UNIVERSITY OF SCIENCE AND TECHNOLOGY OF HANOI

PYTHON PROJECT REPORT

COMPUTER STORE INFORMATION MANAGEMENT SYSTEM

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May 2021

I. Introduction

1. Overview:

Managing a computer store is difficult because you have to deal with a large number of variables such as staff, orders, remaining stock, and so on. First, the store requires employees; however, one computer shop cannot operate with just one employee per shift, as repair technicians, cashiers, promotions, sales, and management are all required. That includes everything from your name, age, working hours, job description, personal details, and even your salary. The second factor is the quantity of items in stock; a computer retailer would have a wide range of devices for sale, including mice, keyboards, displays ,headphones, webcams, and other hardware as crucial as ram, chip, and heatsink, ... The order comes next; a shop cannot sell to a single buyer or only sell a single company's keyboard or mouse. There will be lots of people ordering a lot of items from a lot of different brands, so order chaos will happen a lot if orders aren't organized and handled properly.

2. Project goal:

We developed a software to track each store employee, the amount of items in stock and the quantities sold, the number of orders placed, and the details of each order. This application will capture, store, and organise data to make it easier for users to access the data they've presented to the app. Not only that, but users can quickly erase, alter, overwrite or correct information if it is wrongly inserted or updated. Because this software is aimed to be used in the store, it also has a customer front for customers to search the information about the goods that they want.

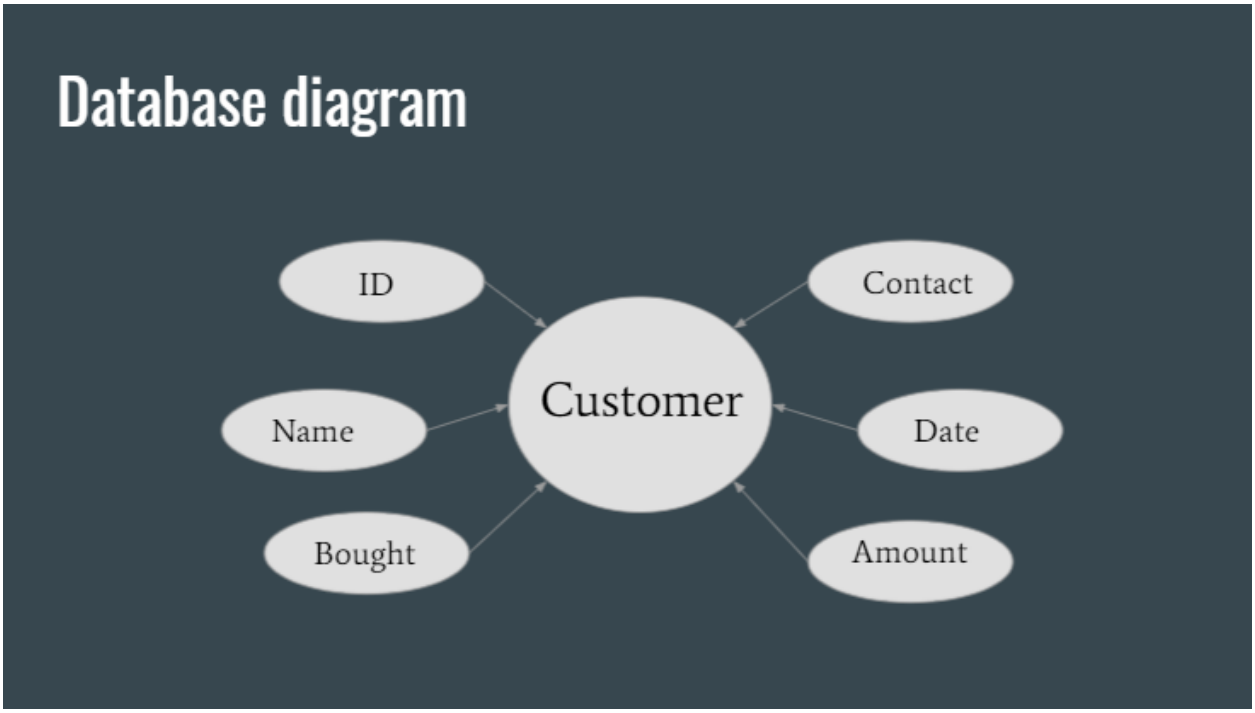
3. Extensions used:

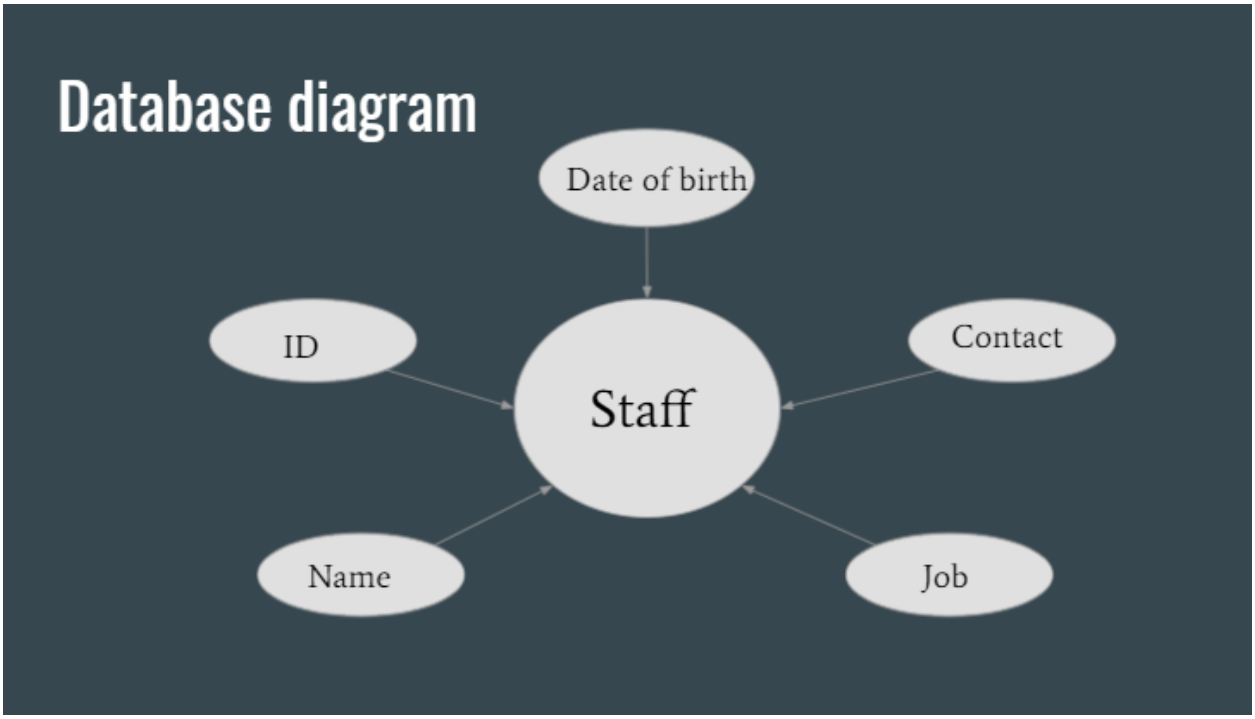
- Tkinter modules: Modules to create graphical user interface.
- MySQL connector: database driver to process data in MySQL from python.
- Os: Provide functions for interacting with the operating system.

