


FINAL PROJECT DOCUMENTATION

1. **Name of the project:** Point of Sales (POS) app for Luxury furniture.
2. **Programming language:** Python.
3. **Integrated Development Environment:** IDLE (Python 3.10 64-bit version), then  PyCharm 2021.2.2 version (interpreter with Python 3.8 version).
4. **Reasons to choose this project:** I want to build a Point of Sales (POS) app to support for my parents' business in Vietnam. There are some apps on the market but most of them are complicated and not user-friendly for businesspeople and those apps often have transaction fees. Also, I hope to have our own app for the security and privacy. In the future, I can build more functionalities to support business analysis and understand more about the market and customers.
5. **Amount of time taken to complete the project:** at the very beginning of this course, when I knew that I was going to build an app, I started to think about the app idea. Then, I narrowed down the ideas and decided to focus on POS app 2 months ago.
6. **Resources used to prepare myself and improve my programming skills:**
 - **Book:** Python Object-Oriented Programming, 4th Edition, *Steven F. Lott, and Dusty Phillips*.
 - **YouTube:** Tkinter Course – Create Graphic User Interfaces in Python Tutorial <https://www.youtube.com/watch?v=YXPyB4XeYLA&t=798s>
 - **Website:** Tutorialspoint for Tkinter widgets <https://www.tutorialspoint.com/>
 - **Website:** Stack Overflow when stuck on issues <https://stackoverflow.com>
 - **Website:** DelftStack to understand more about using Python loop for multiple variables, and configuration with Tkinter widgets and buttons <https://www.delftstack.com/>
 - **Website:** JournalDev to get ideas how to use multiple classes with Tkinter <https://www.journaldev.com/>
7. **Current bugs of the project:**

- I want to build a customer function stuck on Pay button that I press Pay button, the program will calculate and save Customer Information into separate Customer Records file. Also, that function will check if the Customer name already exists or not, then it will sum up the new bonus points to the old points. If that is a new Customer, it will add the new Customer name into the file and save the point of current sales. The function worked well many times with IDLE, but then it was suddenly not working anymore, it didn't work on PyCharm too. If I kept that function active in my codes and press Pay button, the program would be loading forever although I had only 2 customer names in the file. I couldn't find the bug in my code and there was no error shown up. Then, I had to change it to get another Sales record file to save every transaction info.
- I don't know how to deal with Signature function in my program. It seems I didn't think carefully in design stage that my program is a type of mouse interaction, not touch-screen interaction to work with Signature function.

8. Updates for the project:

- If I can figure out how to deal with Customer record file and Signature function, it would be great.
- In the near future, I hope that I can add more business analysis functions into my project to make it more useful, such as machine learning, business intelligence.
- If my program can have function about connecting with Inventory Management, it would be awesome that I can know many items I have left for a specific product, so I can order new ones and track about buying trends for business analytics.

9. Step-by-step interaction with the program:

- **Step 1:** Open the Python file of the program. The users can use any IDE that works with Python programming language.

LUX FURNITURE - Point of Sales

Employee Date **Friday 06 May - 17:17:16 PM**

Items

MODERN FURNITURE

Armchair sofa \$299	Vintage sofa \$199	Coffee chair \$149	Chair chair \$149	Kingstone chair \$229	Long sofa \$1999	Hanging chair \$129	Beach chair \$129
Dining chair \$149	VN chair \$149	Hammock chair \$129	Flower chair \$149	Velvet chair \$429	Lounge chair \$129	Forward chair \$129	Office chair \$129
Doctor chair \$1199	Plastic chair \$109	Green sofa \$109	Soft set \$1099	Over chair \$109	Luxury sofa \$1099	Premium chair \$1099	Premium chair \$1099
Royal sofa \$1099	Red sofa \$1099	Royal bed \$11099	Vintage bed \$11099	Classic bed \$11099	Red bed \$1099	White bed \$799	Kid bed \$1099

Receipt Details

Item	Qty	Amount
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Customer Address Phone Points

Total Sales Tax Fees Discount

Charge Method of Payment Customer Payment Change

Signature

PAY REMOVE RESET EXIT

- **Step 2:** Input Employee Name on the top left side of the program. Then, click on the picture of any product items the user wants. The item will be shown in the frame of Receipt Details that the user can check.

