

# CNT 4714 – Programming Assignment #1 – Spring 2016

**Title:** “Program Assignment 1: Event-Driven Programming”

**Points:** 100 points

**Due Date:** **Sunday January 24, 2016 by 11:59 pm (WebCourses time)**

**Objectives:** To practice event-driven programming using Java-based GUIs. To refresh your basic Java skills.

**Description:** Develop a Java program that creates a standalone GUI application (not an applet) that simulates an e-store which allows the user to add items (books) to a shopping cart and once all items are included, total all costs (including tax), produces an invoice, and appends a transaction log file.

Your program development must include the following steps:

1. Create a main GUI containing the following components:
  - a. An area that allows the user to input data into the application along with the descriptive text that describes each input area.
  - b. A total of six buttons as shown below with functionality as described below.
  - c. As illustrated below, the various buttons on the interface are only accessible at certain points during a user’s interaction with the e-store.
2. An input file named “inventory.txt”. This file contains the data that will be read by the application when the user makes a selection. A sample file is provided for you on the course website.
3. An output file named “transactions.txt” must be created that uniquely logs each user transaction with the e-store. The unique transaction id will be generated as a permutation of the date/time string.

## Restrictions:

Your source file shall begin with comments containing the following information:

```
/* Name: <your name goes here>  
   Course: CNT 4714 – Spring 2016  
   Assignment title: Program 1 – Event-driven Programming  
   Date: Sunday January 24, 2016  
*/
```

**Input Specification:** The file “inventory.txt” as described above (see example below as well).

**Output Specification:** Output is to appear in the specified components of the GUI and various message boxes that appear, plus the contents of the “transactions.txt” log file that will be generated.

## Deliverables:

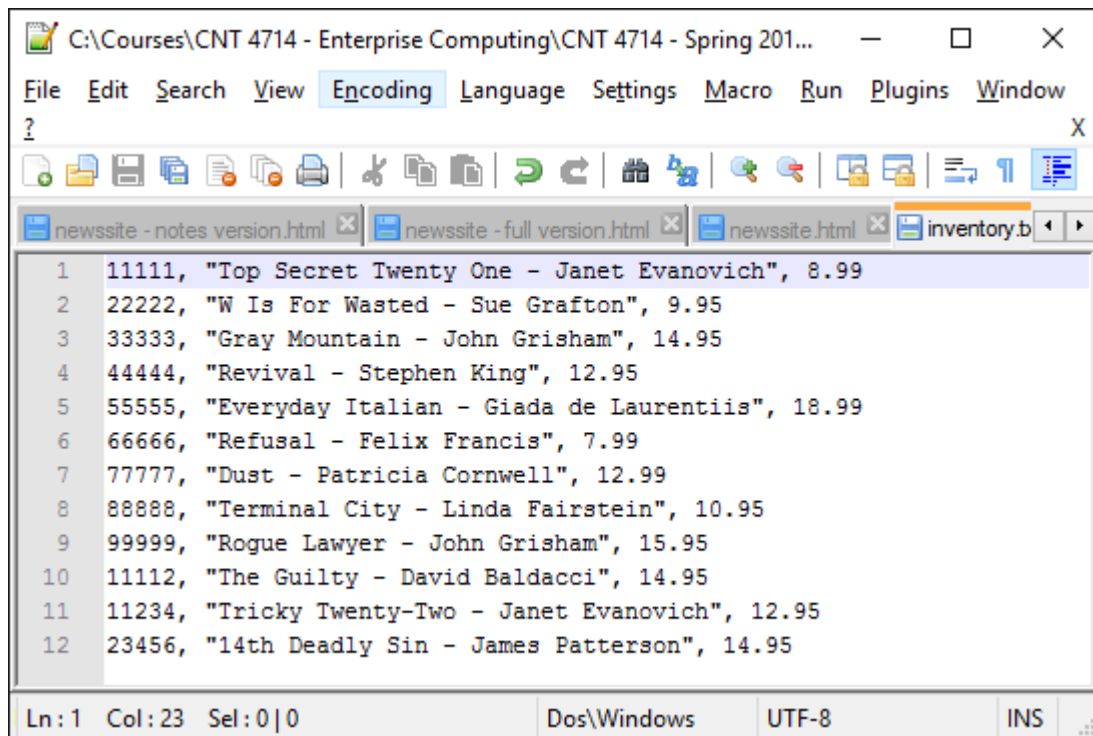
- (1) Submit a working copy of your source code via WebCourses no later than 11:59pm Sunday January 24, 2016.

