

TASK 3: Control Flow Based Student Result System

What is the purpose of this task?

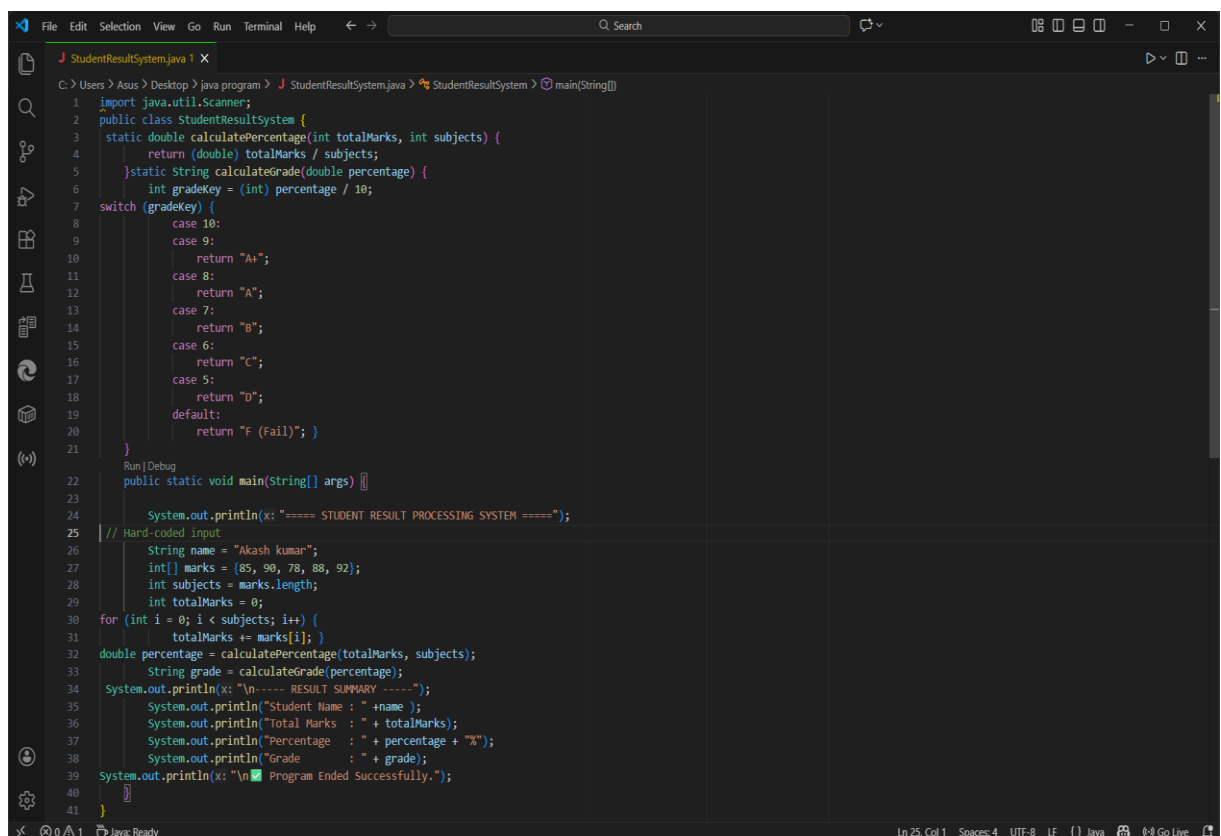
The main purpose of this task is to check your understanding of Java control flow statements such as:

- if-else
- switch
- loops
- break and continue
- methods (functions)
- input validation

This task simulates a real-life student result processing system where:

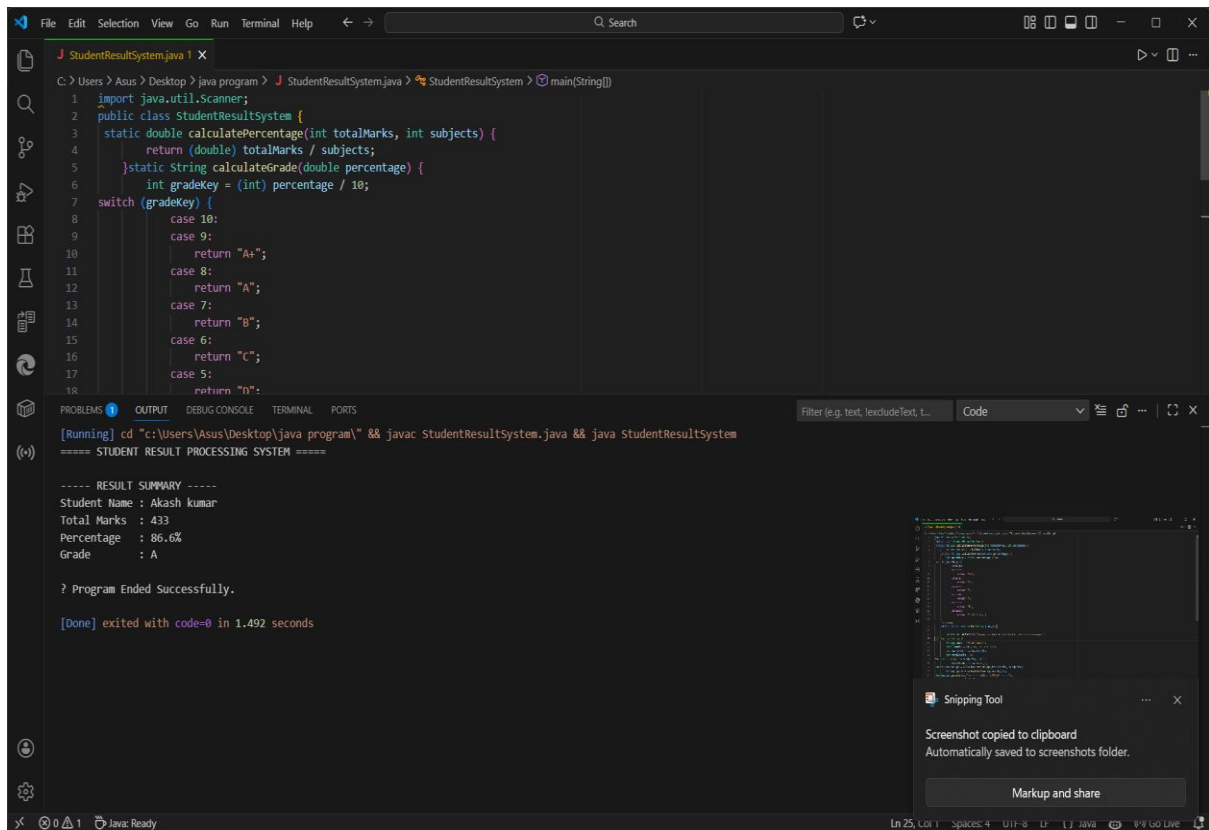
- A student enters marks
- The system checks validity
- Calculates percentage
- Assigns grades
- Shows final results

code:-



```
1  import java.util.Scanner;
2  public class StudentResultSystem {
3      static double calculatePercentage(int totalMarks, int subjects) {
4          return (double) totalMarks / subjects;
5      }
6      static String calculateGrade(double percentage) {
7          int gradeKey = (int) percentage / 10;
8          switch (gradeKey) {
9              case 10:
10                 return "A+";
11             case 9:
12                 return "A";
13             case 8:
14                 return "B";
15             case 7:
16                 return "C";
17             case 6:
18                 return "D";
19             default:
20                 return "F (Fail)";
21             }
22         }
23     }
24     public static void main(String[] args) {
25         // Hard-coded input
26         String name = "Akash kumar";
27         int[] marks = {85, 90, 78, 88, 92};
28         int subjects = marks.length;
29         int totalMarks = 0;
30         for (int i = 0; i < subjects; i++) {
31             totalMarks += marks[i];
32         }
33         double percentage = calculatePercentage(totalMarks, subjects);
34         String grade = calculateGrade(percentage);
35         System.out.println("\n----- RESULT SUMMARY -----");
36         System.out.println("Student Name : " + name);
37         System.out.println("Total Marks : " + totalMarks);
38         System.out.println("Percentage : " + percentage + "%");
39         System.out.println("Grade : " + grade);
40         System.out.println("\nProgram Ended Successfully.");
41     }
42 }
```

OUTPUT:-



The screenshot shows an IDE with a Java file named `StudentResultSystem.java`. The code defines a `StudentResultSystem` class with two static methods: `calculatePercentage` and `calculateGrade`. The `calculateGrade` method uses a switch statement to map percentage ranges to letter grades. The output window shows the program's execution, displaying a result summary for a student named Akash kumar with a total mark of 433, a percentage of 86.6%, and a grade of A. A Snipping Tool notification is also visible in the bottom right corner.

```
1 import java.util.Scanner;
2 public class StudentResultSystem {
3     static double calculatePercentage(int totalMarks, int subjects) {
4         return (double) totalMarks / subjects;
5     }
6     static String calculateGrade(double percentage) {
7         int gradeKey = (int) percentage / 10;
8         switch (gradeKey) {
9             case 10:
10                return "A+";
11            case 9:
12                return "A";
13            case 8:
14                return "B";
15            case 7:
16                return "C";
17            case 6:
18                return "D";
19            default:
20                return "F";
21        }
22    }
23 }
```

```
[Running] cd "c:\Users\Asus\Desktop\java program" && javac StudentResultSystem.java && java StudentResultSystem
===== STUDENT RESULT PROCESSING SYSTEM =====

----- RESULT SUMMARY -----
Student Name : Akash kumar
Total Marks : 433
Percentage : 86.6%
Grade : A

? Program Ended Successfully.

[Done] exited with code=0 in 1.492 seconds
```

Main purpose of this task:-

Calculate the result