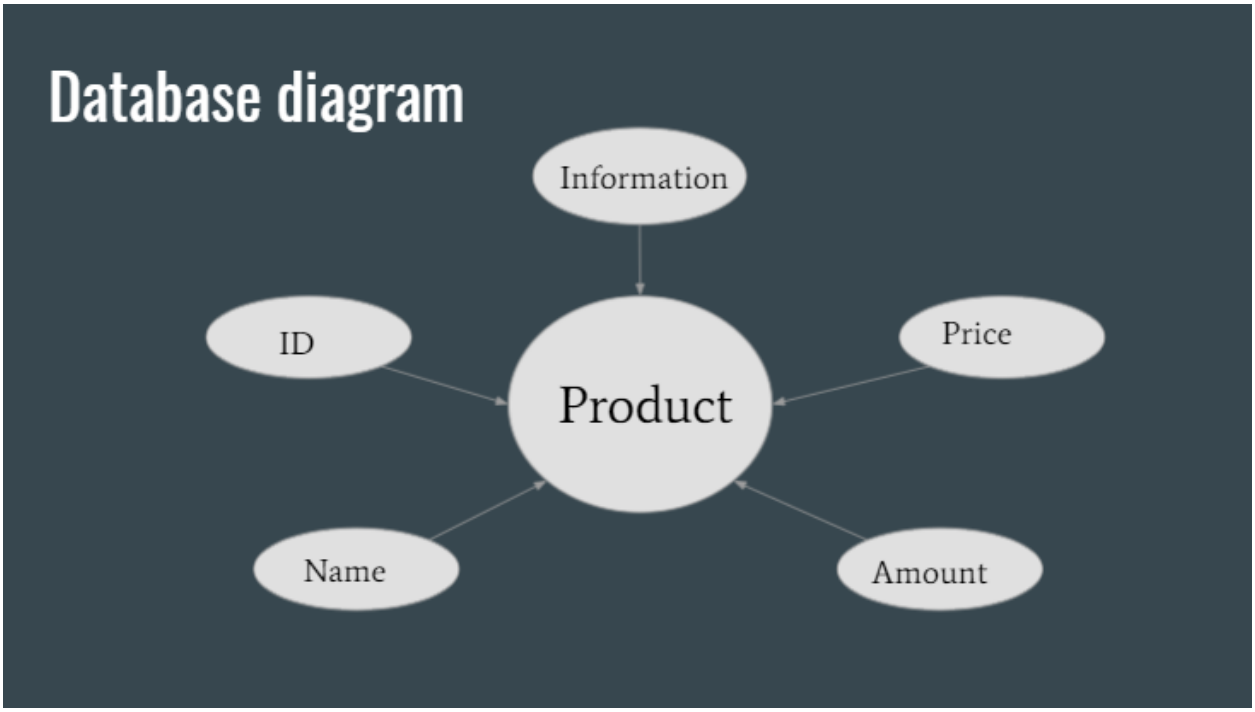
II. Database

1. Entities

We have the following there entities in our database:







2. ERD and Schema

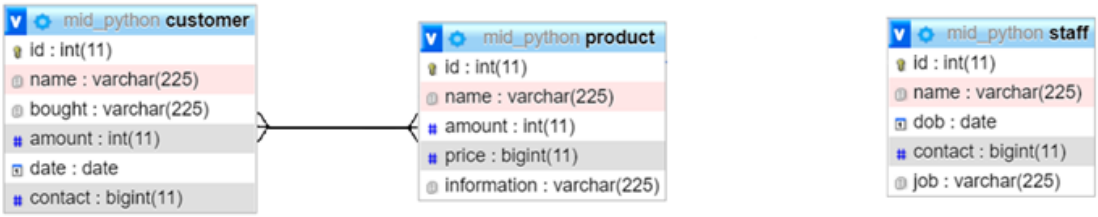


Figure 1: Database Schema

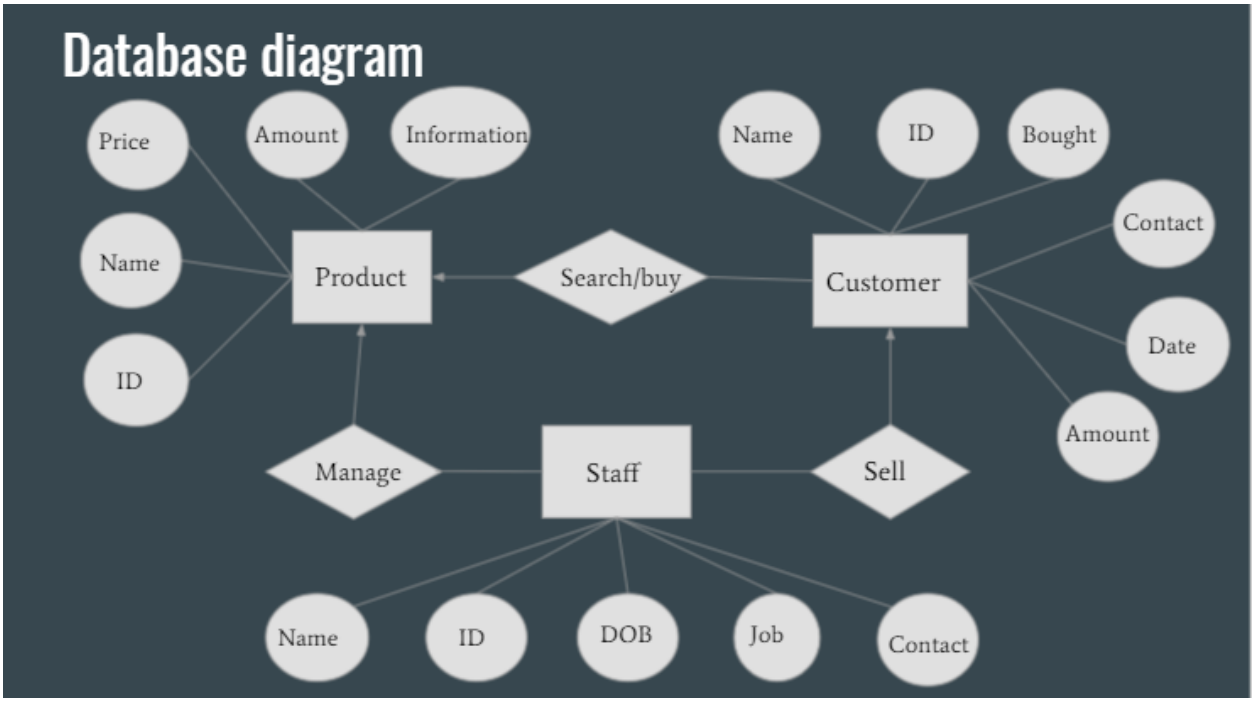
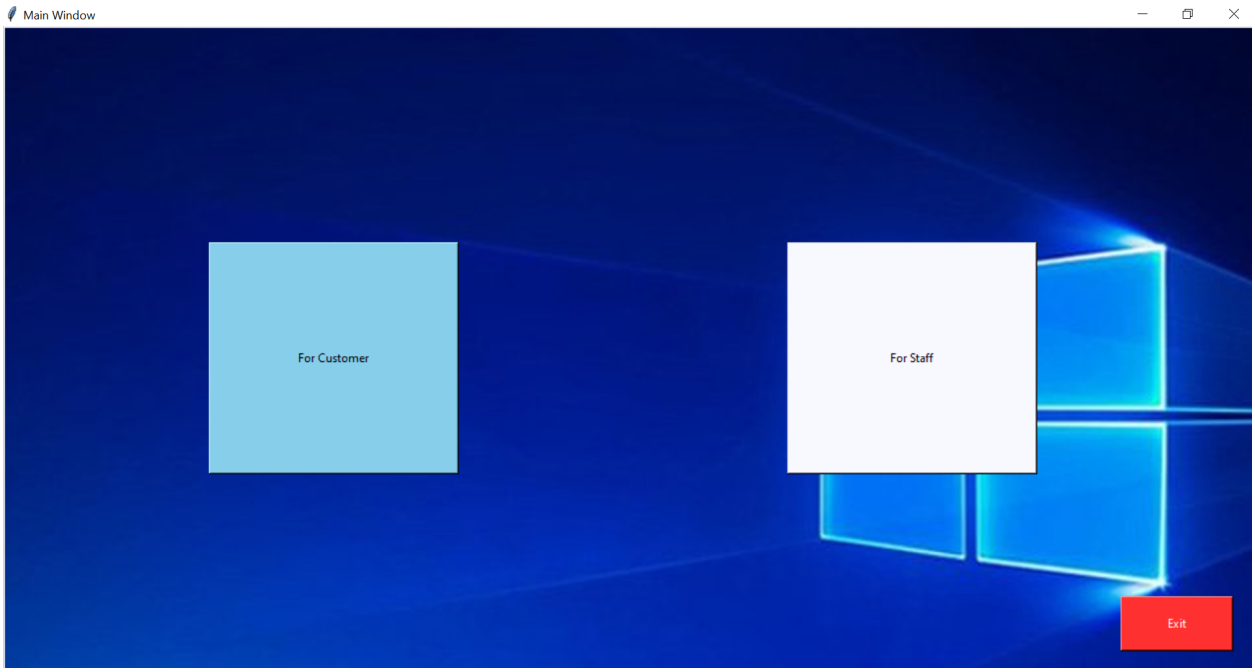


