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SUPERSHOP MANAGEMENT SYSTEM

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ABSTRACT
The supershop management system is a comprehensive software application that utilizes computer science and software engineering principles to automate and optimize various aspects of managing a retail or wholesale business. This system provides a powerful suite of tools for managing inventory, tracking sales, and enhancing customer relations, among other functions. With the help of sophisticated algorithms and advanced data analytics, the supershop management system provides real-time insights into the shop's performance, enabling owners and managers to make informed decisions and respond quickly to changes in the market. The system is designed to be highly scalable and customizable, ensuring that it can adapt to the needs of any business, regardless of size or complexity. Some of the key features of the supershop management system include advanced inventory management tools, point-of-sale terminals, and sophisticated customer relationship management capabilities. These tools help streamline operations, reduce costs, and improve overall efficiency, resulting in increased profitability and sustained growth. Overall, the supershop management system represents a powerful solution for modern businesses and wholesale businesses seeking to stay ahead of the curve in today's fast-paced and highly competitive marketplace. By leveraging the latest computer science and software engineering techniques, this system provides a robust and flexible platform for managing every aspect of the shop's operations. Key words: Managing inventory, advanced inventory management tools, tracking sales, Software engineering techniques.

CHAPTER 1: Presentation of the project framework

1.1 Introduction:

Over the past few decades, there has been a significant shift in the business industry towards digitization. As a result, many businesses have started using various software solutions to automate their operations and improve efficiency. One such solution is the Supershop management system that provides a range of tools for streamlining inventory and sales processes. Developing such software involves designing an integrated platform that can optimize operations while minimizing human errors for better business performance. The primary objective is to create an automated environment that offers real-time data insights and eliminates repetitive tasks. This project explores how Supershop management systems have transformed businesses' efficiency and profitability by automating inventory tracking, improving sales processes, and providing valuable insights for informed decision-making. Implementing this technology effectively can enhance customer experiences by reducing manual record-keeping costs while also freeing up staff time so they can focus on more critical duties like engaging customers directly. Therefore, this thesis argues investing in Supershop management systems should be part of every business owner strategy if they want to stay competitive in today's digital landscape. By automating essential operational functions using advanced algorithms powered by Artificial Intelligence (AI), business owners stand to gain increased productivity levels leading to higher profits ultimately. In summary, incorporating technology into business operations is crucial as it has numerous benefits when implemented correctly. This project highlights why supershop management systems are vital tools for optimizing business performance across all sectors.

1.2 Study of the existing:

1.2.1 Description of the existing:

The existing system requires more computation time, more manual calculations and the complexity involved in feature selection is high. Other disadvantages are lack of data security, lack of data accuracy, time consumption, etc. To avoid all these limitations and make the work more accurate, the system must be computerized.

1.2.2 Critical review of the existing:

- More manpower.
- Takes time.
- Requires manual calculations.
- No direct role for senior officials.
- Lack of security.

To avoid all these limitations and to make the operation more accurate, the system must be computerized.

1.2.3 Proposed solution:

The "SuperShop Management System": "Management Information System" (MIS) is a term used to describe an IT solution that consists of a hardware and software component. Automation plays an important role in any type of business. It will convert a complicated process into a simple operation that will facilitate management decision making. The current setup is done manually; file management, appointment scheduling and other transactions are based on pen, paper and folder methods, in accordance with these problems, work efficiency is also affected. Seeing the difficulties in the manual setup of the company, we decided to create an information system that would replace the manual management mode.

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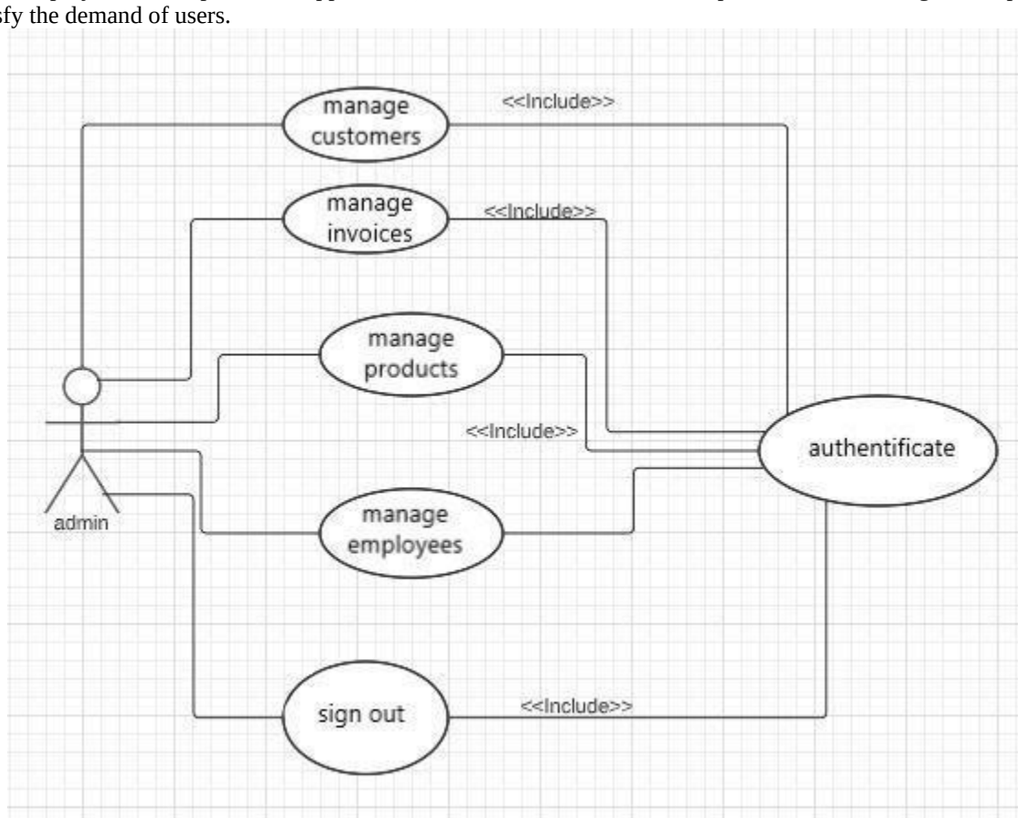
Chapter 2: Conceptual study

1.3 Architectural system:

The architecture of an application traditionally has three levels (we speak of of three-tiered architecture):

- Third party client which corresponds to the machine on which the client application is executed.
- Third party businesses that correspond to the machine on which the central application is executed.
- Third party access to data corresponding to the machine managing the storage of data.

In the case of our project we will present an application, which meets the needs of companies that use management applications and can satisfy the demand of users.



Therefore, the system to be realized will be in accordance with the 3-tier architecture models where the application is divided into three logical levels each with a set of well- defined interfaces.

- Life Cycle Models:

The "application lifecycle" refers to all the development stages of an application, from its conception to its demise. These models consist of a succession of phases, each of which is methodically checked before moving on to the next stage:

- Detailed design

This step consists in defining precisely each subset of our application.

- Coding (Implementation or programming)

It is the translation into a programming language of the functionalities defined during design phases.

- Unit tests

They allow to check individually that each subset of the application is implemented according to the specifications.

- Integration

The objective is to ensure the interfacing of the different elements (modules) of the application. It is subject to integration tests recorded in a document.

- Qualification (or recipe)

The verification of the conformity of the application to the initial specifications.

- Documentation

It aims to produce the information necessary for the use of the application and for further developments.

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- Putting into production

This is the deployment on the application space.

- Maintenance
- It includes all corrective actions (corrective maintenance) and evolutionary actions (evolutionary maintenance) on the application.

1.4 Design:

UML: (Unified Modeling Language) or "Unified Modeling Language". Standardized by the OMG (Object Management Group). UML was proposed in order to standardize development products (model, notation, diagram) without standardizing the development process which depends on people, applications, cultures, etc. UML aims to create a modeling language that can be used by both humans (graphic form) and machines (precise syntax).

1.4.1 Use case diagram:

This diagram is intended to represent the needs of users in relation to the system. It is one of the most structuring diagrams in the analysis of a system.

