TASK-JAVA

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:

```java
import java.util.Scanner;

public class BasicCalculator {

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

        while (true) {
            System.out.println(x:"Simple Calculator");
            System.out.println(x:"1. Addition");
            System.out.println(x:"2. Subtraction");
            System.out.println(x:"3. Multiplication");
            System.out.println(x:"4. Division");
            System.out.println(x:"5. Exit");
            System.out.print(s:"Choose an operation: ");

            int choice = scanner.nextInt();

            if (choice == 5) {
                System.out.println(x:"Exiting...");
                break;
            }

            System.out.print(s:"Enter first number: ");
            double num1 = scanner.nextDouble();

            System.out.print(s:"Enter second number: ");
            double num2 = scanner.nextDouble();

            switch (choice) {
                case 1:
                    System.out.println("Result: " + add(num1, num2));
                    break;
                case 2:
                    System.out.println("Result: " + subtract(num1, num2));
                    break;
                case 3:
                    System.out.println("Result: " + multiply(num1, num2));
```

```java
38                    System.out.println("Result: " + multiply(num1, num2));
39                    break;
40                case 4:
41                    if (num2 == 0) {
42                        System.out.println(x:"Error: Division by zero is not allowed.");
43                    } else {
44                        System.out.println("Result: " + divide(num1, num2));
45                    }
46                    break;
47                default:
48                    System.out.println(x:"Invalid choice. Please try again.");
49            }
50        }
51
52        scanner.close();
53    }
54
55    public static double add(double a, double b) {
56        return a + b;
57    }
58
59    public static double subtract(double a, double b) {
60        return a - b;
61    }
62
63    public static double multiply(double a, double b) {
64        return a * b;
65    }
66
67    public static double divide(double a, double b) {
68        return a / b;
69    }
70 }
```

OUTPUT:

```
PS C:\Users\SWETHA BENNY\Documents\javaProject> javac BasicCalculator.java
>> java BasicCalculator
>>
Simple Calculator
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Choose an operation: 1
Enter first number: 6
Enter second number: 4
Result: 10.0
Simple Calculator
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Choose an operation: 1
Enter first number: 5
Enter second number: 5
Result: 10.0
```

2.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:

```java
import java.util.Scanner;

public class GradeCalculator {

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

        while (true) {
            System.out.print(s:"Enter marks obtained (out of 100): ");
            int marks = scanner.nextInt();

            String grade = calculateGrade(marks);
            System.out.println("Grade: " + grade);

            System.out.print(s:"Do you want to enter another set of marks? (yes/no): ");
            scanner.nextLine(); // Consume newline left-over
            String response = scanner.nextLine();

            if (response.equalsIgnoreCase(anotherString:"no")) {
                break;
            }
        }

        scanner.close();
    }

    public static String 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 (Fail)";
        }
    }
}
```

OUTPUT:

```
PS C:\Users\SWETHA BENNY\Documents\javaProject> javac GradeCalculator.java
>> java GradeCalculator
>>
Enter marks obtained (out of 100): 66
Grade: D
Do you want to enter another set of marks? (yes/no): yes
Enter marks obtained (out of 100): 89
Grade: B
Do you want to enter another set of marks? (yes/no): no
PS C:\Users\SWETHA BENNY\Documents\javaProject>
```