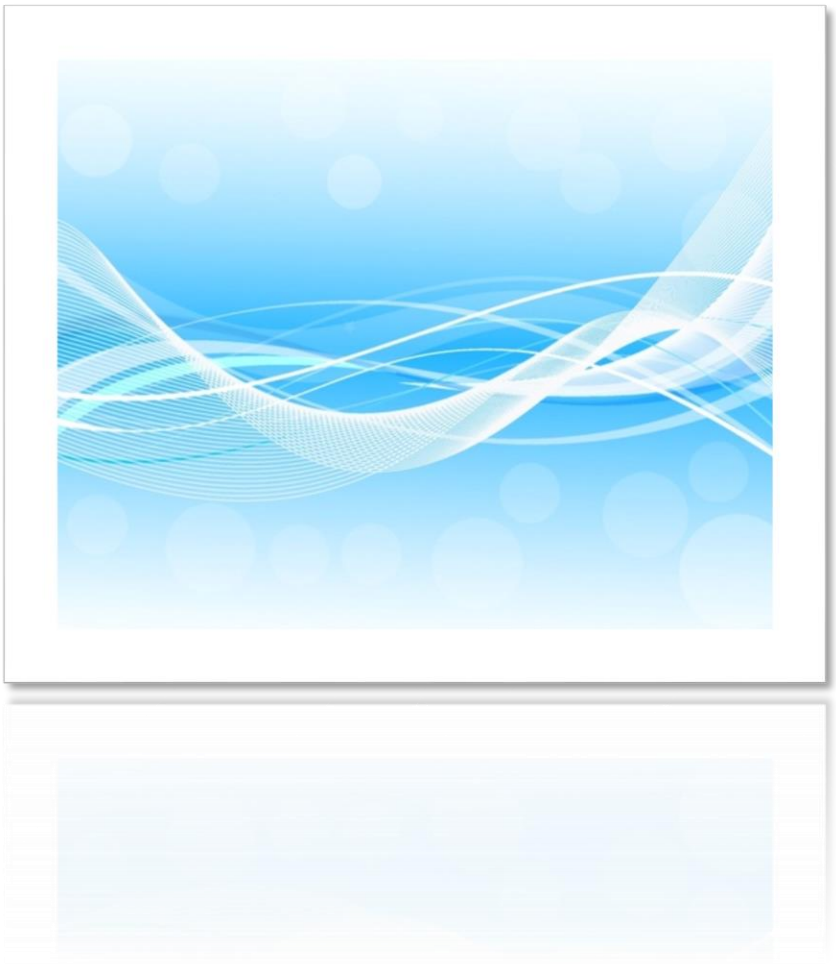

Project 7

INVENTORY MANAGEMENT GUI

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Required Program Aspects

This object-oriented program creates a graphical user interface using JavaFX to help users manage their inventories. As required, users may add, delete, or find an item, and may also list all the items in their inventory. The entries are alphabetically sorted and stored into an array, which in turn is stored into a specified text file.

In addition to the aforementioned characteristics, we have compiled a list of the extra functions that the program allows a user to do, in hopes of making the GUI more accessible and user-friendly. Please find these below.

Additional Program Aspects – Extra Credit

CSS (*usability & aesthetics)*

Along with JavaFX, we used Cascading Style Sheets (CSS) to improve the design and visual appeal of the graphical user interface. Using CSS, we implemented the following:

1. A background image throughout the GUI,
2. Button colors that change when hovering over a specific button,
3. Drop shadow for buttons,
4. Color for menu items within the menu bar,
5. Color for the text in the menu, which changes when hovering over an item, and
6. Color for the table view, including the column header (displayed when using the list, find, and edit functions).

SAME STAGE (*usability & aesthetics, maintainability)*

To improve the performance of the GUI, we implemented all of the different program functions in the same stage with buttons that allow the user to return the main screen on each scene.

PROMPT TEXT *(functionality)*

For each text field in which the user will type, there is prompt text that helps the user determine what needs to be entered here to perform the desired function. Naturally, the prompt text automatically disappears when the user clicks into the text field.

HIDDEN BUTTONS *(maintainability, functionality)*

To make the program more comprehensible for users, we added methods to disable buttons until a specific requirement is fulfilled by the user. These are implemented for the following functions:

1. The login button is disabled until the user inputs a username AND a password,

2. The add button is disabled until the user inputs the name of the product AND its quantity,
3. The delete button is disabled until the user inputs the name of the product,
4. The edit button is disabled until the user inputs the name of the product,
    a. The update button is disabled until the user inputs the new name AND new quantity of the product,
5. The find button is disabled until the user inputs the name of the product, and
6. The rename file button is disabled until the user inputs the new name of the file.

KEYBOARD SHORTCUTS *(maintainability, functionality)*

To allow for quicker usage of the program, keyboard shortcuts were added to most, if not all, scenes. For example,

On the login page,

1. ENTER logs in if the login button is not disabled,
2. ESCAPE quits the program.

On the welcome screen,

1. CTRL + B redirects to the about page,
2. CTRL + H redirects to the help page,
3. CTRL + I redirects to the file information page,
4. CTRL + R redirects to the rename file page,
5. CTRL + O creates/opens a new text file for users to save,
6. CTRL + A redirects to the add item page,
7. CTRL + D redirects to the delete item page,
8. CTRL + E redirects to the edit item page,
9. CTRL + F redirects to the find item page,
10. CTRL + L lists all items,
11. ESCAPE logs out and returns to the login page, where the user can hit ESCAPE again to exit the program.

On the Add/Delete Item page,

1. ENTER adds the item if the add button is not disabled,
2. ESCAPE returns to the welcome screen.

On the Find and Edit pages,

1. ENTER finds or edits the item, respectively, if the find or edit buttons are not disabled,
2. ESCAPE returns to the welcome screen.

For Alert Boxes,

1. ENTER is equivalent to clicking OK.

LOGIN PAGE (*usability & aesthetics)*

When the user first runs the program, a login page is displayed. Here, the user is asked for a username and password to begin using the program. The login page also displays the current date and time that the user is logging in. The name of the user is also stored for further use on the welcome and goodbye screens.

WELCOME SCREEN (*usability & aesthetics)*

After the user has logged in, s/he is directed to a welcome page with his/her name. Also on the welcome screen are a menu bar and five buttons: add/delete item, edit item, find item, list all items, and quit. In addition, on each page other than the welcome screen is a back, close, cancel, and/or done button that returns to the welcome screen, awaiting further user interaction.

MENU BAR (*usability & aesthetics, human engineering, functionality)*

The menu bar located on the welcome screen displays two menus, a file menu and an edit menu. In the file menu, there are four menu items: **about**, **help**, **logout**, and **exit**. In the edit menu, there are four menu items: **manage inventory**, **file information**, **rename file**, and **create/open a new file**.

Menu Separators (*usability & aesthetics)*

Menu separators were added to differentiate between related menu items, thus making the program more visually appealing.

Manage Inventory Menu *(functionality)*

The manage inventory menu serves as a secondary route for performing the same functions as the buttons on the welcome screen. The manage inventory menu item is a dropdown/arrow menu itself that displays the add, delete, edit, find, and list options.

File Information Page (*human engineering)*

The file information page displays information about the file that the user is currently using to store items. This information includes the **name of the file**, its **path**, and the date it was **last modified**. There are also three buttons on this page: rename file, delete file, and close.

FILE MANAGEMENT

Through the welcome screen and the file information page, the user is able to rename, delete, or create a new file. In addition, the program handles the file not found exception for a better user experience.

Rename, delete, create file (*human engineering, reliability*)

As its name suggests, the rename file button renames the current file to a name specified by the user and the delete file button erases the current file; of course, this requires the user to create a new file to store the entries. The user may do this via the menu item create/open a new file on the welcome screen. This option opens a new notepad file for the user to save.

File not found exception handling (*human engineering, reliability*)

If the specified file does not exist, the user is told that the entries are not being stored, but the program still runs accordingly. This tells the user that a new file with the specified name must exist in the specified location.

BUTTON FUNCTIONS

The following lists the superfluous functions and characteristics we added to our program in order to enhance the user's overall experience and improve the program's functionality.

Add Item (*human engineering, reliability, functionality*)

When the user adds an item, the program **checks whether an item with the same name exists**. If so, the program alerts the user and displays that item in a table for the user's convenience. If not, a new item is added and an alert box pops up to communicate this to the user.

Further, when the user adds an item, the program **checks whether the quantity is a number greater than or equal to zero**. If not, the program alerts the user and awaits a new quantity. If the quantity is greater than or equal to zero, a new item is added.

Delete Item (*functionality)*

To delete an item, the user is prompted for the name of the item to be deleted. If such item exists, it is removed and the user is informed of this action. If the specified item does not exist, the program lets the user know.

Delete All Items (*functionality)*

To avoid having users delete each item individually if they wish to delete everything, we added a delete all items button which deletes all items in the inventory and communicates this to the user in an alert box.

Edit Item (*human engineering, reliability, functionality*)

To account for user error and/or inevitable updates to entries, we added an edit item button which requires users to input the name of the item they would like to edit. This will then redirect them to a table with the old item as well as three text fields in which the user may enter the item's new name, quantity, and notes. This allows the user to see the

old and new inputs at same time. The user will then click UPDATE to edit the item, and will then see an alert confirming that the item has been edited. The user may also click on CANCEL to exit editing the item.

Please note that when the user updates the item, the program **performs the same inspections** as outlined in the add item button function, i.e., whether a product with the same name exists and whether the quantity is greater than or equal to zero.

Find Item (*human engineering, reliability, functionality*)

To find an item, the user only needs to enter a **keyword** associated with the name of the item. That is, the program allows for **partial match**es to find an entry. For example, if the user is looking for popcorn, and enters pop, the program will still display popcorn and its associated quantity and notes in a table.