- **Actor**: represents a role played by a person who interacts directly with the studied system.
- **Use case**: represents a set of sequences of actions that are performed by the system and that produce an observable result of interest for a particular actor.

The use of a use case diagram is essential to describe the functional requirements. These diagrams describe the interaction between the actor and the system. It is the image of a system functionality triggered in response to the stimulation of an external actor.

Presentation of use cases

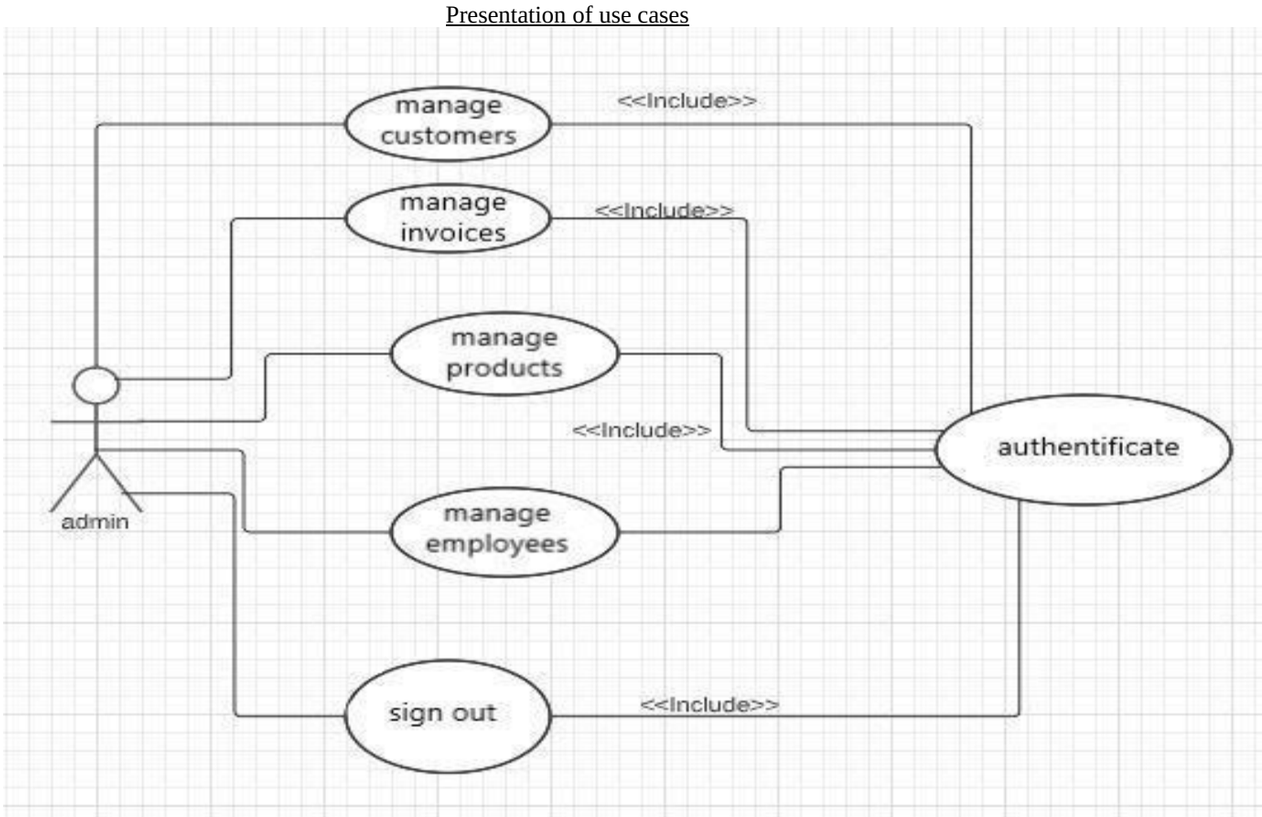

Figure 1: admin use case

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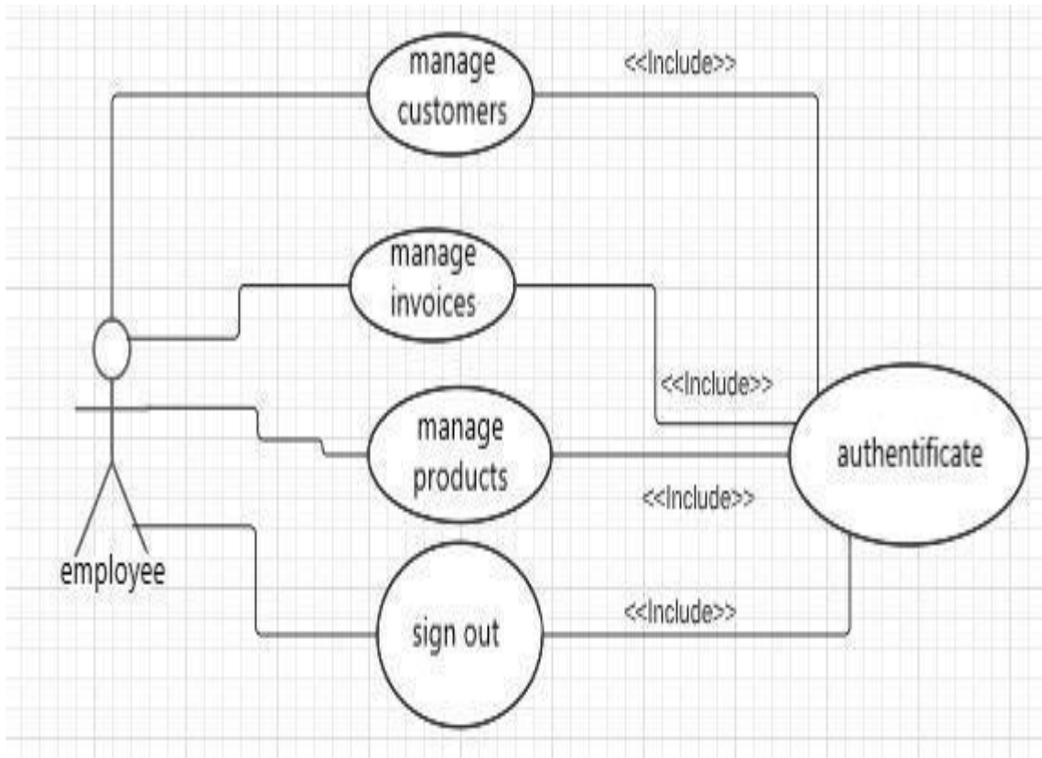


