

# CNT 4714 – Project 1 – Spring 2022

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

**Points:** 100 points

**Due Date:** **Sunday January 30, 2022 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!)<sup>1</sup> 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 four entries; an item id (a string), a quoted string containing the description of the item, an in stock status (a string), 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 for testing purposes or augment the provided 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 – Spring 2022*

*Assignment title: Project 1 – Event-driven Enterprise Simulation*

*Date: Sunday January 30, 2022*

*\*/*

**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.

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

**Deliverables:**

**Submit the following via WebCourses no later than 11:59pm Sunday January 30, 2022.**

**You can zip everything into a single folder if you would like.**

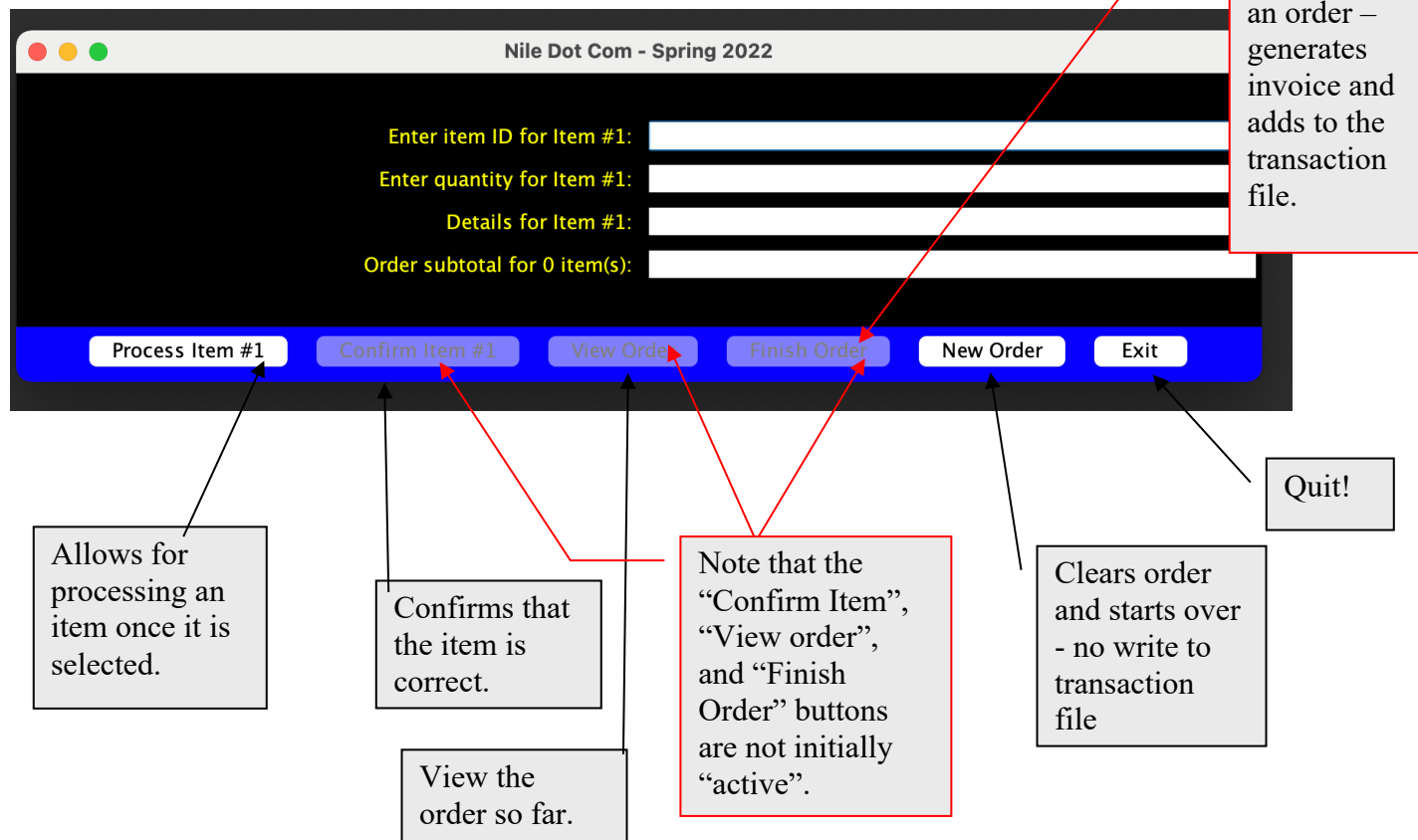
- (1) A working copy of your source code (all .java files) and any necessary supporting libraries.
- (2) Include a file that contains the following nine screen shots.
  - a. The initial GUI (like number 2 in Additional Information below).
  - b. The GUI after the user has entered an item number (ID) and quantity and clicked the “Process Item #” button (like number 4 below).
  - c. The pop-up message box when the user has confirmed the selected item (like number 5 below).
  - d. The pop-up message box when the user has entered an item number (ID) that was not found in the inventory file (like number 5 below).
  - e. The GUI after the user has confirmed the selected item (like number 6 below).
  - f. The GUI after the user has confirmed an item and has entered another item and processed it, but not yet confirmed it (like number 7 below).
  - g. The message dialog box when the user clicks the “View Order” button with multiple items in the order (like number 9 below).
  - h. The message dialog box when the user clicks the “Finish Order” button for an order containing multiple items (like number 10 below).
  - i. The message dialog box when the user has entered an item number (ID) for an item that is out of stock (like number 12 below).
- (3) Include your “transactions.txt” file as it stands after several different transactions have been recorded. You should have at least 5 different transactions in the file with at least three of these transactions having four or more items in the transaction. (similar to the one shown on the last page of this document).

