**PL ASSIGNMENT 12**

**Source Code:**

Client.java

import java.util.Scanner;

class Client {

public static void main(String[] args) {

String a;

Context context = new Context();

context.setState(new ConcreteState1());

Scanner sc = new Scanner(System.in);

System.out.println("Current state is " + context.getState());

char c = 'a';

while (c != 'a' || c != 'b') {

System.out.println("---------------------------------------");

System.out.println("Enter a or b");

a = sc.next();

// System.out.println("\nInput is " + a);

if (a.charAt(0) == 'a') {

context.onA();

c = 'a';

} else if (a.charAt(0) == 'b') {

context.onB();

c = 'b';

} else {

System.out.println("\nInvalid String");

break;

}

}

sc.close();

}

}

Context.java

public class Context {

AbstractState state;

// Concrete concrete;

public void setState(AbstractState s) {

this.state = s;

this.state.context = this;

}

public void onA() {

System.out.println("Context -> On A called\n");

this.state.onA();

}

public void onB() {

System.out.println("Context-> On B called\n");

this.state.onB();

}

public int getState() {

return this.state.state;

}

}

AbstractState.java

abstract class AbstractState {

Context context;

int state;

// public AbstractState(Context c) {

// this.context = c;

// }

public Context getcontext() {

return this.context;

}

public void setContext(Context c) {

this.context = c;

}

public abstract void onA();

public abstract void onB();

}

ConcreteState1.java

public class ConcreteState1 extends AbstractState {

public ConcreteState1() {

super();

this.state = 1;

}

@Override

public void onA() {

this.context.setState(new ConcreteState2());

System.out.println("State Changed to 2");

}

@Override

public void onB() {

this.context.setState(new ConcreteState3());

System.out.println("State Changed to 3");

}

}

ConcreteState2.java

public class ConcreteState2 extends AbstractState {

public ConcreteState2() {

super();

this.state = 2;

}

@Override

public void onA() {

this.context.setState(new ConcreteState1());

System.out.println("State Changed to 1");

}

@Override

public void onB() {

this.context.setState(new ConcreteState4());

System.out.println("State Changed to 4");

}

}

ConcreteState3.java

public class ConcreteState3 extends AbstractState {

public ConcreteState3() {

super();

this.state = 3;

}

@Override

public void onA() {

this.context.setState(new ConcreteState4());

System.out.println("State Changed to 4");

}

@Override

public void onB() {

this.context.setState(new ConcreteState1());

System.out.println("State Changed to 1");

}

}

ConcreteState4.java

public class ConcreteState4 extends AbstractState {

public ConcreteState4() {

super();

this.state = 4;

}

@Override

public void onA() {

this.context.setState(new ConcreteState3());

System.out.println("State Changed to 3");

}

@Override

public void onB() {

this.context.setState(new ConcreteState2());

System.out.println("State Changed to 2");

}

}

**OUTPUT:**

Text

Description automatically generated