

# Rajalakshmi Engineering College

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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.*;  
class MessageAnalyzer{  
    public static void main(String[] args){  
        Scanner sc=new Scanner(System.in);  
        int n=Integer.parseInt(sc.nextLine());  
        TreeMap<Character,Integer> freqMap=new TreeMap<>();  
        for(int i=0;i<n;i++){  
            String line=sc.nextLine();  
            for(char ch:line.toCharArray()){  
                if(Character.isLetter(ch)){  
                    freqMap.put(ch,freqMap.getOrDefault(ch,0) + 1);  
                }  
            }  
        }  
    }  
}
```

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

**Status : Correct**

**Marks : 10/10**