

# CNT 4714 – Programming Assignment #1 – Spring 2018

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

**Points:** 100 points

**Due Date:** **Sunday January 28, 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 – Spring 2018  
   Assignment title: Program 1 – Event-driven Programming  
   Date: Sunday January 28, 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:

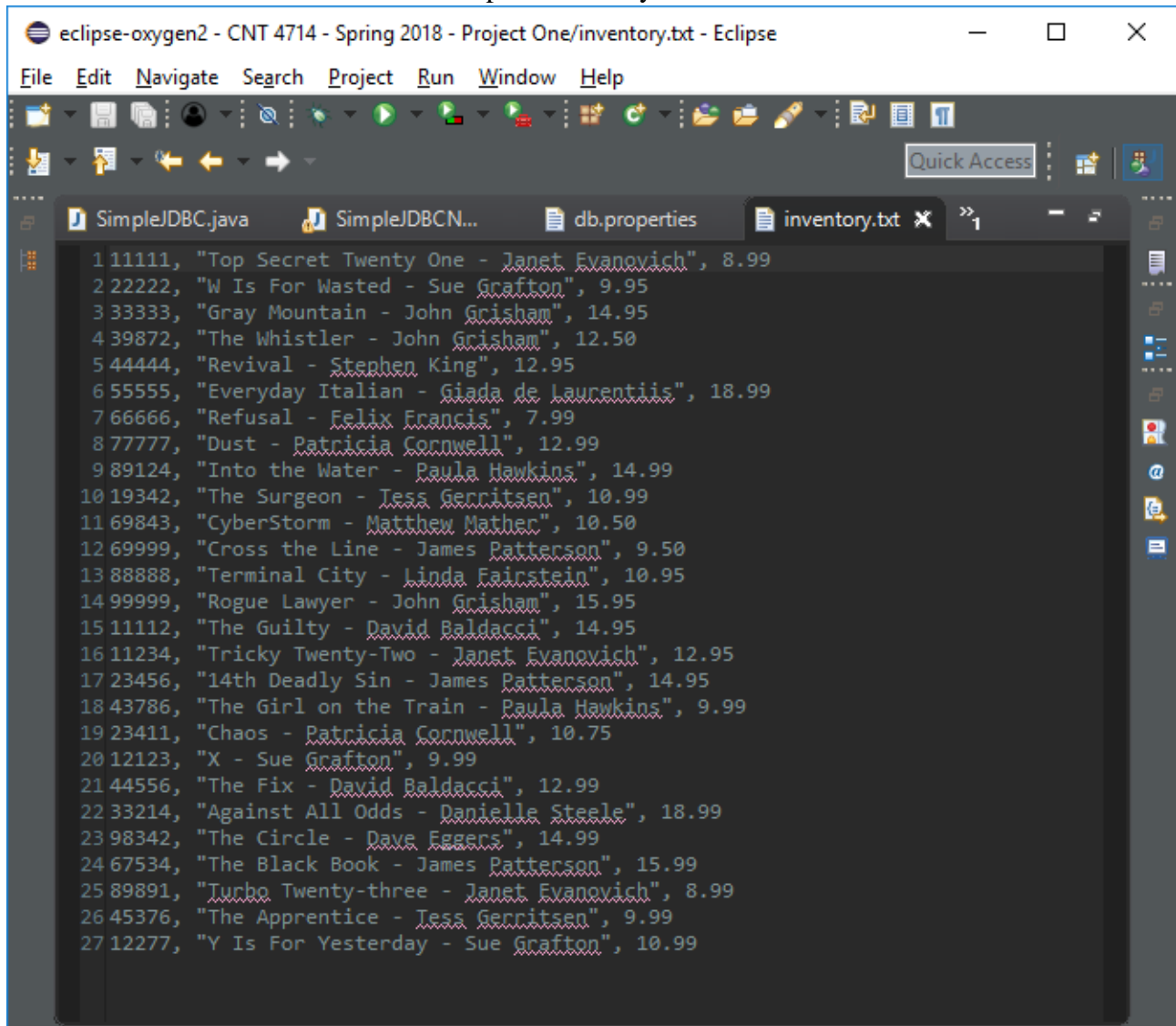
- (1) Submit a working copy of your source code (all .java files) via WebCourses no later than 11:59pm Sunday January 28, 2018.