LIST ALL ITEMS (*usability & aesthetics, maintainability)*

When listing all of the items in the inventory, the user is provided with a neat and colorful listing of the name, quantity, and notes of each item.

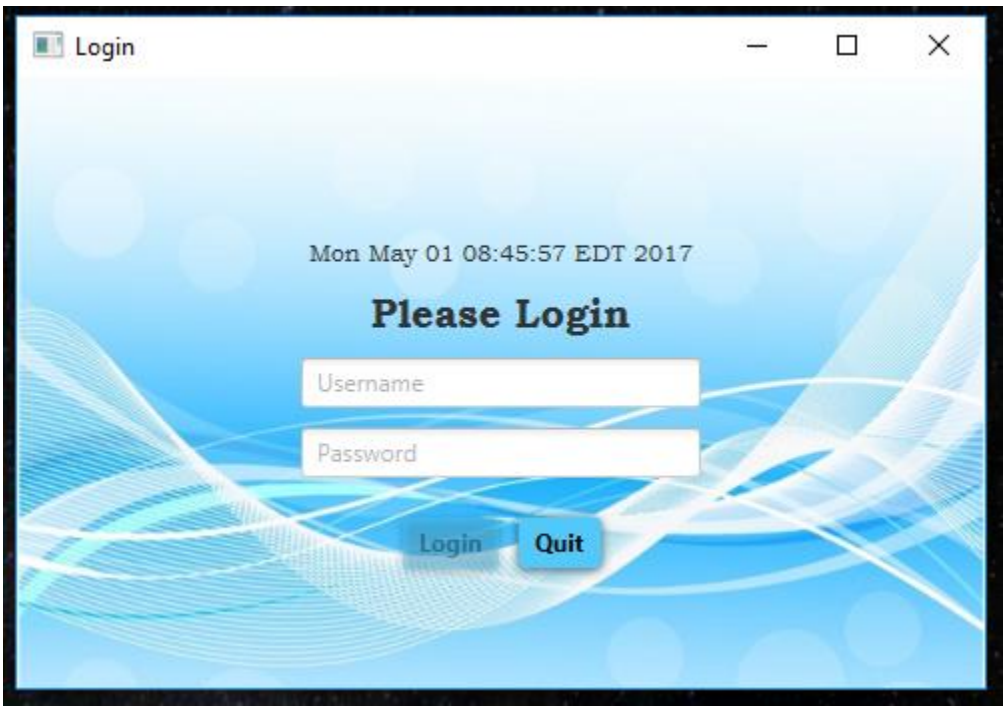
GOODBYE SCREEN (*usability & aesthetics)*

If the user quits the program from the welcome screen or the login page, a goodbye screen with the name of the user appears for one second and then **automatically disappears** at the termination of the program.

Program Screenshots

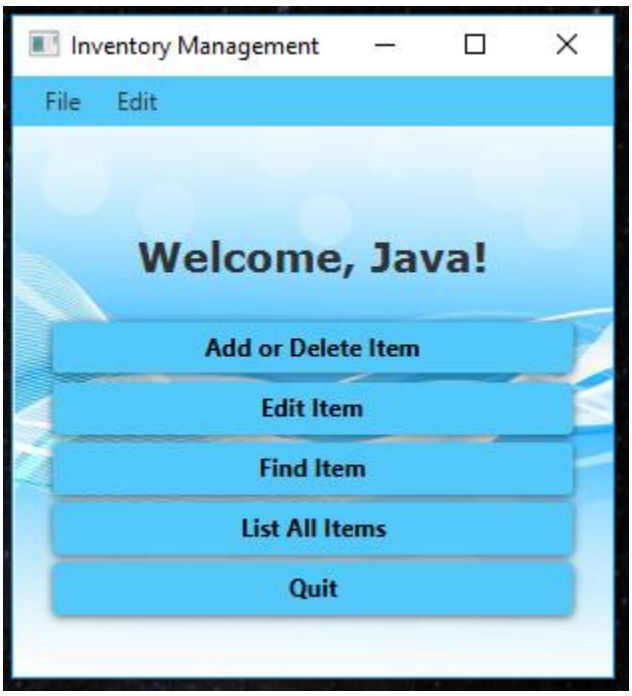
What follows are the screenshots of our Inventory Management Graphical User Interface, which display the required and additional aspects/characteristics outlined above.