Figure 2: Entities Relationship Diagram

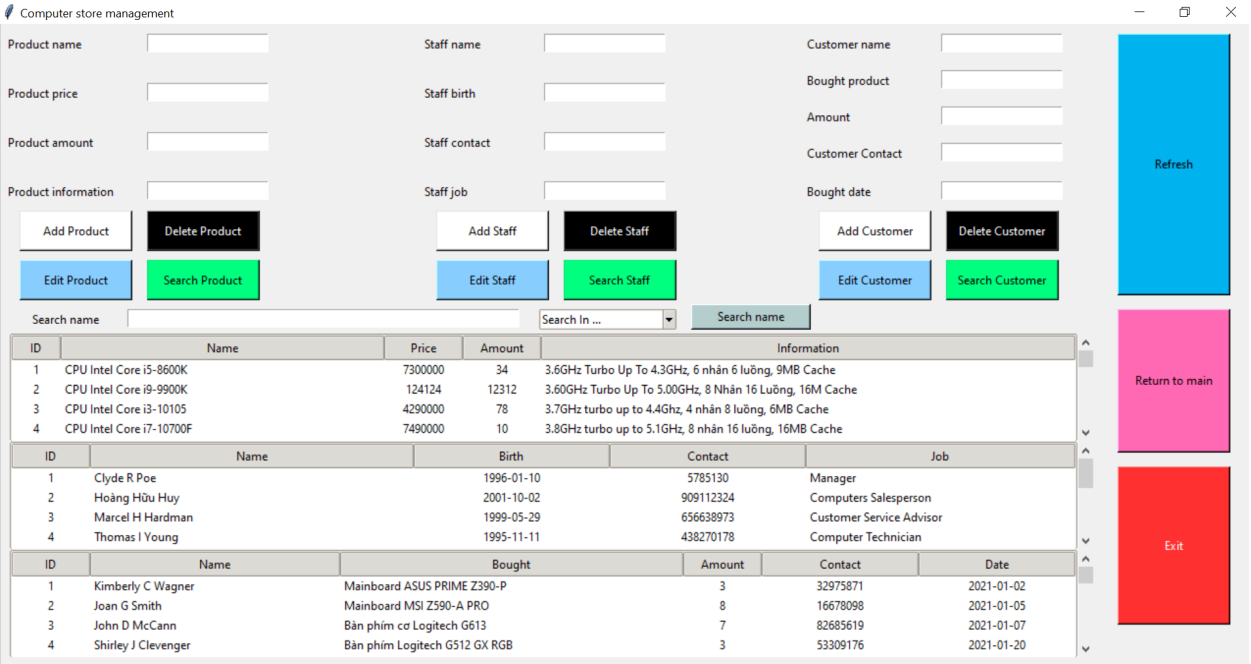
III. Features:

1. Transition window



From this transition window, we have the option to open the window for the staff or the customer. When you are done with the program and you find yourself in this window you can click the Exit button to close the program.

2. Staff window



With the staff window we can use basic functionalities (adding, editing, deleting, searching) to an entry in the database according to the three tables (Products, Staffs, Customers) for the first section (the above CRUD section):

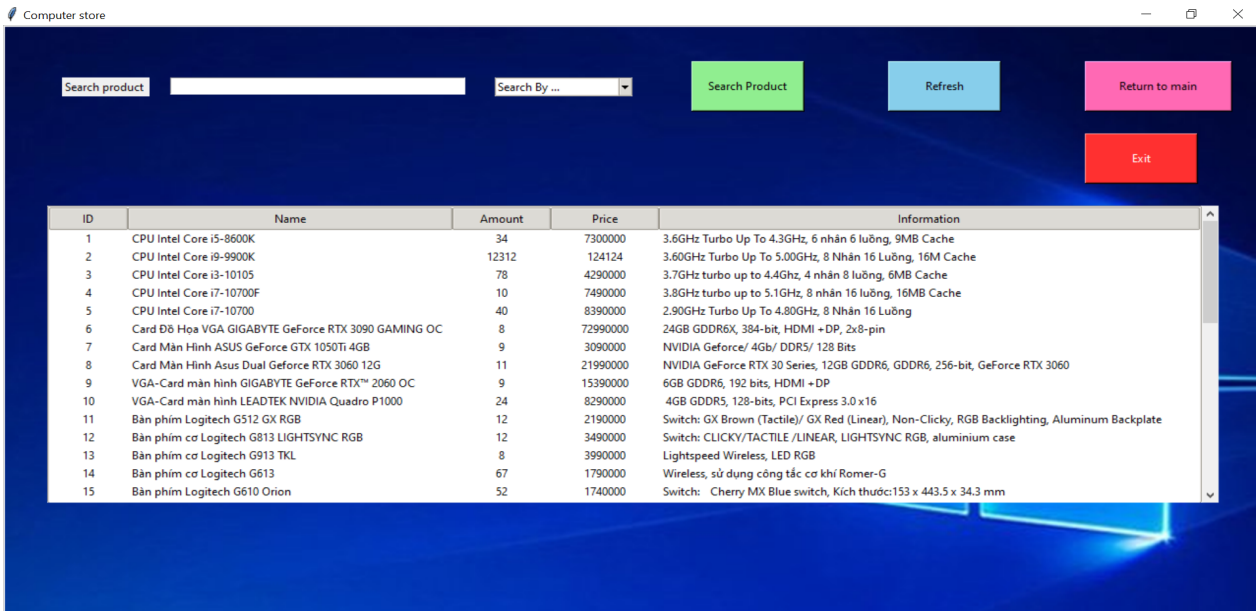
- All information must be filled when you want to add/edit a customer or product or staff entry. If you leave one or more spaces blank and try to click the button add/edit it will return a warning "**Something is wrong**".
- The input name in the product related blank spaces must not exist in the database yet, if it already exists then the program will give you a message that reads "**Product already exists**".
- The Delete/Search button only requires the name to be filled, if you don't input any name it will return a "**Name is required**" message.

If you want to search information about a product or staff or a customer with keywords then you use the second section (the below searching section):

- You choose to search from one of the three tables, put in the keyword and then click the search name button. The information will be shown in the table of your choice.
- If you don't choose from any table to search in, the program will show "**What do you like to search in?**" message. And if you don't put any character in the input space, a "**What do you like to search?**" notification will appear.
- If you double click an entry in the search table below, every related information about that entry will appear in one of the three tables above depending on which table that entry comes from.
- If all the spaces in the above tables are filled and you want to clear them all at once then you can use the Refresh button. The Refresh button also refreshes all three tables and the 2nd search feature entry.

Once you are done with everything in this window or you simply want to leave this window, you can either click the Return to main button to go back to the transition window and change to Customer window or just click the Exit button to close the program completely.

3. Customer window



For the customer window, we have the ability to search for product information:

- Name & information entry only need keywords to be able to search in the database and the user doesn't have to be careful about capital letters or not.
- Amount & price entry need the exact amount for the program to start searching.
- Refresh button clears all space if you want to clear all entries and shows the whole table from the database again.
- If you don’t choose one of the entries in the search by button, it will result in an error notification **“What do you like to search by?”**.
- If you choose one of the entries in the search by button but didn’t put anything in the black space, it will result in an error notification **“What do you like to search?”**.
- Similar to the Return to main and Exit button from the staff window, it also returns you to the transition window or closes the program.

IV. Conclusion

1. What we have achieved:

We have created a simple and easy to use application that helps computer stores to manage their data(products,customers,staff) while also having a customer front so that the customers can see the store's product information. Giving the store more opportunities to improve itself, however this application can still be changed and improved in the future.

2. Future improvement

As you can see from this report, although we have created a way for the store to compile and manage their data, the program still doesn’t have the function for the customer to buy products directly from the program. Graphical user interface is still dull and not too suited for the general user. We want to implement a way for the customer to make orders on the program comfortably.

The last is that our application doesn’t have any means of security, that means it can be vulnerable against malicious intents. So in the future, we want to create a security system to protect the program as well as the store.