Slip 8

10 Marks

```
import java.util.Scanner;

class Student {
    int roll_no;
    String name;
    float percentage;

    Student(int roll_no, String name, float percentage) {
        this.roll_no = roll_no;
        this.name = name;
        this.percentage = percentage;
    }

    public void display() {
        System.out.println(roll_no + "\t" + name + "\t" + percentage);
    }

    public float getPercentage() {
        return percentage;
    }

    public static void sortStudent(Student[] students, int n) {
        for (int i = n - 1; i > 0; i--) {
            for (int j = 0; j < i; j++) {
                if (students[j].getPercentage() > students[j +
1].getPercentage()) {
                    Student temp = students[j];
                    students[j] = students[j + 1];
                    students[j + 1] = temp;
                }
            }
        }

        System.out.println("Sorted list of students by percentage:");
        for (Student student : students) {
            student.display();
        }
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the number of students: ");
        int n = sc.nextInt();
        Student[] students = new Student[n];

        for (int i = 0; i < n; i++) {
            System.out.print("Enter roll number: ");
            int roll_no = sc.nextInt();
            sc.nextLine();  // consume newline
            System.out.print("Enter name: ");
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            String name = sc.nextLine();
            System.out.print("Enter percentage: ");
            float percentage = sc.nextFloat();

            students[i] = new Student(roll_no, name, percentage);
        }

        Student.sortStudent(students, n);
    }
}
```

20 Marks:

```
package SY;

import java.util.Scanner;

public class SYMarks {
    public int ComputerTotal, MathsTotal, ElectronicsTotal;

    public void get() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Computer Total, Maths Total, and
Electronics Total out of 200:");
        ComputerTotal = sc.nextInt();
        MathsTotal = sc.nextInt();
        ElectronicsTotal = sc.nextInt();
    }
}
java
Copy code
package TY;

import java.util.Scanner;

public class TYMarks {
    public int Theory, Practicals;

    public void get() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Theory marks out of 400 and Practicals
marks out of 200:");
        Theory = sc.nextInt();
        Practicals = sc.nextInt();
    }
}
java
Copy code
import SY.SYMarks;
import TY.TYMarks;

import java.util.Scanner;

class Student {
    int rollNumber;
    String name;
```

```
    SYMarks syMarks;
    TYMarks tyMarks;
    float total;
    String grade;

    public void getDetails() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Roll Number and Name:");
        rollNumber = sc.nextInt();
        sc.nextLine();  // consume newline
        name = sc.nextLine();
    }

    public void calculateTotal() {
        total = syMarks.ComputerTotal + tyMarks.Theory;
        calculateGrade();
    }

    private void calculateGrade() {
        float percentage = (total / 600) * 100;
        if (percentage >= 70) grade = "A";
        else if (percentage >= 60) grade = "B";
        else if (percentage >= 50) grade = "C";
        else if (percentage >= 40) grade = "Pass";
        else grade = "Fail";
    }

    public void display() {
        System.out.println(rollNumber + "\t" + name + "\t" + total + "\t" +
grade);
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of students:");
        int n = sc.nextInt();
        Student[] students = new Student[n];

        for (int i = 0; i < n; i++) {
            students[i] = new Student();
            students[i].getDetails();
            students[i].syMarks = new SYMarks();
            students[i].tyMarks = new TYMarks();
            students[i].syMarks.get();
            students[i].tyMarks.get();
            students[i].calculateTotal();
        }

        System.out.println("RollNo\tName\tTotal\tGrade");
        for (Student student : students) {
            student.display();
        }
    }
}
```