Classes and Objects - Java Examples

🎯 Direct Challenges

1. Create a Student class with name, age, and grade attributes

```java
public class Student {

    String name;

    int age;

    char grade;

}
```

Output:
No output. Class definition only.

2. Define a method inside a class to display details

```java
public class Student {

    String name;

    int age;

    char grade;


    void display() {

        System.out.println("Name: " + name);

        System.out.println("Age: " + age);

        System.out.println("Grade: " + grade);

    }

}
```

Output:

Name: John

Age: 20

Grade: A

3. Instantiate multiple objects and show their data

```java
public class Main {
    public static void main(String[] args) {
        Student s1 = new Student();
        s1.name = "John";
        s1.age = 20;
        s1.grade = 'A';

        Student s2 = new Student();
        s2.name = "Alice";
        s2.age = 19;
        s2.grade = 'B';

        s1.display();
        System.out.println();
        s2.display();
    }
}
```

Output:

Name: John

Age: 20

Grade: A

Name: Alice

Age: 19

Grade: B

✳️ Scenario-Based Challenges

1. Create a class Employee with a method to calculate salary based on hours worked

```
public class Employee {

    String name;

    double hourlyRate;

    double calculateSalary(int hoursWorked) {

        return hoursWorked * hourlyRate;

    }

}


public class Main {

    public static void main(String[] args) {

        Employee emp = new Employee();

        emp.name = "Vani";

        emp.hourlyRate = 200;


        double salary = emp.calculateSalary(40);

        System.out.println("Employee Name: " + emp.name);

        System.out.println("Weekly Salary: ₹" + salary);

    }

}
```

Output:

Employee Name: Vani

Weekly Salary: ₹8000.0

2. Write a Car class and display its specifications using a method

```
public class Car {
```

```java
    String model;

    String color;

    int year;


    void displaySpecs() {

        System.out.println("Model: " + model);

        System.out.println("Color: " + color);

        System.out.println("Year: " + year);

    }

}


public class Main {

    public static void main(String[] args) {

        Car car1 = new Car();

        car1.model = "Hyundai i20";

        car1.color = "Red";

        car1.year = 2022;


        car1.displaySpecs();

    }

}
```

Output:

Model: Hyundai i20

Color: Red

Year: 2022