- (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 green background with white text and input fields. The title bar shows the application name and standard window controls. The main area contains the following labels and input fields:

- 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): [ ]

At the bottom, a blue 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 explain the functions of the 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 these buttons are not initially "active".
- New Order:** Clears order and starts over.
- Exit:** Completes an order – generates invoice and adds to transaction file.

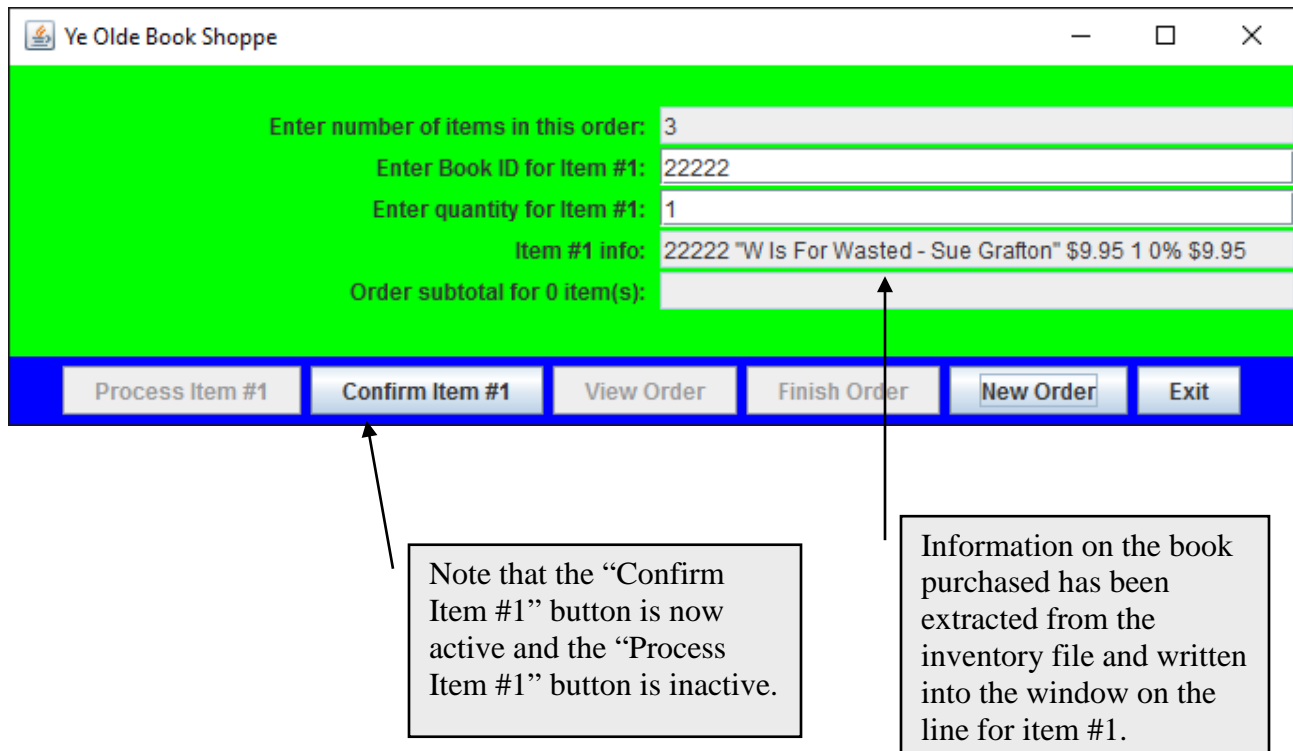
## 3. GUI after user specifies total number of items in the order and makes a selection for item #1.

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

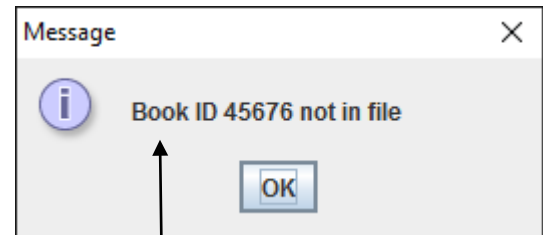
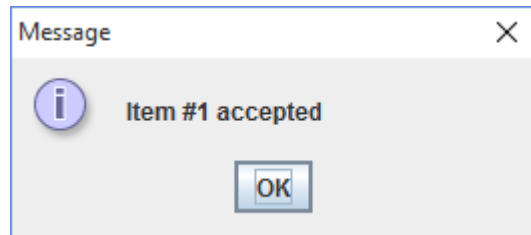
- Enter number of items in this order: 3
- Enter Book ID for Item #1: 22222
- Enter quantity for Item #1: 1
- Item #1 info: [ ]
- Order subtotal for 0 item(s): [ ]

The buttons at the bottom remain the same: '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.



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



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

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

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.

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

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

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" with a green 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 containing six buttons: "Process Item", "Confirm Item", "View Order", "Finish Order", "New Order", and "Exit".

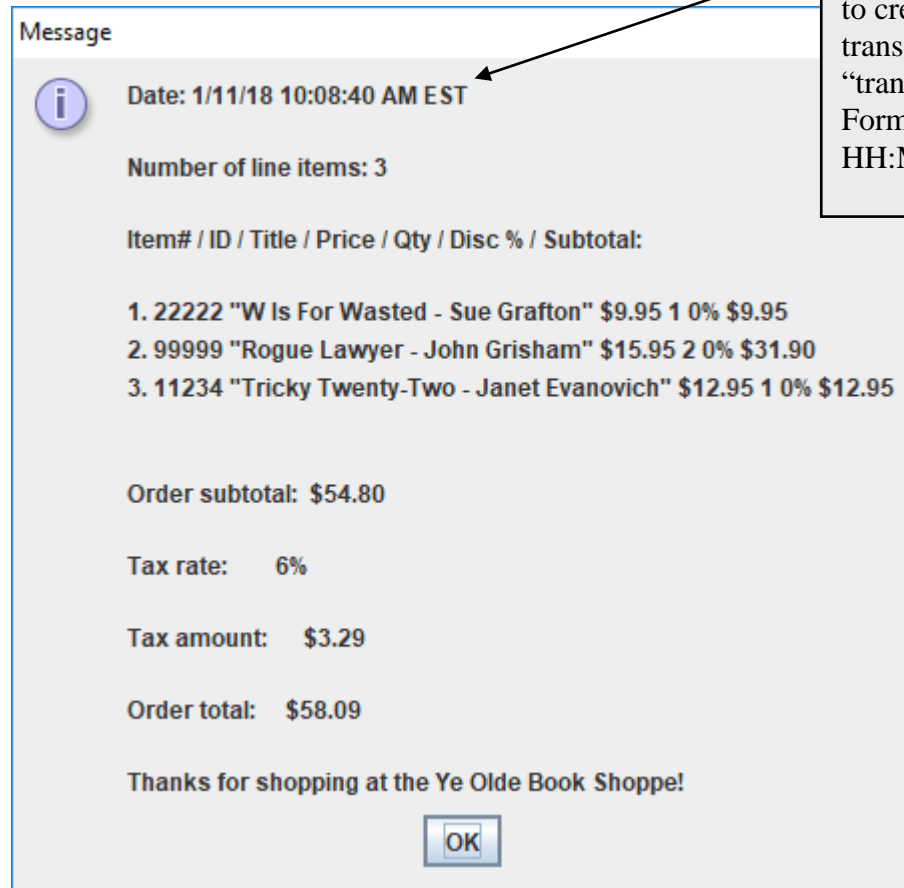
9. When the user clicks the "View Order" button, the following message box should appear.

The screenshot shows a "Message" dialog box with a light gray background and a close button (X) in the top right corner. It contains an information icon (i) and the following text:

- 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

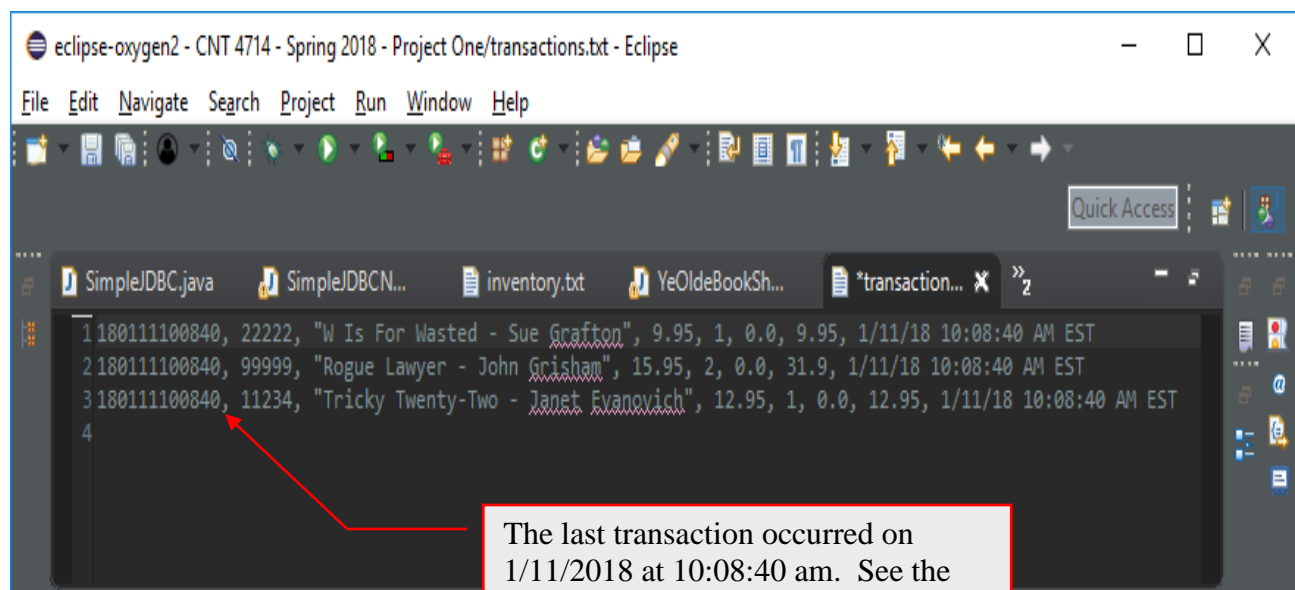
An "OK" button is located at the bottom center of the dialog box.

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



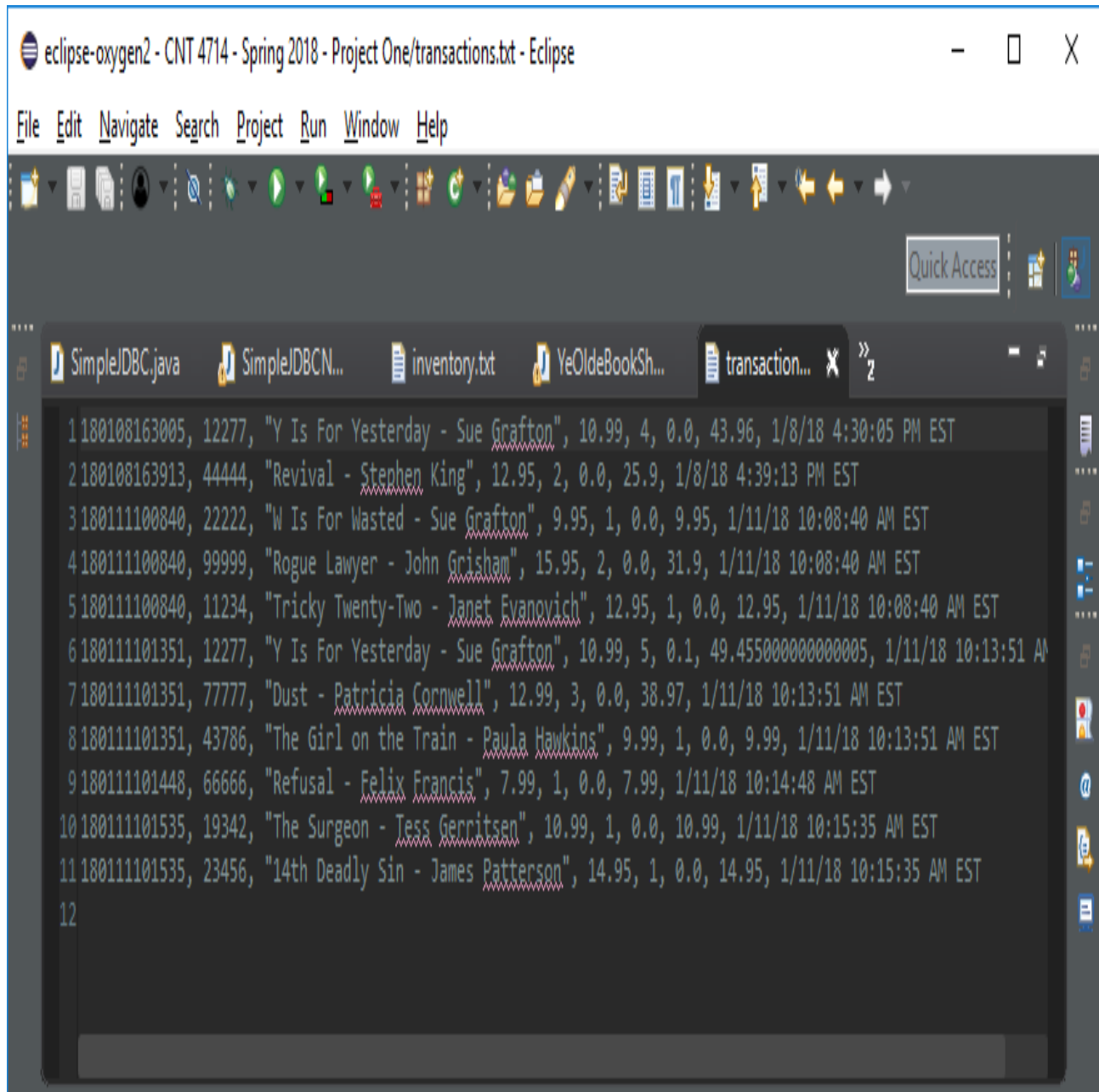
The date and time are used to create the unique transaction id in the “transactions.txt” file. Format is “DD/MM/YY HH:MM:SS TMZ”

