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OOAD_assignment6(Decorator_Pattern)

Output:

Problems @ Javadoc Declaration Console ✕

\<terminated\> Main (4) [Java Application] C:\Program Files (x86)\Java\jre1.8.0_101\bin\javaw.exe (Aug 14, 2017, 7:19:21 PM)

```
Enter Car type:
1. C
2. E
3. CS
3
You selected: CS Cost is: 54000.0
Enter Additional features:
1. V-8 Engine
2. V-12 Engine
3. Sun Roof
4. Towing Package
5. Oversized Gas Tank
6. Puma Skin Seats
7. Seal Skin Seats
8. Komodo Dragon Skin Seats
9. 32oz Cup Holders
10. Blaupunkt New York 800 Radio
11. Spare Tire
12. Free First Oil Change
13. Quit
1
2
3
8
11
13
V-8 not available on CS
New Order
You selected: CS, V8Engine, V12Engine, Sun Roof, Komodo Dragon Seats, Spare Tire
Cost is: 75400.0
End Order
```

Problems @ Javadoc Declaration Console ✕

\<terminated\> Main (4) [Java Application] C:\Program Files (x86)\Java\jre1.8.0_101\bin\javaw.exe (Aug 14, 2017, 8:08:33 PM)

```
Enter Car type:
1. C
2. E
3. CS
1
You selected: C Cost is: 28000.0
Enter Additional features:
1. V-8 Engine
2. V-12 Engine
3. Sun Roof
4. Towing Package
5. Oversized Gas Tank
6. Puma Skin Seats
7. Seal Skin Seats
8. Komodo Dragon Skin Seats
9. 32oz Cup Holders
10. Blaupunkt New York 800 Radio
11. Spare Tire
12. Free First Oil Change
13. Quit
1
4
6
12
13
Puma Skin Seats not available on C
New Order
You selected: C, V8Engine, Towing Package, Puma Skin Seats, Free First Oil Change
Cost is: 35075.0
```

Code:

// 1. Main.java

```java
package ooad_assign6;

import java.util.Scanner;

public class Main  {

    public static void main(String args[]){

        System.out.println("Enter Car type: "+"\n"+"1. C"+"\n"+"2. E"+"\n"+"3. CS");
        Scanner sc= new Scanner(System.in);
        int car_choice = sc.nextInt();
        Car c=null;


        switch(car_choice){
        case 1:
            c= new Car_C();
            break;
        case 2:
            c= new Car_E();
            break;
        case 3:
            c= new Car_CS();
            break;
        default:
            System.err.println("Invalid option");

        }
        System.out.println("You selected: " + c.getDesc() + " Cost is: "+ c.cost());
        System.out.println("Enter Additional features: "+"\n" + "1. V-8 Engine"+"\n"+"2. V-12 Engine"+"\n"+"3. Sun Roof"+"\n"+"4. Towing Package"+"\n"+"5. Oversized Gas Tank"+"\n"+"6. Puma Skin Seats"+"\n"+"7. Seal Skin Seats"+"\n"+"8. Komodo Dragon Skin Seats"+"\n"+"9. 32oz Cup Holders"+"\n"+"10. Blaupunkt New York 800 Radio"+"\n"+"11. Spare Tire"+"\n"+"12. Free First Oil Change"+"\n"+"13. Quit");

        int additional_features = sc.nextInt();

        do{

            switch(additional_features){
            case 1:
                c= new V8Engine(c);
                break;
            case 2:
                c= new V12Engine(c);
                break;
            case 3:
                c= new SunRoof(c);
                break;
            case 4:
                c= new TowingPackage(c);
                break;
            case 5:
```

```java
                          c= new OverSizedGasTank(c);
                          break;
                  case 6:
                          c= new PumaSkinSeats(c);
                          break;
                  case 7:
                          c= new SealSkinSeats(c);
                          break;
                  case 8:
                          c= new KomodoDragonSeats(c);
                          break;
                  case 9:
                          c= new CupHolders(c);
                          break;
                  case 10:
                          c= new BlaupunktRadio(c);
                          break;
                  case 11:
                          c= new SpareTire(c);
                          break;
                  case 12:
                          c= new OilChange(c);
                          break;
                  }
                  additional_features=sc.nextInt();
          } while(additional_features!=13);
          System.out.println("New Order"+"\n"+"You selected: " + c.getDesc() + "\n" + "Cost is:
"+ c.cost()+"\n"+"End Order");
          }
      }
```

// 2. Car.java

```java
package ooad_assign6;

public abstract class Car {

      public int Total_Price=0;
      protected    String desc ;
      protected static String car_type="";
  public    Car() {
          desc = "unknown car";
      }
   public String  getDesc() {
          return desc;
      }

      public void setCarType(String s){
          car_type=s;
      }

      public String getCarType(){
          return car_type;
      }
```

```java
    public double cost(){
        return 0;
    }

}
```

// 3. Additional_Features.java

```java
package ooad_assign6;

public class Additional_Features extends Car {

    Additional_Features(){}

}
```

// 4. BlaupunktRadio.java

```java
package ooad_assign6;

public class BlaupunktRadio extends Additional_Features {
    Car car;
     public      BlaupunktRadio(Car c) {
            car =c;
        }
        public String  getDesc() {
            return car.getDesc() + ", Blaupunkt New York 800 Radio";
        }
        public  double cost() {
            return 900 + car.cost();
        }

}
```

// 5. Car_C.java

```java
package ooad_assign6;

public class Car_C extends Car {

    public      Car_C() {
        desc = "C";
        setCarType("C");
    }
    public  double cost() {
        return 28000;
    }

}
```

