ATU - An Integration of Inventory Management Software for POS Systems

A Web Programming Project by

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APPROVAL SHEET

This web programming project entitled **ATU – An Integration of Inventory Management Software for POS Systems**, prepared and submitted by **Alfred Ashley Andrion, Jhon Louise Tan, and Abdul Aziz Uy**, in partial fulfillment of the requirements for the degree **Bachelor of Science in Information Systems** is hereby accepted.

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INTRODUCTION

A company requires a robust POS and inventory system to help them run efficiently if they want to maintain their top spot in the cutthroat retail sector of today. They also need to combine a POS with an inventory system to increase productivity, obtain visibility into their stock, and automate their most labor-intensive tasks (Nguyen, 2022). A point of sale, sometimes known as a POS, is a machine that handles retail customers' transactions. In a physical store or at the cash register of an online retailer, a POS may be present (Hayes, 2022). In other words, POS acts as the hub where everything—including sales, inventory management, payment processing, and customer management—merges to form the core of a company (Stubbs & Conrad, 2021). In addition, the simplest definition of inventory management is having the correct inventory counts in the correct quantity at the correct time with the correct cost. Inventory management aids businesses in determining what, when, and how much inventory counts to order as a component of supply chain management. Real-time inventory tracking from the point of purchase until the point of sale is made possible with the aid of inventory management (Rai, 2022).

According to a survey done by Stubbs and Conrad (2021), almost a quarter of the business owners contacted (23%) were prioritizing their point-of-sale infrastructure more during COVID-19 while another 43% were maintaining their pre-pandemic level of prioritization, In other words, even in the event of a global pandemic, two-thirds of store executives were either unable to or unwilling to prioritize POS systems. However, POS solutions have developed over the past ten years to keep up with the demands and

sophistication of today's consumers. With their mobile devices in hand, people may immediately access an endless array of alternatives if they are dissatisfied with the options or service levels you provide. Due to these intense competitive demands, modern POS has advanced well beyond being only a point of sale and accounting system to also serve as a point of service, enabling highly customized interactions that continually satisfy customers in the here and now (Oracle, n.d.). One of the best choices a business can make is to choose the proper POS system for managing inventory. Inventory management with a POS system helps reduce costs for small businesses, especially in retail operations but also for any company that sells goods (Carlson, 2022).

Figure 1. From “Introduction”. Project Logo

1 THE PROJECT DESCRIPTION

Problem Encountered

Many businesses still need to manually manage their inventory, which can lead to operational challenges such as an incorrect listing of products due to miscommunication between the business owner and supplier. Their systems still use manual order processing, which only automatically sends invoice orders to suppliers, resulting in a lot of time and effort spent manually processing orders. Lastly, these systems require a separate communication system to handle business transactions, which can take time and effort.

Objective of the Project

The project aims to solve the operational challenges faced by businesses using their current system, either computerized or non-computerized. Specifically, this project's objectives were:

1. To design and implement a user-friendly interface.
2. To develop a comprehensive inventory management software that integrates essential CRUD functionalities.
3. To enhance the overall management of inventory and inventory-related tasks.

Limitation of the Project

This project was limited to the admin and supplier functions. Admin functions are where an admin can perform essential CRUD functions on the supplier and product

database. As for supplier functions, the suppliers can also perform essential CRUD functions but only on the product database.

2 PROJECT MODULES

Login

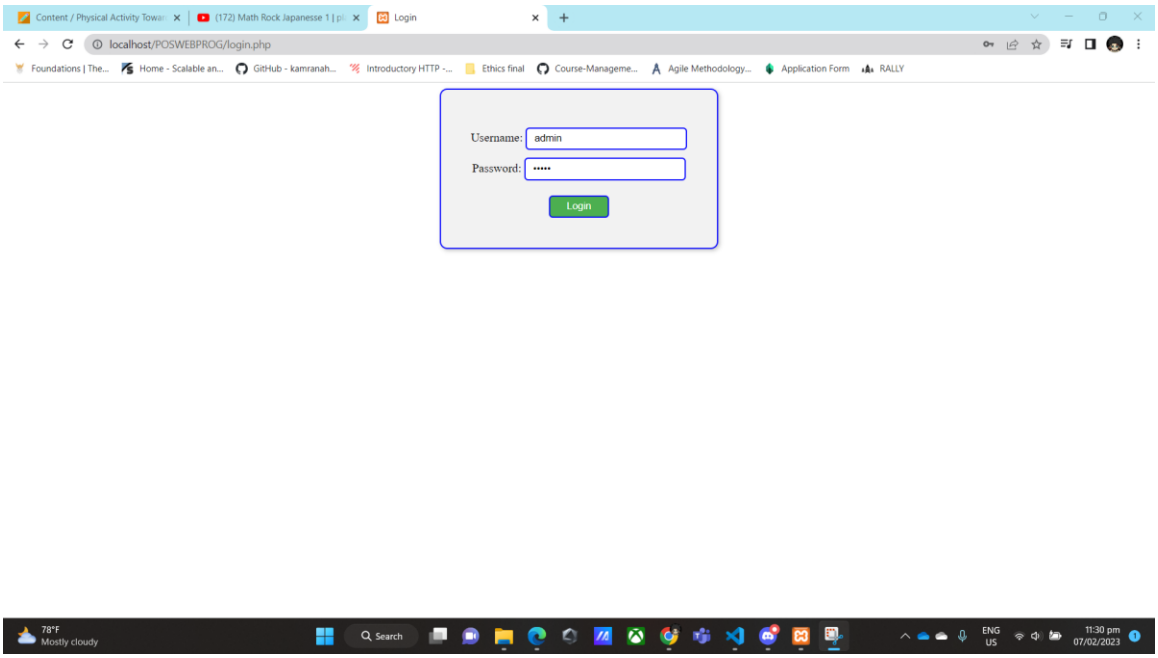

Figure 2-1. From “Project Modules”. Login Screen

In this module, the users, in this case the admin and the supplier/s, would input their assigned username and password to be directed to their own interface.

