**Design Pattern And Principles**

**EXERCISE 9: Implementing the Command Pattern**

**Source Code**

// Main.java

// Step 2: Command Interface

interface Command {

void execute();

}

// Step 5: Receiver Class

class Light {

private String location;

public Light(String location) {

this.location = location;

}

public void turnOn() {

System.out.println(location + " light is ON");

}

public void turnOff() {

System.out.println(location + " light is OFF");

}

}

// Step 3: Concrete Commands

class LightOnCommand implements Command {

private Light light;

public LightOnCommand(Light light) {

this.light = light;

}

public void execute() {

light.turnOn();

}

}

class LightOffCommand implements Command {

private Light light;

public LightOffCommand(Light light) {

this.light = light;

}

public void execute() {

light.turnOff();

}

}

// Step 4: Invoker Class

class RemoteControl {

private Command command;

public void setCommand(Command command) {

this.command = command;

}

public void pressButton() {

if (command != null) {

command.execute();

} else {

System.out.println("No command set.");

}

}

}

// Step 6: Test the Command Implementation

public class Main {

public static void main(String[] args) {

Light livingRoomLight = new Light("Living Room");

Light kitchenLight = new Light("Kitchen");

Command livingRoomOn = new LightOnCommand(livingRoomLight);

Command livingRoomOff = new LightOffCommand(livingRoomLight);

Command kitchenOn = new LightOnCommand(kitchenLight);

Command kitchenOff = new LightOffCommand(kitchenLight);

RemoteControl remote = new RemoteControl();

System.out.println("--- Turning Living Room Light ON ---");

remote.setCommand(livingRoomOn);

remote.pressButton();

System.out.println("--- Turning Kitchen Light ON ---");

remote.setCommand(kitchenOn);

remote.pressButton();

System.out.println("--- Turning Living Room Light OFF ---");

remote.setCommand(livingRoomOff);

remote.pressButton();

System.out.println("--- Turning Kitchen Light OFF ---");

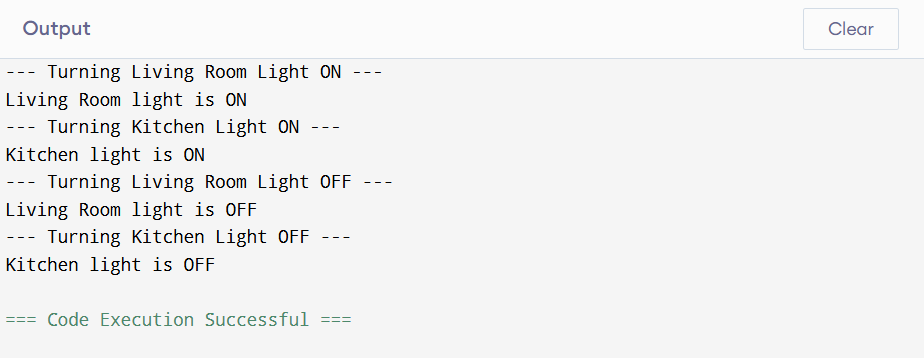
remote.setCommand(kitchenOff);

remote.pressButton();

}

}

**OUTPUT**

****