**LAB ASSIGNMENT 8**

**COMPOSITE DESIGN PATTERN**

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DIV-2 G4

DIAGRAM:

Congo

Drum

Violin

Guitar

Harmonium

Piano

CODE:

* **Inside compositeDP package: -**
* Music\_Shop.java //main file

package compositeDP;

public class Music\_Shop {

    public static void main(String[] args) {

        Component st1 = new Leaf("Guitar",7000);

        Component st2 = new Leaf("Violin",8500);

        Component pr1 = new Leaf("Drum",8000);

        Component pr2 = new Leaf("Congo",5550);

        Component key1 = new Leaf("Piano",6500);

        Component key2 = new Leaf("Harmonium",7450);

        Composite string = new Composite("STRING");

        Composite percussion = new Composite("PERCUSSION");

        Composite keyboard = new Composite("KEYBOARD");

        Composite allInstruments = new Composite("All\_Instruments");

        string.addComponent(st1);

        string.addComponent(st2);

        percussion.addComponent(pr1);

        percussion.addComponent(pr2);

        keyboard.addComponent(key1);

        keyboard.addComponent(key2);

        allInstruments.addComponent(string);

        allInstruments.addComponent(percussion);

        allInstruments.addComponent(keyboard);

        allInstruments.showPrice();

        //string.showPrice();

        //percussion.showPrice();

        //keyboard.showPrice();

    }

}

* Instrument\_Shop.java

package compositeDP;

import java.util.ArrayList;

import java.util.List;

interface Component{

    void showPrice();

}

class Leaf implements Component{

    int price;

    String name;

    public Leaf(String name , int price) {

        this.price = price;

        this.name = name;

    }

    @Override

    public void showPrice() {

        System.out.println(name + " : " + price + '\n');

    }

}

class Composite implements Component{

    String name;

    List<Component> items = new ArrayList<>();

    public Composite(String name) {

        this.name = name;

    }

    public void addComponent(Component com){

        items.add(com);

    }

    @Override

    public void showPrice() {

        System.out.println(name);

        for (Component c : items){

            c.showPrice();

        }

    }

}

OUTPUT:

