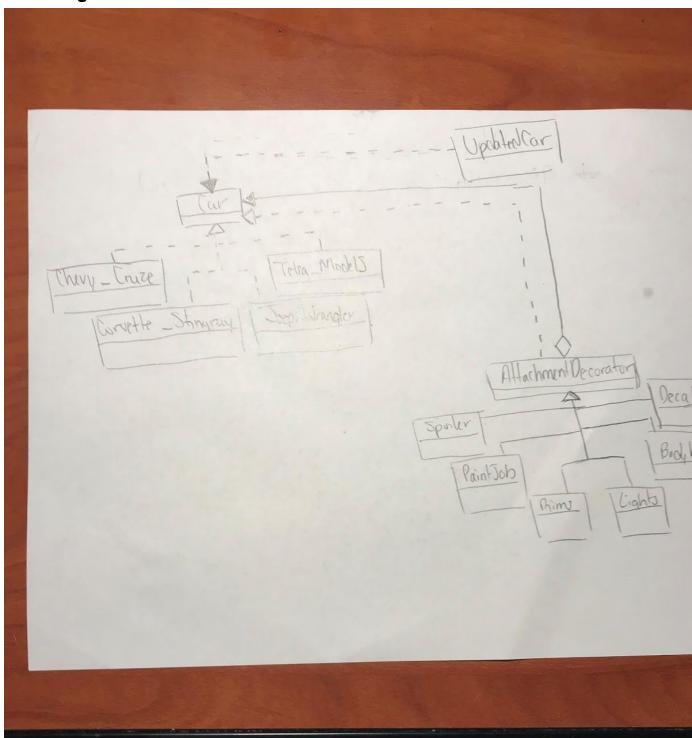
Name: Dominique Cooper Eagle ID:900929361 Course: CSCI 5335

UML Diagram:



```
Car Interface and 4 implementations:
```

```
public interface Car {
public void carType();
public class Chevy_Cruze implements Car{
public void carType() {
 System.out.println("Car being modified: Chevy Cruze");
public class Corvette_Stingray implements Car {
public void carType() {
 System.out.println("Car being modified: Corvette Stingray");
}
public class Jeep_Wrangler implements Car {
public void carType() {
 System.out.println("Car being modified: Jeep Wrangler");
}
public class Tesla_ModelS implements Car{
public void carType() {
 System.out.println("Car being modified: Tesla Model S");
```

Abstract Class and also implementation of Car class, AttachmentDecorator and its six extended classes:

public abstract class AttachmentDecorator implements Car {

```
protected Car attachment;
 public AttachmentDecorator(Car attachment) {
 this.attachment = attachment;
 }
 public void carType() {
 attachment.carType();
}
public class BodyKit extends AttachmentDecorator {
public BodyKit(Car attachment) {
 super(attachment);
 public void carType() {
 attachment.carType();
 setBodyKit(attachment);
 }
 private void setBodyKit(Car attachment) {
 System.out.println("Modified attachment obtained: BodyKit");
 }
}
public class Decal extends AttachmentDecorator {
 public Decal(Car attachment) {
 super(attachment);
 }
 public void carType() {
  attachment.carType();
  setDecal(attachment);
 }
 private void setDecal(Car attachment) {
  System.out.println("Modified attachment obtained: Decal");
 }
```

```
public class Decal extends AttachmentDecorator {
 public Decal(Car attachment) {
 super(attachment);
 }
 public void carType() {
  attachment.carType();
  setDecal(attachment);
 }
 private void setDecal(Car attachment) {
  System.out.println("Modified attachment obtained: Decal");
public class Lights extends AttachmentDecorator {
 public Lights(Car attachment) {
 super(attachment);
 public void carType() {
  attachment.carType();
  setLights(attachment);
 }
 private void setLights(Car attachment) {
  System.out.println("Modified attachment obtained: Lights");
 }
public class PaintJob extends AttachmentDecorator {
 public PaintJob(Car attachment) {
 super(attachment);
 }
 public void carType() {
  attachment.carType();
  setPaintJob(attachment);
 }
 private void setPaintJob(Car attachment) {
  System.out.println("Modified attachment obtained: PaintJob");
 }
 }
```

```
public class Rims extends AttachmentDecorator{
 public Rims(Car attachment) {
 super(attachment);
 public void carType() {
  attachment.carType();
  setRims(attachment);
 private void setRims(Car attachment) {
  System.out.println("Modified attachment obtained: Rims");
 }
 }
public class Spoiler extends AttachmentDecorator {
 public Spoiler(Car attachment) {
 super(attachment);
 public void carType() {
  attachment.carType();
  setSpoiler(attachment);
 }
 private void setSpoiler(Car attachment) {
  System.out.println("Modified attachment obtained: Spoiler");
 }
Test and Compile UpdatedClass:
public class UpdatedCar {
public static void main(String[] args) {
 Car ChevyCruze = new BodyKit(new Decal(new PaintJob(new Chevy_Cruze())));
 ChevyCruze.carType();
 System.out.println("========");
 Car CorvetteStingray = new BodyKit(new Rims(new PaintJob(new Lights(new Spoiler(new
Corvette_Stingray()))));
 CorvetteStingray.carType();
 System.out.println("=======");
```

```
Car JeepWrangler = new Rims(new PaintJob(new Lights(new Jeep_Wrangler())));
JeepWrangler.carType();
System.out.println("============");

Car TeslaModelS = new Rims(new Lights(new Tesla_ModelS()));
TeslaModelS.carType();
System.out.println("=============");
}
```