LOGIN PAGE WITH LOGIN BUTTON DISABLED

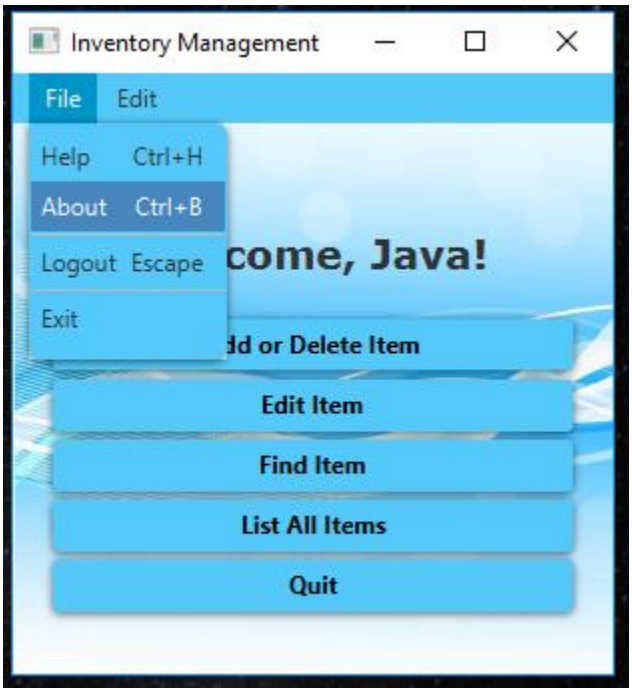


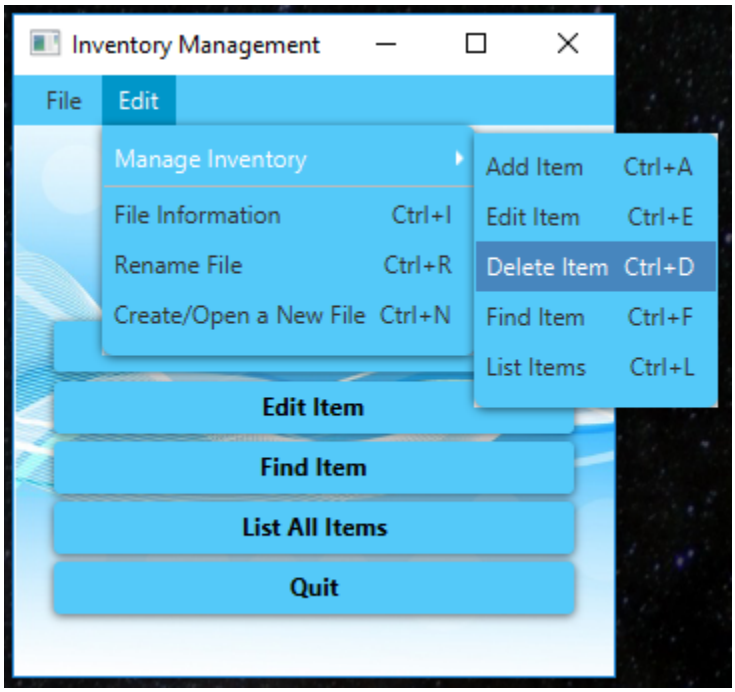
LOGIN PAGE WITH LOGIN BUTTON ENABLED

WELCOME SCREEN

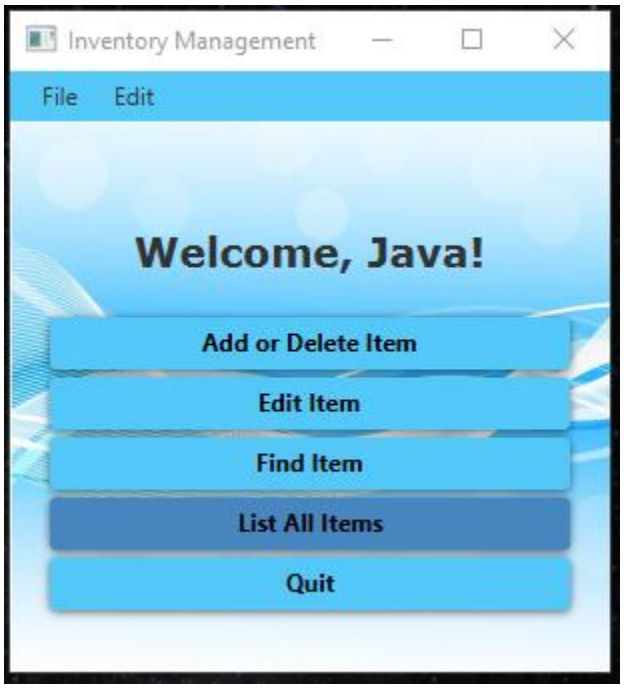


WELCOME SCREEN WITH MENU ITEMS

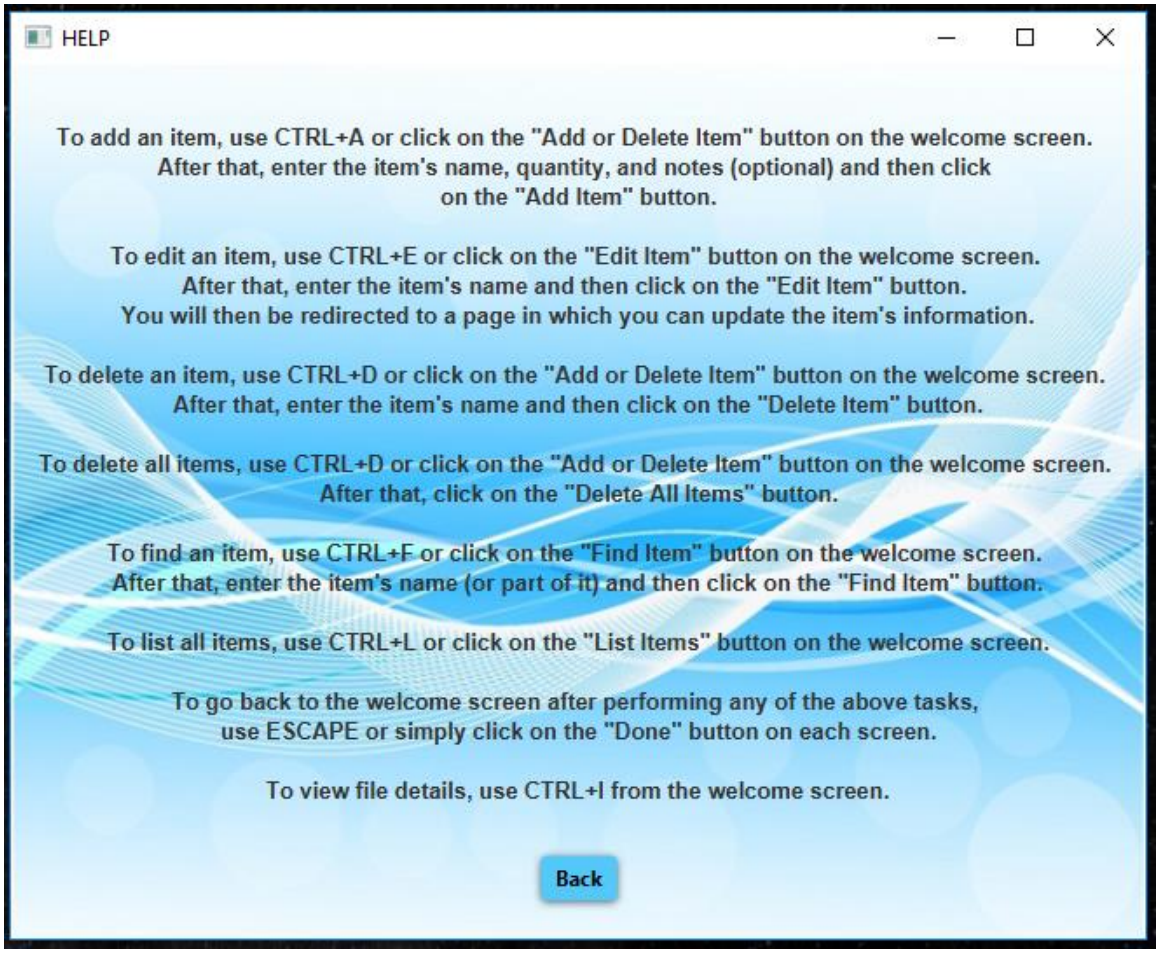




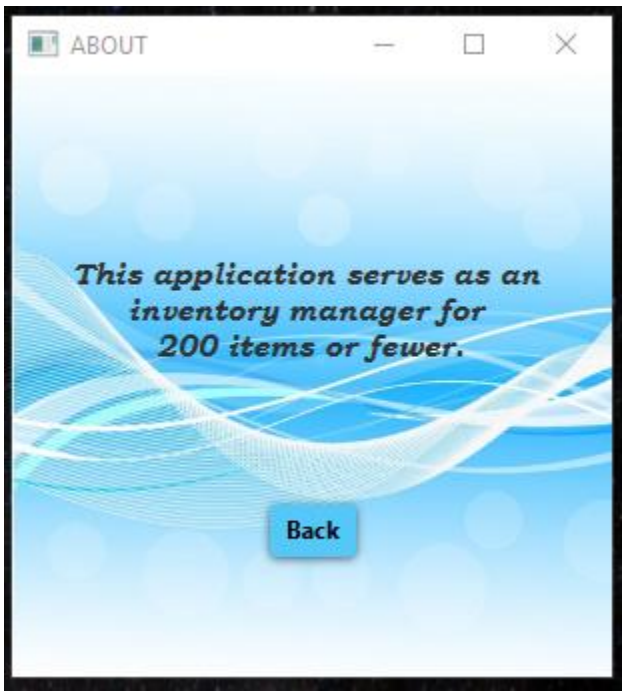
WELCOME SCREEN WITH BUTTONS HOVERED OVER



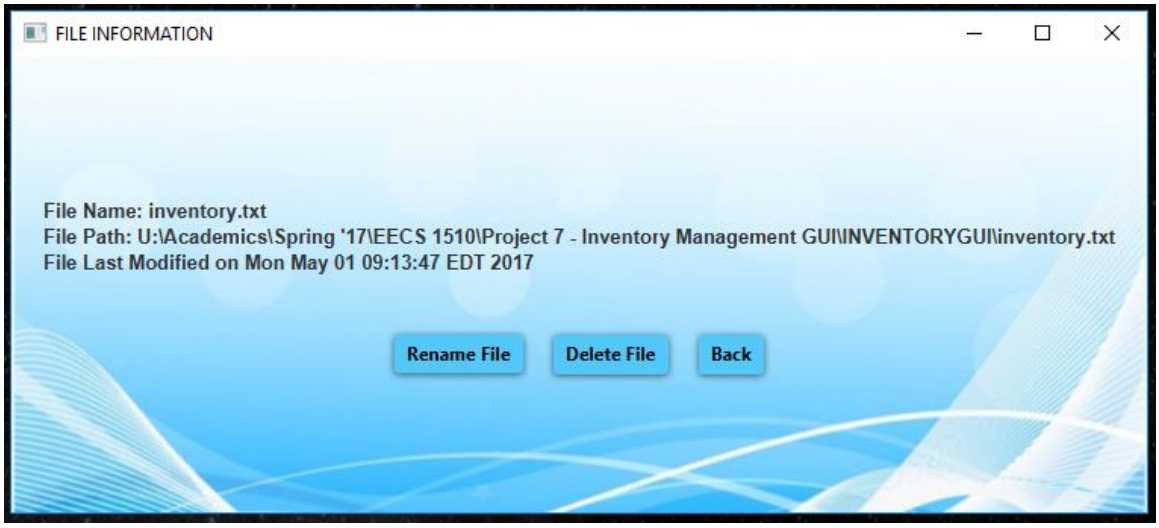
HELP PAGE


HELP
To add an item, use CTRL+A or click on the "Add or Delete Item" button on the welcome screen.
After that, enter the item's name, quantity, and notes (optional) and then click
on the "Add Item" button.
To edit an item, use CTRL+E or click on the "Edit Item" button on the welcome screen.
After that, enter the item's name and then click on the "Edit Item" button.
You will then be redirected to a page in which you can update the item's information.
To delete an item, use CTRL+D or click on the "Add or Delete Item" button on the welcome screen.
After that, enter the item's name and then click on the "Delete Item" button.
To delete all items, use CTRL+D or click on the "Add or Delete Item" button on the welcome screen.
After that, click on the "Delete All Items" button.
To find an item, use CTRL+F or click on the "Find Item" button on the welcome screen.
After that, enter the item's name (or part of it) and then click on the "Find Item" button.
To list all items, use CTRL+L or click on the "List Items" button on the welcome screen.
To go back to the welcome screen after performing any of the above tasks,
use ESCAPE or simply click on the "Done" button on each screen.
To view file details, use CTRL+I from the welcome screen.
Back