LUX FURNITURE - Point of Sales

Employee **Marvel** Date **Friday 06 May - 22:35:43 PM**

Items

MODERN FURNITURE

Armchair sofa \$299	Vintage sofa \$199	Coffee chair \$149	Chair chair \$149	Kingstone chair \$229	Long sofa \$1999	Hanging chair \$129	Beach chair \$129
Dining chair \$149	VN chair \$149	Hammock chair \$129	Flower chair \$149	Velvet chair \$429	Lounge chair \$129	Forward chair \$129	Office chair \$129
Doctor chair \$1199	Plastic chair \$109	Green sofa \$109	Soft set \$1099	Over chair \$109	Luxury sofa \$1099	Premium chair \$1099	Premium chair \$1099
Royal sofa \$1099	Red sofa \$1099	Royal bed \$11099	Vintage bed \$11099	Classic bed \$11099	Red bed \$1099	White bed \$799	Kid bed \$1099

Receipt Details

Item	Qty	Amount
Armchair	1	299
Vintage Sofa	1	199
Hammock Chair	1	329
Velvet Chair	1	429
Sofa Set	1	3599
Luxury Sofa	1	5699
Seaview Outdoor Sofi	1	2599
White Bed	1	7569
Kid Bed	1	1569

Customer Address Phone Points

Total Sales **\$ 22271.00** Tax **\$ 556.77** Fees Discount

Charge **22827.78** Method of Payment Customer Payment **0** Change

Signature

PAY REMOVE RESET EXIT

- **Step 3:** Enter the Customer Information, particularly Customer Name, Address, Phone.

Employee: Marvel Date: Friday 06 May - 22:35:43 PM

Items

MODERN FURNITURE

Item	Qty	Amount
Armchair	1	299
Vintage Sofa	1	199
Hammock Chair	1	329
Velvet Chair	1	429
Sofa Set	1	3599
Luxury Sofa	1	5689
Seaview Outdoor Sofi	1	2589
White Bed	1	7569
Kid Bed	1	1569

Customer Information:

Customer: Fish
 Address: F street
 Phone: 0456789123
 Points:

Financial Summary:

Total Sales: \$22271.00
 Tax: \$556.77
 Fees:
 Discount:

Charge: 22827.78
 Method of Payment: Cash
 Customer Payment: 0
 Change:

Buttons: PAY, REMOVE, RESET, EXIT

- **Step 4:** Choose the Method of Payment and enter the money that Customer gives into "Customer Payment". Then, press "Pay" button. It will show up how much for the "Change". Also, It will store the receipt into Records file.

Tax = 2.5%. Fees: 2.0%. Discount: 10% (for current marketing campaign).

Employee: Marvel Date: Friday 06 May - 22:35:43 PM

Items

MODERN FURNITURE

Item	Qty	Amount
Armchair	1	299
Vintage Sofa	1	199
Hammock Chair	1	329
Velvet Chair	1	429
Sofa Set	1	3599
Luxury Sofa	1	5689
Seaview Outdoor Sofi	1	2589
White Bed	1	7569
Kid Bed	1	1569

Customer Information:

Customer: Fish
 Address: F street
 Phone: 0456789123
 Points: 222.00

Financial Summary:

Total Sales: \$22271.00
 Tax: \$556.77
 Fees: \$445.42
 Discount: \$2227.00

Charge: 21046.10
 Method of Payment: Cash
 Customer Payment: 30000
 Change: \$8953.90

Buttons: PAY, REMOVE, RESET, EXIT

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Records.txt - Notepad
File Edit Format View Help
Employee: Marvel
Date: Friday 06 May - 22:35:43 PM

