JAVA

Task 1:

Create a simple Java application that simulates a basic calculator. The calculator should be able to perform addition, subtraction, multiplication, and division operations based on user input.

CODE:

```
import java.util.Scanner;

public class Calculator {

   public static void main(String[] args) {

       Scanner scanner = new Scanner(System.in);

       System.out.print("Enter first number: ");
       double no1 = scanner.nextDouble();

       System.out.print("Enter an operation (+, -, *, /): ");
       char operation = scanner.next().charAt(0);

       System.out.print("Enter second number: ");
       double no2 = scanner.nextDouble();

       double result = 0;
       boolean validOperation = true;

       switch (operation) {
```

```
            case '+':
                result = add(no1, no2);
                break;
            case '-':
                result = sub(no1, no2);
                break;
            case '*':
                result = mul(no1, no2);
                break;
            case '/':
                if (no2 != 0) {
                    result = div(no1, no2);
                } else {
                    System.out.println("Zero division error");
                    validOperation = false;
                }
                break;
            default:
                System.out.println("Invalid input");
                validOperation = false;
                break;
        }

        if (validOperation) {
            System.out.println("Result : " + result);
        }

        scanner.close();
    }

    public static double add(double a, double b) {
        return a + b;
    }

    public static double sub(double a, double b) {
        return a - b;
    }

    public static double mul(double a, double b) {
        return a * b;
```

```
    }

    public static double div(double a, double b) {
        return a / b;
    }
}
```

OUTPUT :

Enter first number: 56
Enter an operation (+, -, *, /): *
Enter second number: 65
Result : 3640.0

Task 2 :

Objective: Create a Java program that calculates the grade based on marks entered by the user.
Requirements:
• Input:
• Prompt the user to enter marks obtained (out of 100).
• Allow the user to enter multiple sets of marks until they choose to stop.
• Output:
• Display the grade based on the following criteria:
• Marks >= 90: Grade A

• Marks >= 80 and < 90: Grade B
• Marks >= 70 and < 80: Grade C
• Marks >= 60 and < 70: Grade D
• Marks < 60: Grade F (Fail)
• After each calculation, display the grade and ask if the user wants to continue or stop.

CODE :

```
import java.util.Scanner;

public class GradeCalculator {

   public static void main(String[] args) {
       Scanner scanner = new Scanner(System.in);
       char continueOption;

       do {
           System.out.print("Enter the marks obtained (out of 100): ");
           int marks = scanner.nextInt();
           char grade = calculateGrade(marks);
           System.out.println("Grade: " + grade);
           System.out.print("Do you want to enter another set of marks?
(Y/N): ");
           continueOption = scanner.next().charAt(0);

       } while (continueOption == 'Y' || continueOption == 'y');

       scanner.close();
   }

   public static char calculateGrade(int marks) {
       if (marks >= 90) {
           return 'A';
       } else if (marks >= 80) {
```

```
            return 'B';
        } else if (marks >= 70) {
            return 'C';
        } else if (marks >= 60) {
            return 'D';
        } else {
            return 'F';
        }
    }
}
```

OUTPUT :

Enter the marks obtained (out of 100): 67
Grade: D
Do you want to enter another set of marks? (Y/N): y
Enter the marks obtained (out of 100): 98
Grade: A
Do you want to enter another set of marks? (Y/N): y
Enter the marks obtained (out of 100): 22
Grade: F
Do you want to enter another set of marks? (Y/N): n