

CNT 4714 – Programming Assignment #1 – Fall 2018

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

Points: 100 points

Due Date: **Sunday September 9, 2018 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 append 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 is a comma separated file which contains the data that will be read by the application when the user makes a selection. A sample file is provided for you on WebCourses.
3. An output file (append only) 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 when the transaction occurred.

Restrictions:

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

```
/* Name: <your name goes here>  
   Course: CNT 4714 – Fall 2018  
   Assignment title: Program 1 – Event-driven Programming  
   Date: Sunday September 9, 2018  
*/
```

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:

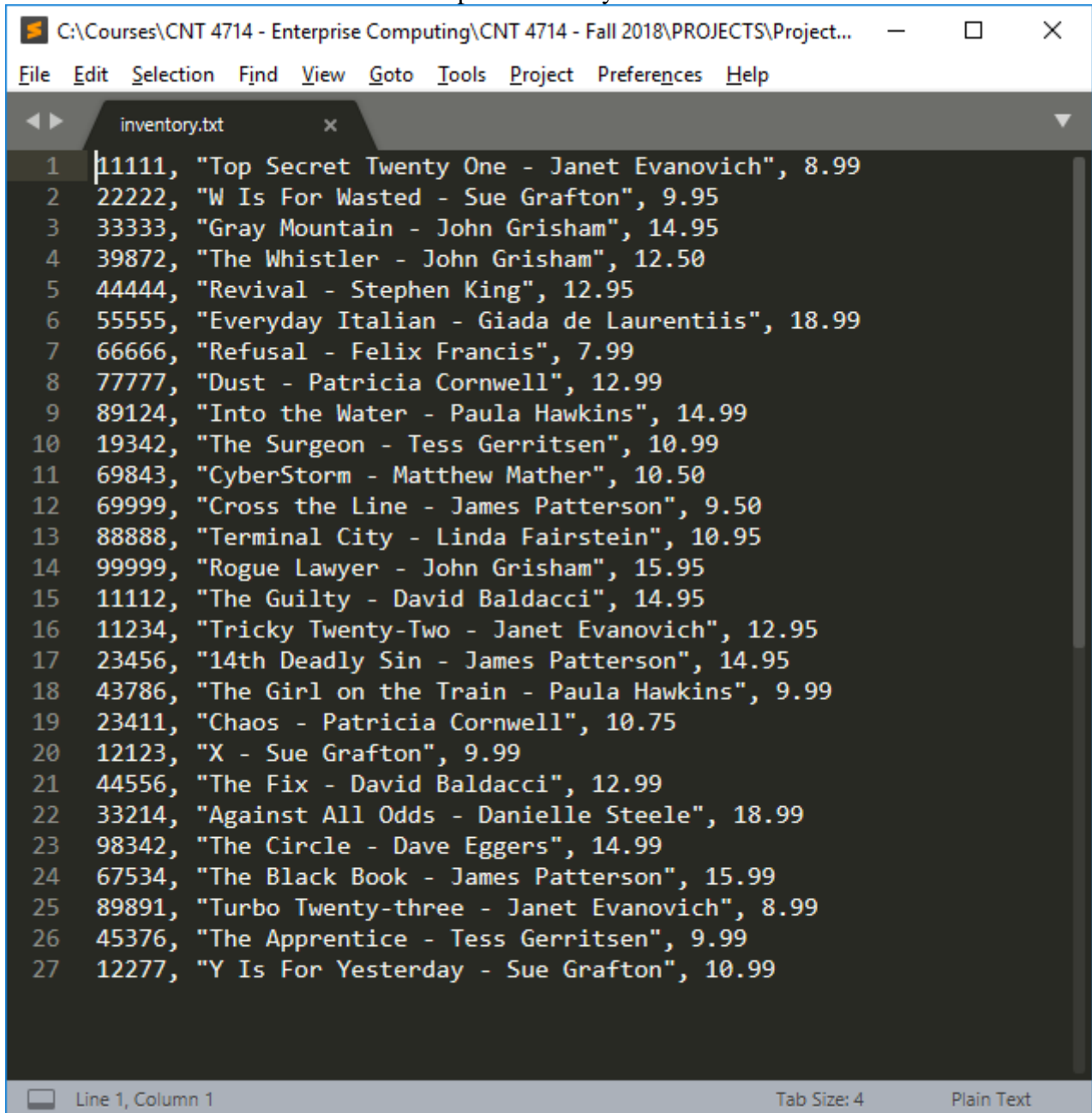
- (1) Submit a working copy of your source code (all .java files) via WebCourses no later than 11:59pm Sunday September 9, 2018.

- (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 (similar to the one shown on the last page of this document).

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 39872, "The Whistler - John Grisham", 12.50
5 44444, "Revival - Stephen King", 12.95
6 55555, "Everyday Italian - Giada de Laurentiis", 18.99
7 66666, "Refusal - Felix Francis", 7.99
8 77777, "Dust - Patricia Cornwell", 12.99
9 89124, "Into the Water - Paula Hawkins", 14.99
10 19342, "The Surgeon - Tess Gerritsen", 10.99
11 69843, "CyberStorm - Matthew Mather", 10.50
12 69999, "Cross the Line - James Patterson", 9.50
13 88888, "Terminal City - Linda Fairstein", 10.95
14 99999, "Rogue Lawyer - John Grisham", 15.95
15 11112, "The Guilty - David Baldacci", 14.95
16 11234, "Tricky Twenty-Two - Janet Evanovich", 12.95
17 23456, "14th Deadly Sin - James Patterson", 14.95
18 43786, "The Girl on the Train - Paula Hawkins", 9.99
19 23411, "Chaos - Patricia Cornwell", 10.75
20 12123, "X - Sue Grafton", 9.99
21 44556, "The Fix - David Baldacci", 12.99
22 33214, "Against All Odds - Danielle Steele", 18.99
23 98342, "The Circle - Dave Eggers", 14.99
24 67534, "The Black Book - James Patterson", 15.99
25 89891, "Turbo Twenty-three - Janet Evanovich", 8.99
26 45376, "The Apprentice - Tess Gerritsen", 9.99
27 12277, "Y Is For Yesterday - Sue Grafton", 10.99
```

2. Initial GUI:

The initial GUI for 'Ye Olde Book Shoppe' features a yellow main area with input fields and a blue button bar at the bottom. The input fields are labeled: 'Enter number of items in this order:', 'Enter Book ID for Item #1:', 'Enter quantity for Item #1:', 'Item #1 info:', and 'Order subtotal for 0 item(s):'. The button bar contains six buttons: 'Process Item #1', 'Confirm Item #1', 'View Order', 'Finish Order', 'New Order', and 'Exit'. A 'Quit!' button is located to the right of the main window. Callouts provide the following descriptions:

- Process Item #1:** Allows for processing an item once it is selected.
- Confirm Item #1:** Confirms that the item is correct.
- View Order:** View the order so far.
- Finish Order:** Note that these buttons are not initially "active".
- New Order:** Clears order and starts over.
- Exit:** Completes an order – generates invoice and adds to transaction file.
- Quit!:** Quit!

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

The GUI after user input shows the following values in the input fields:

- Enter number of items in this order: 3
- Enter Book ID for Item #1: 22222
- Enter quantity for Item #1: 1
- Item #1 info: (empty)
- Order subtotal for 0 item(s): (empty)

The button bar remains the same with buttons: 'Process Item #1', 'Confirm Item #1', 'View Order', 'Finish Order', 'New Order', and 'Exit'.

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: 3

Enter Book ID for Item #1: 22222

Enter quantity for Item #1: 1

Item #1 info: 22222 "W Is For Wasted - Sue Grafton" \$9.95 1 0% \$9.95

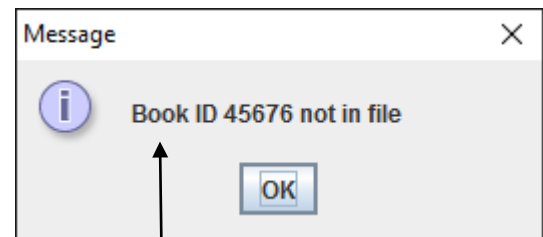
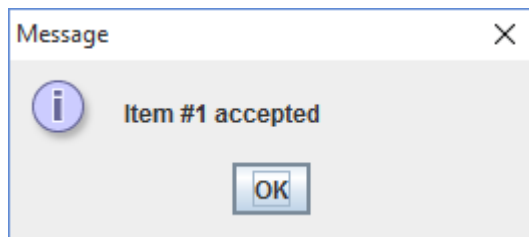
Order subtotal for 0 item(s):

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.



User entered an incorrect book ID. This message would be displayed when user pressed the Process Item button.

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

Ye Olde Book Shoppe

Enter number of items in this order: 3

Enter Book ID for Item #2:

Enter quantity for Item #2:

Item #1 info: 22222 "W Is For Wasted - Sue Grafton" \$9.95 1 0% \$9.95

Order subtotal for 1 item(s): \$9.95

Buttons: Process Item #2, Confirm Item #2, View Order, Finish Order, New Order, Exit

Annotations:

- Note that the button changes number.
- Discount is:
 - 1-4 = 0%
 - 5-9 = 10%
 - 10-14 = 15%
 - >=15 = 20%
- 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.

Ye Olde Book Shoppe

Enter number of items in this order: 3

Enter Book ID for Item #2: 99999

Enter quantity for Item #2: 2

Item #2 info: 99999 "Rogue Lawyer - John Grisham" \$15.95 2 0% \$31.90

Order subtotal for 1 item(s): \$9.95

Buttons: Process Item #2, Confirm Item #2, View Order, Finish Order, New Order, Exit

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

The screenshot shows a window titled "Ye Olde Book Shoppe". The main area has a yellow background. It displays the following information:

- Number of items in this order:** 3
- Item #3 info:** 11234 "Tricky Twenty-Two - Janet Evanovich" \$12.95 1 0% \$12.95
- Order subtotal for 3 item(s):** \$54.80

At the bottom, there is a blue bar with 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 close button (X) in the top right corner. It contains an information icon (i) and a list of three items:

1. 22222 "W Is For Wasted - Sue Grafton" \$9.95 1 0% \$9.95
2. 99999 "Rogue Lawyer - John Grisham" \$15.95 2 0% \$31.90
3. 11234 "Tricky Twenty-Two - Janet Evanovich" \$12.95 1 0% \$12.95

At the bottom of the dialog box is an "OK" button.

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

Message

Date: 8/20/18, 4:50:10 PM EDT

Number of line items: 3

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

1.	22222	"W Is For Wasted - Sue Grafton"	\$9.95	1	0%	\$9.95
2.	99999	"Rogue Lawyer - John Grisham"	\$15.95	2	0%	\$31.90
3.	11234	"Tricky Twenty-Two - Janet Evanovich"	\$12.95	1	0%	\$12.95

Order subtotal: \$54.80

Tax rate: 6%

Tax amount: \$3.29

Order total: \$58.09

Thanks for shopping at the Ye Olde Book Shoppe!

OK

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\eclipse-oxygen3a\CNT 4714 - Fall 2018 - Project One\transactions.txt - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

inventory.txt x transactions.txt x

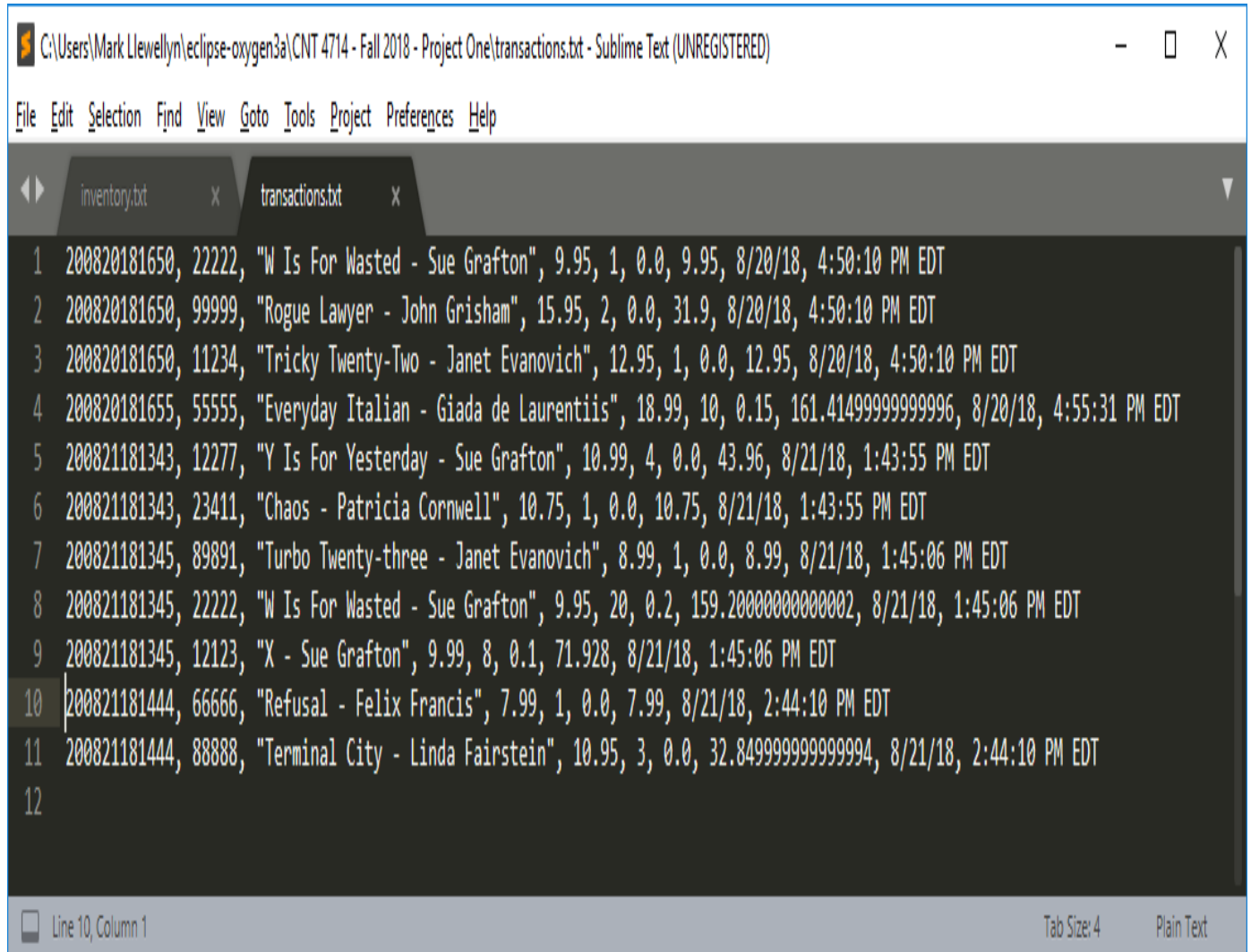
```
1 200820181650, 22222, "W Is For Wasted - Sue Grafton", 9.95, 1, 0.0, 9.95, 8/20/18, 4:50:10 PM EDT
2 200820181650, 99999, "Rogue Lawyer - John Grisham", 15.95, 2, 0.0, 31.9, 8/20/18, 4:50:10 PM EDT
3 200820181650, 11234, "Tricky Twenty-Two - Janet Evanovich", 12.95, 1, 0.0, 12.95, 8/20/18, 4:50:10 PM EDT
4
```

Line 1, Column 1

Tab Size: 4 Plain Text

The last transaction occurred on 8/20/2018 at 4:50:10 pm. See the invoice message above. Permutation is: DDMMYYYYHHMM.

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. This file shows five separate transactions.



The screenshot shows a Sublime Text editor window titled "C:\Users\Mark Llewellyn\workspace\oxygen3a\CNT 4714 - Fall 2018 - Project One\transactions.txt - Sublime Text (UNREGISTERED)". The editor has a menu bar with "File", "Edit", "Selection", "Find", "View", "Goto", "Tools", "Project", "Preferences", and "Help". Below the menu bar, there are two tabs: "inventory.txt" and "transactions.txt". The "transactions.txt" tab is active, showing a list of 11 transactions. Each line is numbered on the left. The transactions are as follows:

Line	Transaction ID	Item	Price	Quantity	Weight	Volume	Date	Time
1	200820181650	"W Is For Wasted - Sue Grafton"	9.95	1	0.0	9.95	8/20/18	4:50:10 PM EDT
2	200820181650	"Rogue Lawyer - John Grisham"	15.95	2	0.0	31.9	8/20/18	4:50:10 PM EDT
3	200820181650	"Tricky Twenty-Two - Janet Evanovich"	12.95	1	0.0	12.95	8/20/18	4:50:10 PM EDT
4	200820181655	"Everyday Italian - Giada de Laurentiis"	18.99	10	0.15	161.41499999999996	8/20/18	4:55:31 PM EDT
5	200821181343	"Y Is For Yesterday - Sue Grafton"	10.99	4	0.0	43.96	8/21/18	1:43:55 PM EDT
6	200821181343	"Chaos - Patricia Cornwell"	10.75	1	0.0	10.75	8/21/18	1:43:55 PM EDT
7	200821181345	"Turbo Twenty-three - Janet Evanovich"	8.99	1	0.0	8.99	8/21/18	1:45:06 PM EDT
8	200821181345	"W Is For Wasted - Sue Grafton"	9.95	20	0.2	159.20000000000002	8/21/18	1:45:06 PM EDT
9	200821181345	"X - Sue Grafton"	9.99	8	0.1	71.928	8/21/18	1:45:06 PM EDT
10	200821181444	"Refusal - Felix Francis"	7.99	1	0.0	7.99	8/21/18	2:44:10 PM EDT
11	200821181444	"Terminal City - Linda Fairstein"	10.95	3	0.0	32.849999999999994	8/21/18	2:44:10 PM EDT

The status bar at the bottom shows "Line 10, Column 1", "Tab Size: 4", and "Plain Text".