Customer: Fish
Address: F street
Phone: 0456789123
Total Purchase: $21046.095

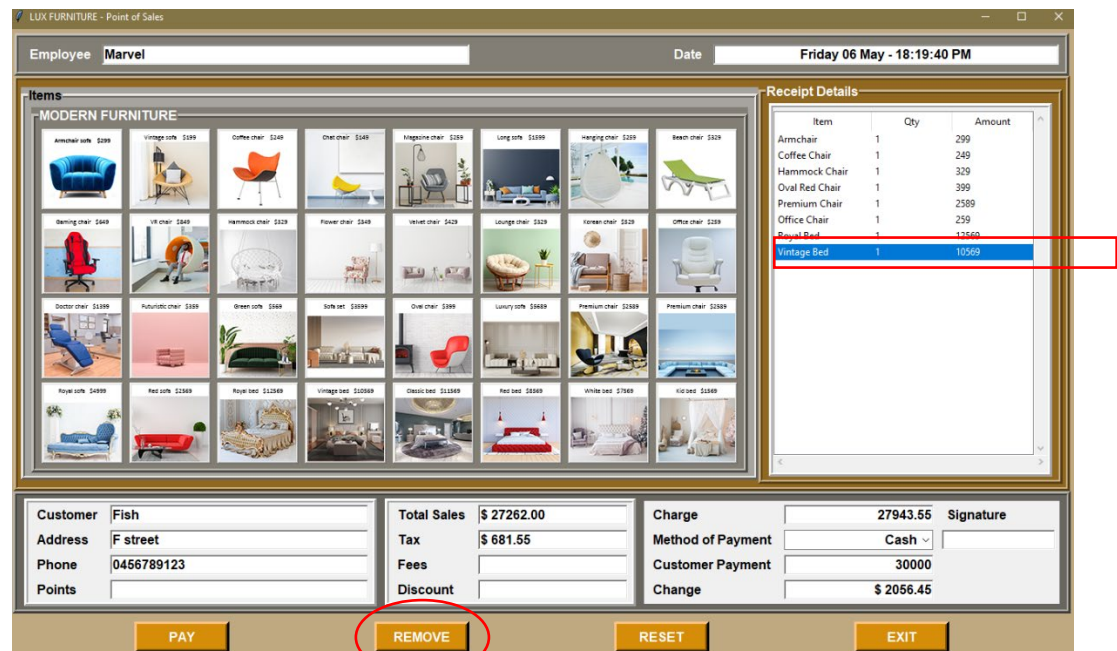
Receipt Details ---

['Armchair', 1, 299]
['Vintage Sofa', 1, 199]
['Hammock Chair', 1, 329]
['Velvet Chair', 1, 429]
['Sofa Set', 1, 3599]
['Luxury Sofa', 1, 5689]
['Seaview Outdoor Sofa', 1, 2589]
['White Bed', 1, 7569]
['Kid Bed', 1, 1569]

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Ln 1, Col 1    100%    Windows (CRLF)    UTF-8

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- **Step 5:** If the user wants to remove any item, they can click on that specific item in the list of “Receipt Details”, then double click on “Remove” button to remove that item from the list, also remove its cost from the calculation.



- **Step 6:** If the user wants to start over the process, just simply press “Reset” button to clear all the data on the screen.

LUX FURNITURE - Point of Sales

Employee **Marvel** Date **Friday 06 May - 18:19:40 PM**

Items

MODERN FURNITURE

Armchair sofa \$299	Village sofa \$329	Coffee chair \$249	Chair chair \$249	Magazine chair \$329	Lung sofa \$3399	Hanging chair \$329	Beach chair \$329
Dining chair \$349	VN chair \$349	Hammock chair \$329	Power chair \$349	Velvet chair \$429	Lounge chair \$329	Korean chair \$329	Office chair \$329
Doctor chair \$3399	Publuc chair \$339	Green sofa \$349	Soft set \$3399	Oral chair \$399	Luxury sofa \$3499	Premium chair \$3399	Premium chair \$3399
Royal sofa \$4999	Red sofa \$3399	Royal bed \$13399	Village bed \$13399	Classic bed \$13399	Red bed \$3399	White bed \$7999	Kid bed \$3399

Receipt Details

Item	Qty	Amount
Armchair	1	299
Coffee Chair	1	249
Hammock Chair	1	329
Oval Red Chair	1	399
Premium Chair	1	2589
Office Chair	1	259
Royal Bed	1	12569