**Additional Information:**

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

```
1 14, "Stanley #2 Philips Screwdriver", true, 6.95
2 2342, "Polar USB mini desk fan", false, 10.50
3 22389, "Swingline Model B2200 stapler", true, 18.00
4 3451, "Oakley Jawbreaker sunglasses", true, 236.00
5 4452, "Colnago stem - black 130mm", false, 145.99
6 56718, "Tamiya McLaren MP4-8 Ford 1/20", false, 75.00
7 14909, "1/4in - 28tpi SS nuts", true, 1.00
8 2190, "Hefty 30 gal with handles - box 40", true, 19.00
9 22345532, "3 ft mini USB cable M-F", true, 4.50
10 678944, "EZ-ink cartridge set for Epson 4630", false, 75.00
11 234887, "2021 CSX train calendar", true, 12.95
12 198, "Box of 10 Sharpie Roller 0.5mm", true, 6.50
13 298765, "3x5 index cards - 100 count", true, 2.25
14 7654, "Bell Stratos helmet - size Lg - blue", false, 230.00
15 65435689, "12x16 paper cutter with ruler", true, 35.95
16 8543, "Ritchey 1 inch threaded headset - silver", true, 45.00
17 38712987, "Wilson NCAA official softball - 1 ea", true, 5.50
18 2234983, "Wilson NCAA official softball - 1 doz", true, 55.00
19 23, "Tamiya 2oz paint - ferrari red", true, 2.39
20 97634, "Campagnolo 12 spd crankset - 53/39 175mm", true, 750.00
21 85456, "Campagnolo 12 spd rear der", true, 350.00
22 67913, "Gios Torino t-shirt size XXL", true, 25.00
23 387, "Brachs butterscotch hard candy - 1 lb", true, 4.50
24 113355, "The Bourne Identity - blu-ray", true, 15.95
25 1111, "Top Secret Twenty One - Janet Evanovich", true, 8.99
26 286934, "1 lb - coffee beans", true, 6.50
27 358922, "25 lbs peanuts in shell", false, 45.00
28 47831, "8x10 picture frame", true, 4.95
29 19981, "Pledge furniture polish 13oz", true, 6.50
30 228865, "3M Super 33+ electrical tape", true, 3.50
31 228865X, "3M Super 33+ electrical tape box 10", true, 32.50
32 4762, "HP copy paper ultra white - ream", true, 13.50
33 29741, "Plush teddy bear 8 inch", true, 24.00
34 339921, "Yamaha KT 100 kart engine", true, 950.00
35 115693, "Colnago C64 - Mapei frame", true, 6500.00
36 582913, "Look Keo 2 Max pedals", true, 135.00
37 4499120, "M&M's dark chocolate w/peanuts - 3oz", true, 2.50
38 268, "Sidi Wire 2 carbon shoes", true, 499.99
39 89476, "Assos T-Evo shorts", true, 299.95
40 245667, "Colnago jersey - size 6", true, 120.00
41
```