Administrator

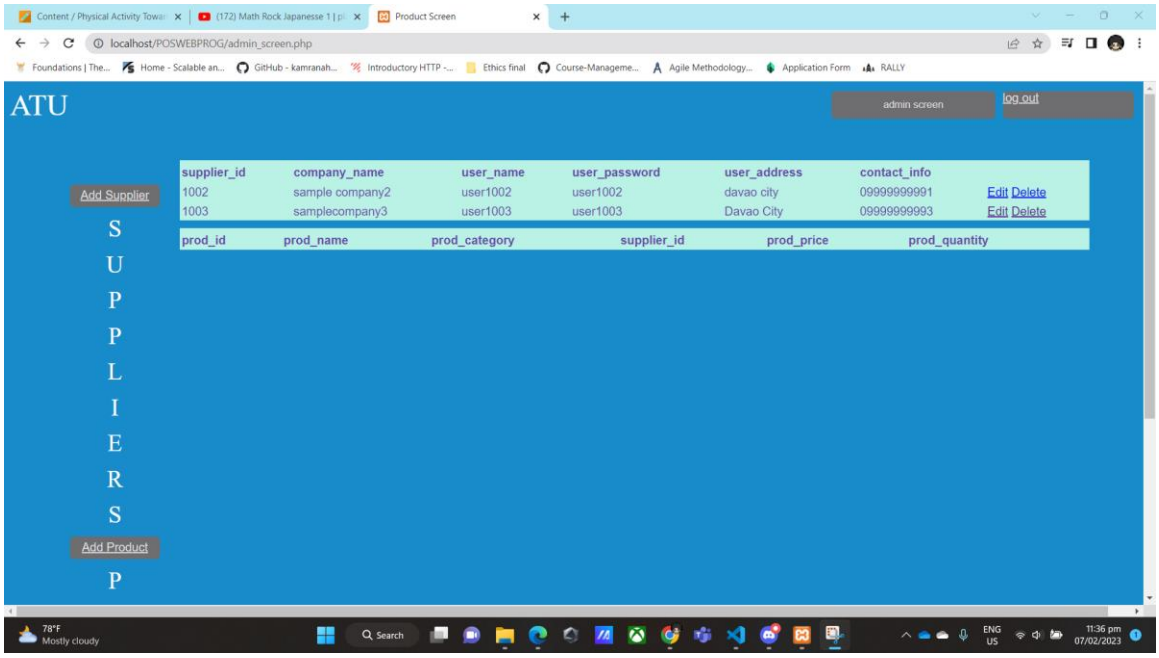

Figure 2-2. From “Project Modules”. Admin Screen

In this module, only the admin can access this interface. The admin could perform CRUD functions on the supplier and product table in their interface which would register in the database. The admin also assigns the suppliers’ username and password.

User-Supplier

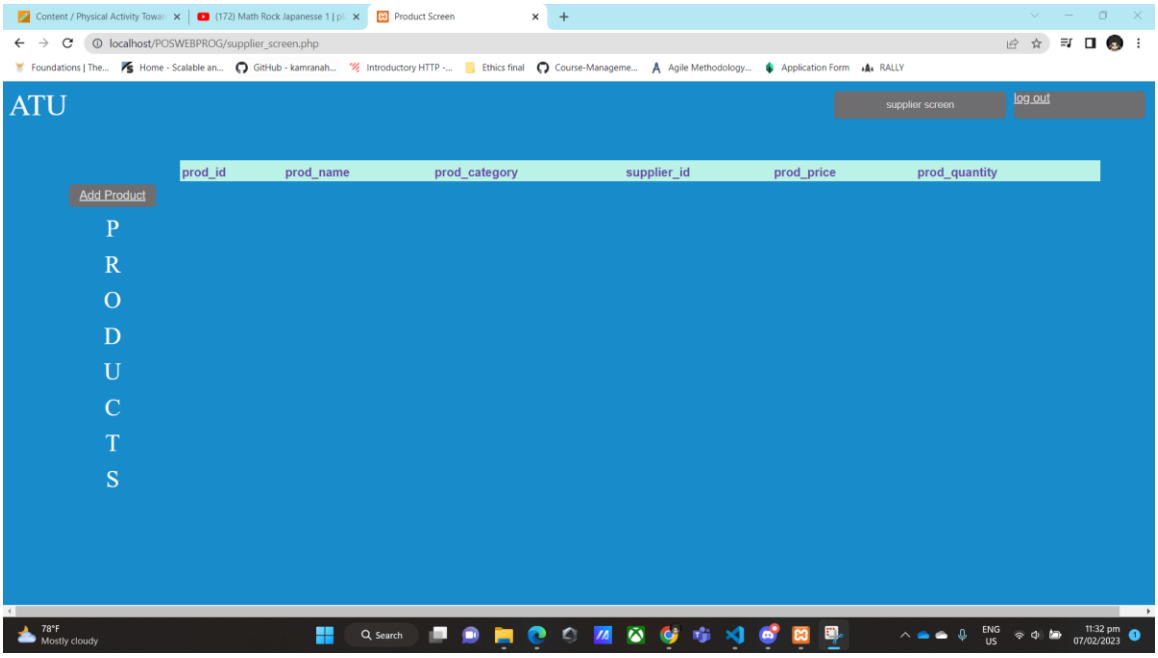

Figure 2-3. From “Project Modules”. Supplier Screen

In this module, the supplier can perform basic CRUD functions as well but only on the product table on their interface which would also then be registered in the database.

