TASK 3

1.Source code

```
import java.util.Scanner;
/*
 * Task 3: Control Flow Based Student Result System
 */
public class StudentResultSystem {
    // Method to calculate percentage
    static double calculatePercentage(int totalMarks, int subjects) {
        return (double) totalMarks / subjects;
    }
    // Method to assign grade using if-else
    static char assignGrade(double percentage) {
        if (percentage >= 90) return 'A';
        else if (percentage >= 75) return 'B';
        else if (percentage >= 60) return 'C';
        else if (percentage >= 40) return 'D';
        else return 'F';
    }
    // Method to display grade meaning using switch
    static void displayGradeMeaning(char grade) {
        switch (grade) {
            case 'A':
                System.out.println("Grade A: Excellent");
                break;
```

```
            case 'B':
                System.out.println("Grade B: Very Good");
                break;
            case 'C':
                System.out.println("Grade C: Good");
                break;
            case 'D':
                System.out.println("Grade D: Pass");
                break;
            case 'F':
                System.out.println("Grade F: Fail");
                break;
            default:
                System.out.println("Invalid Grade");
        }
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("=== Student Result Processing System ===");
        while (true) {
            System.out.print("\nEnter Student Name: ");
            String name = sc.next();
            int totalMarks = 0;
            int subjects = 3;
            // Loop for subject marks
```

```
for (int i = 1; i <= subjects; i++) {
    System.out.print("Enter marks for subject " + i + ": ");
    int marks = sc.nextInt();
    // Validation logic
    if (marks < 0 || marks > 100) {
        System.out.println("Invalid marks! Please enter between 0 and 100.");
        i--;        // repeat same subject
        continue;   // skip remaining code
    }
    totalMarks += marks;
}
double percentage = calculatePercentage(totalMarks, subjects);
char grade = assignGrade(percentage);
// Final result summary
System.out.println("\n--- Result Summary ---");
System.out.println("Student Name: " + name);
System.out.printf("Percentage: %.2f%%\n", percentage);
System.out.println("Grade: " + grade);
displayGradeMeaning(grade);
// Multiple student entry option
System.out.print("\nDo you want to enter another student? (yes/no): ");
String choice = sc.next();
if (choice.equalsIgnoreCase("no"))  {
    break; // exit loop
}
```

```
        }
        sc.close();
        System.out.println("\nProgram  Ended. Thank you!");
    }
}
```

2.Output screenshots:

Testcase1 and Testcase2:

```
Enter Student Name: Akshu
Enter marks for subject 1: 95
Enter marks for subject 2: 98
Enter marks for subject 3: 97

--- Result Summary ---
Student Name: Akshu
Percentage: 96.67%
Grade: A
Grade A: Excellent

Do you want to enter another student? (yes/no): no

Program Ended. Thank you!
```

```
=== Student Result Processing System ===

Enter Student Name: Akshu
Enter marks for subject 1: 120
Invalid marks! Please enter between 0 and 100.
Enter marks for subject 1:
```