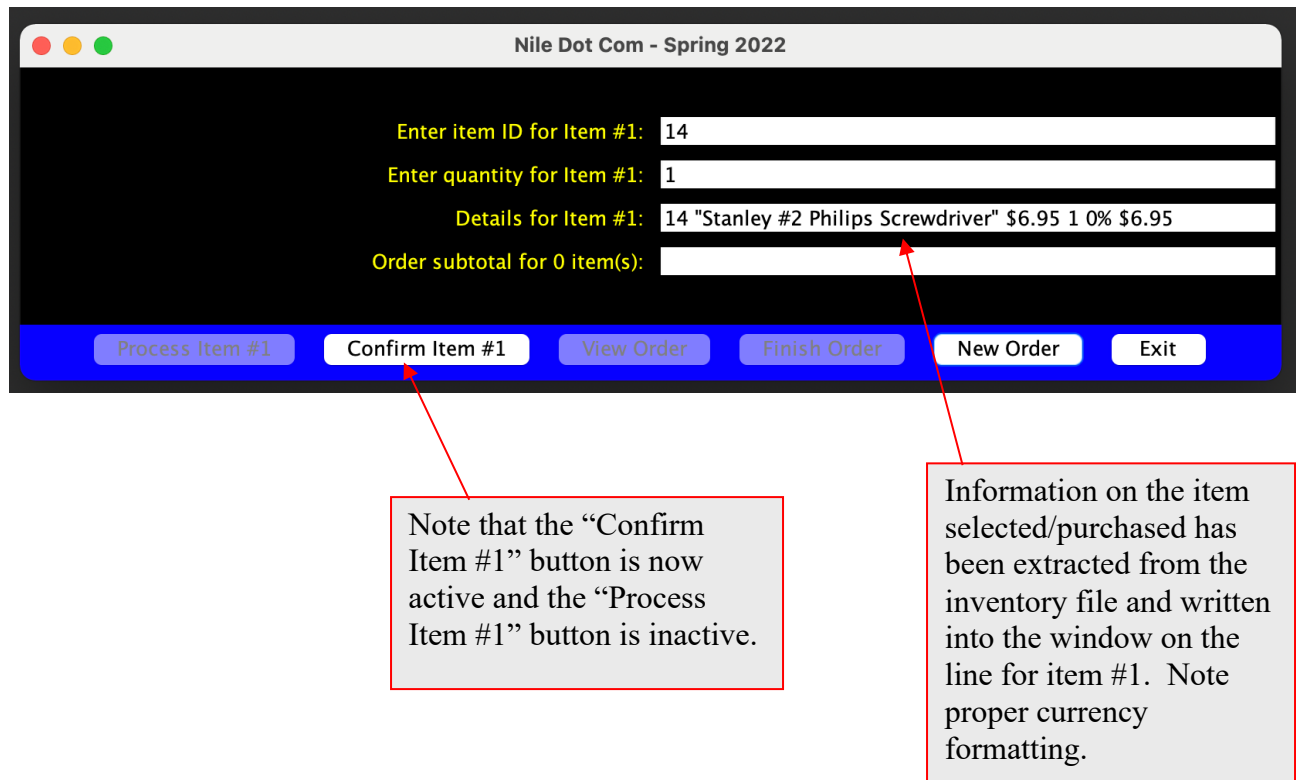
## 2. Initial GUI:



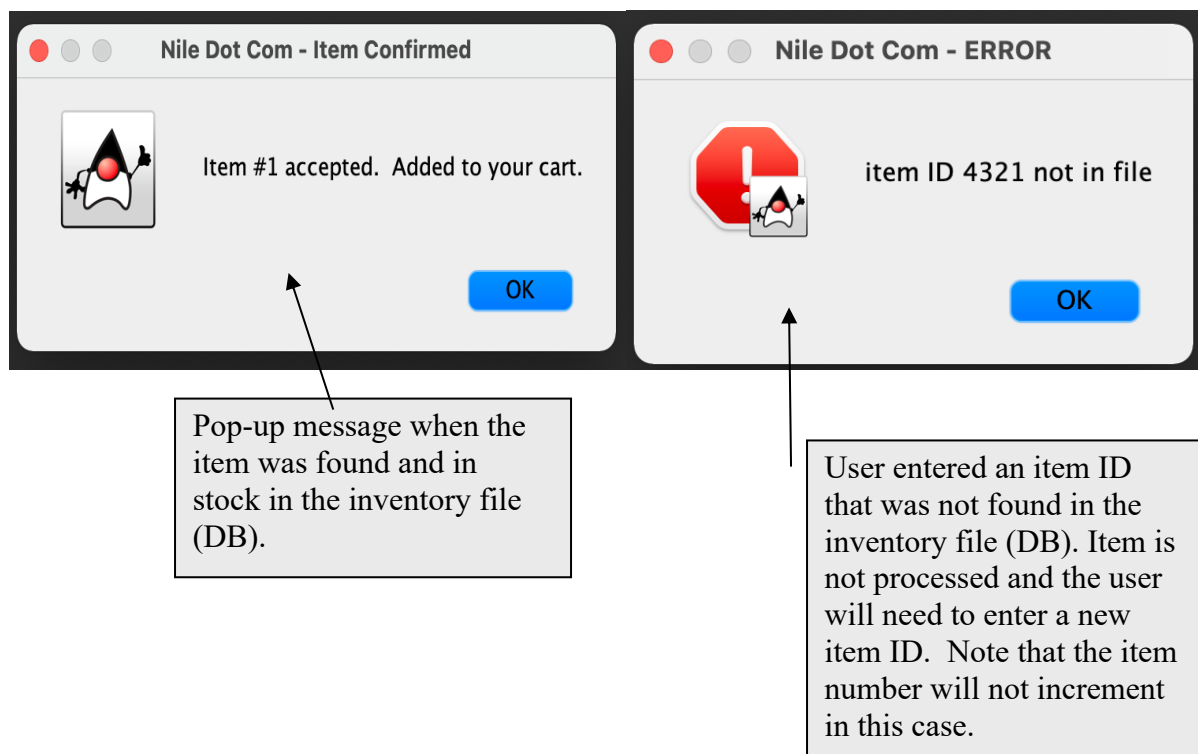
## 3. GUI after user has entered first item number and the quantity of the item they want to purchase, but before clicking the "Process Item" button.



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.

Note that the buttons change number.

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

The screenshot shows a web browser window titled "Nile Dot Com - Spring 2022". The interface has a black background with yellow text. It contains four input fields: "Enter item ID for Item #2:", "Enter quantity for Item #2:", "Details for Item #1:", and "Order subtotal for 1 item(s):". The "Details for Item #1:" field displays "14 'Stanley #2 Philips Screwdriver' \$6.95 1 0% \$6.95". The "Order subtotal" field displays "\$6.95". At the bottom, there is a blue bar with six buttons: "Process Item #2", "Confirm Item #2", "View Order", "Finish Order", "New Order", and "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 (but has not yet confirmed) the next item in the order (which we'll make the last one for this order).

The screenshot shows the same web browser window. The input fields are now populated: "Enter item ID for Item #2:" has "3451", "Enter quantity for Item #2:" has "2", and "Details for Item #2:" displays "3451 'Oakley Jawbreaker sunglasses' \$236.00 2 0% \$472.00". The "Order subtotal for 1 item(s):" field still displays "\$6.95". The buttons at the bottom remain the same.

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

The screenshot shows a window titled "Nile Dot Com - Spring 2022". It contains four input fields with labels in yellow text: "Enter item ID for Item #3:", "Enter quantity for Item #3:", "Details for Item #2:", and "Order subtotal for 2 item(s):". The third field contains the text "3451 \"Oakley Jawbreaker sunglasses\" \$236.00 2 0% \$472.00". The fourth field contains "\$478.95". At the bottom, there is a blue bar with six buttons: "Process Item #3", "Confirm Item #3", "View Order", "Finish Order", "New Order", and "Exit".

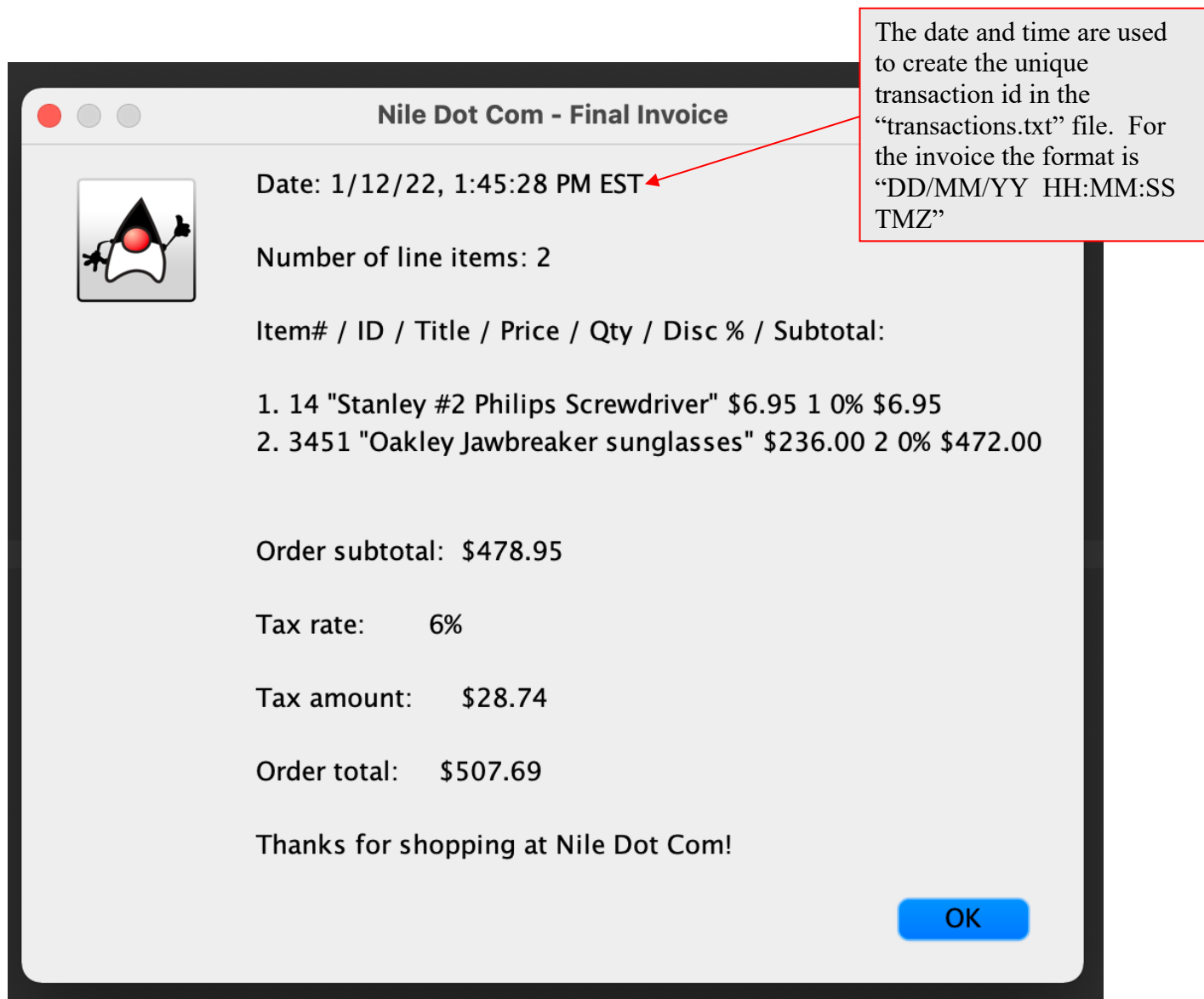
9. When the user clicks the “View Order” button, the following message box should appear.

The screenshot shows a message box titled "Nile Dot Com - Current Shopping Cart Status". It features a small icon of a character with a red nose and a black hat on the left. To the right of the icon, there is a list of items:

- 1. 14 "Stanley #2 Philips Screwdriver" \$6.95 1 0% \$6.95
- 2. 3451 "Oakley Jawbreaker sunglasses" \$236.00 2 0% \$472.00

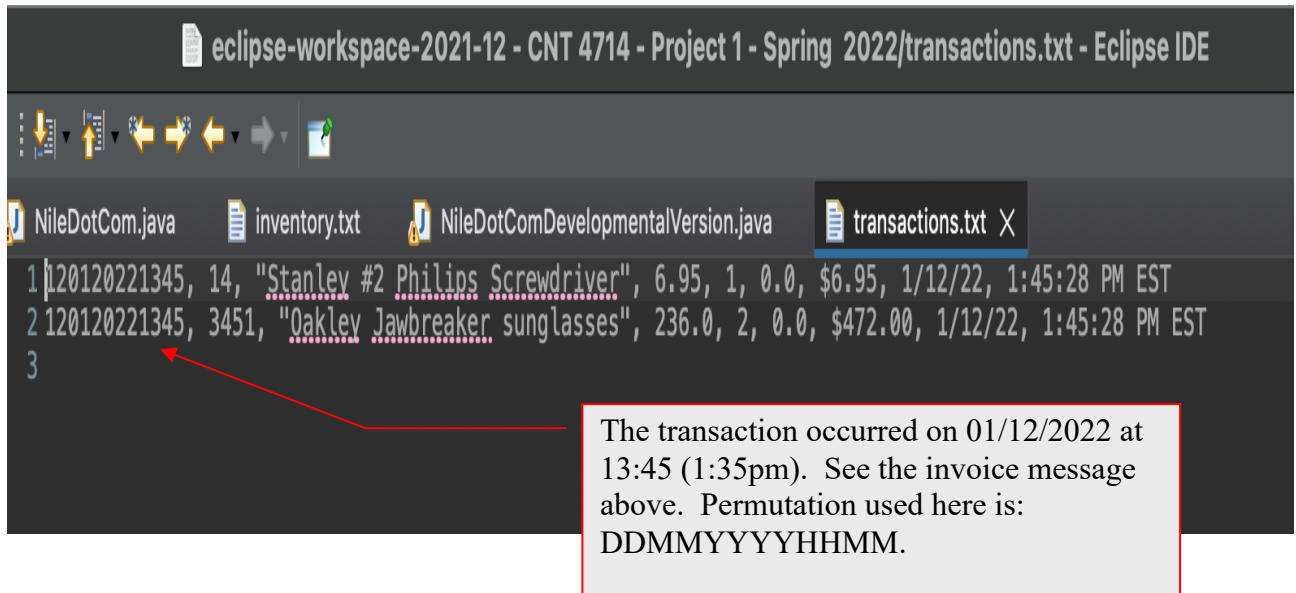
An "OK" button is located at the bottom right of the message box.

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

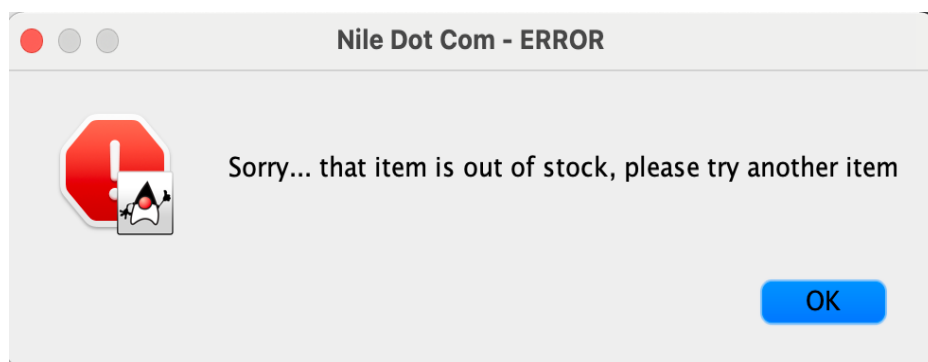
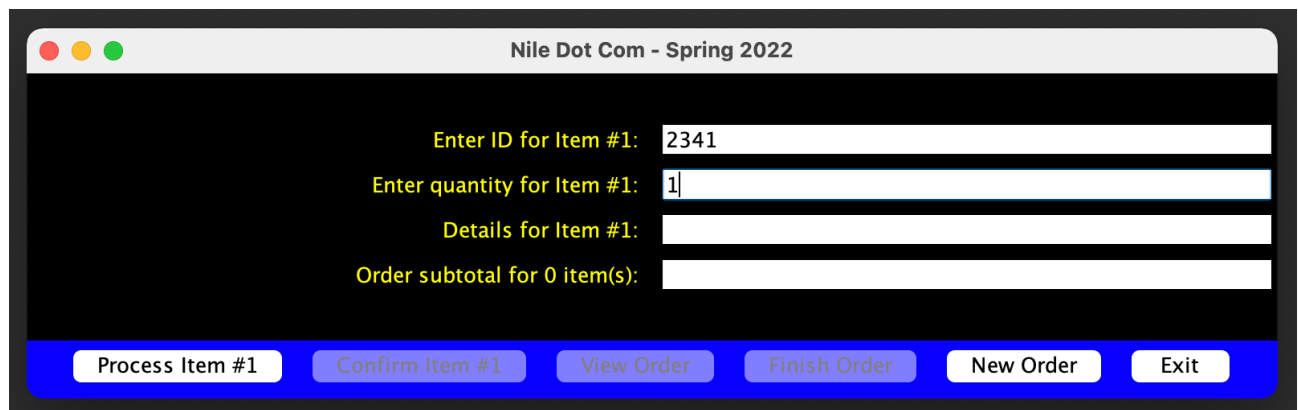




