

Aim:

John is a teacher who wants to analyze the grades of his students. He has stored the grades in a text file, with each student's grade separated by a comma. The grades range from 0 to 100. John needs a Java program to calculate the file's average, highest, and lowest grades. Implement the program to help John with his analysis.

Input Format:

- The input is the file name.

Output Format:

- The output displays the average, highest, and lowest grades each on a new line as formatted:

```
Average Grade: <average>
Highest Grade: <highest>
Lowest Grade: <lowest>
```

- If the file doesn't exist, prints the error message "File does not exist"
- If the file contains alphanumeric or alphabets then print "Error reading file"

Note:

- Refer to the visible test cases to strictly match the input/output layout.

Source Code:

q28245/GradeAnalyzer.java

```
package q28245;
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.IOException;
import java.util.Scanner;

public class GradeAnalyzer {

    // write your code here..
    public static void main(String[] args){
        Scanner scanner = new Scanner(System.in);
        String filename = scanner.nextLine();
        try(BufferedReader reader = new BufferedReader(new FileReader(filename))){
            String line = reader.readLine();
            if(line == null || line.trim().isEmpty()){
                System.out.println("File is empty");
                return;
            }
            String[] gradeStrings = line.split(",");

            double sum = 0;
            int highest = Integer.MIN_VALUE;
            int lowest = Integer.MAX_VALUE;
            for(String gradeStr : gradeStrings){
                int grade = Integer.parseInt(gradeStr.trim());
```

```

        sum = sum + grade;
        if(grade>highest){
            highest = grade;
        }
        if(grade<lowest){
            lowest = grade;
        }
    }
    double average = sum / gradeStrings.length;

    System.out.println("Average Grade: " + average);
    System.out.println("Highest Grade: " + highest);
    System.out.println("Lowest Grade: " + lowest);
} catch (IOException e) {
    System.out.println("File does not exist");
} catch (NumberFormatException e) {
    System.out.println("Error reading file");
} finally {
    scanner.close();
}
}
}

```

file1.txt

85, 90, 78, 95, 82, 70, 88, 91, 79, 84

file2.txt

85, 90, abc, 95, 82, 70, 88, 91, 79, 84

file3.txt

85, 90, 78, 95, 82, 70, 88, 91, 79, 84, 88, 75, 92, 87, 89, 83, 76, 78, 81, 90

file4.txt

85, 90, 78a, -65, 82, 70, 88, 91, 79, 84

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
file1.txt
Average Grade: 84.2
Highest Grade: 95
Lowest Grade: 70

Test Case - 2
User Output
file2.txt
Error reading file

Test Case - 3
User Output
input.txt
File does not exist

Test Case - 4
User Output
file5.txt
Average Grade: 74.05
Highest Grade: 75
Lowest Grade: 74