

CNT 4714 – Project 1 – Fall 2020

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

Points: 100 points

Due Date: **Sunday September 13, 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 that simulates an e-store (we’ll call our store Nile Dot Com... we’re not quite as big as Amazon.com!)¹ which allows the user to add in stock items 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 entries; an item id (a string), a quoted string containing the description of the item, and the unit price for one of the item (a double). A sample file is provided for you on WebCourses. Feel free to create your own input file.
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 (see below).

Restrictions:

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

```
/* Name: <your name goes here>  
   Course: CNT 4714 – Fall 2020  
   Assignment title: Project 1 – Event-driven Enterprise Simulation  
   Date: Sunday September 13, 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.

¹ Source = <https://www.wonderslist.com/top-10-largest-rivers/>

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 September 13, 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 items.
- (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).
- (4) You can zip all of the above into a single folder.

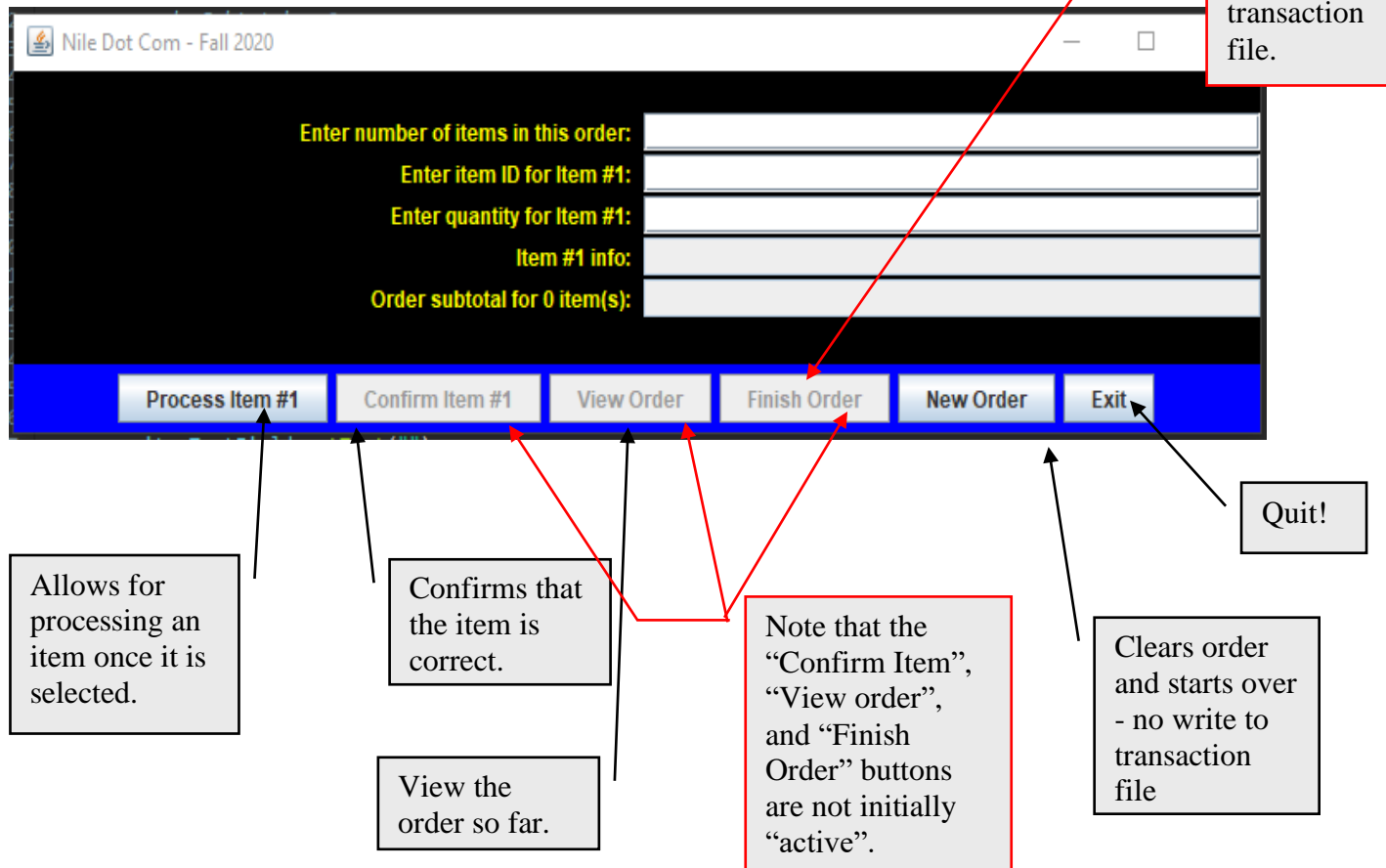
Additional Information:

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

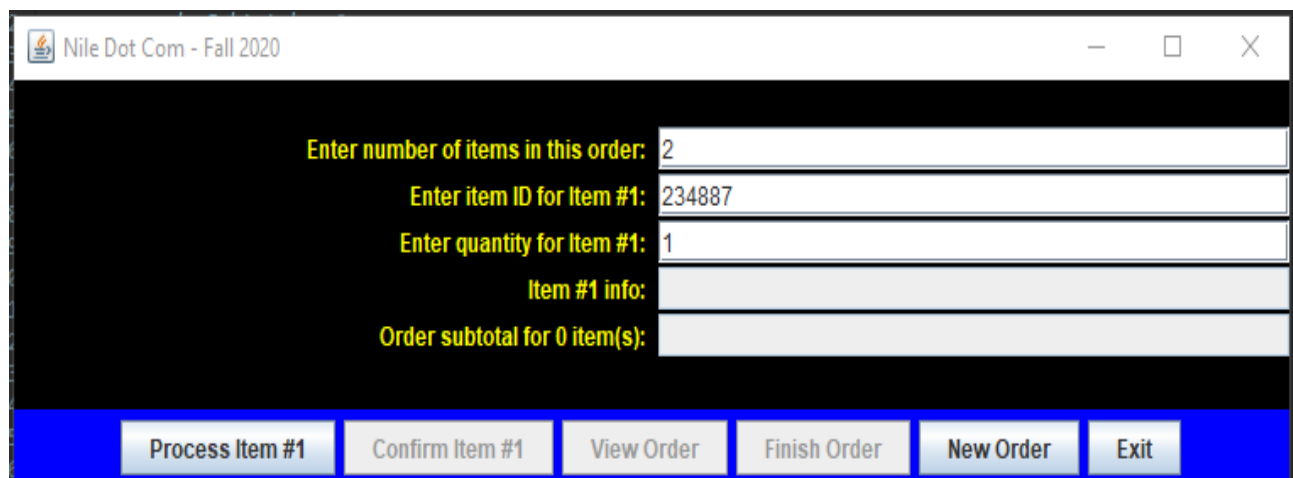
1. Screen shot of the contents of an example “inventory.txt” file.

```
1 14, "Stanley #2 Philips Screwdriver", 6.95
2 2342, "Polar USB mini desk fan", 10.50
3 22389, "Swingline Model B2200 stapler", 18.00
4 3451, "Oakley Jawbreaker sunglasses", 236.00
5 4452, "Colnago stem - black 130mm", 145.99
6 56718, "Tamiya McLaren MP4-8 Ford 1/20", 75.00
7 14909, "1/4in - 28tpi SS nuts", 1.00
8 2190, "Hefty 30 gal with handles - box 40", 19.00
9 22345532, "3 ft mini USB cable M-F", 4.50
10 678944, "EZ-ink cartridge set for Epson 4630", 75.00
11 234887, "2021 CSX train calendar", 12.95
12 198, "Box of 10 Sharpie Roller 0.5mm", 6.50
13 298765, "3x5 index cards - 100 count", 2.25
14 7654, "Bell Stratos helmet - size Lg - blue". 230.00
15 65435689, "12x16 paper cutter with ruler", 35.95
