**package** lab8;

**import** java.util.ArrayList;

**import** java.util.List;

**public** **class** Electronics **implements** Visitable{

**public** List<Visitable> shoppingCart = **new** ArrayList<Visitable>();

**protected** **double** cartTotal;

**protected** **int** cartItems;

@Override

**public** **void** accept(Visitor visitor) {

// **TODO** Auto-generated method stub

visitor.visit(**this**);

**for** (Visitable vis: shoppingCart) {

vis.accept(visitor);

}

}

**public** **double** returnTotal() {

**return** cartTotal;

}

**public** **void** addToCart(Visitable item) {

**if** (item **instanceof** Phone) {

**for**(**int** i = 0; i < ((Phone) item).getQuant(); i++)

{

cartTotal += ((Phone) item).getPrice();

cartItems++;

}

}

**else** **if** (item **instanceof** Laptop)

{

**for**(**int** i = 0; i < ((Laptop) item).getQuant(); i++)

{

cartTotal += ((Laptop) item).getPrice();

cartItems++;

}

}

**else** **if** (item **instanceof** VideoGame)

{

**for**(**int** i = 0; i < ((VideoGame) item).getQuant(); i++)

{

cartTotal += ((VideoGame) item).getPrice();

cartItems++;

}

}

shoppingCart.add(item);

}

}

**package** lab8;

**public** **class** Laptop **implements** Visitable{

**private** **double** lapPrice;

**private** String lapCompName;

**private** String lapBrandName;

**protected** **int** quant;

Laptop(){

lapPrice = 0.0;

lapCompName = "";

lapBrandName = "";

quant = 0;

}

Laptop(**double** nPrice, String nCompName, String nBrandName, **int** nQuant){

lapPrice = nPrice;

lapCompName = nCompName;

lapBrandName = nBrandName;

quant = nQuant;

**if** (nCompName.equalsIgnoreCase("Surface"))

surfacePriceReduction();

}

**public** **double** getQuant() {

**return** quant;

}

**public** **double** getPrice() {

**return** lapPrice;

}

**public** **void** setPrice(**double** price) {

lapPrice = price;

}

**public** **void** surfacePriceReduction() {

System.***out***.println("Surface Discout applied");

lapPrice = lapPrice \* 0.8;

}

**public** **void** print() {

System.***out***.println(lapBrandName + " " + lapCompName + "\nQuantity: " + quant + "\nTotal Price: $" + lapPrice \* quant);

}

@Override

**public** **void** accept(Visitor visitor) {

// **TODO** Auto-generated method stub

visitor.visit(**this**);

}

}

**package** lab8;

**import** java.util.Scanner;

**public** **class** Main {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

Electronics allItems = **new** Electronics();

Scanner in = **new** Scanner(System.***in***);

//allItems.addToCart(new Laptop(500.0, "Surface", "Microsoft", 2));

//allItems.addToCart(new Phone(1000.0, "X Max", "Apple", 1));

//allItems.addToCart(new Phone(700.0, "Galaxy S8", "Samsung", 1));

//allItems.addToCart(new VideoGame(300.0, "Playstation", "Sony", 2));

//allItems.addToCart(new VideoGame(300.0, "Xbox One", "Microsoft", 2));

**int** choice = 0;

**do** {

System.***out***.println("Welcome to the Microsoft Store!");

System.***out***.println("What would you like to buy?");

System.***out***.println("Hit 1 for phone, 2 for laptop, 3 for video game console, 4 to quit");

choice = in.nextInt();

**switch**(choice) {

**case** 1 : {

System.***out***.println("How much is the phone?");

**double** price = in.nextDouble();

System.***out***.println("What's the name of it?");

String name = in.next();

System.***out***.println("Which company desgined it");

String brand = in.next();

System.***out***.println("How much is the phone?");

**int** quant = in.nextInt();

allItems.addToCart(**new** Phone(price, name, brand, quant));

**break**;

}

**case** 2 : {

System.***out***.println("How much is the laptop?");

**double** price = in.nextDouble();

System.***out***.println("What's the name of it?");

String name = in.next();

System.***out***.println("Which company desgined it");

String brand = in.next();

System.***out***.println("How much is the phone?");

**int** quant = in.nextInt();

allItems.addToCart(**new** Laptop(price, name, brand, quant));

**break**;

}

**case** 3 : {

System.***out***.println("How much is the console?");

**double** price = in.nextDouble();

System.***out***.println("What's the name of it?");

String name = in.next();

System.***out***.println("Which company desgined it");

String brand = in.next();

System.***out***.println("How much is the phone?");

**int** quant = in.nextInt();

allItems.addToCart(**new** VideoGame(price, name, brand, quant));

**break**;

}

**default** : {

System.***out***.println("Thank you! See you again!");

**break**;

}

}

}**while**(choice < 4);

**for** (Visitable vis : allItems.shoppingCart) {

**if** (vis **instanceof** Phone)

((Phone) vis).print();

**else** **if** (vis **instanceof** Laptop)

((Laptop) vis).print();

**else** **if** (vis **instanceof** VideoGame)

((VideoGame) vis).print();

**else**

System.***out***.println("Not in cart");

}

allItems.accept(**new** PriceChecker());

System.***out***.println("Cart total: $" + allItems.returnTotal());

}

}

**package** lab8;

**public** **class** Phone **implements** Visitable{

**private** **double** pPrice;

**private** String pModName;

**private** String pBrandName;

**protected** **int** quant;

Phone(){

pPrice = 0.0;

pModName = "";

pBrandName = "";

quant = 0;

}

Phone(**double** nPrice, String nModName, String nBrandName, **int** nQuant){

pPrice = nPrice;

pModName = nModName;

pBrandName = nBrandName;

quant = nQuant;

**if**(pBrandName.equalsIgnoreCase("APPLE"))

{

**if**(pPrice > 400.0)

appleDiscount();

}

**else** **if**(pBrandName.equalsIgnoreCase("SAMSUNG"))

{

**if**(pModName.equalsIgnoreCase("Galaxy S8"))

galaxyDiscount();

}

}

**public** **double** getPrice() {

**return** pPrice;

}

**public** **double** getQuant() {

**return** quant;

}

**public** **void** setPrice(**double** price) {

pPrice = price;

}

**public** **void** appleDiscount() {

System.***out***.println("Apple Discount applied");

pPrice -= 30;

}

**public** **void** galaxyDiscount() {

System.***out***.println("Samsung Discount applied");

pPrice = pPrice \* 0.8;

}

**public** **void** print() {

System.***out***.println(pBrandName + " " + pModName + "\nQuantity: " + quant + "\nTotal Price: $" + pPrice \* quant);

}

@Override

**public** **void** accept(Visitor visitor) {

// **TODO** Auto-generated method stub

visitor.visit(**this**);

}

}

**package** lab8;

**public** **class** PriceChecker **implements** Visitor{

@Override

**public** **void** visit(Laptop laptop) {

// **TODO** Auto-generated method stub

System.***out***.println("Adding laptop to cart");

}

@Override

**public** **void** visit(Phone phone) {

// **TODO** Auto-generated method stub

System.***out***.println("Adding phone to cart");

}

@Override

**public** **void** visit(VideoGame videoGame) {

// **TODO** Auto-generated method stub

System.***out***.println("Adding video game to cart");

}

@Override

**public** **void** visit(Electronics electronics) {

// **TODO** Auto-generated method stub

System.***out***.println("Filling cart");

}

}

**package** lab8;

**public** **class** VideoGame **implements** Visitable{

**private** **double** vgPrice;

**private** String vgGameName;

**private** String vgCompName;

**protected** **int** quant;

VideoGame(){

vgPrice = 0.0;

vgGameName = "";

vgCompName = "";

quant = 1;

}

VideoGame(**double** nPrice, String nGameName, String nCompName, **int** nQuant){

vgPrice = nPrice;

vgGameName = nGameName;

vgCompName = nCompName;

quant = nQuant;

**if**(nCompName.equalsIgnoreCase("Sony"))

{

**if**(nGameName.equalsIgnoreCase("Playstation"))

sonyDiscount();

}

**else** **if**(nCompName.equalsIgnoreCase("Microsoft"))

{

**if**(nGameName.equalsIgnoreCase("Xbox One"))

{

**if**(quant == 2)

XboxDiscount();

}

}

}

**public** **double** getQuant() {

**return** quant;

}

**public** **double** getPrice() {

**return** vgPrice;

}

**public** **void** setPrice(**double** price) {

vgPrice = price;

}

**public** **void** sonyDiscount() {

System.***out***.println("Sony Discount applied");

vgPrice = vgPrice \* 0.8;

}

**public** **void** XboxDiscount() {

System.***out***.println("Xbox Discount applied");

vgPrice = vgPrice \* 0.7;

}

**public** **void** print() {

System.***out***.println(vgCompName + " " + vgGameName + "\nQuantity: " + quant + "\nTotal Price: $" + vgPrice \* quant);

}

@Override

**public** **void** accept(Visitor visitor) {

// **TODO** Auto-generated method stub

visitor.visit(**this**);

}

}

**package** lab8;

**public** **interface** Visitable {

**public** **abstract** **void** accept(Visitor visitor);

}

**package** lab8;

**public** **interface** Visitor {

**public** **abstract** **void** visit(Laptop laptop);

**public** **abstract** **void** visit(Phone phone);

**public** **abstract** **void** visit(VideoGame videoGame);

**public** **abstract** **void** visit(Electronics electronics);

}