

CNT 4714 – Project 1 – Summer 2020

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

Points: 100 points

Due Date: **Sunday May 31, 2020 by 11:59 pm (WebCourses time)**

Objectives: To practice event-driven programming using Java-based GUIs. To refresh your basic Java skills. To simulate (albeit at a very high-level) an enterprise application.

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>*

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**/*

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:

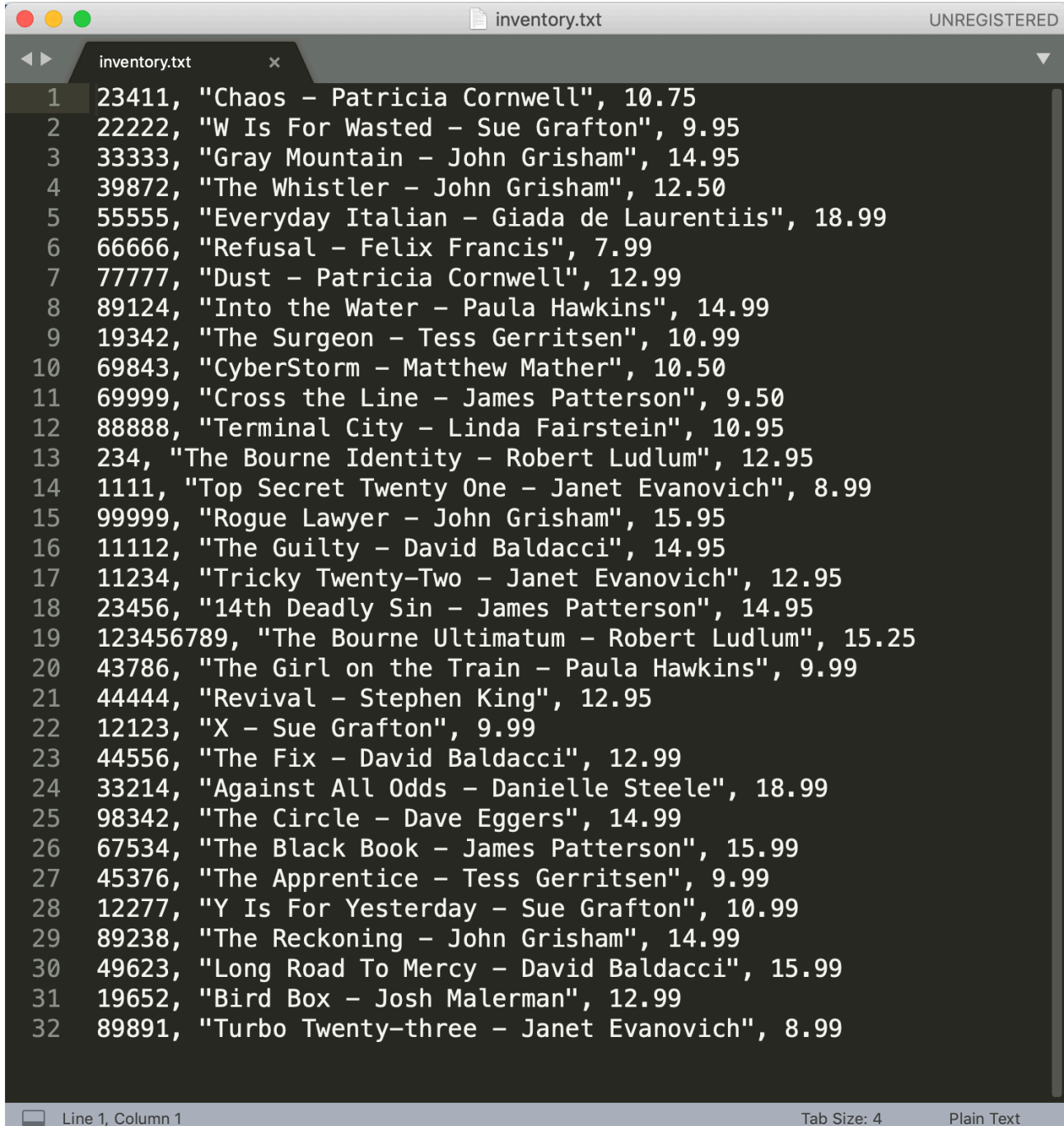
- (1) Submit a working copy of your source code (all .java files), including your `inventory.txt` file, via WebCourses no later than 11:59pm Sunday May 31, 2020.