11. The transaction file after order shown above was finished. Note the unique transaction ids based on the date and time.



12. If the user enters an item number for an item that is not in stock (it is in the inventory – just not in stock), the following message dialog should appear. Once the user clicks OK in the dialog box, then they would enter a new item number for another item and continue processing their current transaction.



Nile Dot Com - Spring 2022

Enter ID for Item #1:

Enter quantity for Item #1:

Details for Item #1:

Order subtotal for 0 item(s):

Process Item #1   Confirm Item #1   View Order   Finish Order   New Order   Exit

Notice that after the “Not In Stock” error has occurred, the GUI has cleared the user entries in the two input fields and has not incremented the item count.

13. The GUI after the user has clicked the “Finish Order” button and also clicked “OK” on the invoice dialog box.

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Enter item ID for Item #2:

Enter quantity for Item #2:

Details for Item #1: 47831 "8x10 picture frame" \$4.95 8 10% \$35.64

Order subtotal for 1 item(s): \$35.64

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

Notice that ID and quantity fields are no longer editable, since the order has been completed. Thus a new order must be started.

14. 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.



```
1 120120221345, 14, "Stanley #2 Philips Screwdriver", 6.95, 1, 0.0, $6.95, 1/12/22, 1:45:28 PM EST
2 120120221345, 3451, "Oakley Jawbreaker sunglasses", 236.0, 2, 0.0, $472.00, 1/12/22, 1:45:28 PM EST
3 120120221612, 23, "Tamiya 2oz paint - ferrari red", 2.39, 2, 0.0, $4.78, 1/12/22, 4:12:27 PM EST
4 120120221612, 67913, "Gios Torino t-shirt size XXL", 25.0, 1, 0.0, $25.00, 1/12/22, 4:12:27 PM EST
5 120120221612, 582913, "Look Keo 2 Max pedals", 135.0, 1, 0.0, $135.00, 1/12/22, 4:12:27 PM EST
6 120120221612, 4762, "HP copy paper ultra white - ream", 13.5, 20, 0.2, $216.00, 1/12/22, 4:12:27 PM EST
7 120120221613, 97634, "Campagnolo 12 spd crankset - 53/39 175mm", 750.0, 1, 0.0, $750.00, 1/12/22, 4:13:44 PM EST
8 120120221613, 8543, "Ritchey 1 inch threaded headset - silver", 45.0, 2, 0.0, $90.00, 1/12/22, 4:13:44 PM EST
9 120120221615, 1111, "Top Secret Twenty One - Janet Evanovich", 8.99, 5, 0.1, $40.46, 1/12/22, 4:15:02 PM EST
10 120120221616, 47831, "8x10 picture frame", 4.95, 8, 0.1, $35.64, 1/12/22, 4:16:25 PM EST
11 120120221855, 245667, "Colnago jersey - size 6", 120.0, 4, 0.0, $480.00, 1/12/22, 6:55:28 PM EST
12 120120221855, 339921, "Yamaha KT 100 kart engine", 950.0, 2, 0.0, $1,900.00, 1/12/22, 6:55:28 PM EST
13 120120221856, 198, "Box of 10 Sharpie Roller 0.5mm", 6.5, 2, 0.0, $13.00, 1/12/22, 6:56:26 PM EST
14 120120221856, 228865, "3M Super 33+ electrical tape", 3.5, 4, 0.0, $14.00, 1/12/22, 6:56:26 PM EST
15 120120221902, 387, "Brachs butterscotch hard candy - 1 lb", 4.5, 1, 0.0, $4.50, 1/12/22, 7:02:42 PM EST
16 120120221902, 38712987, "Wilson NCAA official softball - 1 ea", 5.5, 25, 0.2, $110.00, 1/12/22, 7:02:42 PM EST
17
```