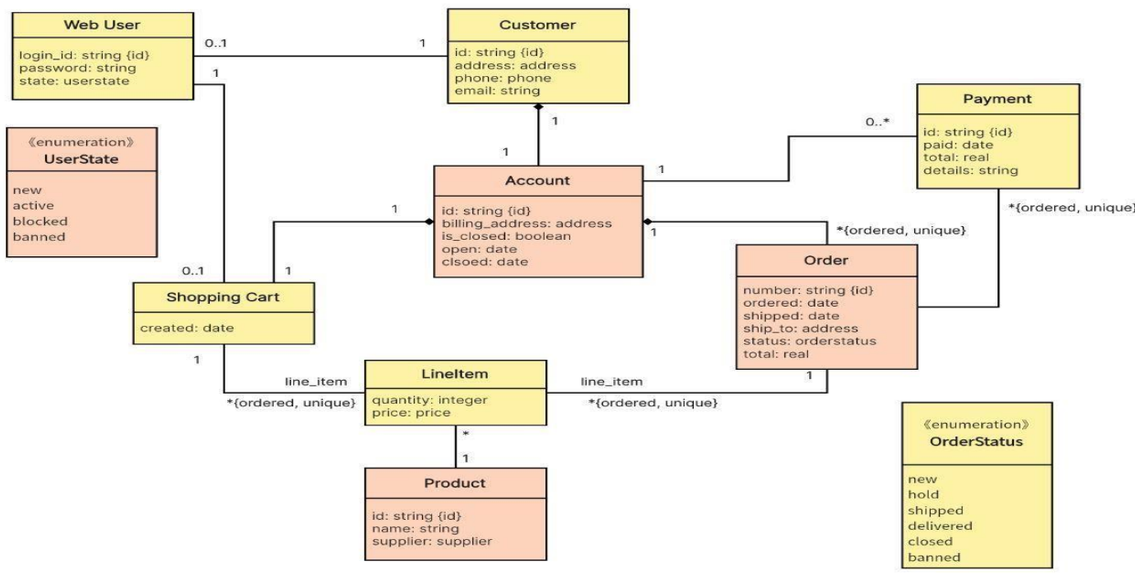
Figure 2: use case employe

2.2.2 Class diagram:

In the UML, class diagrams are fundamental to the object modeling and model the static structure of a system.

Class diagrams are the blueprints of the system or subsystem. Class diagrams can be usedto model the objects that make up the system, to display the relationships between objects, and to describe what those objects do and the services theyprovide.

Figure 3: Class diagram



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CHAPTER 3: IMPLEMENTATION

3.1 Database:

The database is realized with **MYSQL**, we propose an architecture with 4 tables which answer, according to us, all the needs of this project (we can modify this database if necessary).

We can see above all the tables of the database. We will now present them to you in a detailed form.

Table admin login: This table is usually dedicated to the administrator.

User login table: This table will allow you to sort the different users of the application by their role. It will therefore contain the identifiers of the employees, their name, their password, their address and their telephone number in order to contact them if necessary.

Table Product details: This table will contain information about the products and the available at the supershop. Each product will have a unique identifier (Primary Key), name, product type, quantity and price.

Table dial: Generally, this table will be used for information about the purchases made. It will contain a unique identifier (Primary Key) for each transaction, the product name, the quantity and the name of the employee who performed the transaction.

3.2 Development languages and tools:

The realization phase highlights the graphical interfaces of the application. So we will start by identifying the languages and development tools. Then we will present the different phases of implementation and some interfaces of our application to describe their functioning

Choice of IDE:

Eclipse is a powerful integrated development environment for the java language with integrated workloads for java development and data science.

Development language:

JAVA is a modern, object-oriented, secure programming language. Java allows developers to create many types of secure and reliable applications

3.3 Visual model:

After the realization of the database, we started to think about a model of the application. We wanted to show you the different user interfaces. Through these interfaces, you will be able to see the layout of the different sections and the useful information for each user. We had to propose an easy-to-use application with a userfriendly environment.

Authentication interface:

The figure below represents the authentication page. Indeed, authentication is the first task that a user must perform to access the application menu. In case he enters wrong information an error message will be displayed to correct the information: his ID and his password.

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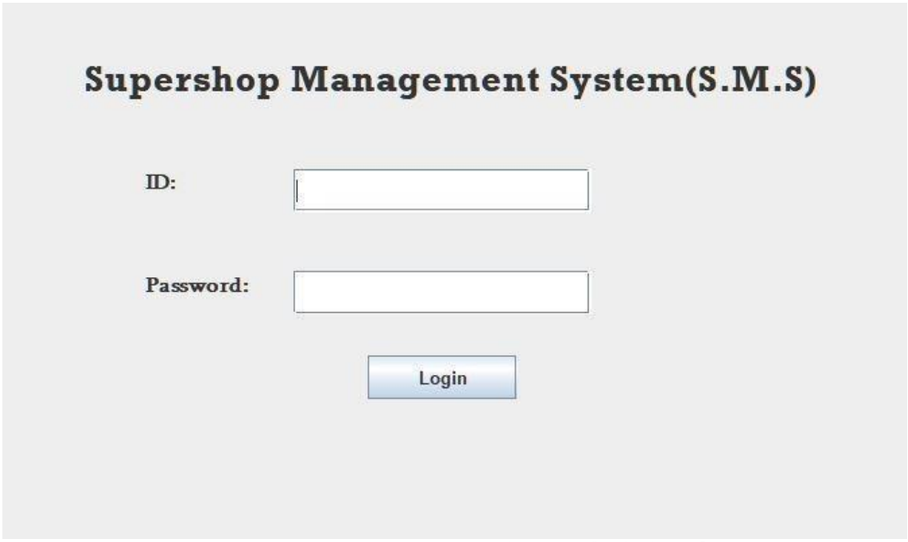

