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1: abstract class Item {
2:     protected double basePrice;
3:     double getPrice() { return basePrice; }
4:     boolean isPerishable() { return false; }
5: }

6: class Foodstuff extends Item {
7:     Foodstuff(double price) { this.basePrice = price; }
8:     boolean isPerishable() { return true; }
9: }

10: class Book extends Item {
11:     private String title;
12:     private String ISBN;
13:     Book(String title, String ISBN, double price) {
14:         this.basePrice = price;
15:         this.title = title;
16:         this.ISBN = ISBN;
17:     }
18: }

19: class ShoppingCart {
20:     private ArrayList<Item> contents;
21:     private User owner;
22:     private PricingStrategy strat;

23:     ShoppingCart(User owner) {
24:         this.owner = owner;
25:         if (!owner.isPrimeUser()) {
26:             strat = new DefaultPricingStrategy();
27:         } else {
28:             strat = new FixedDiscountPricingStrategy(.2);
29:         }
30:         contents = new ArrayList<Item>();
31:     }

32:     double getPrice() {
33:         return strat.computePrice(this);
34:     }

35:     void add(Item item, int quantity) {
36:         for (int i=0; i<quantity; i++) { contents.add(item); }
37:     }

38:     void add(Item item) { add(item,1); }

39:     void setPricingStrategy(PricingStrategy newStrategy) {
40:         strat = newStrategy;
41:     }

42:     public String toString() {
43:         return "A " + contents.size() + "-item, $" + getPrice() +
44:             " cart owned by " + owner.getName();
45:     }

46:     ArrayList<Item> getContents() {
47:         return contents;
48:     }
49: }

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50: interface PricingStrategy {
51:     double computePrice(ShoppingCart sc);
52: }

53: class DefaultPricingStrategy implements PricingStrategy {
54:     protected DefaultPricingStrategy() { }
55:     public double computePrice(ShoppingCart sc) {
56:         double price = 0.0;
57:         for (Item item : sc.getContents()) {
58:             price += item.getPrice();
59:         }
60:         return price;
61:     }
62: }

63: class DiscountPerishablePricingStrategy implements PricingStrategy {
64:     private double perishableDiscount;
65:     DiscountPerishablePricingStrategy(double d) {
66:         this.perishableDiscount = d;
67:     }
68:     public double computePrice(ShoppingCart sc) {
69:         double price = 0.0;
70:         for (Item item : sc.getContents()) {
71:             if (item.isPerishable()) {
72:                 price += (1 - perishableDiscount) * item.getPrice();
73:             } else {
74:                 price += item.getPrice();
75:             }
76:         }
77:         return price;
78:     }
79: }

80: class FixedDiscountPricingStrategy extends DefaultPricingStrategy implements
PricingStrategy {
81:     private double fixedDiscount;
82:     FixedDiscountPricingStrategy(double d) {
83:         super();
84:         this.fixedDiscount = d;
85:     }
86:     public double computePrice(ShoppingCart sc) {
87:         return super.computePrice(sc) * (1 - fixedDiscount);
88:     }
89: }

90: class User {
91:     private String name;
92:     private boolean isPrime;
93:     User(String name) {
94:         this(name, false);
95:     }
96:     User(String name, boolean isPrime) {
97:         this.name = name;
98:         this.isPrime = isPrime;
99:     }
100:     public String getName() { return name; }
101:     boolean isPrimeUser() { return isPrime; }
102: }

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103: class Main {
104:     private static ArrayList<ShoppingCart> carts =
105:         new ArrayList<ShoppingCart>();
106:     public static void main(String args[]) {
107:         Book harryPotter = new Book("Harry Potter", "ABC123", 9.99);
108:         Book gameOfThrones = new Book("A Game of Thrones", "XYZ567", 12.99);
109:         Book hungerGames = new Book("Hunger Games", "DEF790", 8.99);
110:         Foodstuff carrots = new Foodstuff(0.56);
111:         Foodstuff okra = new Foodstuff(0.78);
112:         Foodstuff kCups = new Foodstuff(29.99);
113:         User offset = new User("Offset");
114:         User cardiB = new User("Cardi B", true);
115:         ShoppingCart cardisCart = new ShoppingCart(cardiB);
116:         ShoppingCart cardisOtherCart = new ShoppingCart(cardiB);
117:         ShoppingCart offsetsCart = new ShoppingCart(offset);
118:         carts.add(offsetsCart);
119:         carts.add(cardisCart);
120:         carts.add(cardisOtherCart);
121:         cardisCart.add(gameOfThrones, 1);
122:         cardisCart.add(hungerGames, 3);
123:         cardisOtherCart.add(carrots, 20);
124:         cardisOtherCart.add(okra, 5);
125:         cardisOtherCart.add(okra, 5);
126:         cardisOtherCart.add(kCups);
127:         offsetsCart.add(gameOfThrones);
128:         offsetsCart.add(harryPotter);
129:         offsetsCart.add(hungerGames);
130:         printCarts();
131:         enableHolidayDiscounts();
132:         System.out.println("The holiday season is here!");
133:         printCarts();
134:     }
135:     private static void printCarts() {
136:         for (ShoppingCart cart : carts) {
137:             System.out.println(cart);
138:         }
139:     }
140:     private static void enableHolidayDiscounts() {
141:         for (ShoppingCart cart : carts) {
142:             cart.setPricingStrategy(
143:                 new DiscountPerishablePricingStrategy(.5));
144:         }
145:     }
146: }
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