

OOSE

Quiz2

11/30/2017

Name: 賴育謙 Jim ID: B10323024

1. This is an example of Command Pattern. The two receivers are Light and GarageDoor. Please write the code in Java based on the direction. 30%

//Please specify the class Light with methods on() and off(). You may use System.out.println() to describe the movement, such as: "Light is ..."

public class Light {

}

//Please specify the class GarageDoor with methods up(), down(), stop(), lightOn(), and lightoff(), and off(). You may use System.out.println() to describe the movement, such as: "Garage Door is ..."

public class GarageDoor {

//Please specify the interface Command with the method used in Command Pattern.

public interface Command {

}

//This GarageDoorOpenCommand will have its suitable receiver and execute the garageDoor.up() function. please specify it.

public class GarageDoorOpenCommand implements Command {

//Have its suitable receiver

//Specify the Constructor

//Execute the garageDoor.up() function.

}

//Then describe the LightOnCommand implements Command.

```
import java.util.*;
```

// This is the invoker.

```
public class SimpleRemoteControl {  
    Command slot;  
  
    public SimpleRemoteControl() {}
```

//Describe the important function of the invoker

```
    public void buttonWasPressed() {  
        slot.execute();  
    }  
}
```

//This is the execution code, please write down the result.

```
public class RemoteControlTest {  
    public static void main(String[] args) {  
        SimpleRemoteControl remote = new SimpleRemoteControl();  
        Light light = new Light();  
        GarageDoor garageDoor = new GarageDoor();  
        LightOnCommand lightOn = new LightOnCommand(light);  
        GarageDoorOpenCommand garageOpen =  
3
```

```
new GarageDoorOpenCommand(garageDoor);
```

```
remote.setCommand(lightOn);
```

```
remote.buttonWasPressed();
```

```
remote.setCommand(garageOpen);
```

```
remote.buttonWasPressed();
```

```
}
```

```
}
```

Result:

2. The following Cruise control state transition table is a well-designed table, please convert the table to a state diagram. 20%

State & Substate	Event	Lever down	Lever up and hold	Lever down and hold	Lever released	Lever pulled	Brake applied	Lever up	ON-OFF button pressed
Cruise deactivated (init)		NA	NA	NA	NA	NA	NA	NA	Cruise activated
Cruising Activated	Cruising canceled (init)	Cruising/set desired speed	Increasing speed	Decreasing speed	NA	NA	NA	Cruising	Cruise deactivated
	Cruising	Cruising/set desired speed	Increasing speed	Decreasing speed	NA	Cruising canceled	Cruising canceled	NA	
	Increasing speed	NA	NA	NA	Cruising/set desired speed	NA	NA	NA	
	Decreasing speed	NA	NA	NA	Cruising/set desired speed	NA	NA	NA	

3. Based on the state diagram you have drawn, please write the code in Java. If writing code is too difficult for you, you may choose to describe the abnormalities including dead state, unreachable state, neglected event, impossible transition, nondeterministic transitions, redundant transitions, and inconsistent transitions. Then make up examples related to this cruise control state transition. 30%

4. Please compare pros and cons of class adapter and object adapter. 20%

4