- (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 23411, "Chaos – Patricia Cornwell", 10.75
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 55555, "Everyday Italian – Giada de Laurentiis", 18.99
6 66666, "Refusal – Felix Francis", 7.99
7 77777, "Dust – Patricia Cornwell", 12.99
8 89124, "Into the Water – Paula Hawkins", 14.99
9 19342, "The Surgeon – Tess Gerritsen", 10.99
10 69843, "CyberStorm – Matthew Mather", 10.50
11 69999, "Cross the Line – James Patterson", 9.50
12 88888, "Terminal City – Linda Fairstein", 10.95
13 234, "The Bourne Identity – Robert Ludlum", 12.95
14 1111, "Top Secret Twenty One – Janet Evanovich", 8.99
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 44444, "Revival – Stephen King", 12.95
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 45376, "The Apprentice – Tess Gerritsen", 9.99
28 12277, "Y Is For Yesterday – Sue Grafton", 10.99
29 89238, "The Reckoning – John Grisham", 14.99
30 49623, "Long Road To Mercy – David Baldacci", 15.99
31 19652, "Bird Box – Josh Malerman", 12.99
32 89891, "Turbo Twenty-three – Janet Evanovich", 8.99
```

2. Initial GUI:

The initial GUI for 'Ye Olde Book Shoppe - Summer 2020' features a dark background with yellow text for labels. The input fields are white with black text. The buttons are white with black text, except for 'Confirm Item #1', 'View Order', and 'Finish Order', which are blue with white text. Annotations are provided for several buttons:

- 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 the "Confirm Item", "View order", and "Finish Order" buttons are not initially "active".
- New Order:** Clears order and starts over - no write to transaction file.
- Exit:** Quit!
- Finish Order (Red box):** Completes an order – generates invoice and adds to the transaction file.

3. GUI after user specifies total number of items in the order and makes a selection for item #1, but before clicking the "Process Item" button.

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

- Enter number of items in this order: 2
- 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 buttons remain the same as in the initial GUI.

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

Ye Olde Book Shoppe - Summer 2020

Enter number of items in this order: 2

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

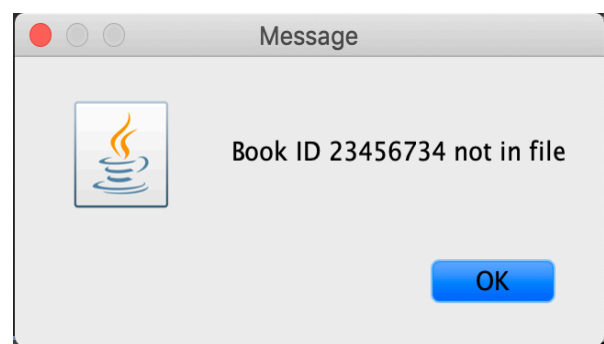
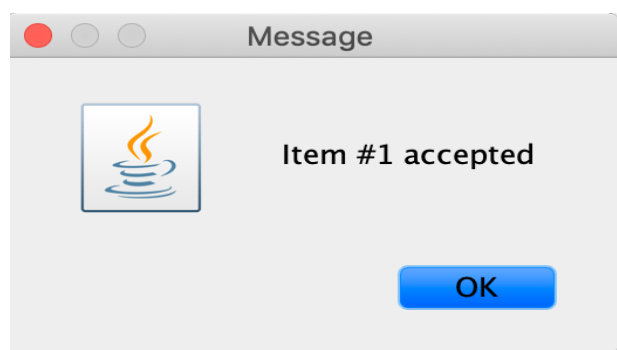
Order subtotal for 0 item(s):

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. Note proper currency formatting.

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.

Discount is based on the quantity of a item. If:
1-4 = 0%
5-9 = 10%
10-14 = 15%