Figure 4: login interface

Home page:

Depending on the user' s role, they will be redirected to a specific menu page,

ADMIN:

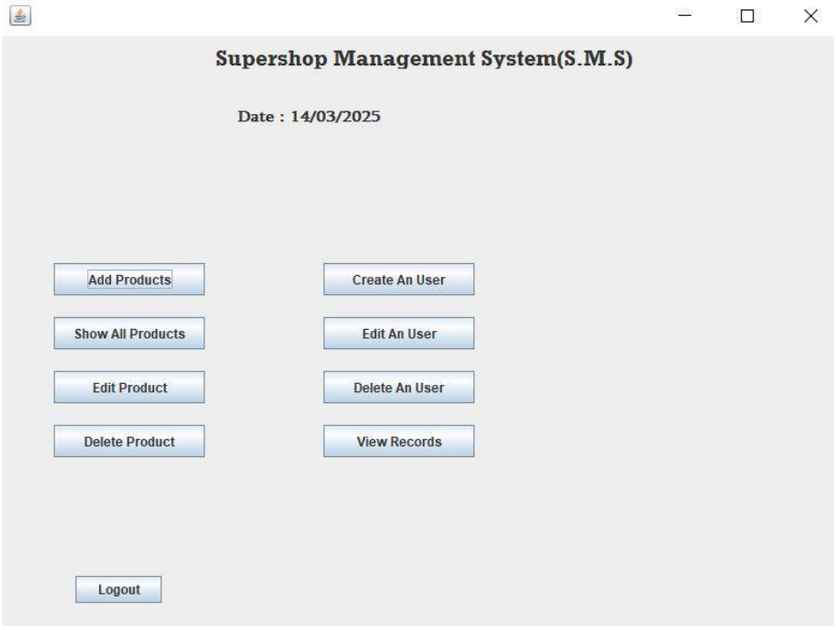

Figure 5: admin interface

On the other hand, users other than administrators cannot access the user form

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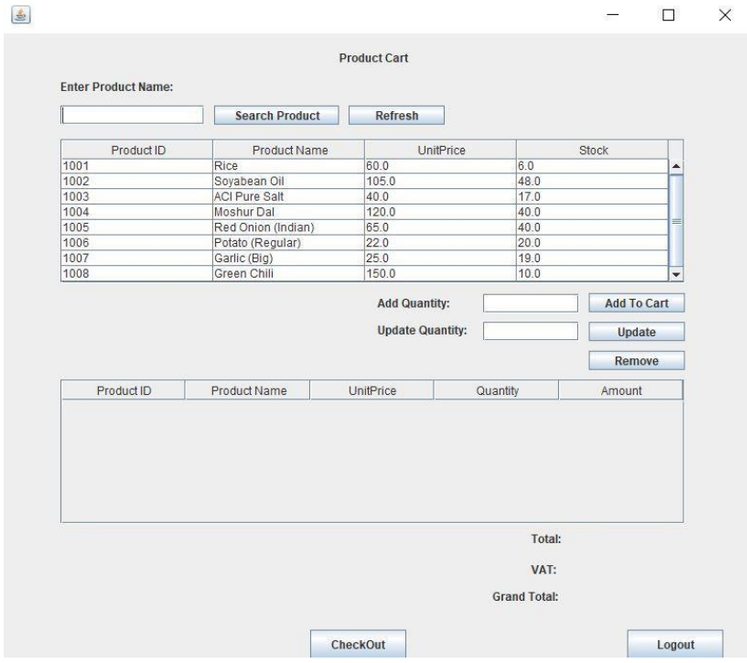

Figure 6: user interface

Features used:

In this part we find all the functionalities of our interface as the addition of a product as well as its modification, its deletion and also the creation of users whatever their role admin or employee as shown in the following figures.

