**Prototype Design Pattern**

**Assignment - 2**

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* **Program :** Create a Prototype Design Pattern for Car Specifications Example.
* **Code :**

import java.util.\*;

public class CarSpecification implements Cloneable

{

private List<String> carspecs;

public CarSpecification()

{

this.carspecs = new ArrayList<String>();

}

public CarSpecification(List<String> list)

{

this.carspecs = list;

}

public void insertData()

{

carspecs.add("V8 Engine");

carspecs.add("SUV");

carspecs.add("Bi-Turbo");

carspecs.add("Quad-Tip Exhaust");

}

public void modify(String oldItem, String newItem)

{

int index = carspecs.indexOf(oldItem);

if (index != -1)

{

carspecs.set(index, newItem);

System.out.println("Modification successful.");

}

else

{

System.out.println(oldItem + " not found in the clothing list.");

}

}

public List<String> getSpecList()

{

return this.carspecs;

}

// Shallow Copy

public Object clone1() throws CloneNotSupportedException

{

return super.clone();

}

// Deep Copy

public Object clone2() throws CloneNotSupportedException

{

List<String> tempList = new ArrayList<String>();

for (String s: this.carspecs)

{

tempList.add(s);

}

return new CarSpecification(tempList);

}

}

import java.util.\*;

public class PrototypePattern2

{

public static void main(String[] args) throws CloneNotSupportedException

{

CarSpecification a = new CarSpecification();

a.insertData();

CarSpecification b = (CarSpecification) a.clone1();

System.out.println("For Shallow Copy: ");

System.out.println("Original List: "+ a.getSpecList());

System.out.println("Clone List: "+ b.getSpecList());

CarSpecification c = (CarSpecification) a.clone2();

System.out.println("For Deep Copy:");

System.out.println("Original List: "+a.getSpecList());

System.out.println("Clone List: "+c.getSpecList());

List<String> list = c.getSpecList();

list.add("Mafia SUV");

System.out.println("Clone list after addition of one element: "+c.getSpecList());

c.modify("V8 Engine","Roaring V8");

System.out.println("Clone list after modifying one element: "+c.getSpecList());

c.getSpecList().remove("SUV");

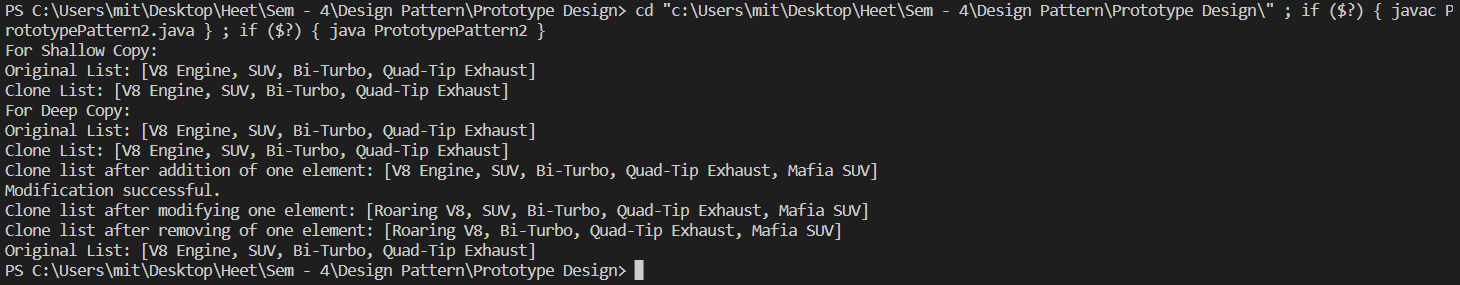
System.out.println("Clone list after removing of one element: "+list);

System.out.println("Original List: "+a.getSpecList());

}

}

* **Output :**

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