3 THE INPUT OUTPUT OF THE PROJECT

Input of the Project

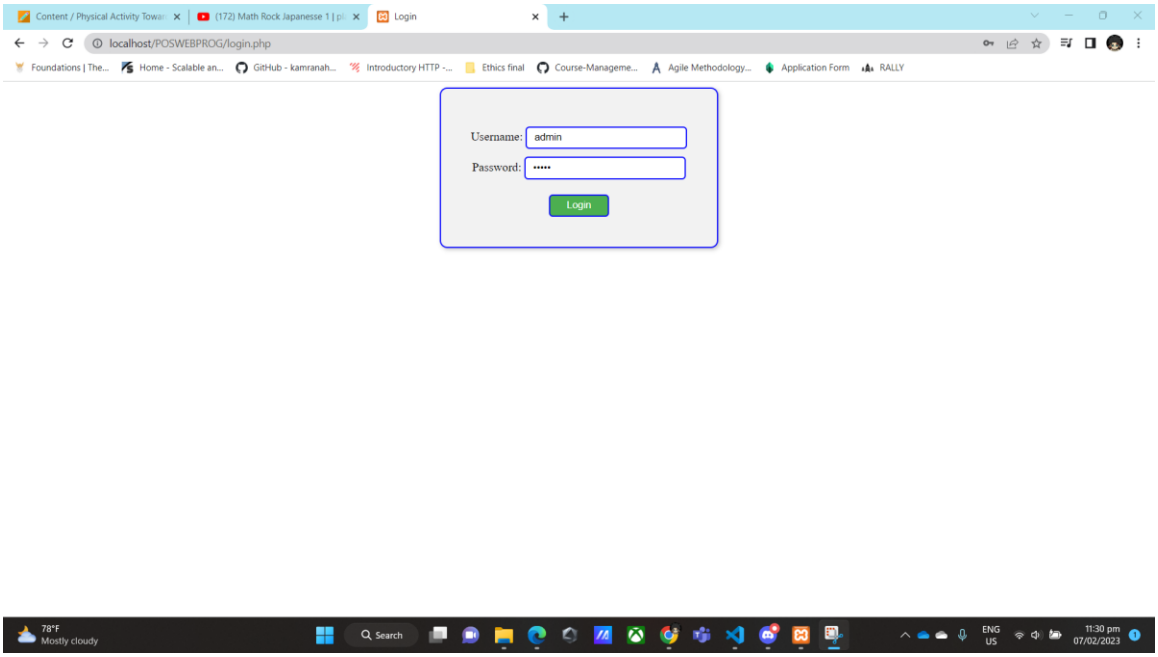

Figure 2-1. From “Project Modules”. Login Screen

The input needed for this is the username and password of the admin, or the supplier, which is given by the admin.

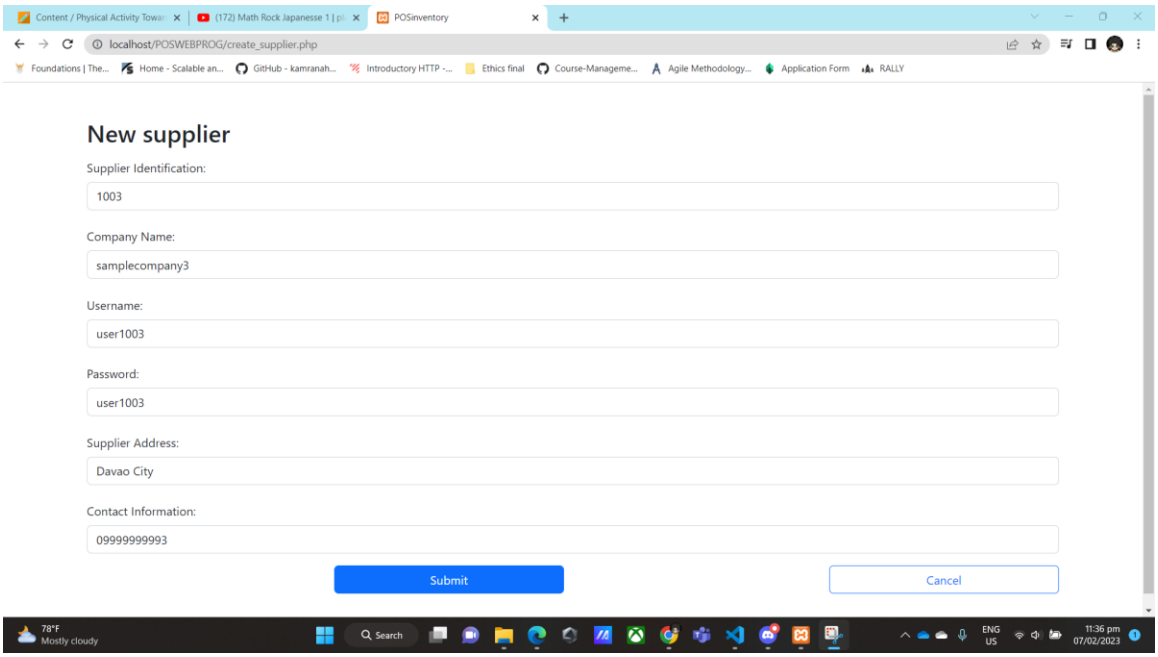

Figure 3-1. From “Input Output of Project”. Add Supplier Screen

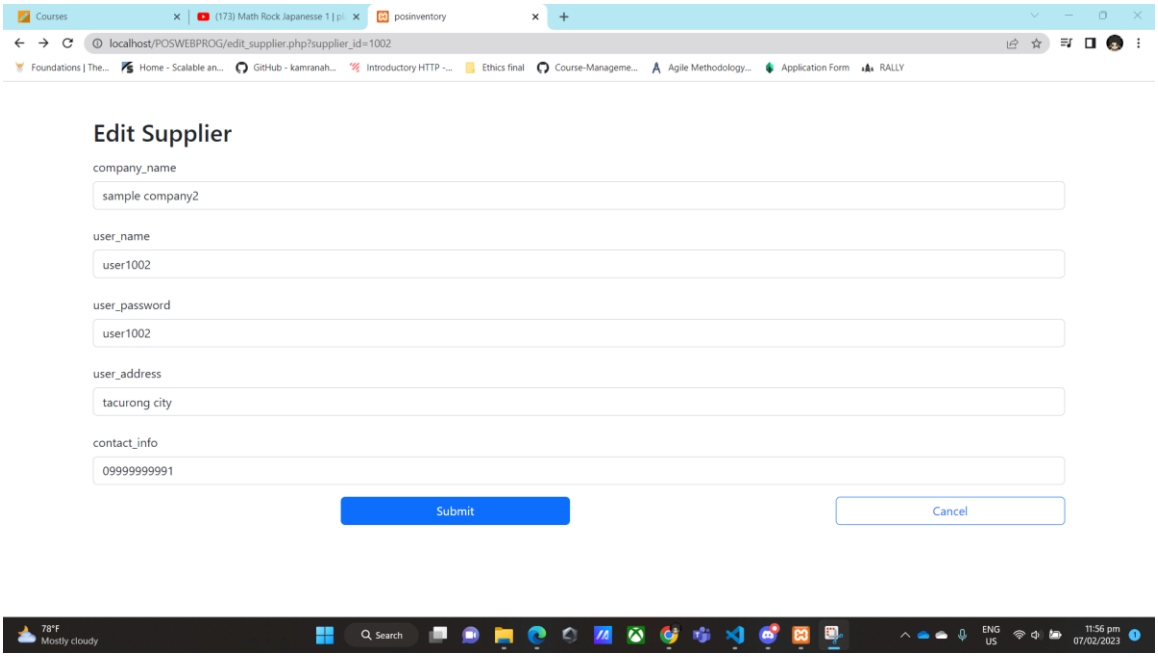

Figure 3-2. From “Input Output of Project”. Edit Supplier Screen

When adding a new supplier, the admin must input the supplier’s ID, company name, their own username and password, address, and contact information. The admin

could also edit a supplier's info which would allow them to update all details of the supplier.