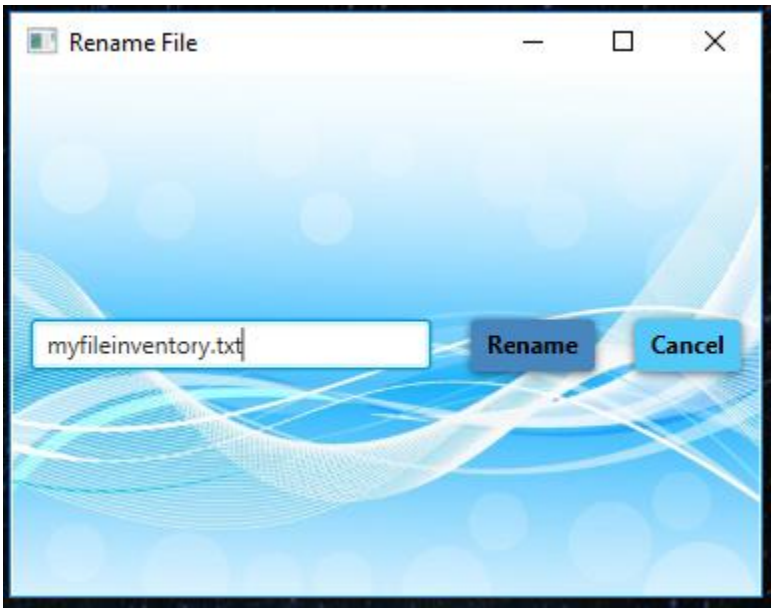
ABOUT PAGE

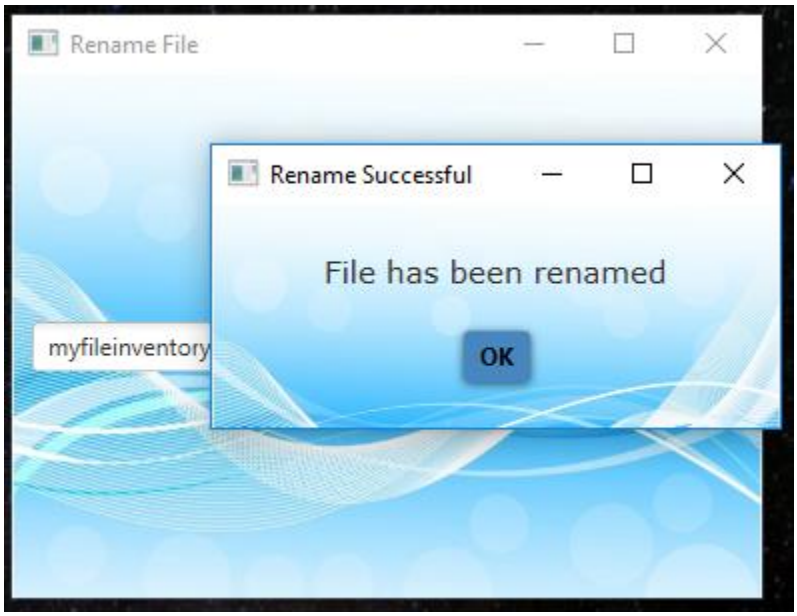


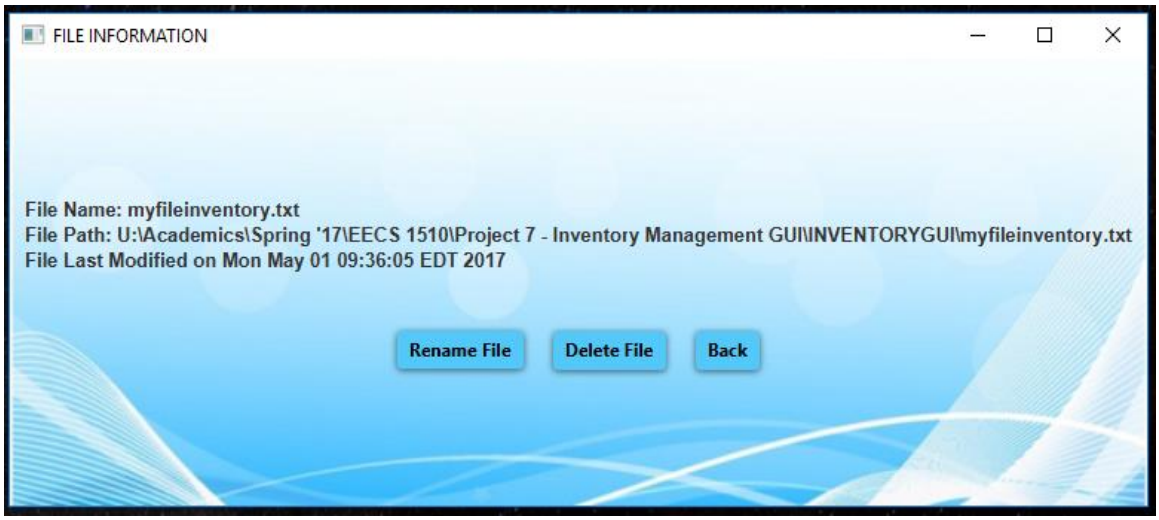
FILE INFORMATION PAGE



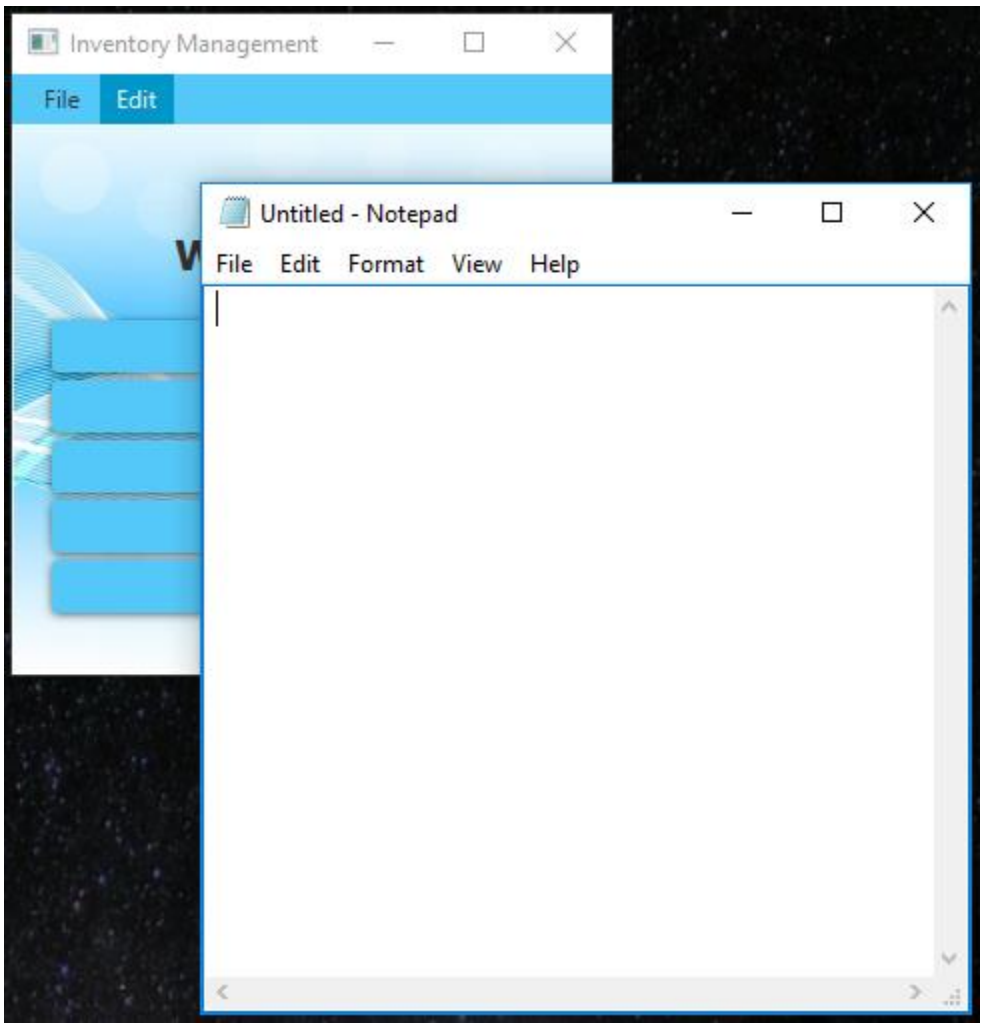
RENAME FILE PAGE



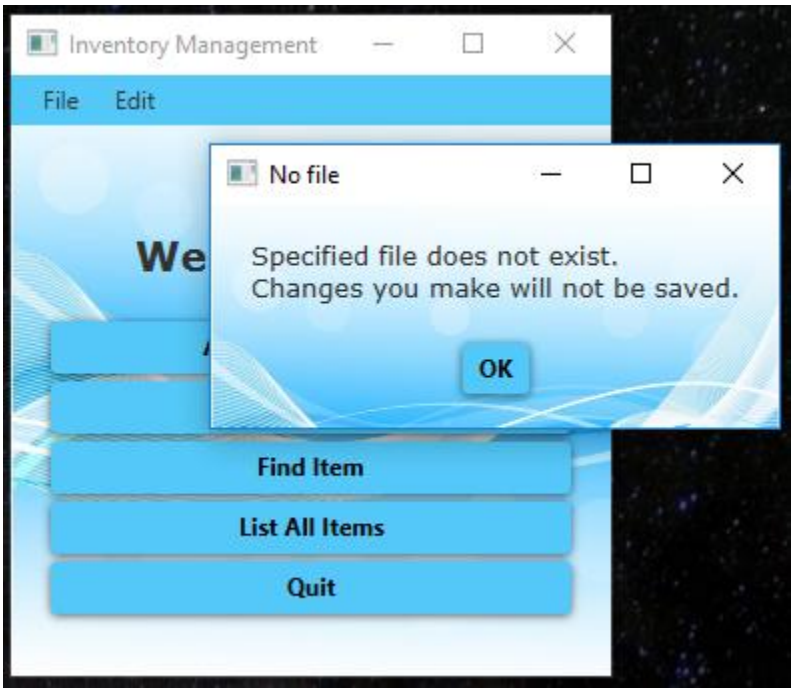

Rename File
Rename Successful
File has been renamed
OK
myfileinventory


FILE INFORMATION
File Name: myfileinventory.txt
File Path: U:\Academics\Spring '17\EECS 1510\Project 7 - Inventory Management GUI\INVENTORYGUI\myfileinventory.txt
File Last Modified on Mon May 01 09:36:05 EDT 2017
Rename File
Delete File
Back

