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1.
class Student {
    String name;
    int rollNo;
    double marks;

    void displayDetails() {
        System.out.println("Name: " + name + ", Roll No: " + rollNo + ", Marks: " + marks);
    }

    public static void main(String[] args) {
        Student s1 = new Student();
        s1.name = "Amit";
        s1.rollNo = 1;
        s1.marks = 85.5;

        Student s2 = new Student();
        s2.name = "Riya";
        s2.rollNo = 2;
        s2.marks = 90.0;

        Student s3 = new Student();
        s3.name = "Rahul";
        s3.rollNo = 3;
        s3.marks = 78.0;

        s1.displayDetails();
        s2.displayDetails();
        s3.displayDetails();
    }
}

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2.
class Rectangle {
    double length;
    double width;

    double calculateArea() {
        return length * width;
    }

    public static void main(String[] args) {
        Rectangle r1 = new Rectangle();
        r1.length = 5;
        r1.width = 4;
        System.out.println("Area: " + r1.calculateArea());

        Rectangle r2 = new Rectangle();
        r2.length = 7;
        r2.width = 3;
        System.out.println("Area: " + r2.calculateArea());
    }
}

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3.
class Employee {
    int empId;
    String empName;
    double salary;

    void showDetails() {
        System.out.println(empId + " " + empName + " " + salary);
    }

    void increaseSalary(double amount) {
        salary += amount;
    }

    public static void main(String[] args) {
        Employee e1 = new Employee();
        e1.empId = 101;
        e1.empName = "John";
        e1.salary = 50000;
        e1.increaseSalary(5000);
        e1.showDetails();

        Employee e2 = new Employee();
    }
}

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        e2.empId = 102;
        e2.empName = "Sneha";
        e2.salary = 60000;
        e2.increaseSalary(4000);
        e2.showDetails();
    }
}

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4.
class BankAccount {
    int accountNumber;
    String holderName;
    double balance;

    void deposit(double amount) {
        balance += amount;
    }

    void withdraw(double amount) {
        if (amount <= balance) balance -= amount;
        else System.out.println("Insufficient balance");
    }

    public static void main(String[] args) {
        BankAccount acc = new BankAccount();
        acc.accountNumber = 12345;
        acc.holderName = "Ravi";
        acc.balance = 10000;

        acc.deposit(2000);
        acc.withdraw(3000);
        System.out.println("Final Balance: " + acc.balance);
    }
}

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5.
class Book {
    String title;
    String author;
    double price;

    void displayBook() {
        System.out.println(title + " by " + author + " costs " + price);
    }

    public static void main(String[] args) {
        Book b1 = new Book();
        b1.title = "Java Basics";
        b1.author = "James";
        b1.price = 450;

        Book b2 = new Book();
        b2.title = "Python Guide";
        b2.author = "Guido";
        b2.price = 500;

        Book b3 = new Book();
        b3.title = "C++ Mastery";
        b3.author = "Stroustrup";
        b3.price = 550;

        b1.displayBook();
        b2.displayBook();
        b3.displayBook();
    }
}

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6.
class Car {
    String model;
    String brand;
    double mileage;

    void showCarInfo() {
        System.out.println(brand + " " + model + " Mileage: " + mileage);
    }
}

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        public static void main(String[] args) {
            Car c1 = new Car();
            c1.brand = "Honda";
            c1.model = "City";
            c1.mileage = 18.5;

            Car c2 = new Car();
            c2.brand = "Maruti";
            c2.model = "Swift";
            c2.mileage = 20.0;

            c1.showCarInfo();
            c2.showCarInfo();
        }
    }
}

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7.
class Product {
    String name;
    double price;
    double discountPercent;

    double calculateDiscountPrice() {
        return price - (price * discountPercent / 100);
    }

    public static void main(String[] args) {
        Product p1 = new Product();
        p1.name = "Laptop";
        p1.price = 60000;
        p1.discountPercent = 10;
        System.out.println("Final Price: " + p1.calculateDiscountPrice());

        Product p2 = new Product();
        p2.name = "Mobile";
        p2.price = 25000;
        p2.discountPercent = 15;
        System.out.println("Final Price: " + p2.calculateDiscountPrice());
    }
}

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8.
class Movie {
    String movieName;
    double rating;
    int duration;

    void showMovieInfo() {
        System.out.println(movieName + " Rating: " + rating + " Duration: " + duration + " mins");
    }

    public static void main(String[] args) {
        Movie m1 = new Movie();
        m1.movieName = "Inception";
        m1.rating = 8.8;
        m1.duration = 150;

        Movie m2 = new Movie();
        m2.movieName = "Avatar";
        m2.rating = 9.0;
        m2.duration = 160;

        Movie m3 = new Movie();
        m3.movieName = "Interstellar";
        m3.rating = 9.2;
        m3.duration = 170;

        m1.showMovieInfo();
        m2.showMovieInfo();
        m3.showMovieInfo();
    }
}

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9.
class Teacher {
    String name;

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        String subject;
        int experience;

        void displayInfo() {
            System.out.println(name + " teaches " + subject + " with " + experience + " years experience")
        }

        public static void main(String[] args) {
            Teacher t1 = new Teacher();
            t1.name = "Meena";
            t1.subject = "Math";
            t1.experience = 10;

            Teacher t2 = new Teacher();
            t2.name = "Sanjay";
            t2.subject = "Science";
            t2.experience = 8;

            t1.displayInfo();
            t2.displayInfo();
        }
    }
}

10.
class Mobile {
    String brand;
    double price;
    int ramSize;

    void showSpecs() {
        System.out.println(brand + " with " + ramSize + "GB RAM costs " + price);
    }

    public static void main(String[] args) {
        Mobile m1 = new Mobile();
        m1.brand = "Samsung";
        m1.price = 15000;
        m1.ramSize = 6;

        Mobile m2 = new Mobile();
        m2.brand = "OnePlus";
        m2.price = 35000;
        m2.ramSize = 8;

        Mobile m3 = new Mobile();
        m3.brand = "Realme";
        m3.price = 18000;
        m3.ramSize = 4;

        m1.showSpecs();
        m2.showSpecs();
        m3.showSpecs();
    }
}

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