```java
/*
 * Landry M. King
 * Kaylin Lee
 * Tea.java
 * 14 Sept 2023
 * Commander Schenk
 * APCS-A
 */

package qualitea;
import qualitea.TeaFlavor;
import qualitea.TeaType;

// class that holds data for a tea order
public class Tea {
    String name;            // name of tea
    double grams;           // how many grams
    int servings;           // cups per serving
    boolean bagged;         // bagged/leaves
    boolean caffinated;     // caffinated or not
    short packets;          // # of packets ordered
    TeaFlavor flavor;       // flavor of tea
    TeaType type;           // type of tea prepared

    // default values
    final String DEFAULT_NAME = "NO TEA SELECTED";
    final double DEFAULT_GRAMS = 20.0;
    final short DEFAULT_PACKET_COUNT = 1;
    final boolean DEFAULT_BAGGED = true;
    final boolean DEFAULT_CAFFINATED = true;
    final int DEFAULT_CUPS_PER_BAG = 1;
    final TeaFlavor DEFAULT_FLAVOR = TeaFlavor.PLAIN;
    final TeaType DEFAULT_TEA_TYPE = TeaType.BLACK;

    // empty constructor
    public Tea() {
        this.name = DEFAULT_NAME;
        this.grams = DEFAULT_GRAMS;
        this.servings = DEFAULT_CUPS_PER_BAG;
        this.bagged = DEFAULT_BAGGED;
        this.caffinated = DEFAULT_CAFFINATED;
        this.packets = DEFAULT_PACKET_COUNT;
        this.flavor = DEFAULT_FLAVOR;
        this.type = DEFAULT_TEA_TYPE;
    };
```

```
    // partial constructor
    public Tea(String n, TeaFlavor f, TeaType t) {
        this.name = n;
        this.grams = DEFAULT_GRAMS;
        this.servings = DEFAULT_CUPS_PER_BAG;
        this.bagged = DEFAULT_BAGGED;
        this.caffinated = DEFAULT_CAFFINATED;
        this.packets = DEFAULT_PACKET_COUNT;
        this.flavor = f;
        this.type = t;
    };

    // full constructor
    public Tea(String n, double g, int s, boolean b, boolean c, short p,
TeaFlavor f, TeaType t) {
        this.name = n;
        this.grams = g;
        this.servings = s;
        this.bagged = b;
        this.caffinated = c;
        this.packets = p;
        this.flavor = f;
        this.type = t;
    };

    // getters
    public String getName()             {return this.name;}
    public double getGrams()            {return this.grams;}
    public int getServings()            {return this.servings;}
    public boolean getBagged()          {return this.bagged;}
    public boolean getCaffinated()      {return this.caffinated;}
    public short getPackets()           {return this.packets;}
    public TeaFlavor getFlavor()        {return this.flavor;}
    public TeaType getType()            {return this.type;}

    // setters
    public void setName(String n)       {this.name = n;}
    public void setGrams(double g)      {this.grams = g;}
    public void setServings(int s)      {this.servings = s;}
    public void setBagged(boolean b)    {this.bagged = b;}
    public void setCaffine(boolean c)   {this.caffinated = c;}
    public void setPackets(short p)     {this.packets = p;}
    public void setFlavor(TeaFlavor f)  {this.flavor = f;}
    public void setType(TeaType t)      {this.type = t;}
```

```
    static boolean equal(Tea rhs, Tea lhs) {
        if (rhs.getName() != lhs.getName() || rhs.getType() != lhs.getType() ||
rhs.getFlavor() != lhs.getFlavor()) return false;
        else return true;
    }

    // override for toString for println
    @Override
    public String toString() {
        String s = "QUALITEA ORDER\n";
        s += "-------------\n";
        s += "Name: "       + this.getName()        + "\n";
        s += "Grams: "      + this.getGrams()       + " grams\n";
        s += "Servings: "   + this.getServings()    + "\n";
        s += "Bagged: "     + this.getBagged()      + "\n";
        s += "Caffinated: " + this.getCaffinated()  + "\n";
        s += "Packets: "    + this.getPackets()     + "\n";
        s += "Flavor: "     + this.getFlavor()      + "\n";
        s += "Type: "       + this.getType()        + "\n";

        return s;
    }
}
```

```java
/*
 * Landry M. King
 * Kaylin Lee
 * TeaOrders.java
 * 19 Sept 2023
 * Commander Schenk
 * APCS-A
 */

// package the class
package qualitea;

// imports we already wrote
import qualitea.TeaFlavor;
import qualitea.TeaType;
import qualitea.Tea;
import qualitea.Customer;

// import java.utils.* for ArrayList<>
import java.util.*;

// container class
public class TeaOrdersImproved {
    // written by Landry King
    public static void main(String[] args) {
        // intitiate TeaOrders object (empty constructor)
        TeaOrdersImproved orders = new TeaOrders();

        // add 3 objects, using methods provided
        orders.add(new Tea("Test", TeaFlavor.MANGO, TeaType.BLACK));
        orders.add(new Tea("Test", TeaFlavor.MINT, TeaType.GREEN));
        orders.add(new Tea("Test", TeaFlavor.KIWI, TeaType.EARLGREY));

        // print it (using implicit toString)
        System.out.println(orders);
    }

    // written by Kaylin Lee
    // main (dynamic) array holding Tea orders
    private ArrayList<Tea> orders;

    // total price of the order
    double totalPrice;
```

```
    // size of the orders
    int orderSize;

    // premium member
    boolean premium;

    // discount because of premium
    // (in precent %)
    float premiumDiscount;

    // customer that order is for
    Customer customer;

    // written by Kaylin Lee
