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M T W T F S S

Assignment - 2

① Project Title: Calculator application using Method overloading

↳ We will create a first class named "Calculator.java"

Code:-

```
public class Calculator {
    public int add(int a, int b) {
        return a+b;
    }
    public double add(double a, double b) {
        return a+b;
    }
    public int add(int a, int b, int c) {
        return a+b+c;
    }
    public int subtract(int a, int b) {
        return a-b;
    }
    public double multiply(double a, double b) {
        return a*b;
    }
    public double divide(int a, int b) {
        if(b==0) {
            System.out.println("Division by zero is not valid");
            return 0;
        }
        else {
            return (double) a/b;
        }
    }
}
```

Now, we'll create another class named "UserInterface.java"

code:-

```
import java.util.Scanner;
public class UserInterface{

    Scanner sc = new Scanner(System.in);
    Calculator calc = new Calculator();

    public void performAddition(){
        System.out.println("1. Add two integers");
        System.out.println("2. Add two doubles");
        System.out.println("3. Add three integers");
        System.out.println("Choose option: ");
        int choice = sc.nextInt();

        if(choice == 1){
            System.out.print("Enter two integers: ");
            int a = sc.nextInt();
            int b = sc.nextInt();
            System.out.println("Result: " + calc.add(a, b));
        }else if(choice == 2){
            System.out.print("Enter two doubles: ");
            double c = sc.nextDouble();
            double d = sc.nextDouble();
            System.out.println("Result: " + calc.add(c, d));
        }
        else if(choice == 3){
            System.out.print("Enter three integers");
            int p = sc.nextInt();
            int q = sc.nextInt();
            int r = sc.nextInt();
            System.out.println("Result: " + calc.add(p, q, r));
```

```
        }else {
            System.out.println("Invalid!");
        }
    }
    public void performSubtraction() {
        System.out.print("Enter two integers: ");
        int a = sc.nextInt();
        int b = sc.nextInt();
        System.out.println("Result: " + calc.subtract(a, b));
    }
    public void performMultiplication() {
        System.out.print("Enter two doubles: ");
        double a = sc.nextDouble();
        double b = sc.nextDouble();
        System.out.print("Result: " + calc.multiply(a, b));
    }
    public void performDivision() {
        System.out.print("Enter two integers: ");
        int a = sc.nextInt();
        int b = sc.nextInt();
        System.out.println("Result: " + calc.divide(a, b));
    }
    public void mainMenu() {
        int choice;
        do {
            System.out.println("Welcome to the Calculator Appli
            System.out.println("1. Add Numbers");
            System.out.println("2. Subtract Numbers");
            System.out.println("3. Multiply Numbers");
            System.out.println("4. Divide Numbers");
            System.out.println("5. Exit");
            System.out.print("Enter your choice: ");
```

```
choice = sc.nextInt();

Switch (choice) {
    case 1: performAddition(); break;
    case 2: performSubtraction(); break;
    case 3; performMultiplication(); break;
    case 4; performDivision(); break;
    case 5; System.out.println("Exiting."); break;
    default:
      System.out.println("Invalid");
  }
}while(choice != 5);
}

public static void main(String[] args) {
    UserInterface ui = new UserInterface();
    ui.mainMenu();

}
}
```