CREATE/OPEN FILE



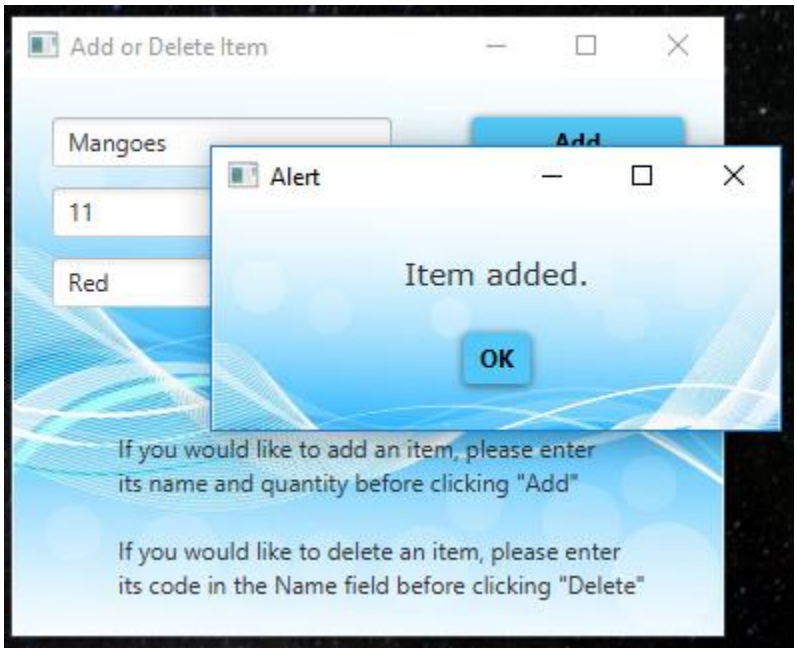
FILE NOT FOUND EXCEPTION HANDLING



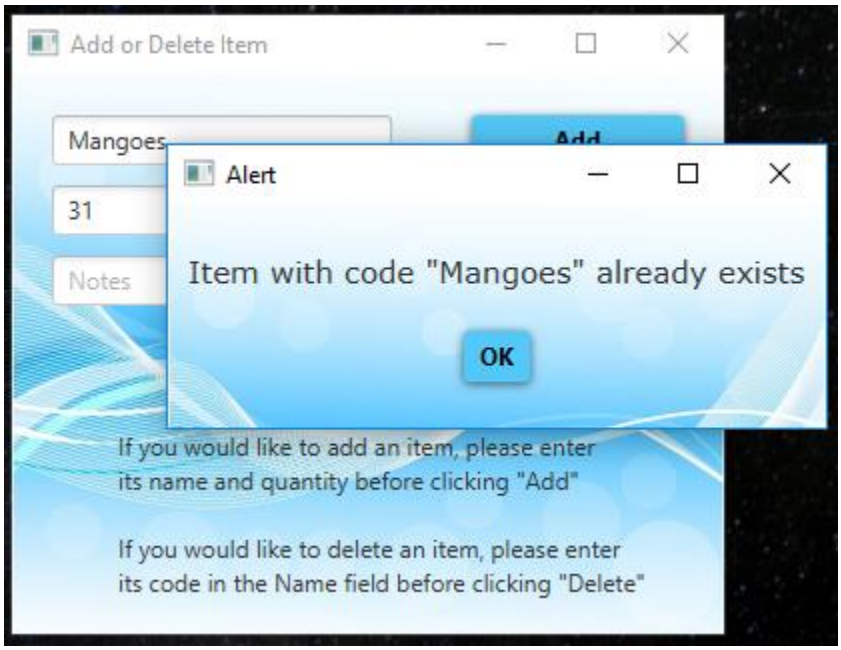
ADD/DELETE ITEM PAGE WITH ADD & DELETE BUTTONS DISABLED

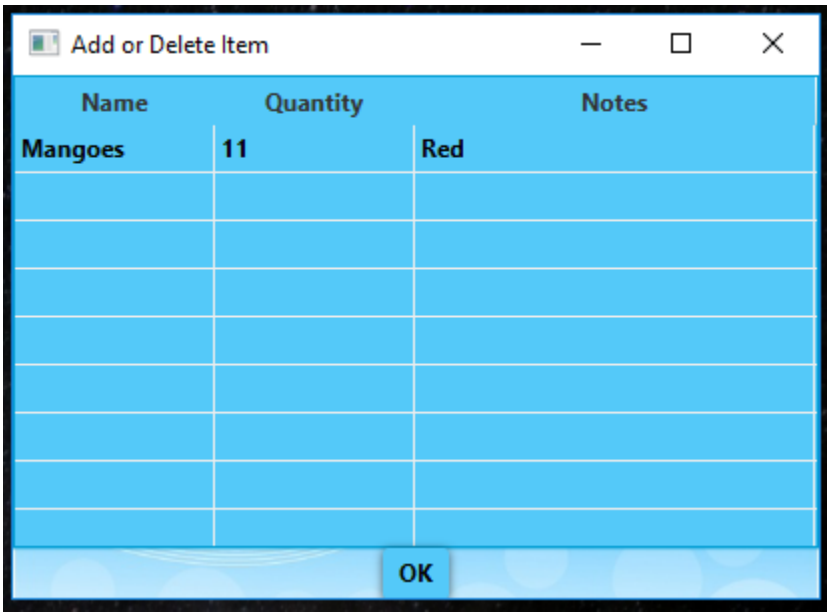
ADD/DELETE ITEM PAGE WITH ADD BUTTON DISABLED

ITEM ADDED ALERT

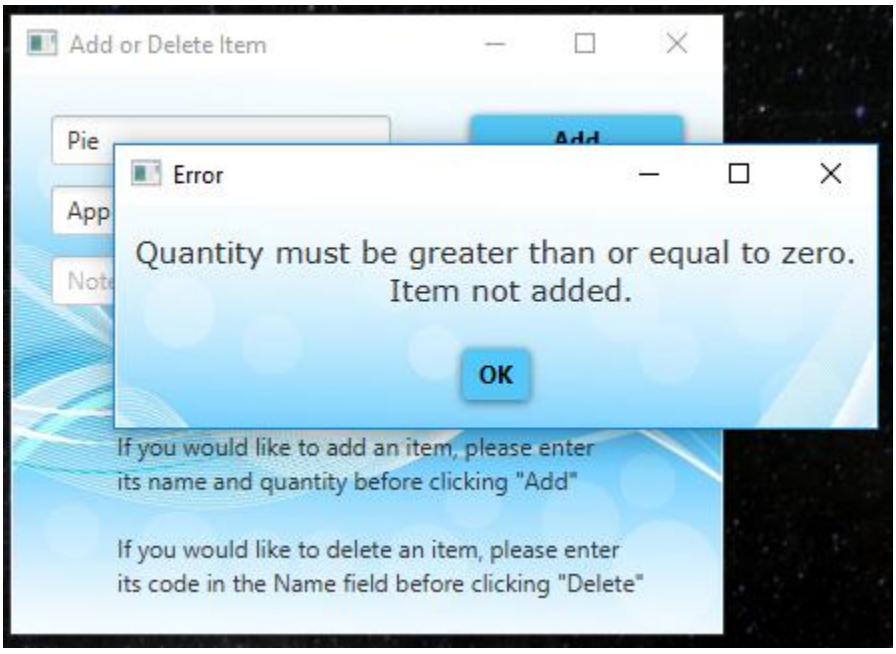


ITEM WITH THE SAME NAME EXISTS ALERT

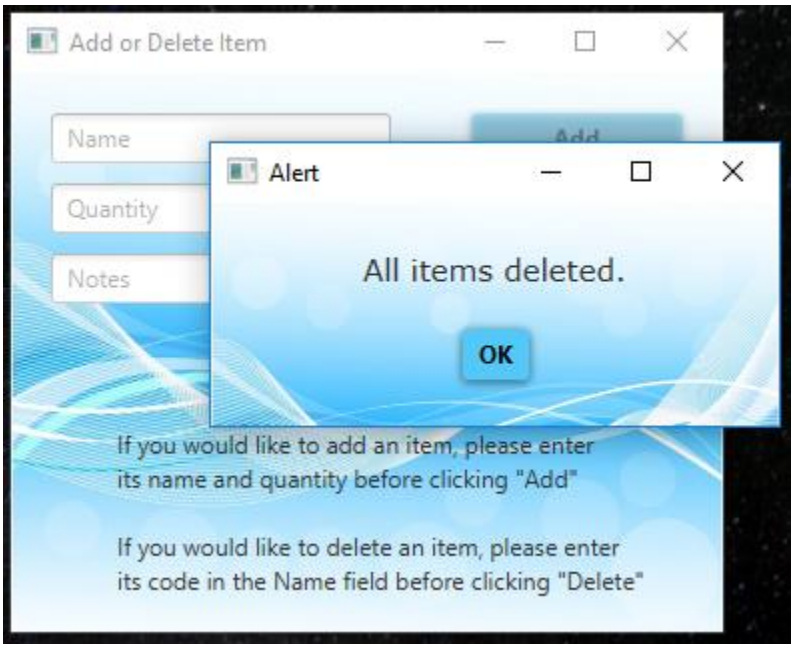




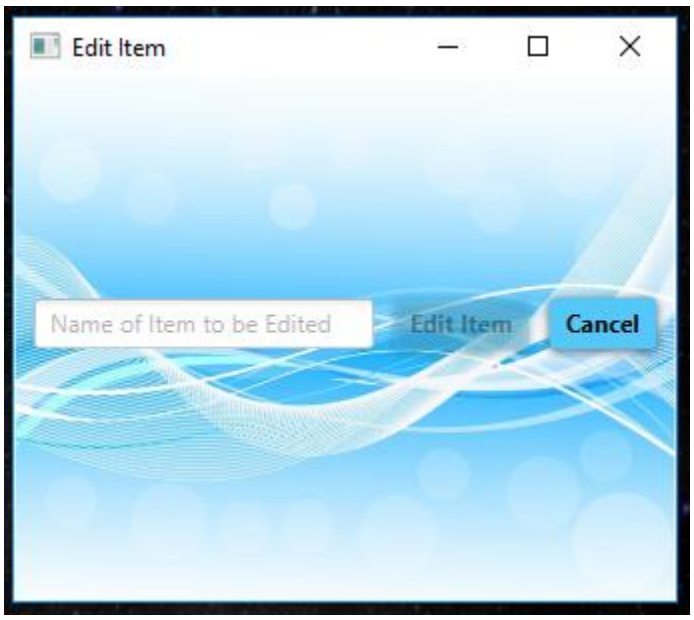
QUANTITY MUST BE ≥ 0 ALERT



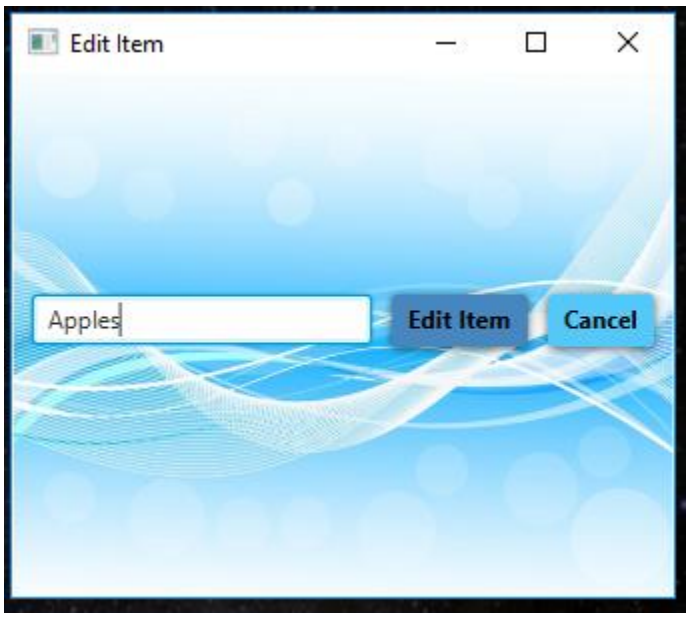
DELETE ALL ITEMS ALERT


Add or Delete Item
Name
Quantity
Notes
Add
Alert
All items deleted.
OK
If you would like to add an item, please enter
its name and quantity before clicking "Add"
If you would like to delete an item, please enter
its code in the Name field before clicking "Delete"

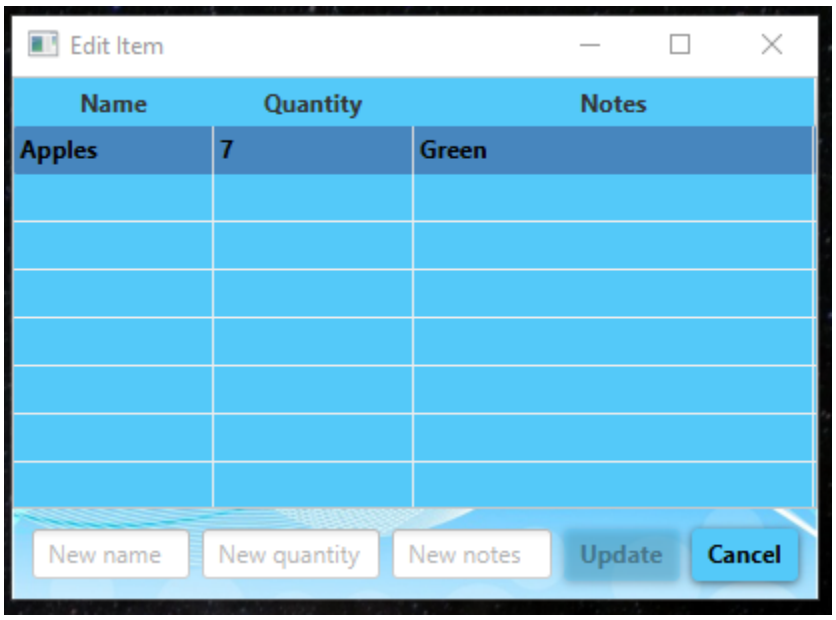
EDIT ITEM PAGE WITH EDIT BUTTON DISABLED