- (2) Include a file that contains screen shots, similar to those illustrated below, that shows your application in action as a user interacts with your e-store to purchase books.
- (3) Include a screen shot of your "transactions.txt" file showing at least the last few transactions.

### Additional Information:

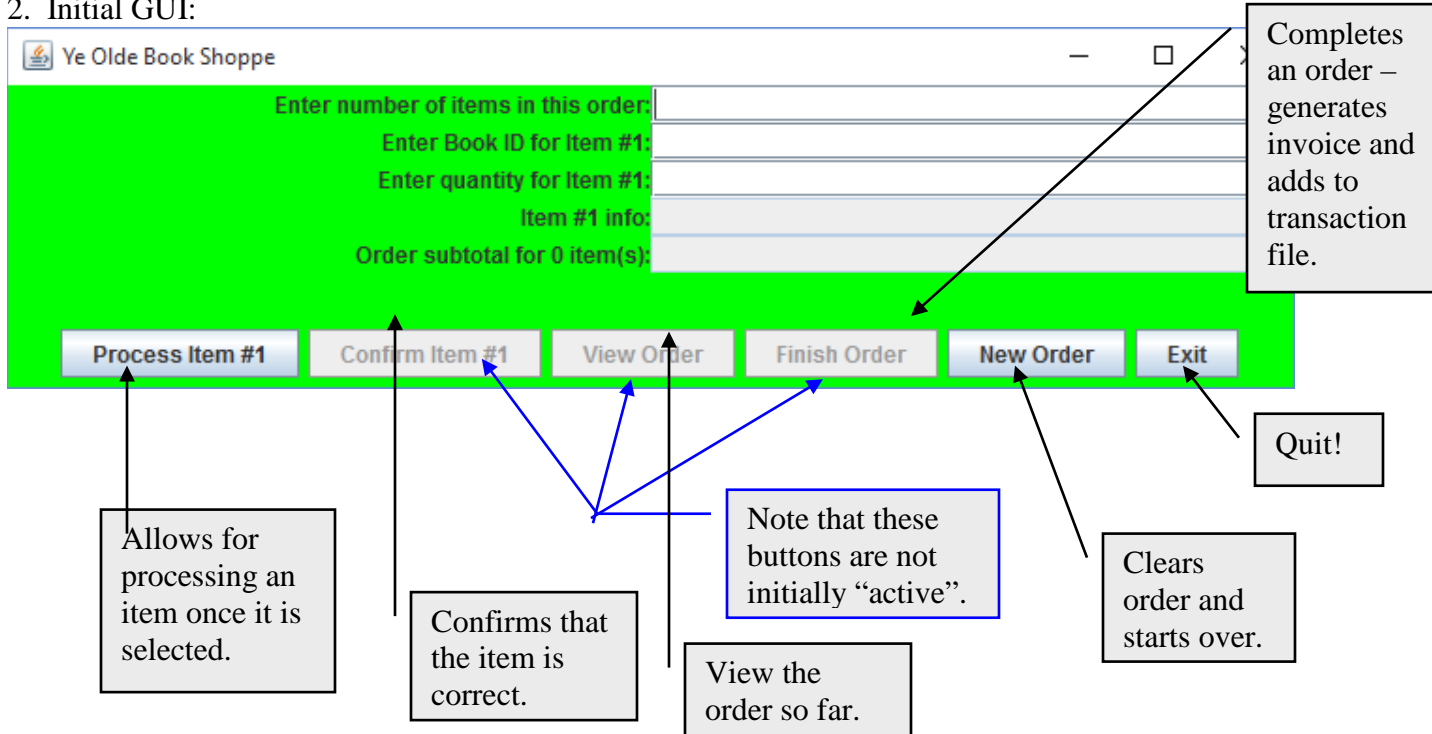
Shown below are example screen shots of the GUI to help illustrate how your application is to operate.

1. Screen shot of the contents of an example "inventory.txt" file.

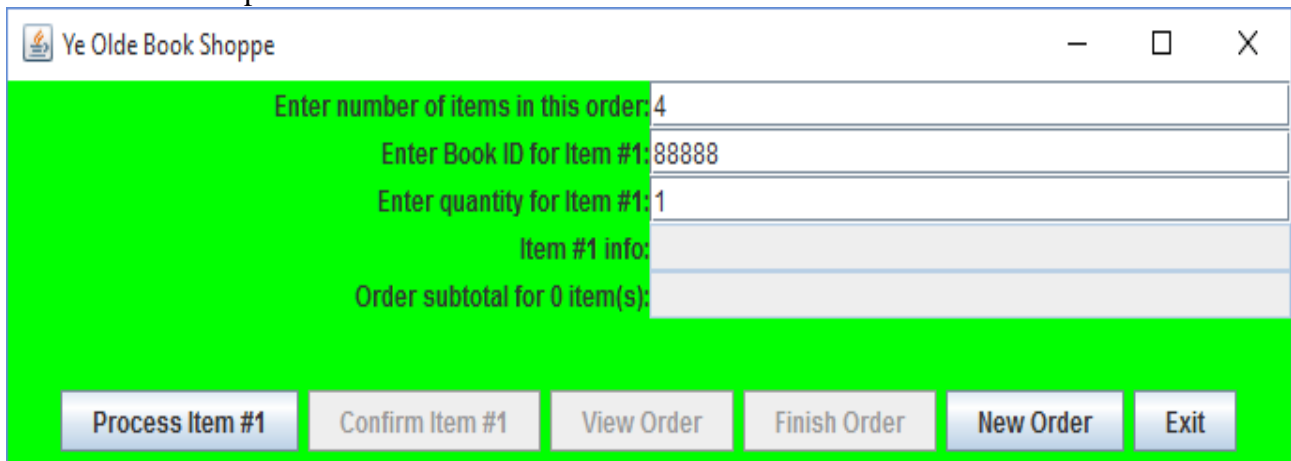


```
1 11111, "Top Secret Twenty One - Janet Evanovich", 8.99
2 22222, "W Is For Wasted - Sue Grafton", 9.95
3 33333, "Gray Mountain - John Grisham", 14.95
4 44444, "Revival - Stephen King", 12.95
5 55555, "Everyday Italian - Giada de Laurentiis", 18.99
6 66666, "Refusal - Felix Francis", 7.99
7 77777, "Dust - Patricia Cornwell", 12.99
8 88888, "Terminal City - Linda Fairstein", 10.95
9 99999, "Rogue Lawyer - John Grisham", 15.95
10 11112, "The Guilty - David Baldacci", 14.95
11 11234, "Tricky Twenty-Two - Janet Evanovich", 12.95
12 23456, "14th Deadly Sin - James Patterson", 14.95
```

## 2. Initial GUI:



## 3. GUI after user specifies total number of items in the order and makes a selection for item #1.



## 4. GUI after user has selected the first item and clicked the "Process Item #1" button.

Ye Olde Book Shoppe

Enter number of items in this order: 4

Enter Book ID for Item #1: 88888

Enter quantity for Item #1: 1

Item #1 info: 88888 "Terminal City - Linda Fairstein" \$10.95 1 0% \$10.95

Order subtotal for 0 item(s):

Process Item #1 Confirm Item #1 View Order Finish Order New Order Exit

Note that the "Confirm Item #1" button is now active and the "Process Item #1" button is inactive.

Information on the book purchased has been extracted from the inventory file and written into the window on the line for item #1.