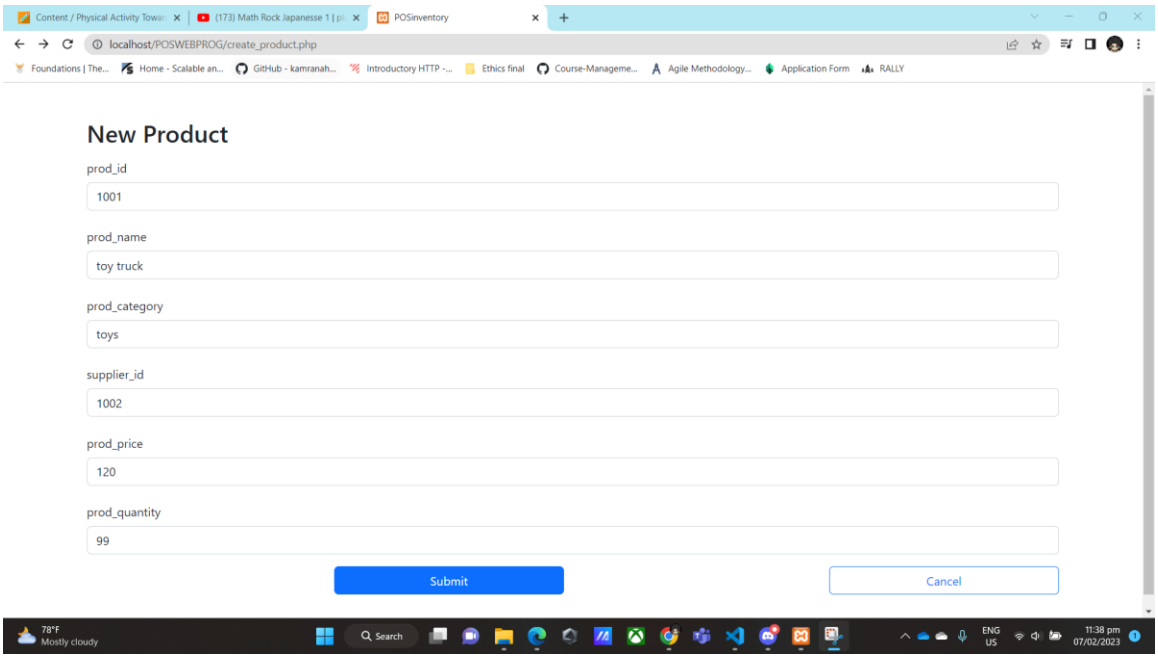

Figure 3-3. From "Input Output of Project". Add Product Screen

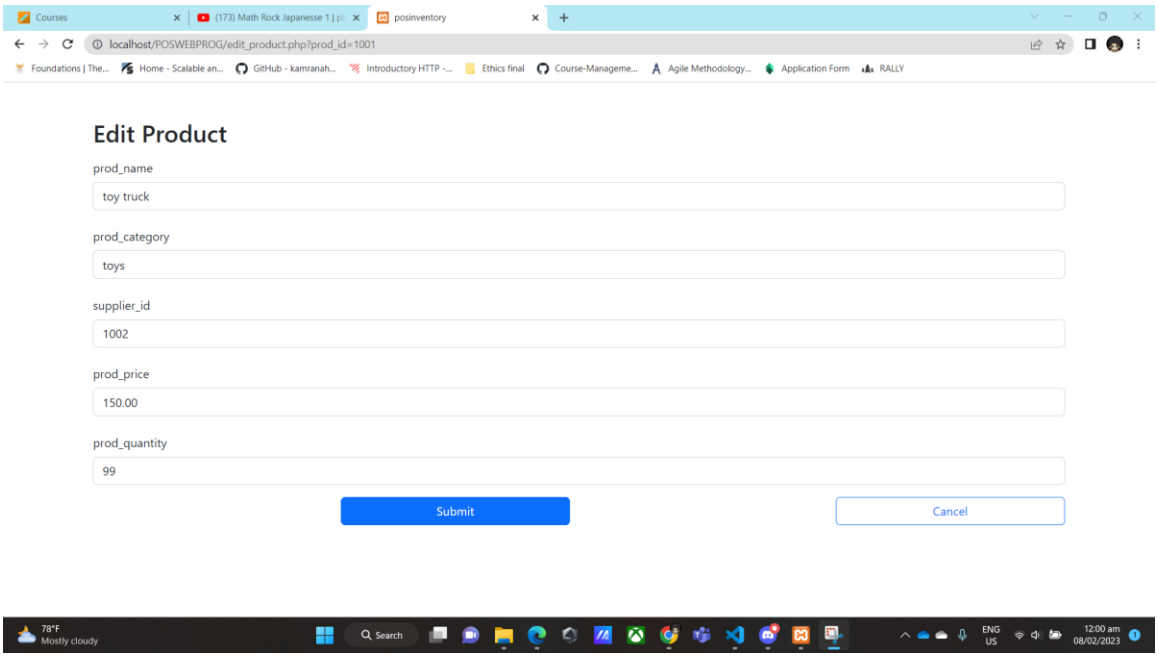

Figure 3-4. From “Input Output of Project”. Edit Product Screen

When adding a product, both the admin and supplier can perform this action. They would need to input the product’s name, category, price, quantity, and the supplier’s ID. Like the supplier table, the admin and supplier could also edit a product’s info by updating its details.

