found".

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

The input contains a single line containing a sentence with multiple words.

### **Output Format**

The output prints all words having length  $\geq 5$ , separated by a space.

If no such word is found, print "No long words found".

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: The quick brown fox jumps over the lazy dog

Output: quick brown jumps

### **Answer**

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

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine().trim();

        String[] words = sentence.split(" ");
        boolean found = false;

        for (int i = 0; i < words.length; i++) {
            String word = words[i];
            if (word.length() >= 5) {
                System.out.print(word + " ");
                found = true;
            }
        }

        if (!found) {
            System.out.println("No long words found");
        }
    }
}
```

**Status : Correct**

**Marks : 10/10**

## 2. Problem Statement

In a university library, librarians need to track the usage of special characters in students' notes.

To help them, you are asked to write a program that counts the number of specific symbols in each passage of text.

The symbols of interest are:

Exclamation marks (!) Colons (:) Semicolons (;

### ***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 exclamation marks, colons, and semicolons 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! How are you  
Output: 1 0 0

### ***Answer***

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

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

```
Scanner sc = new Scanner(System.in);
int T = sc.nextInt();
sc.nextLine();

for (int i = 0; i < T; i++) {
    String passage = sc.nextLine();
    int exclamations = 0, colons = 0, semicolons = 0;

    for (char c : passage.toCharArray()) {
        if (c == '!') exclamations++;
        else if (c == ':') colons++;
        else if (c == ';') semicolons++;
    }

    System.out.println(exclamations + " " + colons + " " + semicolons);
}
sc.close();
}
```

**Status :** Correct

**Marks :** 10/10

### 3. Problem Statement

A library wants to analyze book titles to count the number of words that start with an uppercase letter. This helps the library track proper nouns and important words in titles.

Your task is to write a program that, for each given title, counts and prints the number of words that start with an uppercase letter.

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

The first line contains an integer  $T$ , representing the number of book titles.

Each of the next  $T$  lines contains a single title (string).

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

For each title, the output print a single integer representing the number of words starting with an uppercase letter.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 1

The Chronicles of Narnia

Output: 3

### **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();

        for (int i = 0; i < T; i++) {
            String title = sc.nextLine();
            String[] words = title.split(" ");
            int count = 0;

            for (String word : words) {
                if (word.length() > 0 && Character.isUpperCase(word.charAt(0))) {
                    count++;
                }
            }

            System.out.println(count);
        }
        sc.close();
    }
}
```

**Status : Correct**

**Marks : 10/10**

4. Problem Statement

Meera is practicing her English vocabulary. She wants to focus on words that have more vowels in them, as they help improve her pronunciation. She decides to extract only those words from a sentence that contain at least two vowels.

Your task is to help Meera by writing a program that finds such words from the given sentence.

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

The input contains a string representing the sentence.

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

The output prints all the words that contain at least two vowels, separated by a space.

If no such word exists, print "No words with two vowels".

Refer to the sample output for formatting specifications.

#### ***Sample Test Case***

Input: This is an example sentence

Output: example sentence

#### ***Answer***

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

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String sentence = sc.nextLine().trim();

        String[] words = sentence.split(" ");
        boolean found = false;

        for (int i = 0; i < words.length; i++) {
            String word = words[i];
```

```
int vowelCount = countVowels(word);

if (vowelCount >= 2) {
    System.out.print(word + " ");
    found = true;
}
}

if (!found) {
    System.out.println("No words with two vowels");
}
}

static int countVowels(String word) {
    int count = 0;
    for (int i = 0; i < word.length(); i++) {
        char ch = Character.toLowerCase(word.charAt(i));
        if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
            count++;
        }
    }
    return count;
}
}
```

**Status : Correct**

**Marks : 10/10**