CLASS PROGRAMS in java

1.

```
class Dog {
	String name;
	int age;
	Dog(String name, int age) {
		this.name = name;
		this.age = age;
	}
	void displayInfo() {
		System.out.println("Dog's Name: " + name);
		System.out.println("Dog's Age: " + age);
	}
}


public class Main {
	public static void main(String[] args) {
		Dog dog1 = new Dog("Buddy", 3);
		dog1.displayInfo();
	}
}
```

output:

```
java -cp /tmp/w9VDeWG9q4/Main
Dog's Name: Buddy
Dog's Age: 3

=== Code Execution Successful ===
```

2.

```
class Animal {
    void sound() {
        System.out.println("Animal makes a sound");
    }
}

class Cat extends Animal {
    void sound() {
        System.out.println("Cat meows");
    }
}

public class Main {
    public static void main(String[] args) {
        Cat cat = new Cat();
        cat.sound();
    }
}
```

output:

```
java -cp /tmp/2G2uhAbdmp/Main
Cat meows

=== Code Execution Successful ===
```

3.

```
class BankAccount {
    private double balance;
    BankAccount(double initialBalance) {
        balance = initialBalance;
    }
    public void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println("Deposited: $" + amount);
        } else {
            System.out.println("Deposit amount must be positive!");
        }
    }
    public double getBalance() {
        return balance;
    }
}

public class Main {
    public static void main(String[] args) {
        BankAccount account = new BankAccount(1000);
        account.deposit(500);
        System.out.println("Current Balance: $" + account.getBalance());
```

```
    }
}
```

output:

```
java -cp /tmp/gmbgV9lnUd/Main
Deposited: $500.0
Current Balance: $1500.0

=== Code Execution Successful ===
```

4.

```
class MathOperations {


    // Method to add two integers
    int add(int a, int b) {
        return a + b;
    }
    int add(int a, int b, int c) {
        return a + b + c;
    }
    double add(double a, double b) {
        return a + b;
    }
}


public class Main {
    public static void main(String[] args) {
        MathOperations math = new MathOperations();
```

```
        System.out.println("Sum of 5 and 10: " + math.add(5, 10));
        System.out.println("Sum of 5, 10 and 15: " + math.add(5, 10, 15));
        System.out.println("Sum of 5.5 and 10.5: " + math.add(5.5, 10.5));
    }
}
```

output:

```
java -cp /tmp/RV8vz1ezZA/Main
Sum of 5 and 10: 15
Sum of 5, 10 and 15: 30
Sum of 5.5 and 10.5: 16.0

=== Code Execution Successful ===
```

5.

```
abstract class Shape {
    abstract void draw();
}

class Circle extends Shape {
    void draw() {
        System.out.println("Drawing a Circle");
    }
}

interface Drawable {
    void draw();
}

class Rectangle implements Drawable {
```

```
    public void draw() {
        System.out.println("Drawing a Rectangle");
    }
}

public class Main {
    public static void main(String[] args) {
        Shape circle = new Circle();
        circle.draw();
        Drawable rectangle = new Rectangle();
        rectangle.draw();
    }
}
```

output:

```
java -cp /tmp/ZhHAOkDx8J/Main
Drawing a Circle
Drawing a Rectangle

=== Code Execution Successful ===
```

object program in java

1.

```
class Address {
    String city, state, country;

    Address(String city, String state, String country) {
        this.city = city;
```

```
        this.state = state;
        this.country = country;
    }
}

class Employee {
    String name;
    int id;
    Address address;

    Employee(String name, int id, Address address) {
        this.name = name;
        this.id = id;
        this.address = address;
    }

    void display() {
        System.out.println("Name: " + name);
        System.out.println("ID: " + id);
        System.out.println("City: " + address.city);
        System.out.println("State: " + address.state);
        System.out.println("Country: " + address.country);
    }
}

public class Main {
    public static void main(String[] args) {
        Address address1 = new Address("New York", "NY", "USA");
```

```
        Employee emp1 = new Employee("John Doe", 101, address1);
        emp1.display();
    }
}
```

output:

```
java -cp /tmp/NKJnaDr6R8/Main
Name: John Doe
ID: 101
City: New York
State: NY
Country: USA

=== Code Execution Successful ===
```

2.

```
class Car {
    String model;
    int year;

    Car(String model, int year) {
        this.model = model;
        this.year = year;
    }

    void display() {
        System.out.println("Model: " + model + ", Year: " + year);
    }
}
```

```
public class Main {
    public static void main(String[] args) {
        Car myCar = new Car("Toyota", 2020);
        myCar.display();
    }
}
```

oputput:

```
java -cp /tmp/1PyHuZIyqU/Main
Model: Toyota, Year: 2020

=== Code Execution Successful ===
```

3.

```
class Dog {
    String name;
    int age;

    void bark() {
        System.out.println(name + " is barking");
    }
}


public class Main {
    public static void main(String[] args) {
        Dog myDog = new Dog();
        myDog.name = "Buddy";
        myDog.age = 3;
        myDog.bark();
    }
```

}

output:

```
java -cp /tmp/Pp1l216Nnc/Main
Buddy is barking

=== Code Execution Successful ===
```

4.

```
class Person {
    private String name;
    private int age;

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getAge() {
        return age;
    }

    public void setAge(int age) {
        this.age = age;
    }
}
```

```
public class Main {
    public static void mai
n(String[] args) {
        Person person = new Person();
        person.setName("Alice");
        person.setAge(30);
        System.out.println("Name: " + person.getName());
        System.out.println("Age: " + person.getAge());
    }
}
```

output:

```
java -cp /tmp/dtZYOpWcrp/Main
Name: Alice
Age: 30

=== Code Execution Successful ===
```

5.

```
class Shape {
    void draw() {
        System.out.println("Drawing a shape");
    }
}


class Circle extends Shape {
    void draw() {
        System.out.println("Drawing a circle");
```

```
    }
}

class Rectangle extends Shape {
    void draw() {
        System.out.println("Drawing a rectangle");
    }
}

public class Main {
    public static void main(String[] args) {
        Shape myShape;
        myShape = new Circle();
        myShape.draw();
        myShape = new Rectangle();
        myShape.draw();
    }
}
```

output:

```
java -cp /tmp/uXkN3ROPJy/Main
Drawing a circle
Drawing a rectangle

=== Code Execution Successful ===
```