

CNT 4714 – Project 1 – Spring 2020

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

Points: 100 points

Due Date: **Sunday January 26, 2020 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. Each line in this file contains three items; a book id, a quoted string containing the book title and author’s name, and the price for one copy of the book. 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 – Spring 2020  
   Assignment title: Project 1 – Event-driven Enterprise Simulation  
   Date: Sunday January 26, 2020  
*/
```

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.

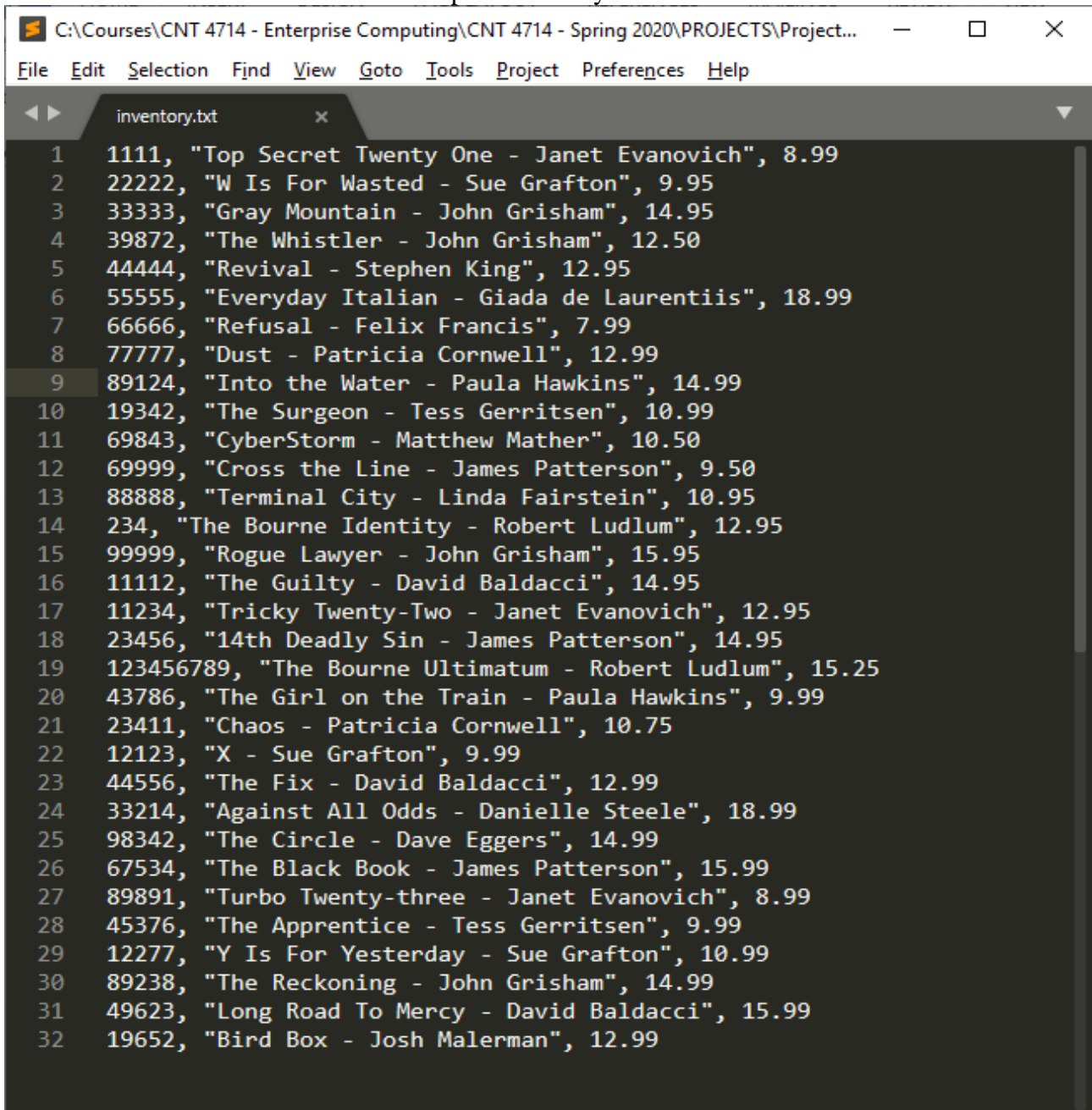
Deliverables:

- (1) Submit a working copy of your source code (all .java files), including your inventory.txt file, via WebCourses no later than 11:59pm Sunday January 26, 2020.
- (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 1111, "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
14 234, "The Bourne Identity - Robert Ludlum", 12.95
15 99999, "Rogue Lawyer - John Grisham", 15.95
16 11112, "The Guilty - David Baldacci", 14.95
17 11234, "Tricky Twenty-Two - Janet Evanovich", 12.95
18 23456, "14th Deadly Sin - James Patterson", 14.95
19 123456789, "The Bourne Ultimatum - Robert Ludlum", 15.25
20 43786, "The Girl on the Train - Paula Hawkins", 9.99
21 23411, "Chaos - Patricia Cornwell", 10.75
22 12123, "X - Sue Grafton", 9.99
23 44556, "The Fix - David Baldacci", 12.99
24 33214, "Against All Odds - Danielle Steele", 18.99
25 98342, "The Circle - Dave Eggers", 14.99
26 67534, "The Black Book - James Patterson", 15.99
27 89891, "Turbo Twenty-three - Janet Evanovich", 8.99
28 45376, "The Apprentice - Tess Gerritsen", 9.99
29 12277, "Y Is For Yesterday - Sue Grafton", 10.99
30 89238, "The Reckoning - John Grisham", 14.99
31 49623, "Long Road To Mercy - David Baldacci", 15.99
32 19652, "Bird Box - Josh Malerman", 12.99
```