//6. Car_CS.java

```java
package ooad_assign6;

public class Car_CS extends Car{
    public         Car_CS() {
            desc = "CS";
            setCarType("CS");
    }
public  double cost() {
            return 54000;
    }

}
```

// 7. Car_E.java

```java
package ooad_assign6;

public class Car_E extends Car {

    public        Car_E() {
                desc = "E";
                setCarType("E");
        }
        public  double cost() {
                return 41000;
        }

}
```

//8. CupHolders.java

```java
package ooad_assign6;

public class CupHolders extends Additional_Features {

    Car car;
     public        CupHolders(Car c) {
                car =c;
        }
        public String  getDesc() {
                return car.getDesc() + ", 32oz Cup Holders";
        }
        public  double cost() {
                return 1 + car.cost();
        }


}
```

// 9. KomodoDragonSeats.java

```java
package ooad_assign6;
```

```java
public class KomodoDragonSeats extends Additional_Features {
        Car car;
         public        KomodoDragonSeats(Car c) {
                        car =c;
                }
                public String  getDesc() {
                        return car.getDesc() + ", Komodo Dragon Seats";
                }
                public  double cost() {
                        if(car.getCarType().equals("CS"))
                        return 12000 + car.cost();
                        else{
                                System.err.println("Komodo Dragon Seats not available on
"+car.getCarType());
                                return 0 + car.cost();
                        }
                }


}
```

// 10. Oil Change.java

```java
package ooad_assign6;

public class OilChange extends Additional_Features {
        Car car;
         public        OilChange(Car c) {
                        car =c;
                }
                public String  getDesc() {
                        return car.getDesc() + ", Free First Oil Change";
                }
                public  double cost() {
                        return 75 + car.cost();
                }

}
```

// 11. OverSizedGasTank.java

```java
package ooad_assign6;

public class OverSizedGasTank extends Additional_Features {

        Car car;
         public        OverSizedGasTank(Car c) {
                        car =c;
                }
                public String  getDesc() {
                        return car.getDesc() + ", Over Sized Gas Tank";
                }
                public  double cost() {
                        return 900 + car.cost();
                }
```

```
}
```

// 12. Puma Skin Seats.java

```java
package ooad_assign6;

public class PumaSkinSeats extends Additional_Features {

    Car car;
     public      PumaSkinSeats(Car c) {
            car =c;
        }
        public String  getDesc() {
            return car.getDesc() + ", Puma Skin Seats";
        }
        public  double cost() {
            if(car.getCarType().equals("E"))
            return 7000 + car.cost();
            else{
                System.err.println("Puma Skin Seats not available on
"+car.getCarType());
                return 0 + car.cost();
            }
        }


}
```

// 13. Seal Skin Seats.java

```java
package ooad_assign6;

public class SealSkinSeats extends Additional_Features {

    Car car;
     public      SealSkinSeats(Car c) {
            car =c;
        }
        public String  getDesc() {
            return car.getDesc() + ", Seal Skin Seats";
        }
        public  double cost() {
            if(car.getCarType().equals("C"))
            return 5600 + car.cost();
            else{
                System.err.println("Seal Skin Seats not available on
"+car.getCarType());
                return 0 + car.cost();
            }
        }


}
```

// 14. Spare Tire.java

```java
package ooad_assign6;

public class SpareTire extends Additional_Features {
    Car car;
    public      SpareTire(Car c) {
            car =c;
        }
        public String  getDesc() {
            return car.getDesc() + ", Spare Tire";
        }
        public  double cost() {
            return 400 + car.cost();
        }

}
```

// 15. Sun Roof.java

```java
package ooad_assign6;

public class SunRoof extends Additional_Features {

    Car car;
    public      SunRoof(Car c) {
            car =c;
        }
        public String  getDesc() {
            return car.getDesc() + ", Sun Roof";
        }
        public  double cost() {
            if(car.getCarType().equals("C"))
            return 1900 + car.cost();
            else if(car.getCarType().equals("E"))
            return 2200 + car.cost();
            else
            return 3000 + car.cost();

        }

}
```

// 16. Towing Package.java

```java
package ooad_assign6;

public class TowingPackage extends Additional_Features {
    Car car;
    public      TowingPackage(Car c) {
            car =c;
        }
        public String  getDesc() {
            return car.getDesc() + ", Towing Package";
```

```
        }
        public  double cost() {
                return 3000 + car.cost();
        }

}
```

// 17. V12Engine.java

```java
package ooad_assign6;

public class V12Engine extends Additional_Features {
        Car car;
         public        V12Engine(Car c) {
                car =c;
        }
        public String  getDesc() {
                return car.getDesc() + ", V12Engine";
        }
        public  double cost() {
                if(car.getCarType().equals("E")||car.getCarType().equals("CS"))
                return 6000 + car.cost();
                else{
                        System.err.println("V-12 not available on "+car.getCarType());
                        return 0 + car.cost();
                }

        }

}
```

// 18. V8Engine.java

```java
package ooad_assign6;

public class V8Engine extends Additional_Features {
        Car car;
         public        V8Engine(Car c) {
                car =c;
        }
        public String  getDesc() {
                return car.getDesc() + ", V8Engine";
        }
        public  double cost() {

                if(car.getCarType().equals("C"))
                return 4000 + car.cost();
                else{
                        System.err.println("V-8 not available on "+car.getCarType());
                        return 0 + car.cost();
                }
        }

}
```