    // empty constructor
    public TeaOrdersImproved() {
        this.orders = new ArrayList<Tea>();
    }

    // written by Kaylin Lee
    // single object constructor (partial)
    public TeaOrdersImproved(Tea tea) {
        this.orders = new ArrayList<Tea>();
        this.orders.add(tea);
    };

    // written by Kaylin Lee
    // full constructor (copys in array of objects)
    public TeaOrdersImproved(ArrayList<Tea> teas) {
        this.orders = new ArrayList<Tea>(teas);
    };

    // getters/setters
    public void getTotalPrice(double p) {this.totalPrice = p;}
    public double getTotalPrice() {return this.totalPrice *= this.premium ? 1 -
this.premiumDiscount : 1;}
    public int getOrderSize() {return this.orders.size();};
    public boolean getPremium() {return this.premium;}
    public void setPremium(boolean p) {this.premium = p;}
    public float getPremiumDiscount() {return this.premiumDiscount;}
    public void setPremiumDiscount(float pd) {this.premiumDiscount = pd;}

    // gets the customer object
    public Customer getCustomer() {return this.customer;}
```

```java
// sets the customer object
public void setCustomer(Customer customer) {this.customer = customer;}

// written by Landry M. King
// attributes
public int getLength() {return this.orders.size();}

// written by Kaylin Lee
// additions
public void add() {this.orders.add(new Tea());}

// written by Kaylin Lee
public void add(Tea tea) {this.orders.add(tea);}

// update tea object at given index
public void update(int index, Tea tea) {this.orders.set(index, tea);}

// written by Landry M. King
// removal functions
public void remove() {this.orders.remove(this.getLength() - 1);}

// written by Kaylin Lee
public void remove(int index) {this.orders.remove(index);}

// written by Landry M. King
public void remove(Tea tea) {
    for (Tea t : orders) {
        if (!Tea.equal(t, tea)) {
            orders.remove(t);
        }
    }
}

// written by Landry M. King
// completely clears the array
public void clear() {
    for (Tea t : orders) {
        orders.remove(t);
    }
}

// written by Landry M. King
@Override
public String toString() {
    String s = "Container Size: " + this.getLength() + " Objects\n\n";
```

```
        for (Tea tea : orders) s += tea;
        return s;
    }
}
```

```java
/*
 * Landry M. King
 * Kaylin Lee
 * TeaFlavor.java
 * 14 Sept 2023
 * Commander Schenk
 * APCS-A
 */

package qualitea;

public enum TeaFlavor {
    PLAIN,
    MINT,
    GINGER,
    HIBISCUS,
    MANGO,
    LIME,
    STRAWBERRY,
    KIWI
}
```

```java
/*
 * Landry M. King
 * Kaylin Lee
 * TeaType.java
 * 14 Sept 2023
 * Commander Schenk
 * APCS-A
 */

package qualitea;

public enum TeaType {
    WHITE,
    YELLOW,
    GREEN,
    OOLONG,
    BLACK,
    EARLGREY,
    MILK
}
```

```java
/*
 * Landry M. King
 * Kaylin Lee
 * Customers.java
 * 3 October 2023
 * Commander Schenk
 * APCS-A
 */

// package the class
package qualitea;

// customer class
public class Customer {
    // empty constructor
    public Customer() {
        this.setName("EMPTY NAME");
        this.setPremium(null);
        this.mostRecent(null);
        this.mostFrequent(null);
    }

    // partial constructor
    public Customer(String name, bool premium) {
        this.setName(name);
        this.setPremium(premium);
        this.setFrequent(null);
        this.setRecent(null);
    }

    // full constructor
    public Customer(String name, bool premium, TeaOrdersImproved recent,
TeaOrdersImproved frequent) {
        this.setName(name);
        this.setPremium(premium);
        this.setFrequent(recent);
        this.setRecent(frequent);
    }

    // holds the customers name
    String name;

    // holds if the customer is a premium member or not
    bool premium;
```

```
// holds the most recent order of the customer
TeaOrdersImproved mostRecent;

// holds the most frequent order of the customer
TeaOrdersImproved mostFrequent;

// getter for name
public String getName() {
    return this.name;
}

// setter for the name
public void setName(String name) {
    this.name = name;
}

// getter for the premium membership property
public bool getPremium() {
    return this.premium;
}

// setter for the premium membership property
public void setPremium(bool premium) {
    this.premium = premium;
}

// gets the most recent order
public TeaOrdersImproved getRecentOrder() {
    return this.mostRecent;
}

// sets the most recent order
public void setRecent(TeaOrdersImproved mostRecent) {
    this.mostRecent = mostRecent;
}

// gets the most frequent order
public TeaOrdersImproved getFrequentOrder() {
    return this.mostFrequent;
}

// sets the most frequent order
public void setFrequent(TeaOrdersImproved mostFrequent) {
    this.mostFrequent = mostFrequent;
}
```

```
}
```

```
PS C:\SHMAVA\Project>  c:; cd 'c:\SHMAVA\Project'; & 'C:\jdk-
ct\bin' 'qualitea.TeaOrders'
Container Size: 3 Objects

QUALITEA ORDER
------------
Name: Test
Grams: 20.0 grams
Servings: 1
Bagged: true
Caffinated: true
Packets: 1
Flavor: MANGO
Type: BLACK
QUALITEA ORDER
------------
Name: Test
Grams: 20.0 grams
Servings: 1
Bagged: true
Caffinated: true
Packets: 1
Flavor: MINT
Type: GREEN
QUALITEA ORDER
------------
Name: Test
Grams: 20.0 grams
Servings: 1
Bagged: true
Caffinated: true
Packets: 1
Flavor: KIWI
Type: EARLGREY

PS C:\SHMAVA\Project>
```