Output of the Project

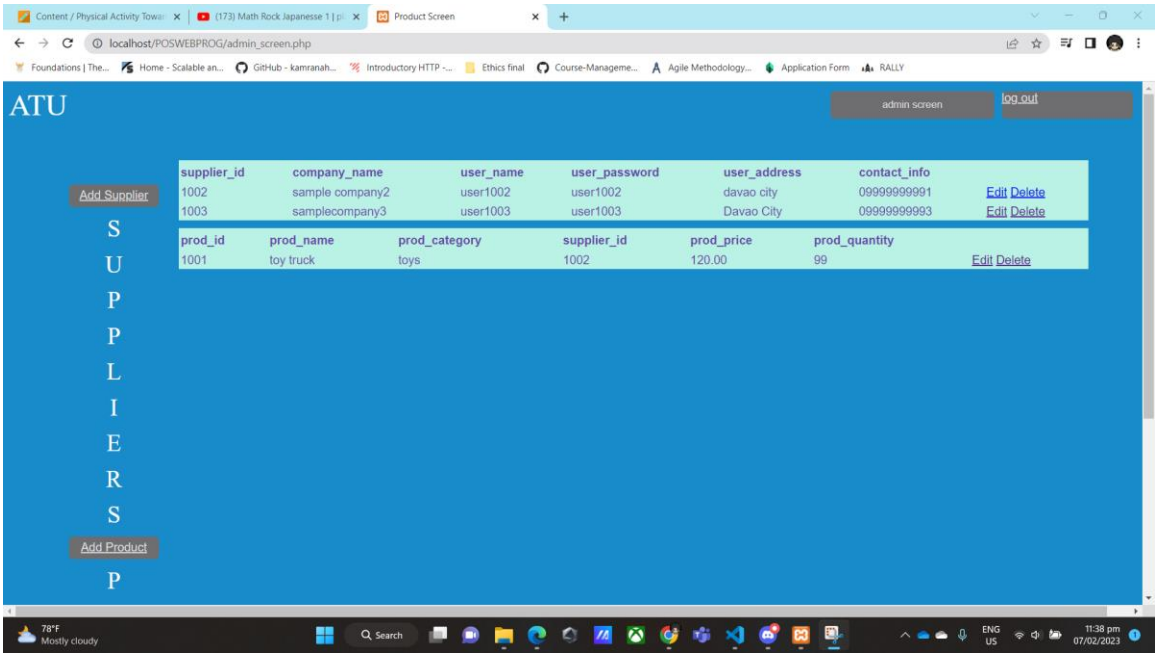

Figure 2-2. From “Project Modules”. Admin Screen

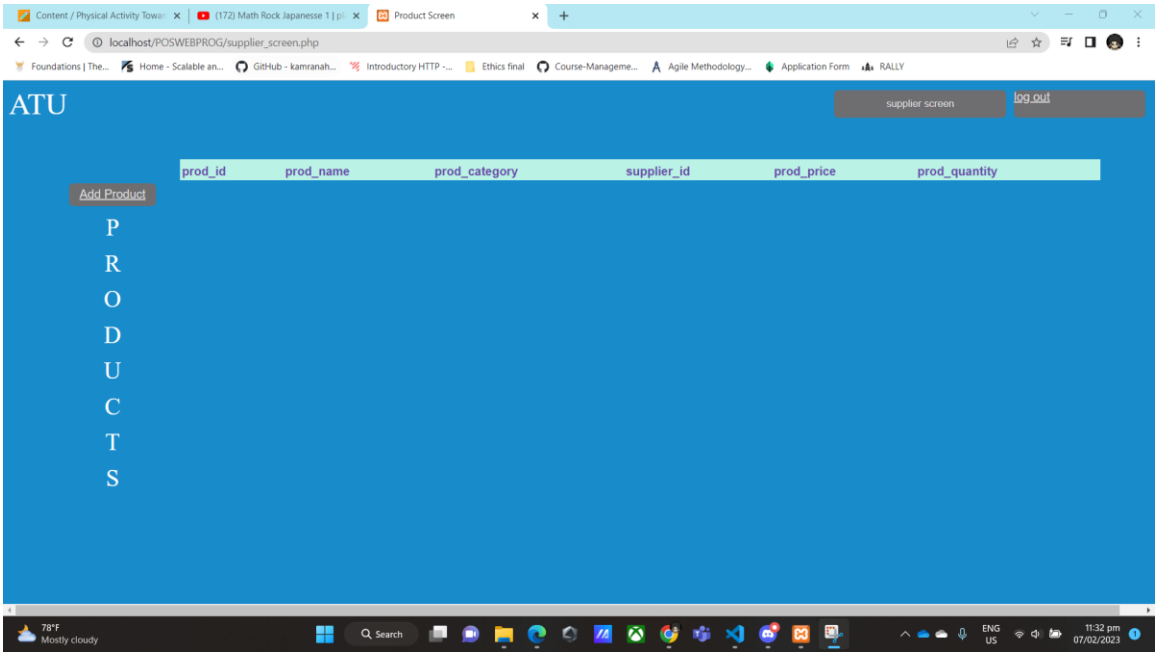

Figure 2-3. From “Project Modules”. Supplier Screen

After adding or editing a supplier or product, the output would then be displayed in the admin screen. The same goes for the supplier screen but only the product will be displayed.

Competitive Advantage

Compared to other Inventory Management Systems, this is a simple yet efficient and flexible system because of how it was designed. Due to it being simple, new users would be able to handle it without needing instructions, which could encourage them to use this system. This system is technically better than manual systems because it has less room for error due to being automated. The business owner utilizing the system would also have the option to back up their database whenever they want.

Specifications

The specification needed for running this website is:

1. Xampp/any SQL program that could run PHP.

4 ANALYSES

Process Logic

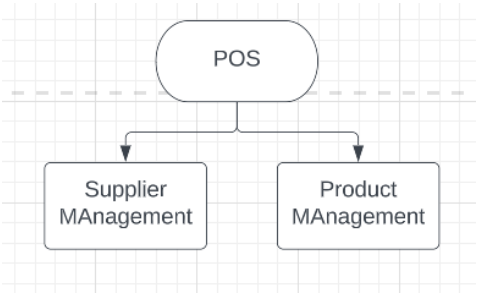

Figure 4-1. From “Analysis”. POS Flowchart

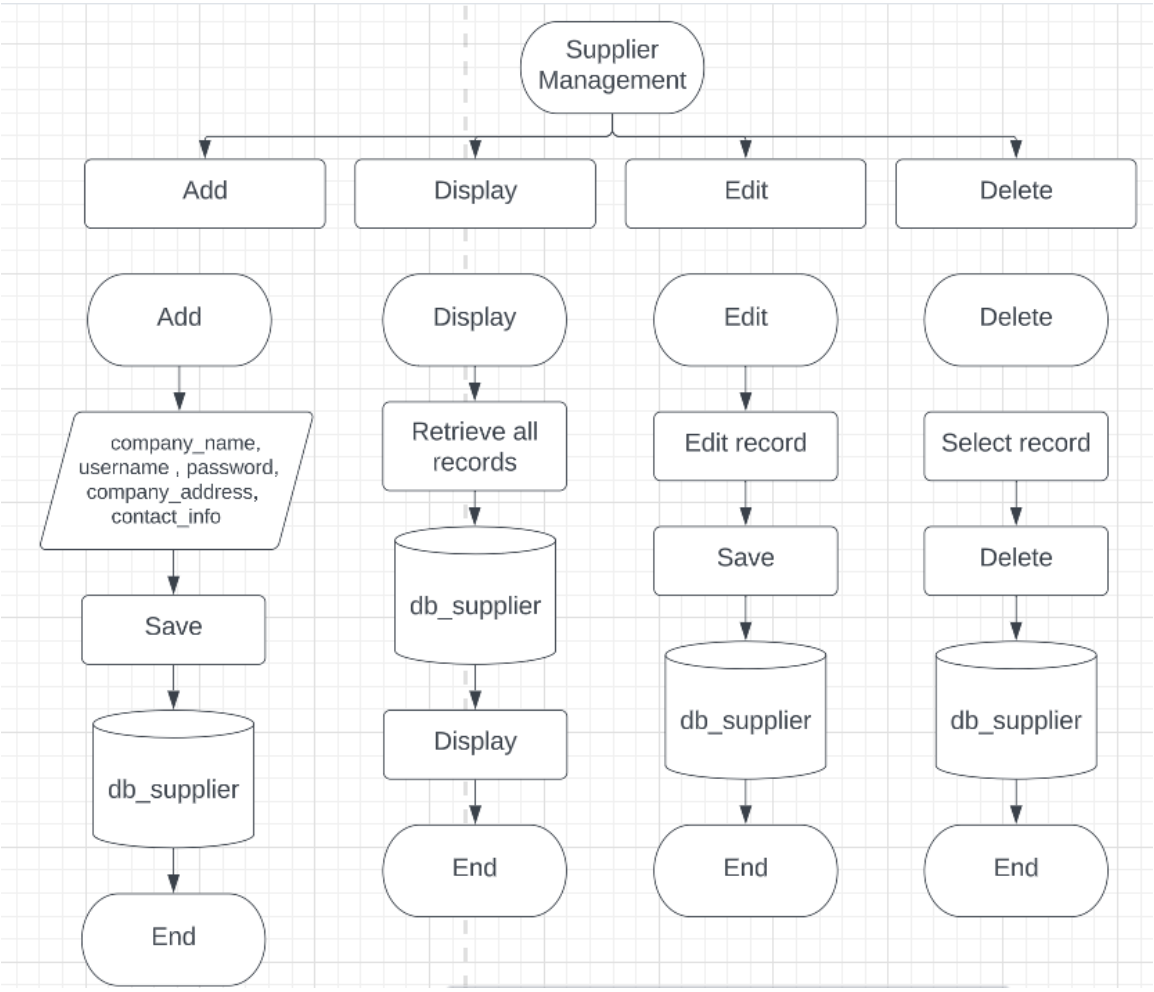

Figure 4-2. From “Analysis”. POS Flowchart Supplier Management cont.

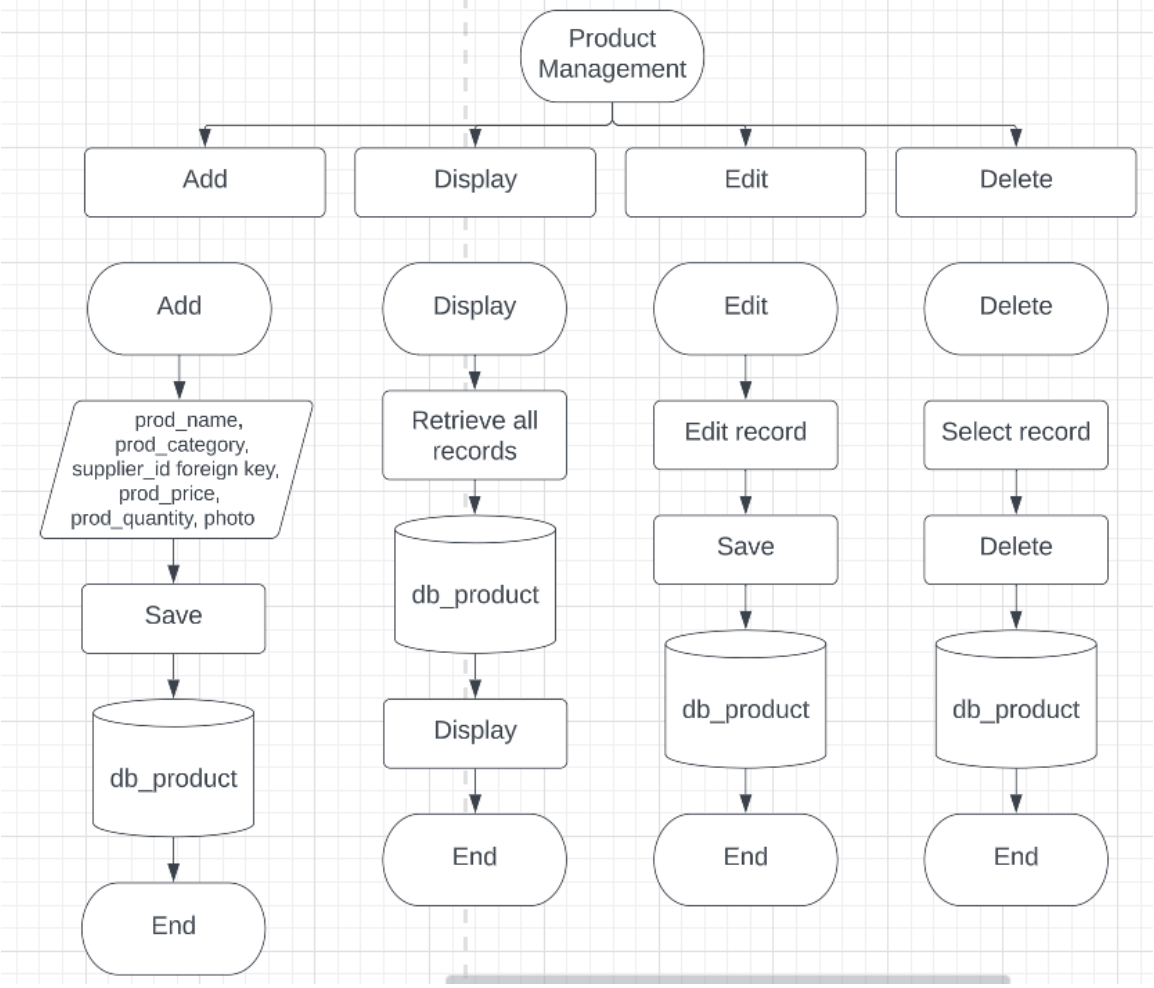

Figure 4-3. From “Analysis”. POS Flowchart Product Management cont.

Data Flow Diagram

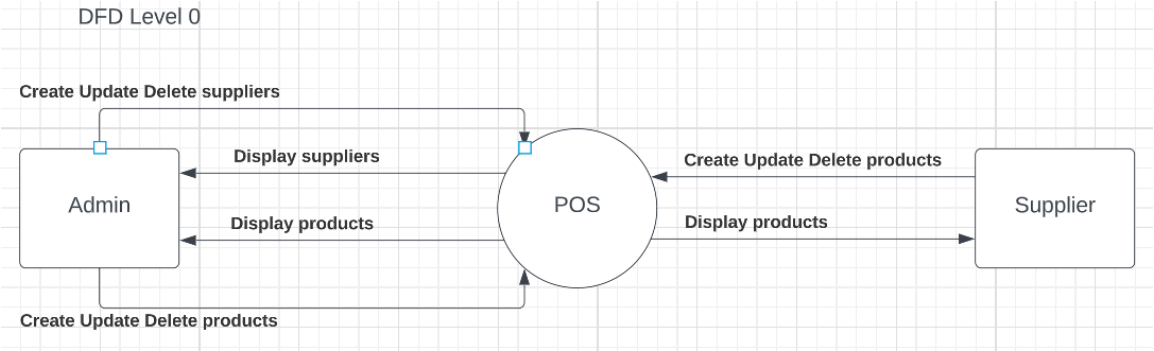

Figure 4-4. From "Analysis". Data Flow Diagram Level 0

The data flow diagram shows the relationship of the admin with the POS system, and the supplier with the POS system. The admin can create, update, and delete suppliers. The POS system displays the list of suppliers to the admin. The admin and supplier can add, modify, and delete products. The POS system displays the list of products to the admin and supplier.

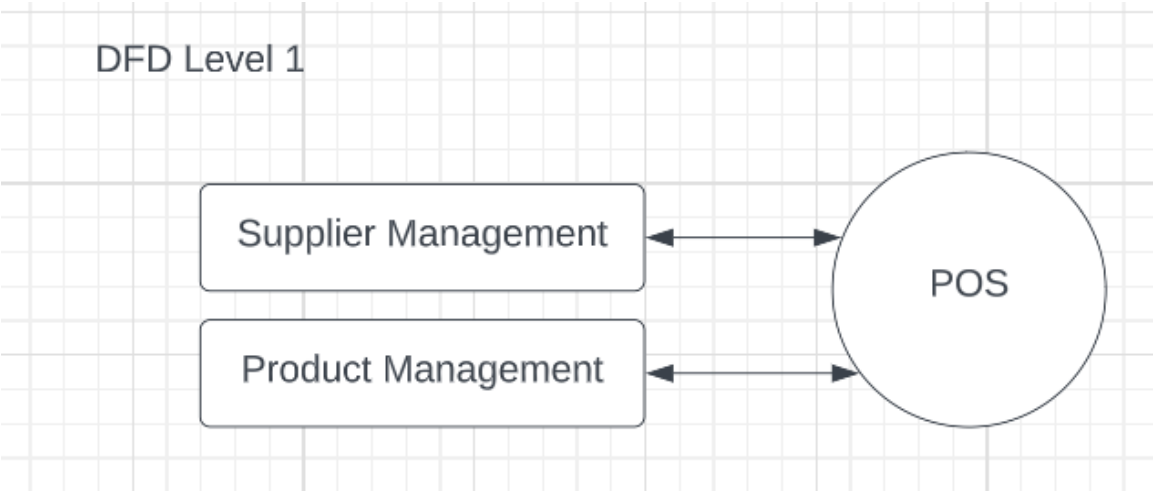

Figure 4-5. From "Analysis" Data Flow Diagram Level 1

The POS system handles the Supplier Management which includes the adding, deleting, and modifying of supplier information. It also handles the Product Management which includes the adding, deleting, and modifying of product information.

5 CONCLUSIONS

Conclusion

After testing the software, the following conclusions were established:

1. The developers were able to design a user-friendly interface for ease of use and maximum user engagement.
2. The developed inventory management system was able to perform its essential CRUD functions.
3. The developers were able to enhance the overall management of inventory and inventory-related tasks, resulting in improved decision-making and cost savings.

Recommendations

To further enhance and improve the system, the developers of this project would like to recommend the following:

1. The developers recommend adding a customer user and be given their own actions.
2. The developers encourage to update the code so that the username and password given by the admin is functional.
3. The developers also recommend adding a product catalog inside the customer screen.
4. In addition, the developers suggest making this system compatible to integrate with a POS system.

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