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> charCount = new TreeMap<>();
      for (int i = 0; i < n; i++) {
         String line = sc.nextLine();

         for (int j = 0; j < line.length(); j++) {
            char ch = line.charAt(j);
```

```
            if (Character.isLetter(ch)) {
                charCount.put(ch, charCount.getOrDefault(ch, 0) + 1);
            }
        }
    }
    System.out.println("Character Frequency:");
    for (Map.Entry<Character, Integer> entry : charCount.entrySet()) {
        System.out.println(entry.getKey() + ": " + entry.getValue());
    }
    sc.close();
  }
}
```

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