>=15 = 20%

Note that the buttons change number.

Ye Olde Book Shoppe - Summer 2020

Enter number of items in this order: 2

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

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

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 - Summer 2020

Enter number of items in this order: 2

Enter Book ID for Item #2: 123123

Enter quantity for Item #2: 12

Item #2 info: 123123 "X - Sue Grafton" \$9.99 12 15% \$101.90

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

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 - Summer 2020

Number of items in this order: 2

Item #2 info: 123123 "X - Sue Grafton" \$9.99 12 15% \$101.90

Order subtotal for 2 item(s): \$111.85

Process Item Confirm Item View Order Finish Order New Order Exit

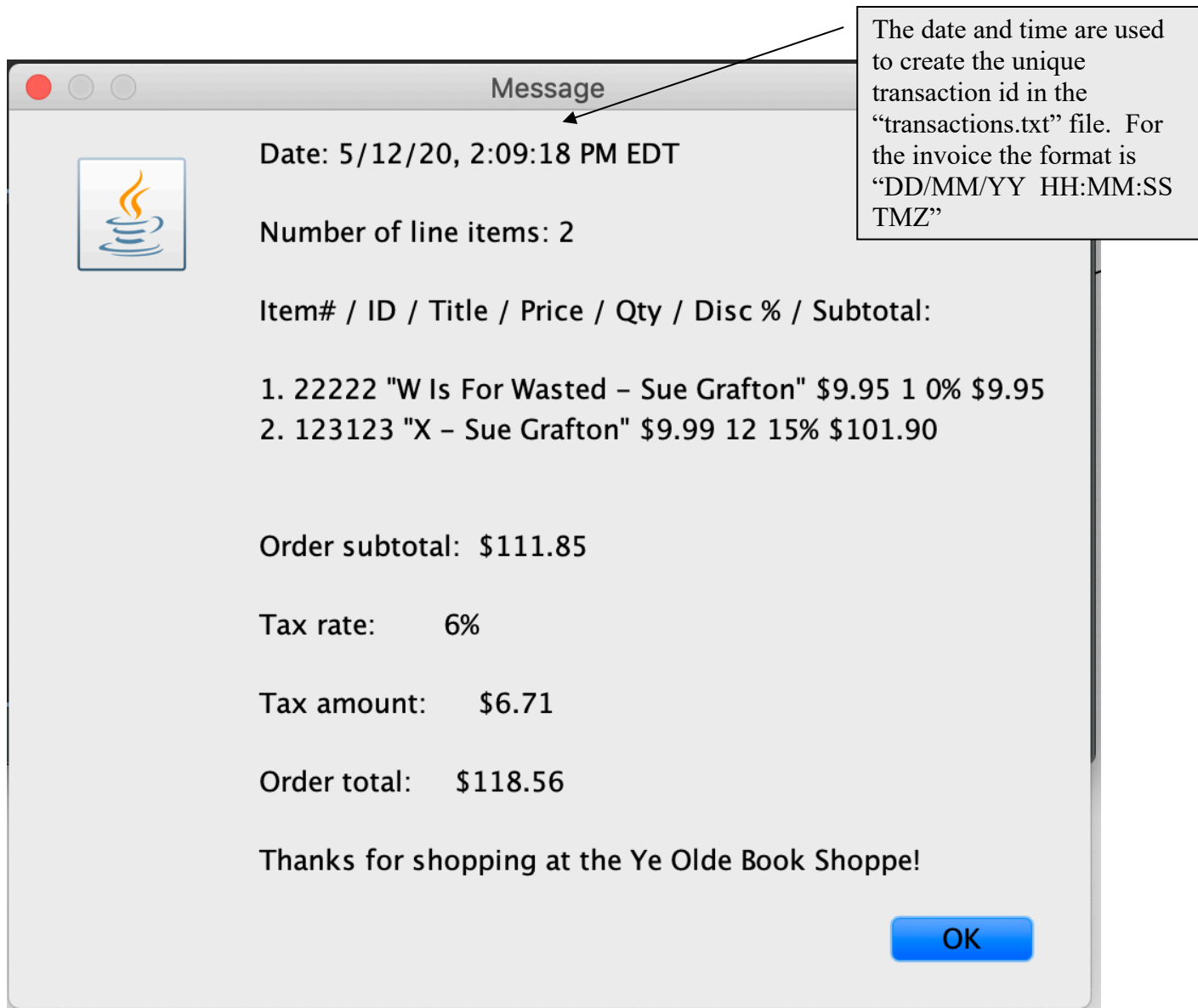
9. When the user clicks the “View Order” button, the following message box should appear.

Message

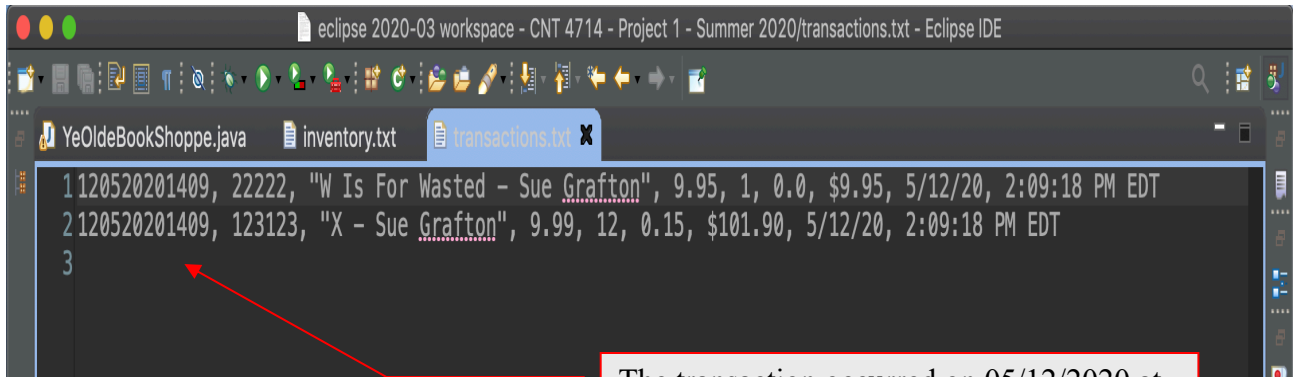
1. 22222 "W Is For Wasted - Sue Grafton" \$9.95 1 0% \$9.95
2. 123123 "X - Sue Grafton" \$9.99 12 15% \$101.90

OK

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



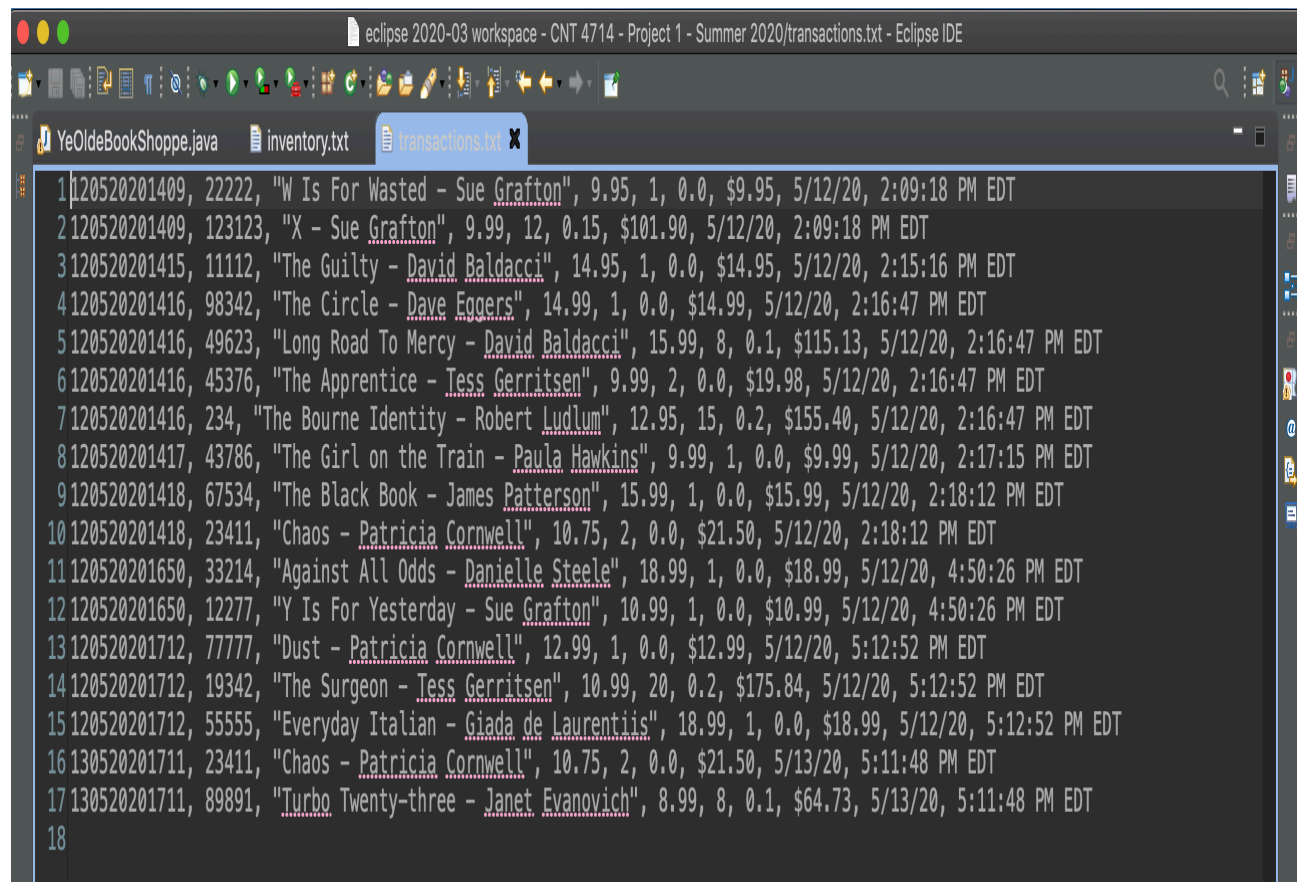
11. The transaction file after order shown above was finished. Note the unique transaction ids based on the date and time.



