# 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 analyze(int n, Scanner sc)

    {
```

```java
TreeMap<Character, Integer> map = new TreeMap<>();

for (int i = 0; i < n; i++)

{

        String line = sc.nextLine();
        for (char c : line.toCharArray())

    {

            if (c != ' ' && Character.isAlphabetic(c))

        {

                map.put(c, map.getOrDefault(c, 0) + 1);

        }

    }

}

    System.out.println("Character Frequency:");
    for (Map.Entry<Character, Integer> e : map.entrySet())

{

        System.out.println(e.getKey() + ": " + e.getValue());

}
```

```java
    }

}

class Main

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);
        int n = Integer.parseInt(sc.nextLine());
        MessageAnalyzer.analyze(n, sc);
        sc.close();

    }

}
```

*Status :* Correct                                                                                              *Marks : 10/10*