16 8543, "Ritchey 1 inch threaded headset - silver", 45.00
17 38712987, "Wilson NCAA official softball - 1 ea", 5.50
18 2234983, "Wilson NCAA official softball - 1 doz", 55.00
19 23, "Tamiya 2oz paint - ferrari red", 2.39
20 97634, "Campagnolo 12 spd crankset - 53/39 175mm", 750.00
21 85456, "Campagnolo 12 spd rear der", 350.00
22 67913, "Gios Torino t-shirt size XXL". 25.00
23 387, "Brachs butterscotch hard candy - 1 lb", 4.50
24 113355, "The Bourne Identity - blu-ray", 15.95
25 1111, "Top Secret Twenty One - Janet Evanovich", 8.99
26 286934, "1 lb - coffee beans", 6.50
27 358922, "25 lbs peanuts in shell", 45.00
28 47831, "8x10 picture frame", 4.95
29 19981, "Pledge furniture polish 13oz", 6.50
30 228865, "3M Super 33+ electrical tape", 3.50
31 228865X, "3M Super 33+ electrical tape box 10", 32.50
32 4762, "HP copy paper ultra white - ream", 13.50
33 29741, "Plush teddy bear 8 inch", 24.00
34 339921, "Yamaha Kt 100 kart engine", 950.00
35 115693, "Colnago C64 - Mapei frame", 6500.00
36 582913, "Look Keo 2 Max pedals", 135.00
37 4499120, "M&Ms dark chocolate w/peanuts - 3oz", 2.50
38 268, "Sidi Wire 2 carbon shoes", 499.99