5. When the user clicks on the "Confirm Item #1" button, a confirmation information message appears on the screen.

Message

Item #1 accepted

OK

Message

Book ID 45676 not in file

OK

User entered an incorrect book ID

6. The main GUI after the user has confirmed the first item.

Ye Olde Book Shoppe

Enter number of items in this order: 4

Enter Book ID for Item #2:

Enter quantity for Item #2:

Item #1 info: 88888 "Terminal City - Linda Fairstein" \$10.95 1 0% \$10.95

Order subtotal for 1 item(s): \$10.95

Process Item #2 Confirm Item #2 View Order Finish Order New Order Exit

Discount is  
1-4 = 0%  
5-9 = 10%  
10-14 = 15%  
≥15 = 20%

Note that the button changes number.

Note that the text areas for entering the second item information are cleared and ready for input.

Subtotal should reflect current total of all confirmed items.

Information for previous item remains on display.

7. User enters next item in the order.

The screenshot shows the 'Ye Olde Book Shoppe' application window. The background is green. The text 'Enter number of items in this order:' is displayed, with the value '4' entered in the adjacent text box. Below this, 'Enter Book ID for Item #2:' is shown with '11111' entered. 'Enter quantity for Item #2:' is shown with '2' entered. The 'Item #1 info:' line displays '88888 "Terminal City - Linda Fairstein" \$10.95 1 0% \$10.95'. The 'Order subtotal for 1 item(s):' is '\$10.95'. At the bottom, there are six buttons: 'Process Item #2', 'Confirm Item #2', 'View Order', 'Finish Order', 'New Order', and 'Exit'.

8. The GUI after the user has entered the information for all the items and confirmed the last item.


The screenshot shows the 'Ye Olde Book Shoppe' application window. The background is green. The text 'Number of items in this order:' is displayed, with the value '4' entered. Below this, 'Item #4 info:' is shown with '33333 "Gray Mountain - John Grisham" \$14.95 1 0% \$14.95'. The 'Order subtotal for 4 item(s):' is '\$62.87'. At the bottom, there are six buttons: 'Process Item', 'Confirm Item', 'View Order', 'Finish Order', 'New Order', and 'Exit'.

9. When the user clicks the “View Order” button, the following message box should appear.

The screenshot shows a 'Message' dialog box with a title bar containing a close button (X). The dialog box has a light gray background. On the left side, there is a blue circular icon with a white 'i'. To the right of the icon, the following text is displayed:  
1. 88888 "Terminal City - Linda Fairstein" \$10.95 1 0% \$10.95  
2. 11111 "Top Secret Twenty One - Janet Evanovich" \$8.99 2 0% \$17.98  
3. 55555 "Everyday Italian - Giada de Laurentiis" \$18.99 1 0% \$18.99  
4. 33333 "Gray Mountain - John Grisham" \$14.95 1 0% \$14.95  
At the bottom center of the dialog box, there is an 'OK' button.

10. When the user clicks the “Finish Order” button, the invoice message should be generated and displayed.

Message

 **Date: 1/12/16 2:52:12 PM EST**

**Number of line items: 4**

**Item# / ID / Title / Price / Qty / Disc % / Subtotal:**

**1. 88888 "Terminal City - Linda Fairstein" \$10.95 1 0% \$10.95**

**2. 11111 "Top Secret Twenty One - Janet Evanovich" \$8.99 2 0% \$17.98**

**3. 55555 "Everyday Italian - Giada de Laurentiis" \$18.99 1 0% \$18.99**

**4. 33333 "Gray Mountain - John Grisham" \$14.95 1 0% \$14.95**


**Order subtotal: \$62.87**

**Tax rate: 6%**

**Tax amount: \$3.77**

**Order total: \$66.64**

**Thanks for shopping at Mark's World of Music!**



The date and time are used to create the unique transaction id in the “transactions.txt” file. Format is “DD/MM/YY HH:MM:SS TMZ”