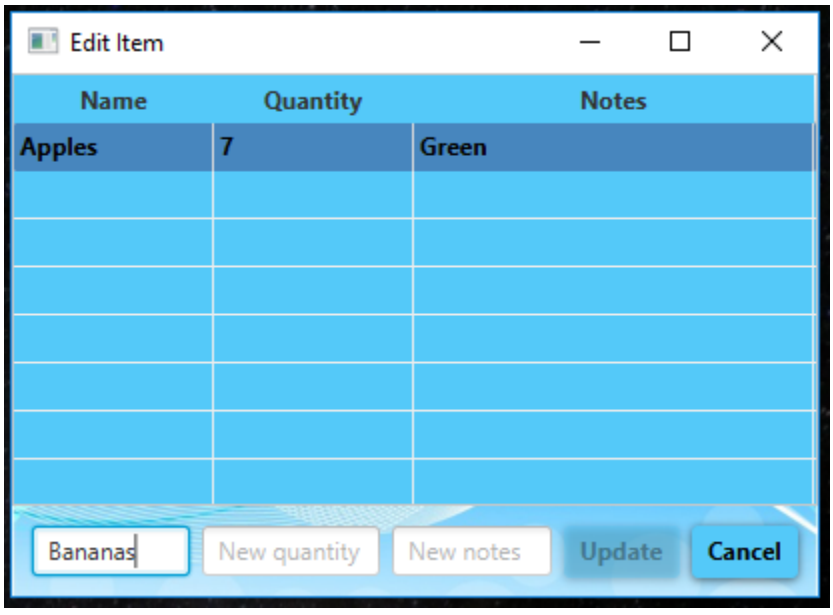


EDIT ITEM PAGE WITH EDIT BUTTON ENABLED

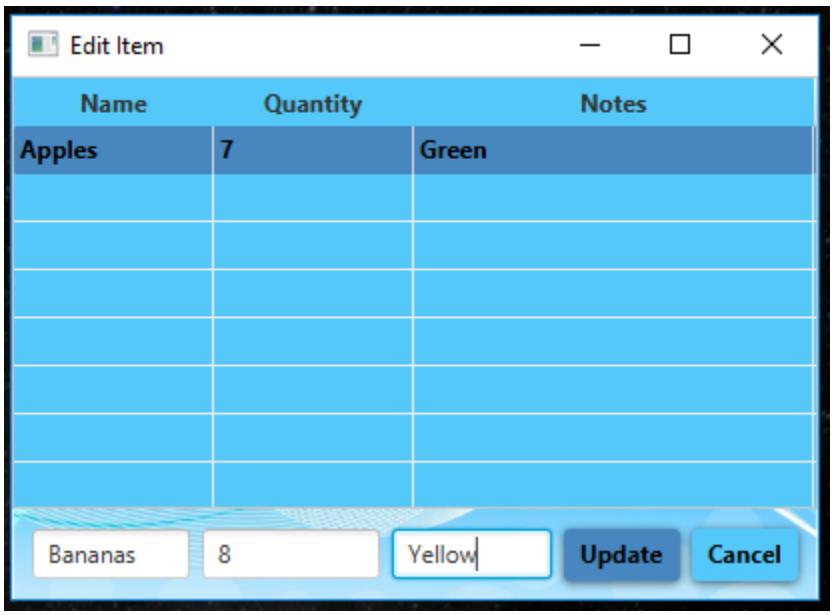


EDIT ITEM WITH UPDATE BUTTON DISABLED

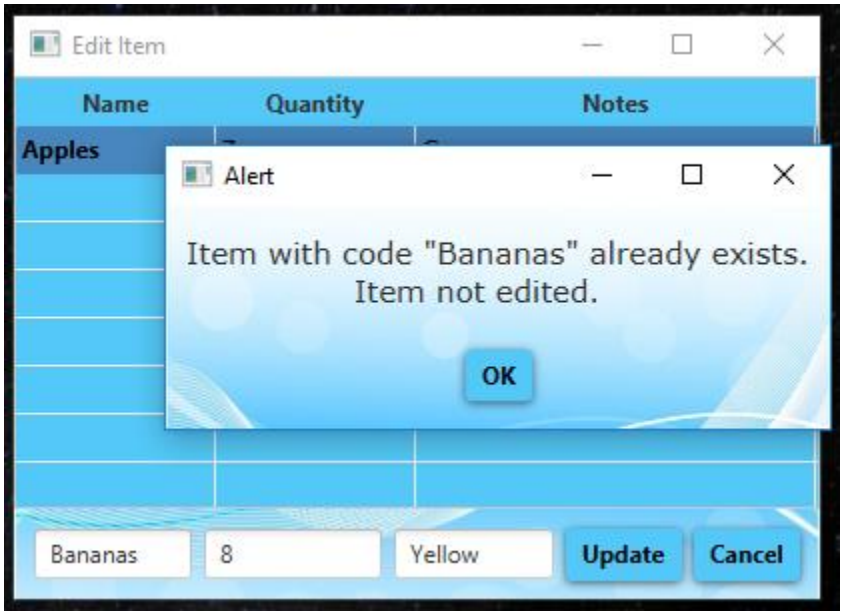




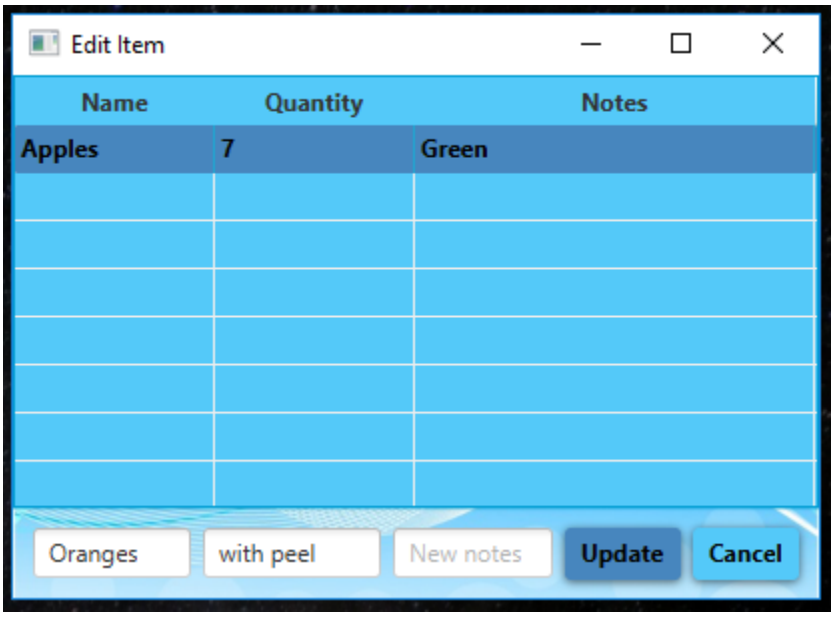
EDIT ITEM WITH UPDATE BUTTON ENABLED

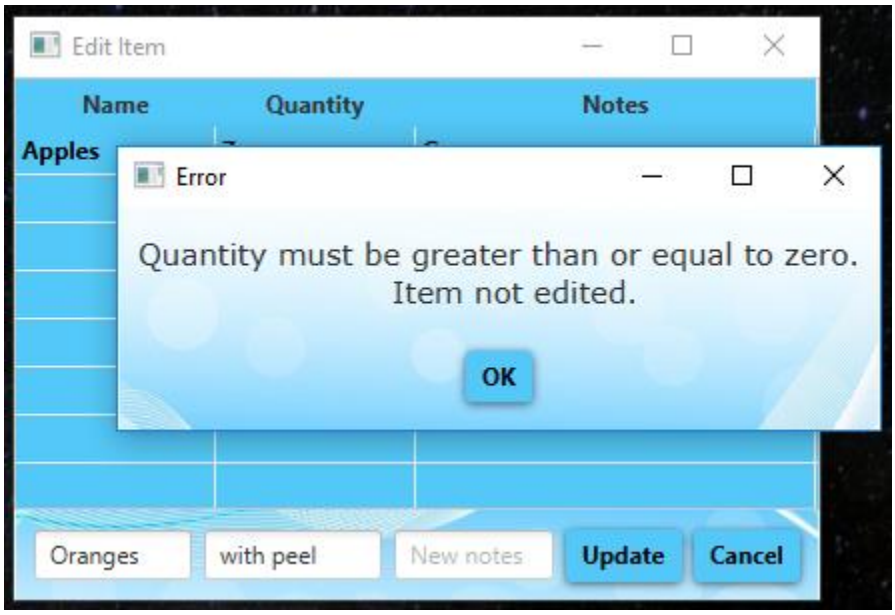


ITEM WITH THE SAME NAME EXISTS ALERT

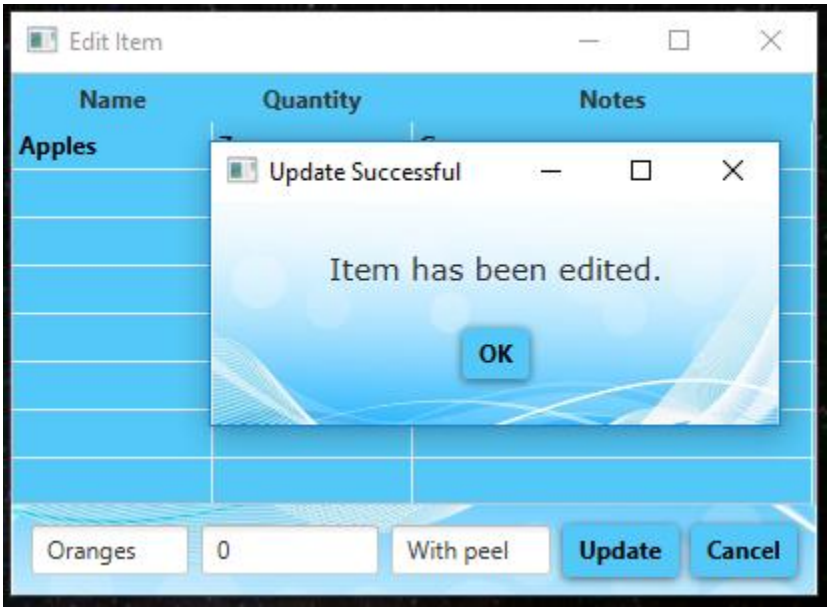


QUANTITY MUST BE ≥ 0 ALERT

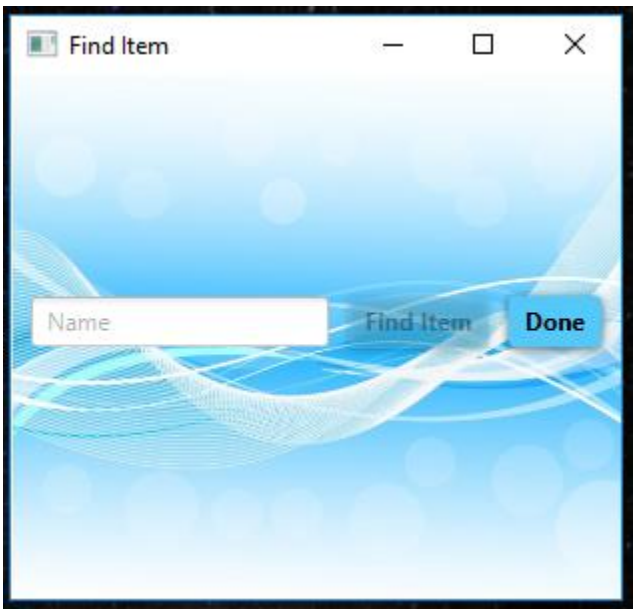




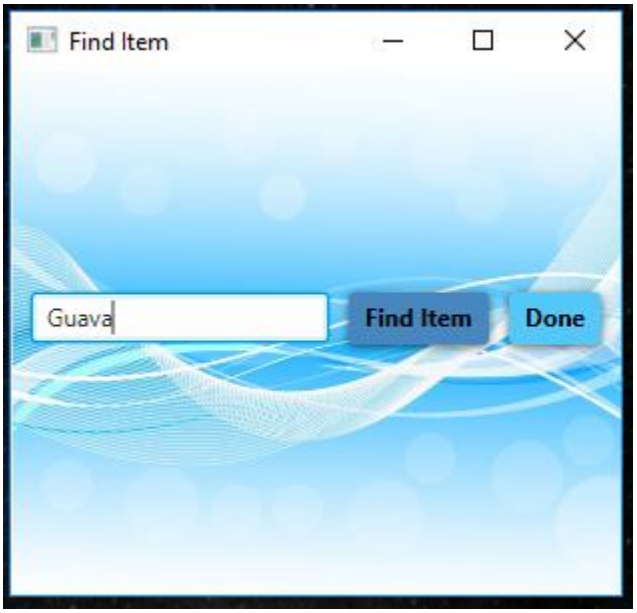
ITEM EDITED ALERT



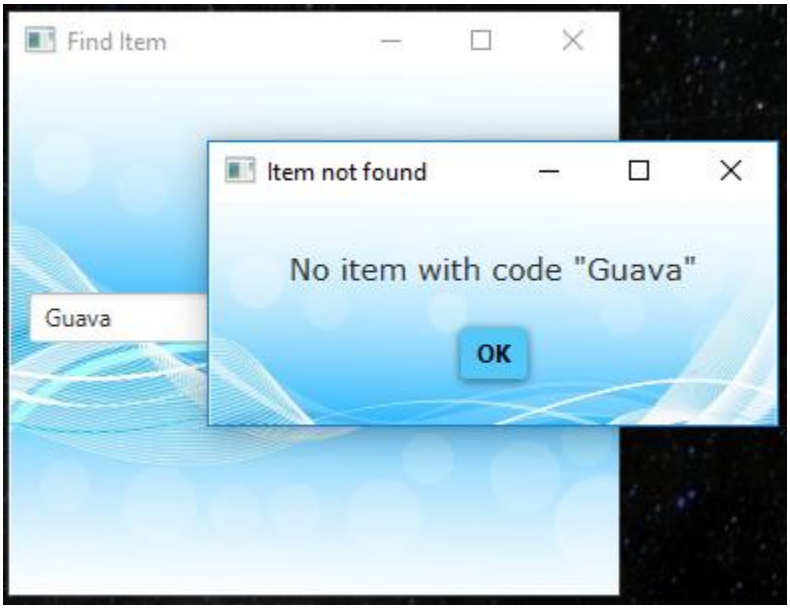
FIND ITEM WITH FIND BUTTON DISABLED



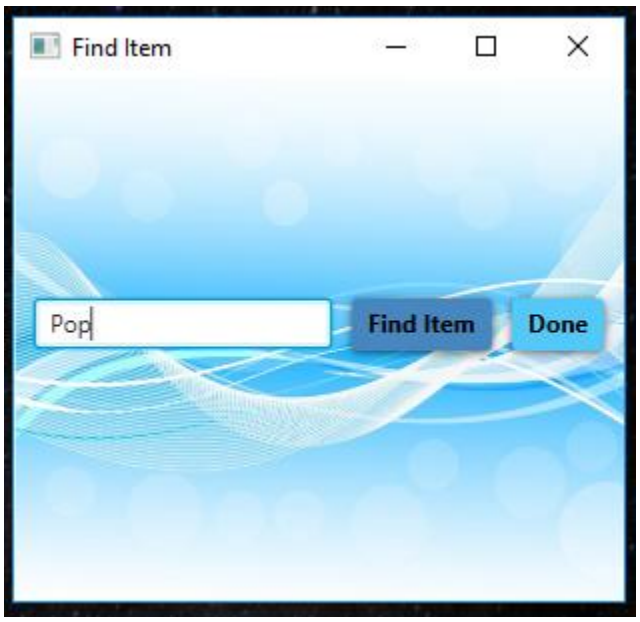