39 89476, "Assos T-Evo shorts", 299.95
40 245667, "Colnago jersey, size 6", 120.00
41
```

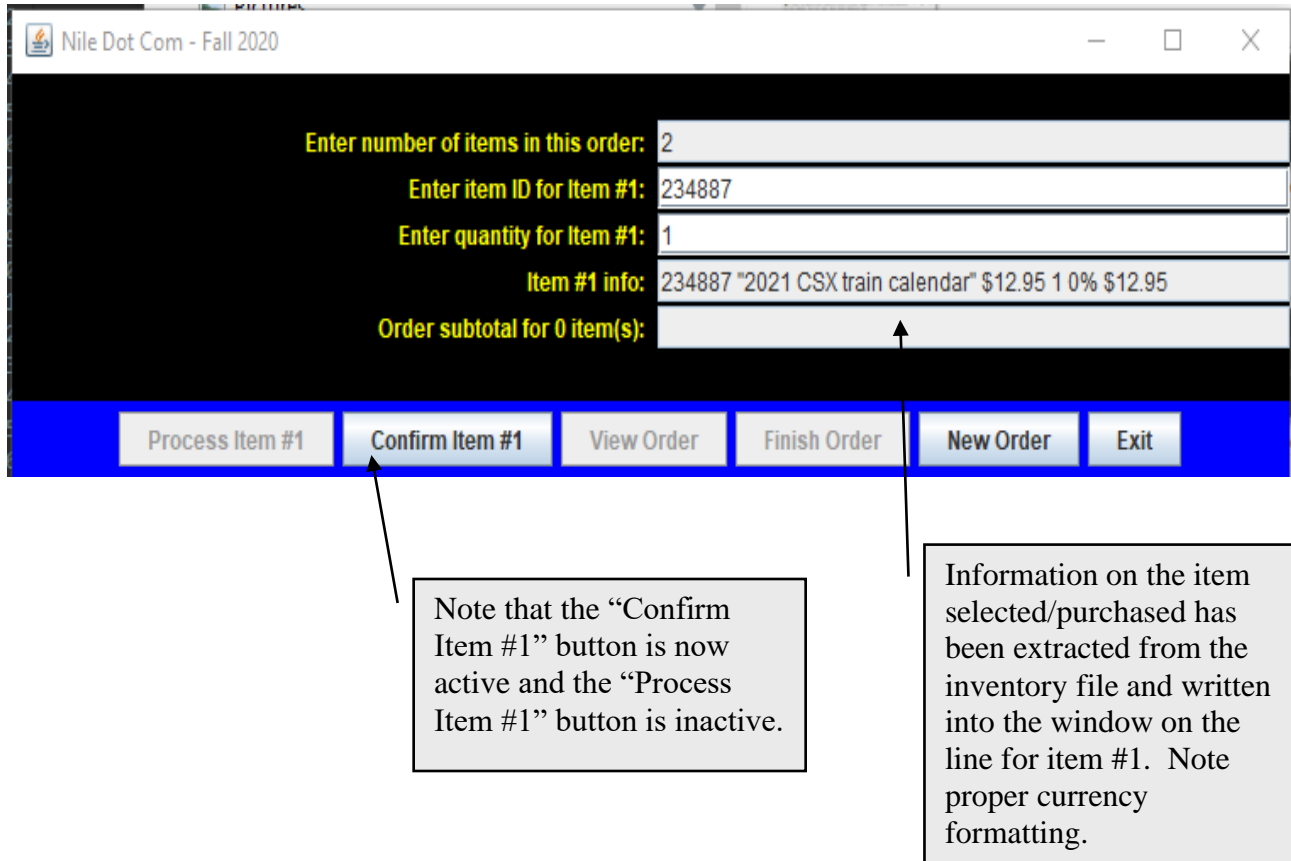
2. Initial GUI:



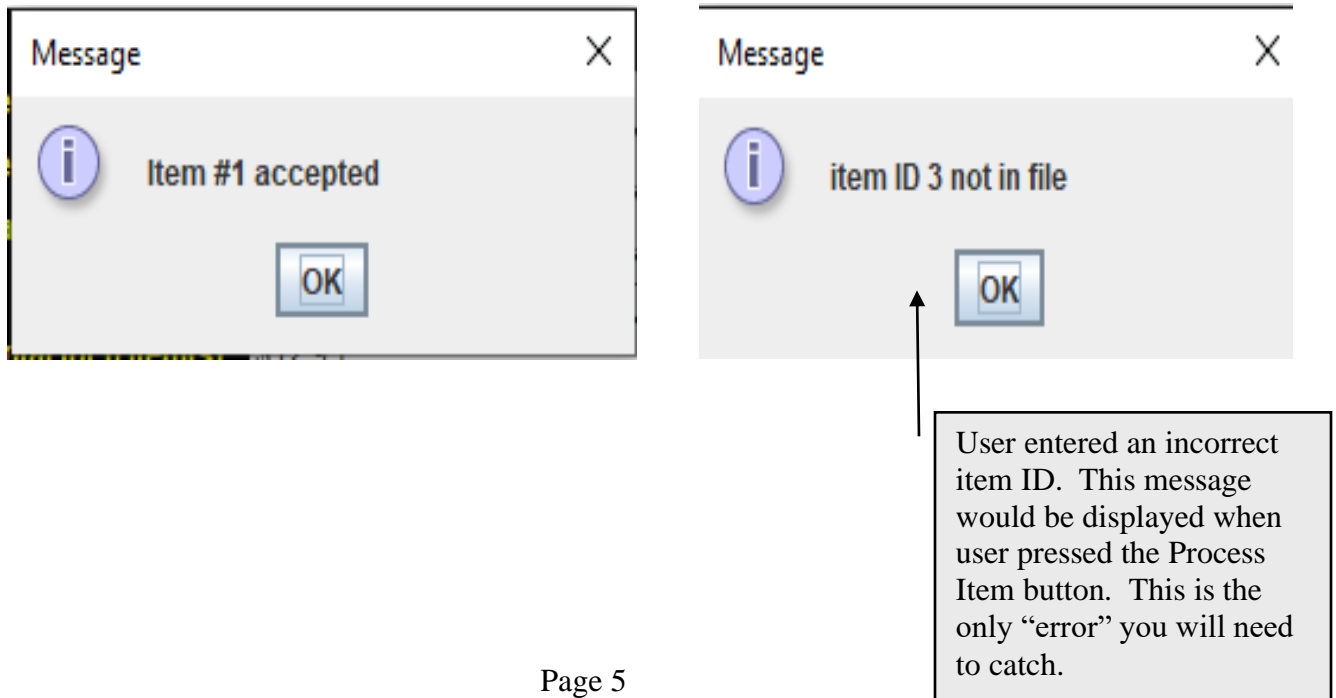
3. GUI after user specifies total number of items in the order and makes a selection for item #1, but before clicking the “Process Item” button.



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.

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.

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 (but has not yet confirmed) the next item in the order (which is the last one for this order).

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 "Nile Dot Com - Fall 2020". The main area has a black background with yellow text. It displays "Number of items in this order: 2" with three empty input fields below it. Then it shows "Item #2 info: 3451 'Oakley Jawbreaker sunglasses' \$236.00 1 0% \$236.00". Below that is "Order subtotal for 2 item(s): \$248.95". At the bottom is a blue bar with six buttons: "Process Item", "Confirm Item", "View Order", "Finish Order", "New Order", and "Exit".

