Rajalakshmi Engineering College

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Scan to verify results

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.Scanner;
import java.util.TreeMap;
import java.util.Map;
import java.util.HashSet;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

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

```
        int n = scanner.nextInt();
        scanner.nextLine();

        for (int i = 0; i < n; i++) {
            String line = scanner.nextLine();
            for (char c : line.toCharArray()) {
                if (c == ' ') {
                    continue;
                }
                charFrequency.put(c, charFrequency.getOrDefault(c, 0) + 1);
            }
        }

        System.out.println("Character Frequency:");

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

        scanner.close();
    }
}
```

Status : Correct *Marks : 10/10*