FIND ITEM WITH FIND BUTTON ENABLED

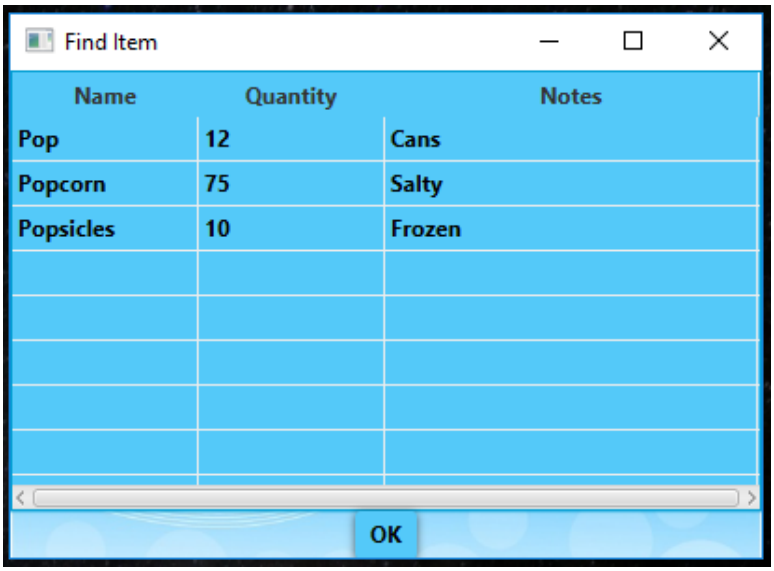


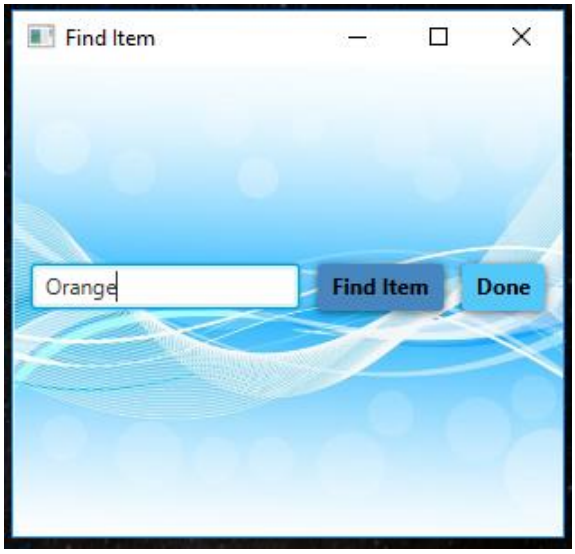
ITEM NOT FOUND ALERT

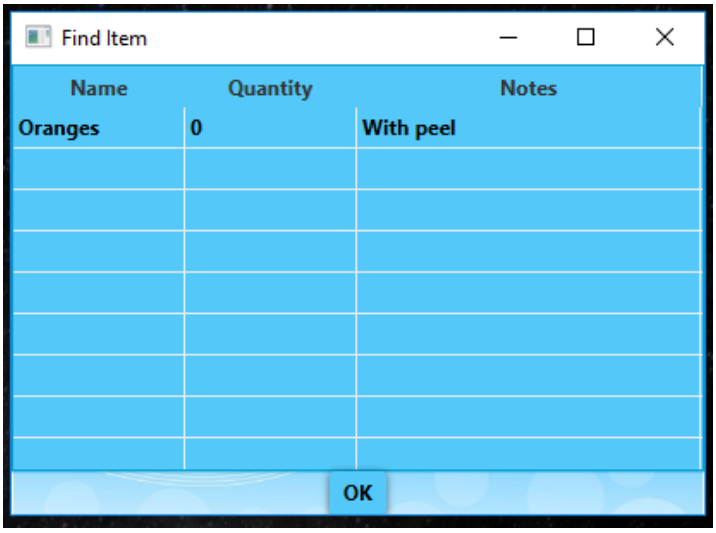


ITEM FOUND LIST



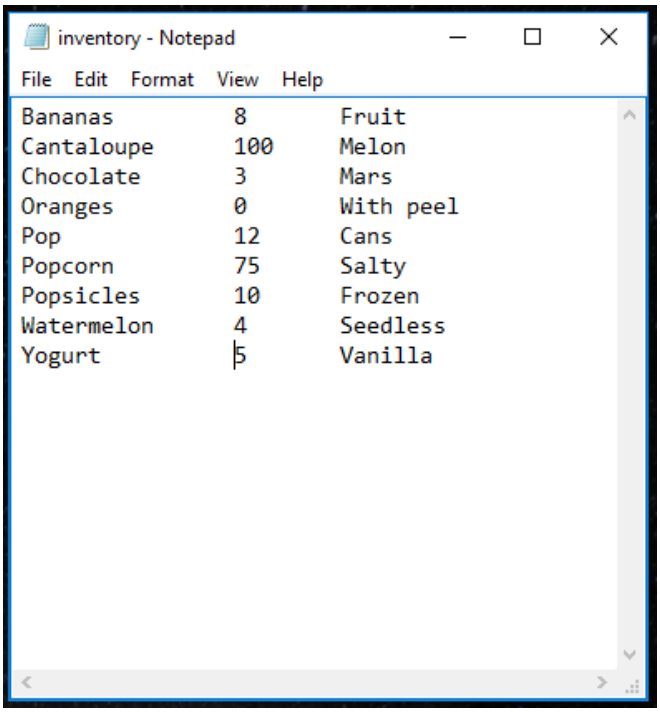

Find Item
Name
Quantity
Notes
Pop
12
Cans
Popcorn
75
Salty
Popsicles
10
Frozen
OK


Find Item
Orange
Find Item
Done


Find Item
Name
Quantity
Notes
Oranges
0
With peel
OK

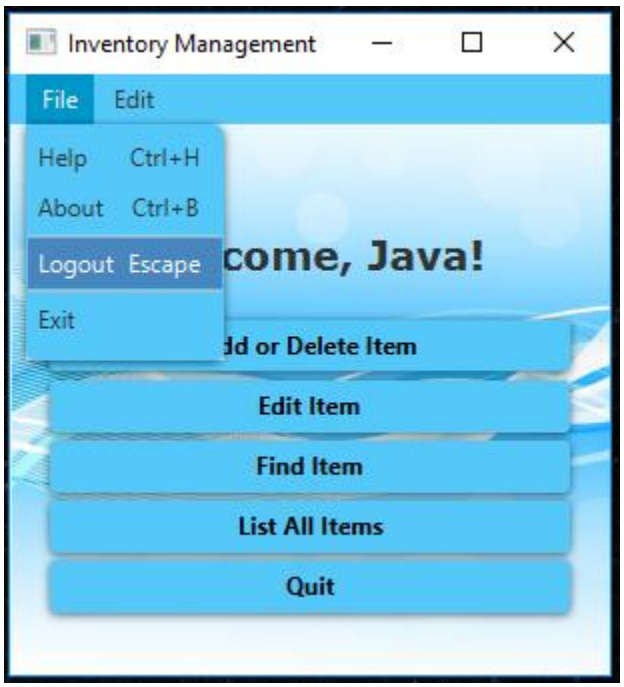
LIST ALL ITEMS

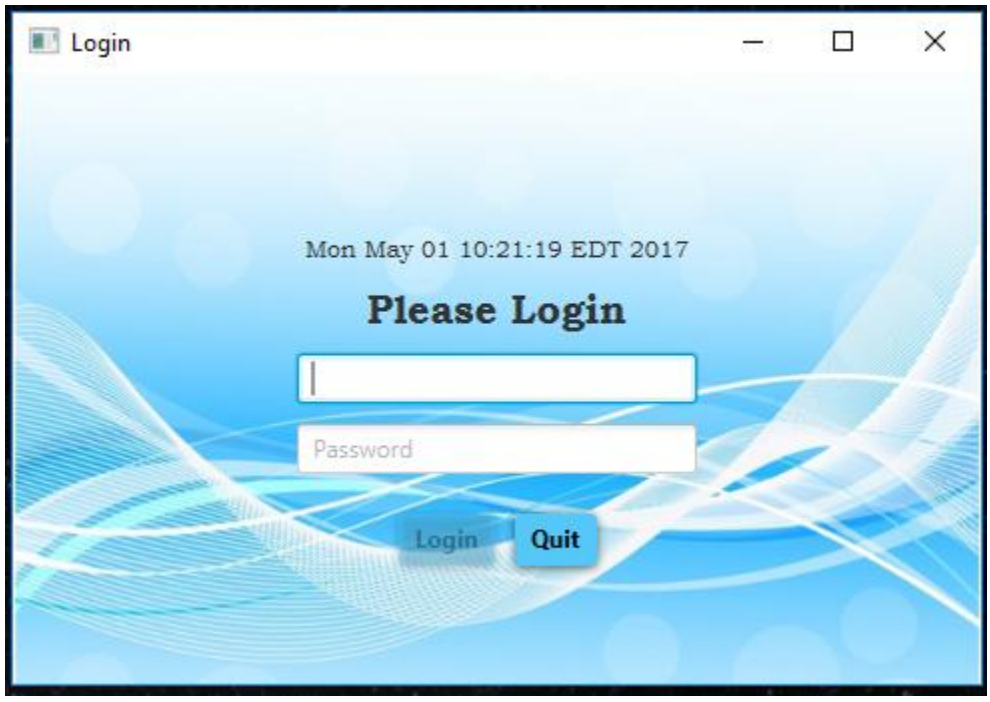
ITEMS ARE STORED IN FILE ALPHABETICALLY AS WELL



QUITTING WITHOUT LOGGING OUT

LOGOUT





GOODBYE SCREEN AFTER LOGGING OUT