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



The last transaction occurred on 1/11/2018 at 10:08:40 am. 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.



The screenshot shows the Eclipse IDE interface. The title bar reads "eclipse-oxygen2 - CNT 4714 - Spring 2018 - Project One/transactions.txt - Eclipse". The menu bar includes File, Edit, Navigate, Search, Project, Run, Window, and Help. The toolbar contains various icons for file operations and development tools. The editor window displays a file named "transaction..." with a list of 11 transactions. Each transaction is a comma-separated string containing a unique ID, a quantity, a book title, an author, a price, a tax, a total, and a timestamp. The transactions are numbered 1 through 11 in the left margin. The text is color-coded: IDs are blue, quantities are green, titles and authors are red, prices are green, tax is blue, total is green, and timestamps are blue.

```
1 180108163005, 12277, "Y Is For Yesterday - Sue Grafton", 10.99, 4, 0.0, 43.96, 1/8/18 4:30:05 PM EST
2 180108163913, 44444, "Revival - Stephen King", 12.95, 2, 0.0, 25.9, 1/8/18 4:39:13 PM EST
3 180111100840, 22222, "W Is For Wasted - Sue Grafton", 9.95, 1, 0.0, 9.95, 1/11/18 10:08:40 AM EST
4 180111100840, 99999, "Rogue Lawyer - John Grisham", 15.95, 2, 0.0, 31.9, 1/11/18 10:08:40 AM EST
5 180111100840, 11234, "Tricky Twenty-Two - Janet Evanovich", 12.95, 1, 0.0, 12.95, 1/11/18 10:08:40 AM EST
6 180111101351, 12277, "Y Is For Yesterday - Sue Grafton", 10.99, 5, 0.1, 49.455000000000005, 1/11/18 10:13:51 AM EST
7 180111101351, 77777, "Dust - Patricia Cornwell", 12.99, 3, 0.0, 38.97, 1/11/18 10:13:51 AM EST
8 180111101351, 43786, "The Girl on the Train - Paula Hawkins", 9.99, 1, 0.0, 9.99, 1/11/18 10:13:51 AM EST
9 180111101448, 66666, "Refusal - Felix Francis", 7.99, 1, 0.0, 7.99, 1/11/18 10:14:48 AM EST
10 180111101535, 19342, "The Surgeon - Jess Gurrtsen", 10.99, 1, 0.0, 10.99, 1/11/18 10:15:35 AM EST
11 180111101535, 23456, "14th Deadly Sin - James Patterson", 14.95, 1, 0.0, 14.95, 1/11/18 10:15:35 AM EST
12
```