

# CSCE 247 - Code Smells Activity

## Name(s):

The following code contains several “bad smells” - signs that the code is not well-designed and needs to be refactored.

**1: Identify at least three code smells in this code. Explain why each is a problem.**

**2: Explain how you would fix each code smell.**

-----Order.java-----

```
package com.nq.util;

import java.io.*;
import java.util.*;
import java.lang.*;
import java.sql.*;

public class Order {

    private lineitemlist lineItemList;

    public Order(lineitemlist lis) {
        lineItemList = lis;
    }

    public boolean equals(Object aThat) {
        if ( this == aThat ) return true;
        if ( !(aThat instanceof Order) ) return false;
        Order that = (Order)aThat;
        return this.lineItemList.equals(that.lineItemList);
    }

    // writes this order object to the specified print writer
    public void writeOrder(Order order, PrintWriter pw) {
        // get a vector of line items
        Vector lineItems = order.getLineItemList().getLineItems();

        // -----
        // calculate total
        // -----
        // create an iterator for the vector
        Iterator iter = lineItems.iterator();
        lineItem item;
        // set total to zero
        int total = 0;
        while (iter.hasNext()) {
            item = (lineItem)iter.next();

            // calculate total for line item
            int unitPrice = item.getUnitPrice();
            int qty = item.getQuantity();
            int lineitemtotal = unitPrice * qty;
```

```

        total += lineitemtotal;
    }
    // -----
    // END calculate total
    // -----

    // -----
    // write order
    // -----
    // create an iterator for the vector
    iter = lineItems.iterator();
    while (iter.hasNext()) {
        item = (lineItem)iter.next();

        // calculate total for line item
        int unitPrice = item.getUnitPrice();
        int qty = item.getQuantity();
        int productID = item.getProductID();
        int imageID = item.getImageId();
        int lineitemtotal = unitPrice * qty;

        pw.println("Begin Line Item");
        pw.println("Product = " + productID);
        pw.println("Image = " + imageID);
        pw.println("Quantity = " + qty);
        pw.println("Total = " + lineitemtotal);
        pw.println("End Line Item");
    }
    pw.println("Order total = " + total);
}

public int getTotal() {
    // get a vector of line items
    Vector lineItems = lineItemList.getLineItems();
    // create an iterator for the vector
    Iterator iter = lineItems.iterator();
    lineItem item;
    // set total to zero
    int total = 0;
    while (iter.hasNext()) {
        item = (lineItem)iterator.next();

        // calculate total for line item
        int unitPrice = item.getUnitPrice();
        int qty = item.getQuantity();
        int lineitemtotal = unitPrice * qty;

        total += lineitemtotal;
    }
    return total;
}

/** This method saves the order to the database */
public void saveOrder() throws SQLException
{
    //create connection

```

```

        Connection conn = null;

        java.sql.Date date = new java.sql.Date((new java.util.Date())
        .getTime());
        PreparedStatement orderStatement = null;
        PreparedStatement getStatement = null;
        String sql = null;
        sql = new StringBuffer().append("INSERT INTO T_ORDER " )
        .append("(AUTHORIZATION_CODE, " )
        .append("SHIPMETHOD_ID, USER_ID, ADDRESS_ID) " )
        .append("VALUES ( ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?,"
        ?)" ).toString();
        conn = setConnection();
        orderStatement = conn.prepareStatement(sql);
        //set all parameters
        ...
        //execute statement
        orderStatement.executeUpdate();
    }
}

```

---

### -----lineitemlist.java-----

```

package com.nq.util;

import java.io.*;
import java.util.*;
import java.lang.*;

class lineitemlist {
    private Vector LIList;

    public void setLineItems(Vector lineItems) {
        LIList = lineItems;
    }

    Vector getLineItems() {
        return LIList;
    }
}

```

---

### -----lineItem.java-----

```

package com.nq.util;

import java.io.*;
import java.util.*;
import java.lang.*;

class lineItem {

```

```
protected int productId;
private int ImageID;
private int qty;
private int Unitprice;

public lineItem(int prodID, int ImageID, int inQty) {
    productId = prodID;
    this.ImageID = ImageID;
    qty = inQty;
}

public void setLineItems(Vector lineItems) {
    LineItems = lineItems;
}

Vector getLineItems() {
    return LineItems;
}

int getProductID() {
    return productId;
}

int getImageID() {
    return imageID;
}

int getQuantity() {
    return qty;
}

int getUnitPrice() {
    return Unitprice;
}

public void setProductID(int id) {
    productId = id;
}

public void setImageID(int ID) {
    imageID = ID;
}

public void setQty(int qty) {
    this.qty = qty;
}

public void setUnitPrice(int i) {
    Unitprice = i;
}
}
```