11. The transaction file after order shown above was finished. Note the unique transaction ids based on the date and time.

```
C:\Users\Mark Llewellyn\workspace-mars\CNT 4714 - Project 1 - Spring 2016\transactions.txt - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
newsite.html inventory.txt YeOldeBookShoppe.java transactions.txt
1 160112145212, 88888, "Terminal City - Linda Fairstein", 10.95, 1, 0.0, 10.95, 1/12/16 2:52:12 PM EST
2 160112145212, 11111, "Top Secret Twenty One - Janet Evanovich", 8.99, 2, 0.0, 17.98, 1/12/16 2:52:12 PM EST
3 160112145212, 55555, "Everyday Italian - Giada de Laurentiis", 18.99, 1, 0.0, 18.99, 1/12/16 2:52:12 PM EST
4 160112145212, 33333, "Gray Mountain - John Grisham", 14.95, 1, 0.0, 14.95, 1/12/16 2:52:12 PM EST
5
Normal text file length: 419 lines: 5 Ln: 1 Col: 1 Sel: 0|0 Dos\Windows UTF-8 INS
```

The last transaction occurred on 1/15/2016 at 14:52:12 pm. See the invoice message above. Permutation is: YYMMDDHHMMSS.

12. The transaction file after several orders have been completed. Note the unique transaction ids based on the date and time for every separate transaction.

```

1 160112145212, 88888, "Terminal City - Linda Fairstein", 10.95, 1, 0.0, 10.95, 1/12/16 2:52:12 PM EST
2 160112145212, 11111, "Top Secret Twenty One - Janet Evanovich", 8.99, 2, 0.0, 17.98, 1/12/16 2:52:12 PM EST
3 160112145212, 55555, "Everyday Italian - Giada de Laurentiis", 18.99, 1, 0.0, 18.99, 1/12/16 2:52:12 PM EST
4 160112145212, 33333, "Gray Mountain - John Grisham", 14.95, 1, 0.0, 14.95, 1/12/16 2:52:12 PM EST
5 160112145712, 23456, "14th Deadly Sin - James Patterson", 14.95, 4, 0.0, 59.8, 1/12/16 2:57:12 PM EST
6 160112145712, 11112, "The Guilty - David Baldacci", 14.95, 10, 0.15, 127.075, 1/12/16 2:57:12 PM EST
7 160112145853, 99999, "Rogue Lawyer - John Grisham", 15.95, 1, 0.0, 15.95, 1/12/16 2:58:53 PM EST
8 160112145853, 22222, "W Is For Wasted - Sue Grafton", 9.95, 1, 0.0, 9.95, 1/12/16 2:58:53 PM EST
9 160112145853, 55555, "Everyday Italian - Giada de Laurentiis", 18.99, 1, 0.0, 18.99, 1/12/16 2:58:53 PM EST
10 160112150025, 11111, "Top Secret Twenty One - Janet Evanovich", 8.99, 2, 0.0, 17.98, 1/12/16 3:00:25 PM EST
11 160112150025, 11234, "Tricky Twenty-Two - Janet Evanovich", 12.95, 2, 0.0, 25.9, 1/12/16 3:00:25 PM EST
12 160112150025, 33333, "Gray Mountain - John Grisham", 14.95, 1, 0.0, 14.95, 1/12/16 3:00:25 PM EST
13 160112150025, 99999, "Rogue Lawyer - John Grisham", 15.95, 1, 0.0, 15.95, 1/12/16 3:00:25 PM EST
14 160112150025, 11112, "The Guilty - David Baldacci", 14.95, 3, 0.0, 44.849999999999994, 1/12/16 3:00:25 PM EST
15 160112150911, 77777, "Dust - Patricia Cornwell", 12.99, 1, 0.0, 12.99, 1/12/16 3:09:11 PM EST
16 160112150911, 88888, "Terminal City - Linda Fairstein", 10.95, 1, 0.0, 10.95, 1/12/16 3:09:11 PM EST
17 160112160239, 23456, "14th Deadly Sin - James Patterson", 14.95, 1, 0.0, 14.95, 1/12/16 4:02:39 PM EST
18 160112160239, 55555, "Everyday Italian - Giada de Laurentiis", 18.99, 1, 0.0, 18.99, 1/12/16 4:02:39 PM EST
19

```

Normal text file   length: 1861   lines: 19   Ln: 1   Col: 77   Sel: 0|0   Dos\Windows   ANSI   INS