Number of items in this order:	2
Item #2 info:	3451 "Oakley Jawbreaker sunglasses" \$236.00 1 0% \$236.00
Order subtotal for 2 item(s):	\$248.95

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

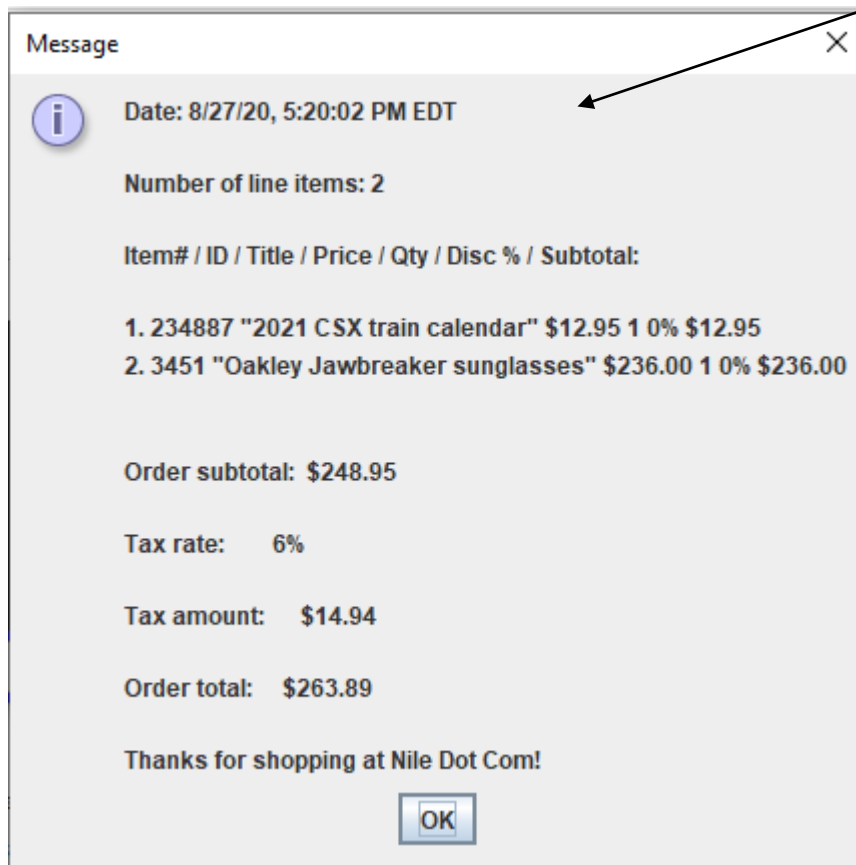
9. When the user clicks the “View Order” button, the following message box should appear.

The screenshot shows a "Message" dialog box with a close button (X) in the top right. It contains an information icon (i) and a list of two items. At the bottom is an "OK" button.

1. 234887 "2021 CSX train calendar" \$12.95 1 0% \$12.95
2. 3451 "Oakley Jawbreaker sunglasses" \$236.00 1 0% \$236.00

OK

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



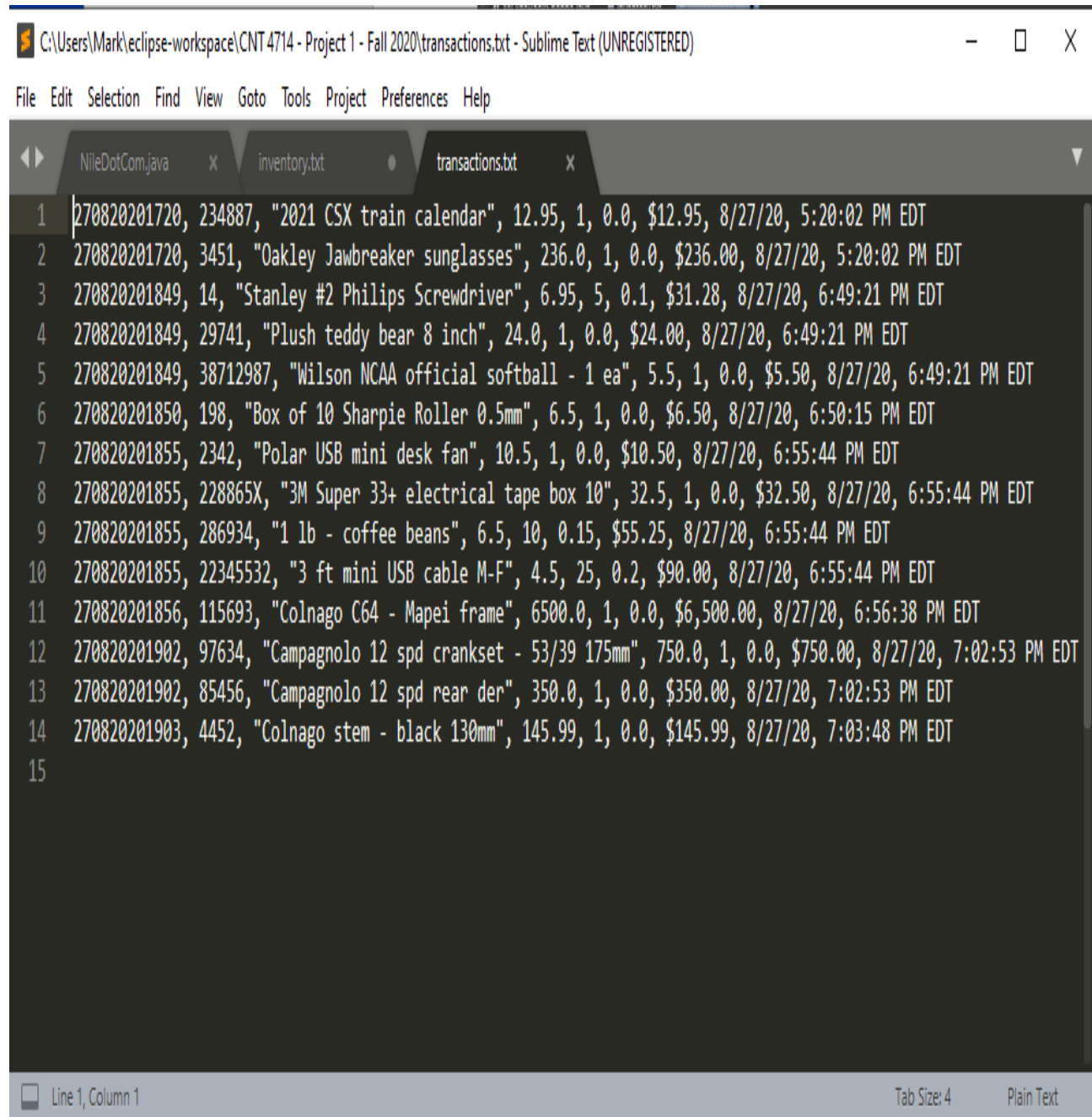
The date and time are used to create the unique transaction id in the “transactions.txt” file. For the invoice the format is “DD/MM/YY HH:MM:SS TMZ”

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



The transaction occurred on 08/27/2020 at 17:20 (5:20pm). 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 a Sublime Text editor window titled "C:\Users\Mark\workspace\CNT4714 - Project 1 - Fall 2020\transactions.txt - Sublime Text (UNREGISTERED)". The editor has three tabs open: "NileDotCom.java", "inventory.txt", and "transactions.txt". The "transactions.txt" tab is active, displaying 15 lines of transaction data. Each line contains a unique transaction ID, a quantity, a description, a unit price, a total price, and a timestamp. The data is as follows:

Line	Transaction ID	Quantity	Description	Unit Price	Total Price	Timestamp
1	270820201720	234887	"2021 CSX train calendar"	12.95	\$12.95	8/27/20, 5:20:02 PM EDT
2	270820201720	3451	"Oakley Jawbreaker sunglasses"	236.00	\$236.00	8/27/20, 5:20:02 PM EDT
3	270820201849	14	"Stanley #2 Philips Screwdriver"	6.95	\$31.28	8/27/20, 6:49:21 PM EDT
4	270820201849	29741	"Plush teddy bear 8 inch"	24.00	\$24.00	8/27/20, 6:49:21 PM EDT
5	270820201849	38712987	"Wilson NCAA official softball - 1 ea"	5.50	\$5.50	8/27/20, 6:49:21 PM EDT
6	270820201850	198	"Box of 10 Sharpie Roller 0.5mm"	6.50	\$6.50	8/27/20, 6:50:15 PM EDT
7	270820201855	2342	"Polar USB mini desk fan"	10.50	\$10.50	8/27/20, 6:55:44 PM EDT
8	270820201855	228865X	"3M Super 33+ electrical tape box 10"	32.50	\$32.50	8/27/20, 6:55:44 PM EDT
9	270820201855	286934	"1 lb - coffee beans"	6.50	\$55.25	8/27/20, 6:55:44 PM EDT
10	270820201855	22345532	"3 ft mini USB cable M-F"	4.50	\$90.00	8/27/20, 6:55:44 PM EDT
11	270820201856	115693	"Colnago C64 - Mapei frame"	6500.00	\$6,500.00	8/27/20, 6:56:38 PM EDT
12	270820201902	97634	"Campagnolo 12 spd crankset - 53/39 175mm"	750.00	\$750.00	8/27/20, 7:02:53 PM EDT
13	270820201902	85456	"Campagnolo 12 spd rear der"	350.00	\$350.00	8/27/20, 7:02:53 PM EDT
14	270820201903	4452	"Colnago stem - black 130mm"	145.99	\$145.99	8/27/20, 7:03:48 PM EDT
15						

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