

# Rajalakshmi Engineering College

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Batch: 2028

Degree: B.E - IT

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

### 2028\_REC\_OOPS using Java\_Week 10\_Q3

Attempt : 1

Total Mark : 10

Marks Obtained : 10

#### **Section 1 : COD**

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

Priya is analyzing encrypted messages in a research project. She wants to analyze the frequency of each character in a given paragraph. The characters should be stored in a TreeMap so that the output is sorted in ascending order of characters automatically.

You are required to build a Java program that:

Uses a TreeMap<Character, Integer> to count how many times each character appears in the message.Ignores spaces and considers only alphabets (case-sensitive).Outputs the frequencies of characters in sorted order.

You must use a TreeMap in the class named MessageAnalyzer.

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

The first line of input contains an integer n, the number of lines in the message.

The next n lines each contain a string (the encrypted message line).

### ***Output Format***

The first line of output prints: "Character Frequency:"

Then print each character and its frequency in the format: "<character>: <count>"

Refer to the sample output for formatting specifications.

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

Input: 2  
Hello World  
Java

Output: Character Frequency:

H: 1  
J: 1  
W: 1  
a: 2  
d: 1  
e: 1  
l: 3  
o: 2  
r: 1  
v: 1

### ***Answer***

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

class MessageAnalyzer {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = Integer.parseInt(scanner.nextLine());
        TreeMap<Character, Integer> charFrequency = new TreeMap<>();
        for (int i = 0; i < n; i++) {
```

```
String line = scanner.nextLine();
for (char c : line.toCharArray()) {
    if (Character.isLetter(c)) {
        charFrequency.put(c, charFrequency.getOrDefault(c, 0) + 1);
    }
}
System.out.println("Character Frequency:");
for (Character key : charFrequency.keySet()) {
    System.out.println(key + ": " + charFrequency.get(key));
}
scanner.close();
}
```

**Status :** Correct

**Marks :** 10/10