

# Rajalakshmi Engineering College

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Department: CSE - Section 7

Batch: 2028

Degree: B.E - CSE

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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***

```
import java.util.*;  
public class Main{  
    public static void main(String[] args){  
        Scanner scanner=new Scanner(System.in);  
        int n=scanner.nextInt();  
        scanner.nextLine();  
  
        TreeMap<Character, Integer> freq=new TreeMap<>();  
        for(int i=0;i<n;i++){  
            String line=scanner.nextLine();
```

```
        for(char ch:line.toCharArray()){
            if(Character.isAlphabetic(ch)){
                freq.put(ch,freq.getOrDefault(ch,0)+1);
            }
        }
    }

    System.out.print("Character Frequency:");
    for(Map.Entry<Character, Integer> entry : freq.entrySet()){
        System.out.println(entry.getKey()+":"+entry.getValue());
    }
}
```

**Status :** Correct

**Marks :** 10/10