2. Initial GUI:

Ye Olde Book Shoppe - Spring 2020

Enter number of items in this order:

Enter Book ID for Item #1:

Enter quantity for Item #1:

Item #1 info:

Order subtotal for 0 item(s):

Buttons: Process Item #1, Confirm Item #1, View Order, Finish Order, New Order, Exit

Quit!

Allows for processing an item once it is selected.

Confirms that the item is correct.

View the order so far.

Note that these buttons are not initially "active".

Completes an order – generates invoice and adds to the transaction file.

Clears order and starts over - no write to transaction file

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

Ye Olde Book Shoppe - Spring 2020

Enter number of items in this order:

Enter Book ID for Item #1:

Enter quantity for Item #1:

Item #1 info:

Order subtotal for 0 item(s):

Buttons: Process Item #1, Confirm Item #1, View Order, Finish Order, New Order, Exit

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

Ye Olde Book Shoppe - Spring 2020

Enter number of items in this order: 2

Enter Book ID for Item #1: 234

Enter quantity for Item #1: 1

Item #1 info: 234 "The Bourne Identity - Robert Ludlum" \$12.95 1 0% \$12.95

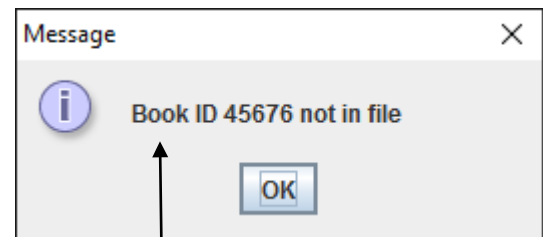
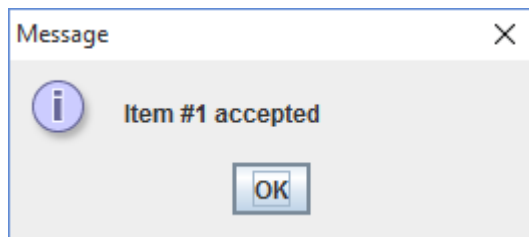
Order subtotal for 0 item(s):

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. This is the only “error” you will need to catch.

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

Ye Olde Book Shoppe - Spring 2020

Enter number of items in this order: 2

Enter Book ID for Item #2:

Enter quantity for Item #2:

Item #1 info: 234 "The Bourne Identity - Robert Ludlum" \$12.95 1 0% \$12.95

Order subtotal for 1 item(s): \$12.95

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

Note that the buttons change number.

Discount is based on the quantity of a item. If:
 1-4 = 0%
 5-9 = 10%
 10-14 = 15%

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 and processes the next item in the order (which is the last one for this order).

Ye Olde Book Shoppe - Spring 2020

Enter number of items in this order: 2

Enter Book ID for Item #2: 12123

Enter quantity for Item #2: 8

Item #2 info: 12123 "X - Sue Grafton" \$9.99 8 10% \$71.93

Order subtotal for 1 item(s): \$12.95

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.

