RIT | Golisano College of Computing and Information Sciences
School of Information

ISTE-121
HW01 - GUI Applications with I/O

Overview

This homework is a continuation of your Lab01. You need to complete Lab01, make a copy of Lab01 Orders, and rename to class OrderSystem for this homework. Then make the modifications required for this homework.

You may not have received all the information to do this assignment by the time it is being assigned. The information from the second module of the course, and the lab will help you with this assignment. Some solutions to this are given in the lab, so do what you can until the lab. Then make sure all your questions are answered for this homework.

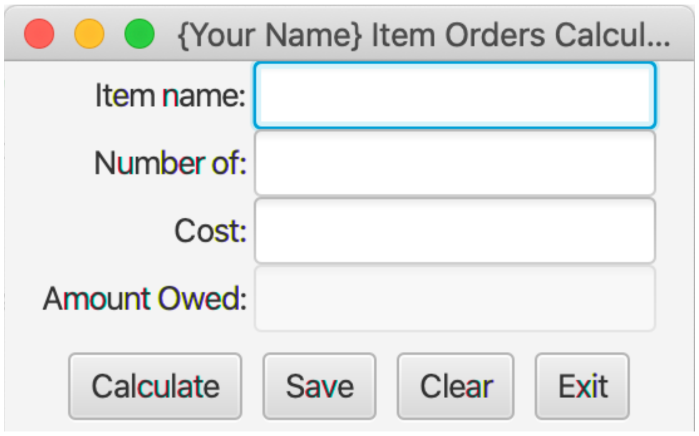
The main class name for HW01 is OrderSystem. When you get the GUI to look similar to the display that is close enough for this homework.

Part 1: GUI Layout (start with Lab01 code)

Part 1 is from "Lab01: GUI Applications with I/O", where you create a GUI that contains right-aligned labels for text fields as shown. Label, field and button object names should be self-documenting representations of the GUI components. Place all of the components in a GridPane, then add the GridPane to the root VBox.

Add buttons to control the actions that will take place on the screen. Your screen should now look similar to the screen shot below.

- Have the "Amount owed" field not allow input.
- Format the amount owed result to have two decimal places. See the String class in the Javadocs regarding how to format a number (String.format).



Adding controls for the buttons should start with the easier ones first.

Exit	Exit the program
Clear	Clears the text fields. Can setText() to null or “” (blank).
Calculate	Multiply the “Number of” by the cost per item, place result in the Amount owed field. Formatted to two decimal places. Assume all numbers entered are valid.
Save	Opens a text file for writing, use file name **121Lab1.csv**. Write in comma-separated format, the item’s name, the number of items, cost per item and the calculated amount owned. Each time the user clicks Save, first execute the Calculate code. The calculation code should only appear once in your program. Each click of Save should **append** new information to the file.

Part 2: Adding more functionality

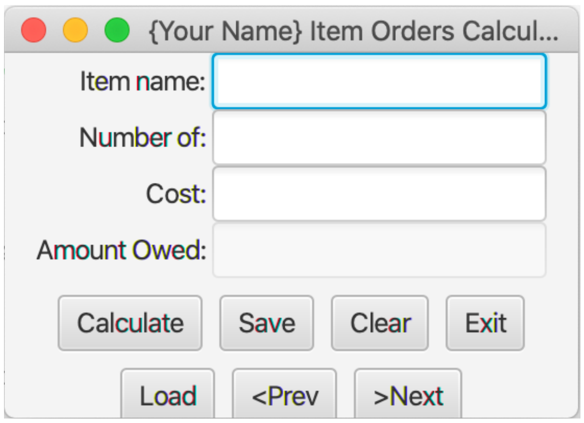
Adding more buttons controls than were in Lab01.

Writing good code. When adding new functionality, think atomic (simple, one task) methods. Create methods to do specific tasks. Call these methods from handle. You should have done this for the Calculate button’s actions, as that method needed to be called from both the Calculate and Save buttons.

Load, >Next and <Prev: We want to add controls that will load the 121Lab1.csv file so we can step forward or backward through the file by pressing the next or previous buttons. This requires these controls:

- Load - Reads the file into the program for use later. Displays the first record in the file.
- Next - Displays the next record in the file.
- Prev - Displays the previous record in the file.

Suggestion: keep an ArrayList of Strings to hold all of the lines in the file. Keep an int attribute (called current) to be the index of the line being currently displayed. This makes Next and Prev easier to implement. See requirements on the next page for Load, Next and Previous buttons.

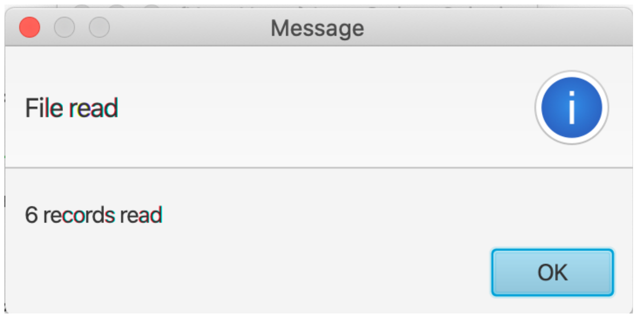


Depending on how you wrote the original program you may have to make adjustments to setting the size of the scene or moving components to different areas of the layout.

Load, Next, Previous

The Load method is to return an integer count of items read into the program (the number of lines). As records are read, store all records (in the ArrayList) for later use. If no records are loaded because of some error, or the file does not exist, a negative one (-1) is returned. This error is reported by using the Alert class to display the following message as shown.

After loading all the records, display the count of how many records were loaded.



Message

File read

6 records read

The Next method displays the next item in the collection of orders you read. When the last order is displayed, clicking the Next will show a message that there is no more data in the next direction.

The Prev method displays the previous item in the collection of orders you read. When the first order is displayed, clicking Prev will show a message that there is no more data in the previous direction.

Your program must catch and handle each separate exception, showing an appropriate message using Alert popup messages. This may mean you need to catch more than just 'Exception'.

Use the String's split method when displaying an order to separate out the fields of an order. Do not duplicate any significant amount of code.

Note: The opening and closing of files should be kept within the methods required. **Files should not be left open through the whole program**.

Bonus:
The buttons need more explanation than the text on them. Let's add a tool tip to the button. To find how to do this, look at the Button class and search for an **inherited** method that will *set the tool tip text* for a button. Text to add should be something meaningful like for the Save button: "Calculate and save order".

ISTE-121 HW01 Gradesheet
GUI with IO

Item	Possible Points	Earned Points
GUI displays as expected	15	
Code to handle events is modularized into methods	15	
Calculate - only one calculation in the code Save - calculates then saves in a CSV file Clear - clears all fields Exit - makes sure file is closed and exists the program	10 from Lab 1	
Load: (5 pts each) • File/data doesn't exist message appears when expected • Load method returns int value (-1 or record count) • Display number of records loaded at end of load • Handles all possible errors, even if error not displayed	20	
Previous: • Determines if there is a previous record to show, if not display a message • Displays previous information from the list each time Prev is clicked	20	
Next: • Determines if there is a next record to show, if not display message • Displays next information from the list each time Next is clicked	20	
Bonus: Tool tips	+5	
Deductions: • Unnecessary duplication of code (-5) • Not following coding standards, naming conventions • Missing javadocs for class/method headers, comments in other parts of code. (0..-10)		
Total:	100	

Comments: