

# CS370 Spring 2019 Project 2

## Restaurants Menu GUI

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### Introduction:

Project 2 specification summary: Design a GUI to display various restaurant menus. Customers can search for a restaurant and sort restaurants by name or by distance to the customer. Customers can view each restaurant's menu page. Administrators has the ability to add/edit/delete restaurants. All restaurant data is saved to a database or some other persistent method.

### Programming Language

Written in Python 3.7.3 - <https://www.python.org/downloads/>

### Database

python3 shelve object - <https://docs.python.org/3.7/library/shelve.html>

### 3rd-party Python libraries

GUI library: wxpython 4.0.4 – <https://wxpython.org/>

Executable build tool: pyinstaller 3.4 – <https://www.pyinstaller.org/>

### Source files

- data folder - contain raw data used to generate the initial database.
- generatedb.py - run this file to generate the initial database of 10 restaurants.
- viewdb.py - used to print out the data in the database file.
- restaurant.py - contain restaurant object classes.
- gui.py - contain the GUI classes.
- main.py - main py file for the app.
- restaurants.app - MacOS executable.
- restaurants.db - database file for MacOS.
- restaurants.exe - Windows executable.
- restaurants.bak - database file for Windows.
- restaurants.dat - database file for Windows.
- restaurants.dir - database file for Windows.
- macapp.spec - used by pyinstaller to build Mac app file.
- winexe.spec - used by pyinstaller to build windows exe file.

## Building Executables from source code

Executable files for Windows and MacOS were built using the python library pyinstaller. Use pip to install pyinstaller from command line:

```
pip3 install pyinstaller
```

To build executables, from command line, navigate to the source file folder, then run the following command:

```
pyinstaller --onefile --noconsole main.py
```

## Running the application

The application can be run from binary executable files or from source code.

The executable files are self-contained. Running the executable does not require python3 or any dependencies used in the application to be installed on the system.

on Windows: run restaurants.exe

on Mac: run restaurants.app

run from source code

1. Must install Python3.7 or above, version below 3.7 will not work:

Latest version of Python can be downloaded from  
<https://www.python.org/downloads/>

2. Install wxpython using pip:

from command line type:

```
pip3 install wxpython
```

3a. After installing Python3.7 and wxpython, application should be able to run from an IDE by running the main.py.

## Main GUI (Customer GUI) Description:

- The default GUI is the customer GUI.
- Displays every restaurant stored in the database.
- Customers can search a restaurant by name.
- When given a location, restaurants can be sorted by distance to the customer.
- Each restaurant has its own menu page. Which can be displayed by double clicking its name.
- Customers can not access administrator functions without login via a valid admin username and password.

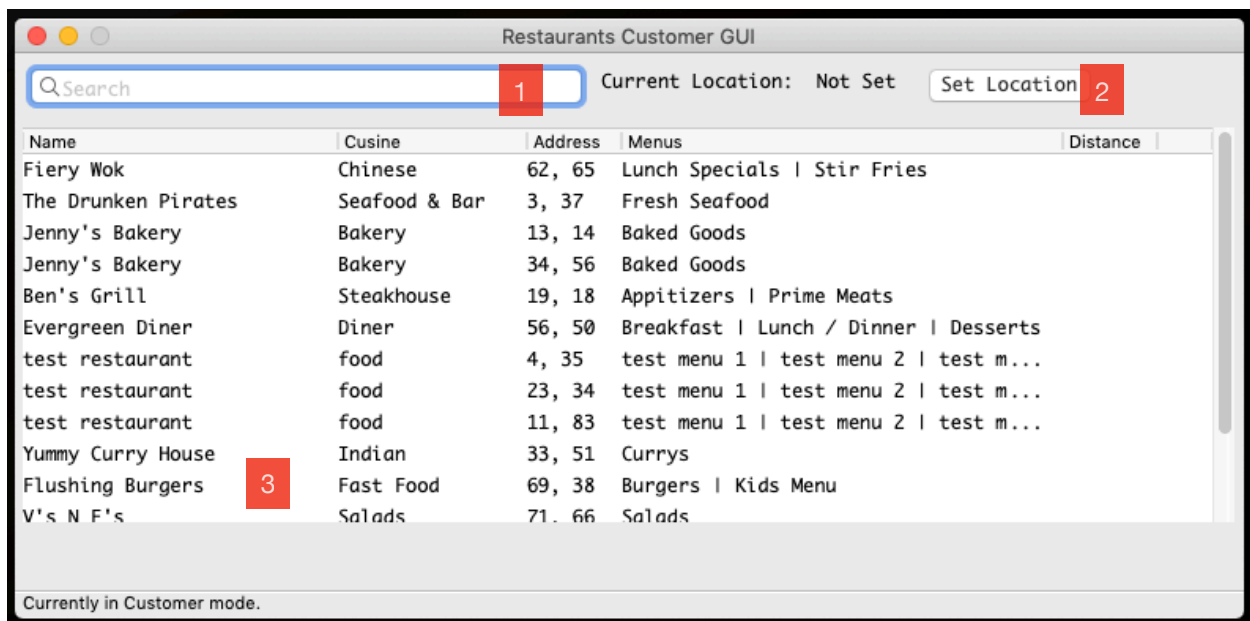
## Administrator GUI Description:

- Contains the same functions as Customer GUI.
- In addition, administrators has the ability to add/edit/delete restaurants via the editor GUI.
- Default hardcoded admin account is :  
username: admin  
password: admin

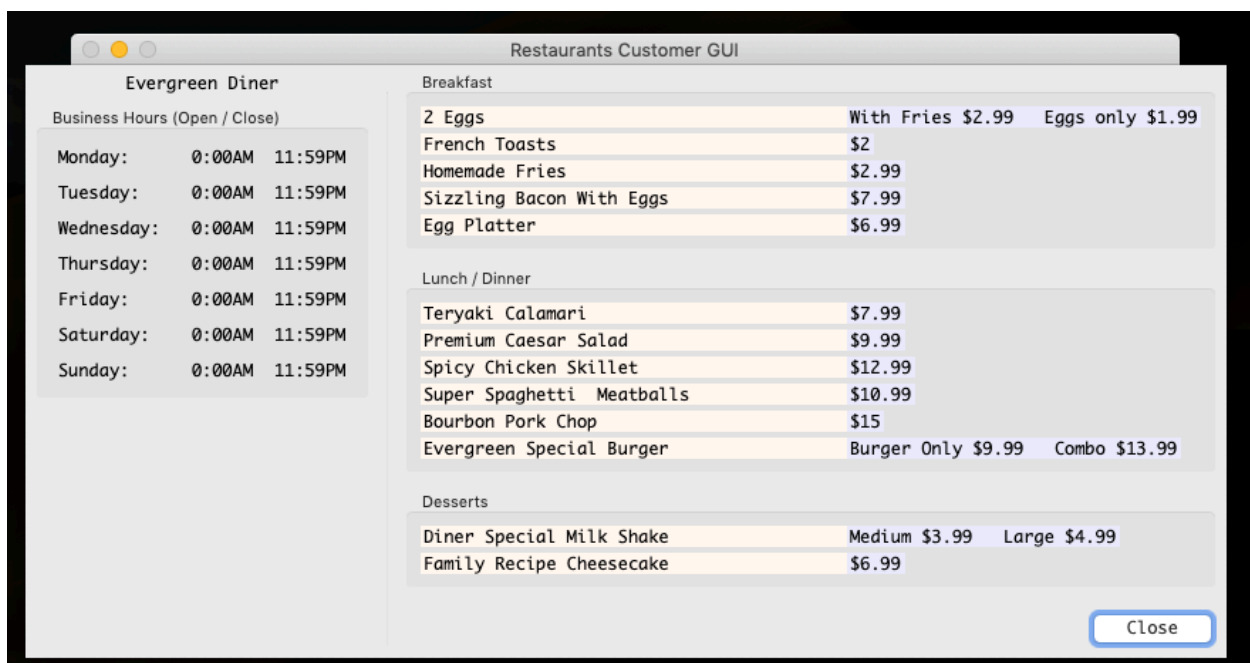
## GUI And Usage Tour

### Customer GUI

1. Search bar. Restaurants can be searched by name. 2. Set location button is used to enter customer location. 3. Lists the restaurants in the database. The list can be sorted by clicking on any of the 5 headers on top of the list. Double click on any of the restaurant to show its own menu page.

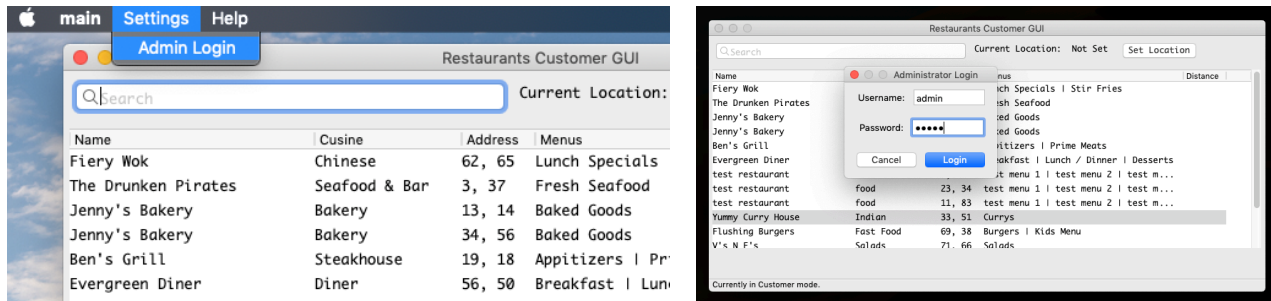


### Restaurant Menu Page



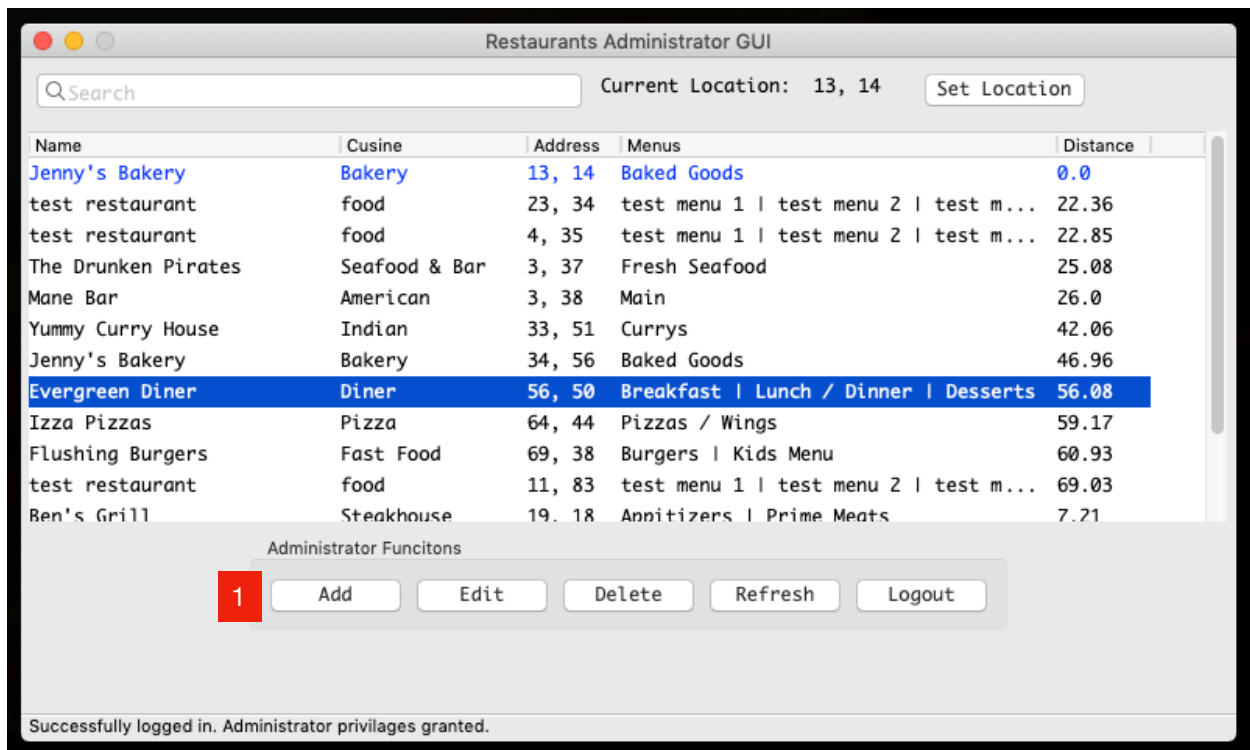
## Admin Login

Administrator functions are enabled only after logging in from the Settings menu.



## Administrator GUI

1. Administrator functions. Existing restaurants can be edited when it is selected from the list and clicking on the "Edit" button. A new restaurant can be added by clicking on the "Add" button. Both operations are done on the same editor GUI.



## Editor GUI

A new restaurant can not be saved without a restaurant name, its cuisine type, at least 1 address, valid business hours and at least 1 menu containing at least 1 menu item.

The screenshot shows the 'Restaurants Administrator GUI' window. It contains several sections for data entry:

- Restaurant Name:** A text input field.
- Cuisine:** A text input field.
- Franchise:** A dropdown menu currently set to 'No'.
- Address:** A section with 'X' and 'Y' input fields, an 'Add' button, and a list box showing '5, 18' with a 'Remove' button.
- Business Hours (Open / Close):** A grid of input fields for each day of the week (Monday through Sunday), each with two columns for time.
- Menus:** A section with 'Item Name' and 'Item Prices' input fields, and buttons for 'Insert Item', 'Modify Item', and 'Remove Item'. Below this is a table with columns 'Menu Item' and 'Prices'.
- Menu Title:** A text input field with buttons for 'Insert Menu', 'Modify Menu', and 'Remove Menu'. Below this is a table with columns 'Menu Title' and '# of items'.
- Bottom Buttons:** 'Preview', 'Save', 'Clear', and 'Cancel' buttons.

If Franchise is set to No. Only one address can be entered. Otherwise, multiple addresses can be entered. To add a franchise location to existing restaurant, it's not necessary to create a new location by adding. Simply add a new address to an existing franchise location by editing it, all menus and business hours are linked and will remain the same across all locations.

This close-up shows the 'Franchise: No' dropdown. Below it, the 'Address' section has 'X' and 'Y' input fields. The 'Y' field is active, and a list box below it shows '5, 18' as the selected address. There are 'Add' and 'Remove' buttons.

This close-up shows the 'Franchise: Yes' dropdown. Below it, the 'Address' section has 'X' and 'Y' input fields. A list box below shows three addresses: '5, 18' (checked), '3, 29', and '20, 76' (highlighted). There are 'Add' and 'Remove' buttons.

Business Hours must be filled. Either with opening and closing hours or the word "Closed" indicating a closed day.

Business Hours (Open / Close)

Monday:	Closed	
Tuesday:		Closed
Wednesday:	11AM	9PM
Thursday:	11AM	9PM
Friday:	11AM	10PM
Saturday:	11AM	10PM
Sunday:	11AM	10PM

Creating a restaurant menu

1. Enter a title for the menu. 2. Create a menu item by entering an item name and prices. 3. Click on "Insert Item" to add the item to the menu. 4. Menu items are displayed in the items list box. 5. When all items are entered, click on "Insert Menu" to save the menu. 6. Saved menus are displayed in the menus list box.

Restaurants Administrator GUI

Menus

2 Item Name: Coconut Milk Tea Item Prices: \$4.99

Insert Item 3 Modify Item Remove Item

Menu Item	Prices
Red Bean Milk Tea	\$4.99
Herbal Iced Tea	Med \$4.50 Lrg \$5.55

4

1 Menu Title: Tea Insert Menu 5 Modify Menu Remove Menu

Menu Title	# of items
Hot Drinks	2

6

Preview Save Clear Cancel

Editing and removing an menu item

1. Select an item. 2. Item data is now editable. 3. Make changes. 4. Click on "Modify Item" to save the changes. 5. While an item is selected, click "Remove Item" to remove it from the menu.

Restaurants Administrator GUI

Menus

Item Name: Herbal Iced Tea Item Prices: S \$3.99 M \$4.50 L \$5.55

Insert Item Modify Item Remove Item

Menu Item	Prices
Red Bean Milk Tea	\$4.99
Herbal Iced Tea	Med \$4.50 Lrg \$5.55
Coconut Milk Tea	\$4.99

Menu Title: Tea

Insert Menu Modify Menu Remove Menu

Menu Title	# of items
Hot Drinks	2

Preview Save Clear Cancel

Select an existing menu and its items will be populated in the items list box, ready for further editing. After changes are made, click "Modify Menu" to save the changes. A selected menu can be removed entirely by clicking "Remove Menu".

Restaurants Administrator GUI

Menus

Item Name: Item Prices:

Insert Item Modify Item Remove Item

Menu Item	Prices
coffee	\$2.99
Hot Tea	\$2.99

Menu Title: Hot Drinks

Insert Menu Modify Menu Remove Menu

Menu Title	# of items
Hot Drinks	2
Tea	3

Preview Save Clear Cancel

Once all information for a restaurant is entered, click the “Save” button to save the restaurant to the database. The “Preview” button provides a preview of what the customer will see on the restaurant page. The “Clear” will reset and clear all data on screen.

The screenshot shows the 'Restaurants Administrator GUI' window. On the left, there are input fields for 'Restaurant Name' (Wu's Bubble Tea), 'Cuisine' (Drinks), 'Franchise' (Yes), and 'Address' (X: 5, Y: 18). Below these are 'Business Hours' for each day of the week. On the right, there is a 'Menus' section with 'Item Name' and 'Item Prices' input fields, and buttons for 'Insert Item', 'Modify Item', and 'Remove Item'. Below that is a table for 'Menu Item' and 'Prices'. At the bottom right, there are buttons for 'Preview', 'Save', 'Clear', and 'Cancel'.

After adding or editing a restaurant, click “Refresh” to reload and update the restaurant data on screen.

The screenshot shows the 'Restaurants Administrator GUI' window after a refresh. At the top, there is a search bar and 'Current Location: 13, 14' with a 'Set Location' button. Below is a table listing restaurants with columns for Name, Cuisine, Address, Menus, and Distance. At the bottom, there is a section for 'Administrator Functions' with buttons for Add, Edit, Delete, Refresh, and Logout. A status message at the very bottom reads 'Successfully logged in. Administrator privileges granted.'

Name	Cuisine	Address	Menus	Distance
Fiery Wok	Chinese	62, 65	Lunch Specials   Stir Fries	70.72
The Drunken Pirates	Seafood & Bar	3, 37	Fresh Seafood	25.08
Jenny's Bakery	Bakery	13, 14	Baked Goods	0.0
Jenny's Bakery	Bakery	34, 56	Baked Goods	46.96
Wu's Bubble Tea	Drinks	5, 18	Hot Drinks   Tea	8.94
Wu's Bubble Tea	Drinks	3, 29	Hot Drinks   Tea	18.03
Wu's Bubble Tea	Drinks	20, 76	Hot Drinks   Tea	62.39
Ben's Grill	Steakhouse	19, 18	Appitizers   Prime Meats	7.21
Evergreen Diner	Diner	56, 50	Breakfast   Lunch / Dinner   Desserts	56.08
Yummy Curry House	Indian	33, 51	Currys	42.06
Flushing Burgers	Fast Food	69, 38	Burgers   Kids Menu	60.93
V's N F's	Salads	71, 66	Salads	77.9



If a restaurant is closed for business, select it from the restaurants list box and click "Delete" to delete it from the database. Click "Logout" to return to the customer GUI.

### **Troubleshooting**

In case the database files are deleted or otherwise corrupted. A new database can be generated by running `generatedb.py`, the database will have 10 initial restaurants.

On Windows, the following 3 files will be generated:

- restaurants.bak

- restaurants.dat

- restuarants.dir

On MacOS, the following file will be generated:

- restaurants.db

The database files must be placed in the same folder as `main.py` or the executable binary.

### **Contact Info**

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Github repo: <https://github.com/wenbinwu85/cs370-software-engineering>