Ye Olde Book Shoppe - Spring 2020

Number of items in this order: 2

Item #2 info: 12123 "X - Sue Grafton" \$9.99 8 10% \$71.93

Order subtotal for 2 item(s): \$84.88

Process Item Confirm Item View Order Finish Order New Order Exit

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

Message

1. 234 "The Bourne Identity - Robert Ludlum" \$12.95 1 0% \$12.95

2. 12123 "X - Sue Grafton" \$9.99 8 10% \$71.93

OK

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

Message

Date: 1/8/20, 1:35:26 PM EST

Number of line items: 2

Item#	ID	Title	Price	Qty	Disc %	Subtotal:
1.	234	"The Bourne Identity - Robert Ludlum"	\$12.95	1	0%	\$12.95
2.	12123	"X - Sue Grafton"	\$9.99	8	10%	\$71.93

Order subtotal: \$84.88

Tax rate: 6%

Tax amount: \$5.09

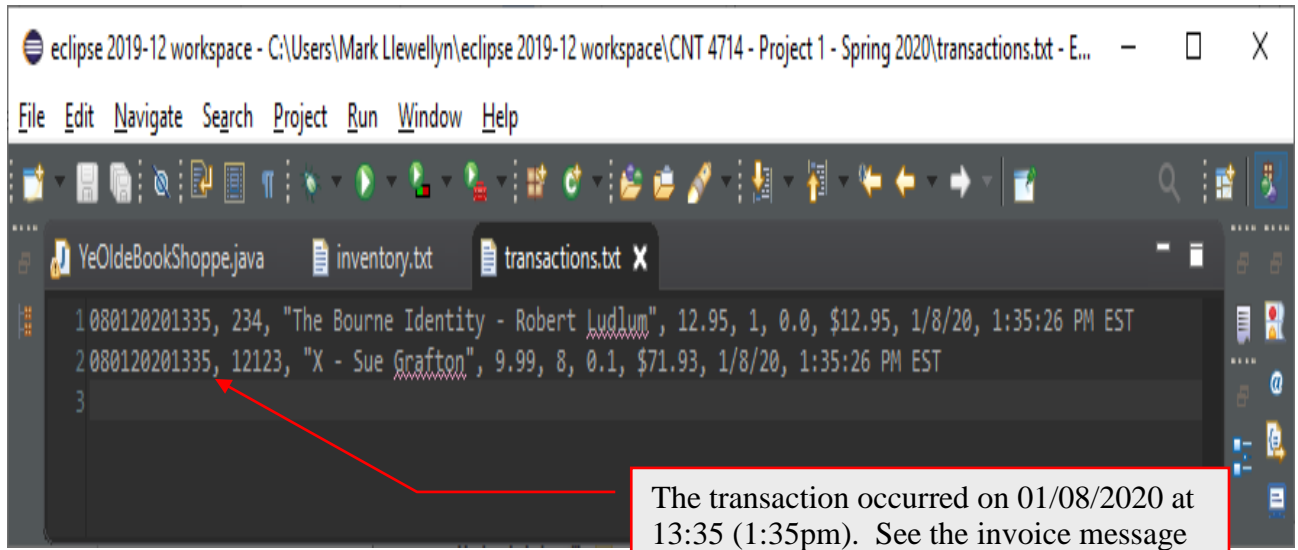
Order total: \$89.97

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. For the invoice the 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.

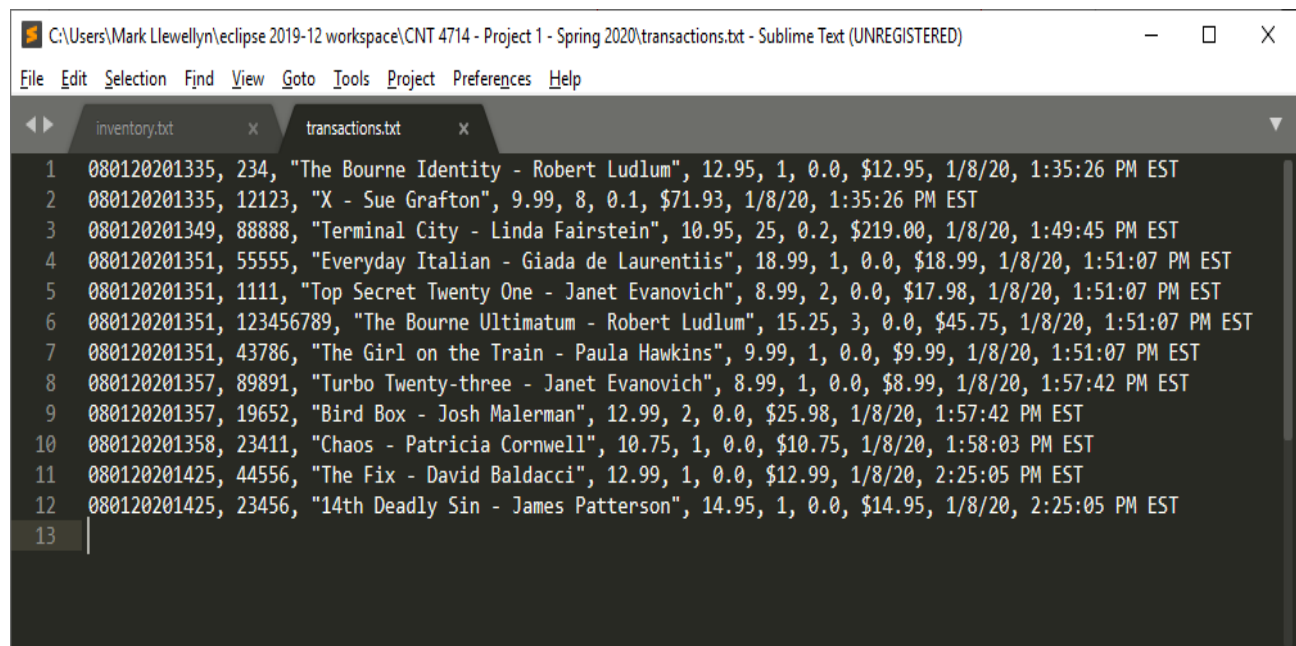


The screenshot shows the Eclipse IDE with the file `transactions.txt` open. The file contains two lines of transaction data. A red arrow points to the second line. A text box explains the date and time of the transaction.

```
1 080120201335, 234, "The Bourne Identity - Robert Ludlum", 12.95, 1, 0.0, $12.95, 1/8/20, 1:35:26 PM EST
2 080120201335, 12123, "X - Sue Grafton", 9.99, 8, 0.1, $71.93, 1/8/20, 1:35:26 PM EST
3
```

The transaction occurred on 01/08/2020 at 13:35 (1:35pm). See the invoice message above. Permutation used here 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 seven separate transactions.



The screenshot shows the Sublime Text editor with the file `transactions.txt` open. The file contains 12 lines of transaction data, each with a unique transaction ID.

```
1 080120201335, 234, "The Bourne Identity - Robert Ludlum", 12.95, 1, 0.0, $12.95, 1/8/20, 1:35:26 PM EST
2 080120201335, 12123, "X - Sue Grafton", 9.99, 8, 0.1, $71.93, 1/8/20, 1:35:26 PM EST
3 080120201349, 88888, "Terminal City - Linda Fairstein", 10.95, 25, 0.2, $219.00, 1/8/20, 1:49:45 PM EST
4 080120201351, 55555, "Everyday Italian - Giada de Laurentiis", 18.99, 1, 0.0, $18.99, 1/8/20, 1:51:07 PM EST
5 080120201351, 1111, "Top Secret Twenty One - Janet Evanovich", 8.99, 2, 0.0, $17.98, 1/8/20, 1:51:07 PM EST
6 080120201351, 123456789, "The Bourne Ultimatum - Robert Ludlum", 15.25, 3, 0.0, $45.75, 1/8/20, 1:51:07 PM EST
7 080120201351, 43786, "The Girl on the Train - Paula Hawkins", 9.99, 1, 0.0, $9.99, 1/8/20, 1:51:07 PM EST
8 080120201357, 89891, "Turbo Twenty-three - Janet Evanovich", 8.99, 1, 0.0, $8.99, 1/8/20, 1:57:42 PM EST
9 080120201357, 19652, "Bird Box - Josh Malerman", 12.99, 2, 0.0, $25.98, 1/8/20, 1:57:42 PM EST
10 080120201358, 23411, "Chaos - Patricia Cornwell", 10.75, 1, 0.0, $10.75, 1/8/20, 1:58:03 PM EST
11 080120201425, 44556, "The Fix - David Baldacci", 12.99, 1, 0.0, $12.99, 1/8/20, 2:25:05 PM EST
12 080120201425, 23456, "14th Deadly Sin - James Patterson", 14.95, 1, 0.0, $14.95, 1/8/20, 2:25:05 PM EST
13
```