```
eclipse 2020-03 workspace - CNT 4714 - Project 1 - Summer 2020/transactions.txt - Eclipse IDE
YeOldeBookShope.java inventory.txt transactions.txt
1120520201409, 22222, "W Is For Wasted - Sue Grafton", 9.95, 1, 0.0, $9.95, 5/12/20, 2:09:18 PM EDT
2120520201409, 123123, "X - Sue Grafton", 9.99, 12, 0.15, $101.90, 5/12/20, 2:09:18 PM EDT
3
```

The transaction occurred on 05/12/2020 at 14:09 (2:09pm). 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 eight separate transactions., notice that the last transaction is on a different day than the first six.



```
eclipse 2020-03 workspace - CNT 4714 - Project 1 - Summer 2020/transactions.txt - Eclipse IDE
YeOldeBookShope.java inventory.txt transactions.txt
1120520201409, 22222, "W Is For Wasted - Sue Grafton", 9.95, 1, 0.0, $9.95, 5/12/20, 2:09:18 PM EDT
2120520201409, 123123, "X - Sue Grafton", 9.99, 12, 0.15, $101.90, 5/12/20, 2:09:18 PM EDT
3120520201415, 11112, "The Guilty - David Baldacci", 14.95, 1, 0.0, $14.95, 5/12/20, 2:15:16 PM EDT
4120520201416, 98342, "The Circle - Dave Eggers", 14.99, 1, 0.0, $14.99, 5/12/20, 2:16:47 PM EDT
5120520201416, 49623, "Long Road To Mercy - David Baldacci", 15.99, 8, 0.1, $115.13, 5/12/20, 2:16:47 PM EDT
6120520201416, 45376, "The Apprentice - Tess Gerritsen", 9.99, 2, 0.0, $19.98, 5/12/20, 2:16:47 PM EDT
7120520201416, 234, "The Bourne Identity - Robert Ludlum", 12.95, 15, 0.2, $155.40, 5/12/20, 2:16:47 PM EDT
8120520201417, 43786, "The Girl on the Train - Paula Hawkins", 9.99, 1, 0.0, $9.99, 5/12/20, 2:17:15 PM EDT
9120520201418, 67534, "The Black Book - James Patterson", 15.99, 1, 0.0, $15.99, 5/12/20, 2:18:12 PM EDT
10120520201418, 23411, "Chaos - Patricia Cornwell", 10.75, 2, 0.0, $21.50, 5/12/20, 2:18:12 PM EDT
11120520201650, 33214, "Against All Odds - Danielle Steele", 18.99, 1, 0.0, $18.99, 5/12/20, 4:50:26 PM EDT
12120520201650, 12277, "Y Is For Yesterday - Sue Grafton", 10.99, 1, 0.0, $10.99, 5/12/20, 4:50:26 PM EDT
13120520201712, 77777, "Dust - Patricia Cornwell", 12.99, 1, 0.0, $12.99, 5/12/20, 5:12:52 PM EDT
14120520201712, 19342, "The Surgeon - Tess Gerritsen", 10.99, 20, 0.2, $175.84, 5/12/20, 5:12:52 PM EDT
15120520201712, 55555, "Everyday Italian - Giada de Laurentiis", 18.99, 1, 0.0, $18.99, 5/12/20, 5:12:52 PM EDT
16130520201711, 23411, "Chaos - Patricia Cornwell", 10.75, 2, 0.0, $21.50, 5/13/20, 5:11:48 PM EDT
17130520201711, 89891, "Turbo Twenty-three - Janet Evanovich", 8.99, 8, 0.1, $64.73, 5/13/20, 5:11:48 PM EDT
18
```