Working Java Code:

```
Java - Object-Oriented Design/src/UpdatedCar.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
🖹 💲 🦰 🗍 🛛 BodyKitjava 🗓 Rims.java 🗓 Spoiler.java 🗓 Decal.java 🗓 Paintlob.java
☐ Package Explorer □

☑ Lights.java ☑ UpdatedCar.java 
☐ Warner

▼ B Object-Oriented Design

                                                      public class UpdatedCar {
  > A JRE System Library [JavaSE-14]
                                                          public static void main(String[] args) {
                                                             Car ChevyCruze = new BodyKit(new Decal(new PaintJob(new Chevy_Cruze())));
     ChevyCruze.carType();
       > AttachmentDecorator.java
                                                             System.out.println("======");
       > D BodyKit,java
                                                             Car CorvetteStingray = new BodyKit(new Rims(new PaintJob(new Lights(new Spoiler(new Corvette_Stingray())))));
      > 🧗 Car.java
                                                             CorvetteStingray.carType();
       > Chevy_Cruze.java
                                                             System.out.println("======");
       > Corvette_Stingray.java
                                                             Car JeepWrangler = new Rims(new PaintJob(new Lights(new Jeep_Wrangler())));
       > Jeep_Wrangler.java
                                                             JeepWrangler.carType();
                                                             System.out.println("==
       > / Lights.java
       > D PaintJob.java
                                                             Car TeslaModelS = new Rims(new Lights(new Tesla_ModelS()));
       > I) Rims.java
                                                             TeslaModelS.carType();
       > D Spoiler.java
                                                             System.out.println("====
       > 🚺 Tesla_ModelS.java
       > D UpdatedCar.java
   > 🗁 Assignment1
   > > Assignment2
    Assignment3
                                                 📳 Problems @ Javadoc 🚇 Declaration 📮 Console 🛭
                                                                                                                                <terminated> UpdatedCar [Java Application] D:\Java\bin\javaw.exe (Sep 10, 2020, 3:37:54 PM - 3:38:10 PM)
                                                 Car being modified: Chevy Cruze
                                                 Modified attachment obtained: PaintJob
                                                 Modified attachment obtained: Decal
                                                 Modified attachment obtained: BodyKit
                                                 Car being modified: Corvette Stingray
                                                 Modified attachment obtained: Spoiler
                                                 Modified attachment obtained: Lights
                                                 Modified attachment obtained: PaintJob
                                                 Modified attachment obtained: Rims
                                                 Modified attachment obtained: BodyKit
                                                                                                       2:1:2
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```

.....