Customer **Fish** Total Sales **\$ 16693.00** Charge **17110.33** Signature

Address **F street** Tax **\$ 417.32** Method of Payment **Cash**

Phone **0456789123** Fees Customer Payment **30000**

Points Discount Change **\$ 2056.45**

PAY REMOVE RESET EXIT



LUX FURNITURE - Point of Sales

Employee Date

Items

MODERN FURNITURE

Armchair sofa \$299	Village sofa \$329	Coffee chair \$249	Chair chair \$249	Magazine chair \$329	Lung sofa \$3399	Hanging chair \$329	Beach chair \$329
Dining chair \$349	VN chair \$349	Hammock chair \$329	Power chair \$349	Velvet chair \$429	Lounge chair \$329	Korean chair \$329	Office chair \$329
Doctor chair \$3399	Publuc chair \$339	Green sofa \$349	Soft set \$3399	Oral chair \$399	Luxury sofa \$3499	Premium chair \$3399	Premium chair \$3399
Royal sofa \$4999	Red sofa \$3399	Royal bed \$13399	Village bed \$13399	Classic bed \$13399	Red bed \$3399	White bed \$7999	Kid bed \$3399

Receipt Details

Item	Qty	Amount
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Customer Total Sales Charge Signature

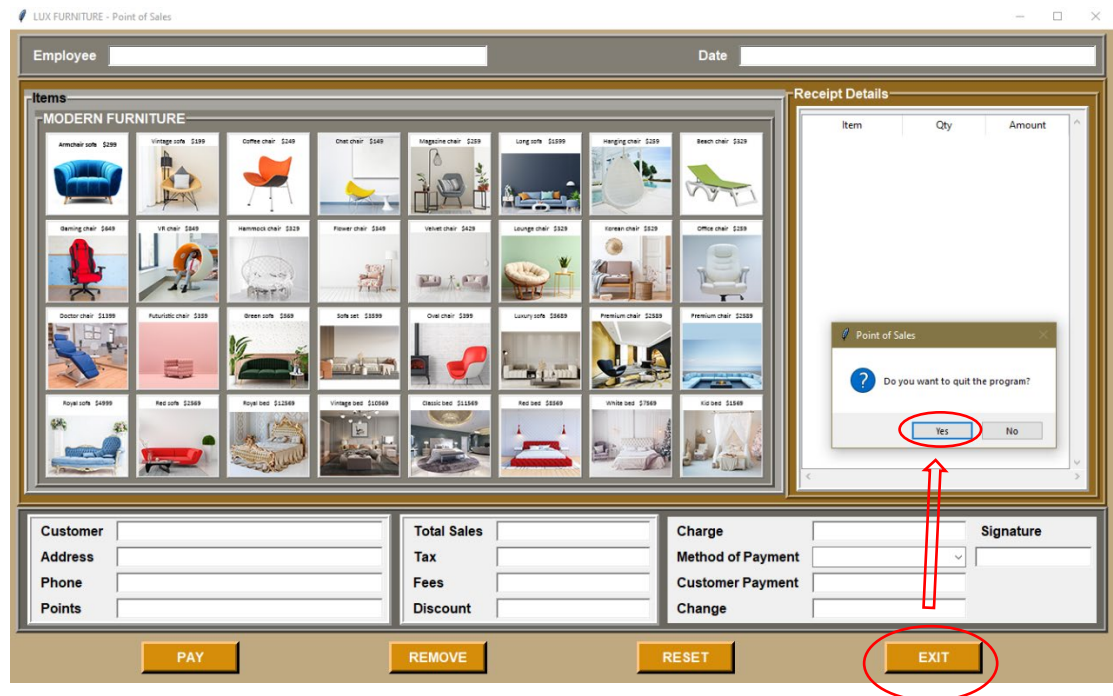
Address Tax Method of Payment

Phone Fees Customer Payment

Points Discount Change

PAY REMOVE RESET EXIT

- **Step 7:** If the user wants to quit the program, press “Exit” button and click “Yes” to quit.



10. UML Diagrams for the major classes of the project:

