Experiment – 14

Aim –Mementodesign pattern (Behavioral pattern)

Concept - **Memento** is a behavioral design pattern that lets you save and restore the previous state of an object without revealing the details of its implementation.

Memento.java

```java
public class Memento {
    private String order;

    public Memento(String order){
        this.order = order;
    }

    public String getOrder(){
        return order;
    }
}
```

Originator.java

```java
public class Originator {
    private String order;

    public void setOrder(String order){
        this.order = order;
    }

    public String getOrder(){
        return order;
    }

    public Memento saveStateToMemento(){
        return new Memento(order);
    }

    public void getStateFromMemento(Memento memento){
        order = memento.getOrder();
    }
}
```

CareTaker.java

```java
import java.util.ArrayList;
import java.util.List;

public class CareTaker {
    private List<Memento> mementoList = new ArrayList<Memento>();

    public void add(Memento order){
        mementoList.add(order);
    }
```

```java
    public Memento get(int index){
        return mementoList.get(index);
    }
}
```

Client.java

```java
public class Client {
    public static void main(String[] args) {

        Originator originator = new Originator();
        CareTaker careTaker = new CareTaker();

        originator.setOrder("Order #1");
        originator.setOrder("Order #2");
        careTaker.add(originator.saveStateToMemento());

        originator.setOrder("Order #3");
        careTaker.add(originator.saveStateToMemento());

        originator.setOrder("Order #4");
        System.out.println("Current Order: " + originator.getOrder());

        originator.getStateFromMemento(careTaker.get(0));
        System.out.println("First saved Order remaining to serve: " +
originator.getOrder());
        originator.getStateFromMemento(careTaker.get(1));
        System.out.println("Second saved Order remaining to serve: " +
originator.getOrder());
    }
}
```

Output :

```
"C:\Program Files\Java\jdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDE
Current Order: Order #4
First saved Order remaining to serve: Order #2
Second saved Order remaining to serve: Order #3

Process finished with exit code 0
```