

Student Grade Tracker in Java

Introduction:

Aim:

The aim of the Student Grade Tracker in Java is to design and implement a program that allows students or instructors to record, store, and manage student grades efficiently. The system should calculate the average score, highest score, lowest score, and display individual student performance, thereby helping in easy evaluation and performance tracking.

Objectives:

- To record and store grades of multiple students using arrays.
- To calculate the **average score** of the class.
- To identify and display the **highest and lowest scores**.
- To provide a simple and user-friendly interface for entering and viewing grades.
- To assist teachers/students in quickly evaluating academic performance.
- To improve efficiency by automating manual grade calculations.

Scope:

The Student Grade Tracker is a simple Java application designed to help in recording and evaluating student performance. It covers the following aspects:

- Allows entry of student grades using arrays.
- Calculates and displays **average, highest, and lowest scores** for the class.
- Provides a straightforward console-based interface suitable for beginners.
- Useful for teachers, students, and institutions for quick performance tracking.

Limitations:

- Works with fixed-size arrays (not dynamic for large datasets).
- Console-based interface (no GUI for user interaction).
- Focuses only on basic grade tracking, without advanced analytics or database integration.

Java Program:

```
import java.util.Scanner;

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

        System.out.print("Enter number of
            students: "); int n =
            sc.nextInt();
        int[] grades = new int[n];
        for (int i = 0; i < n; i++) {
            System.out.print("Enter grade for student " +
                (i+1) + ": "); grades[i] = sc.nextInt();
        }

        int sum = 0, highest = grades[0], lowest =
            grades[0];

        for (int grade :
            grades) { sum +=
                grade;
                if (grade > highest)
                    highest = grade; if
                    (grade < lowest) lowest =
                        grade;
                }

        double average = (double) sum / n;

        System.out.println("Average
            Score: " + average);
        System.out.println("Highest
            Score: " + highest);
        System.out.println("Lowest
            Score: " + lowest);

        sc.close();
    }
}
```

Output:

Enter number of students: 4

Enter grade for student 1: 20

Enter grade for student 2: 70

Enter grade for student 3: 90

Enter grade for student 4: 87

Average Score: 66.75

Highest Score: 90

Lowest Score: 20

Conclusion:

The Student Grade Tracker project in Java successfully demonstrates how arrays can be used to store and process student grades efficiently. The program is able to calculate the **average score, highest score, and lowest score** with accuracy, thus reducing manual effort and chances of error. It provides a simple and effective way for teachers and students to analyze academic performance.