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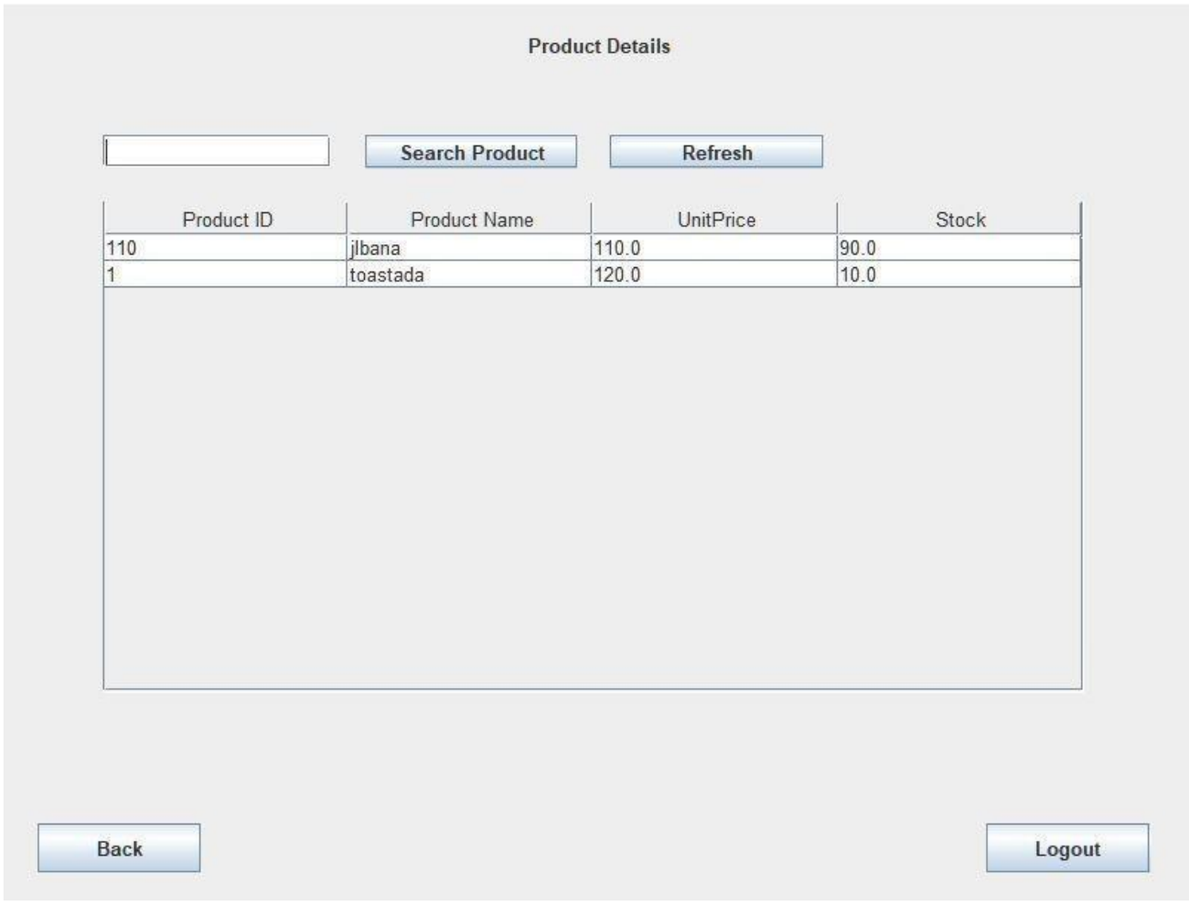

Figure 7: Product Lists

Figure 8: Adding a new product

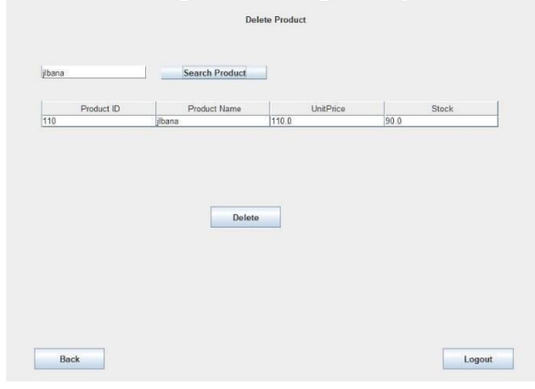

Figure 9: deleting a product

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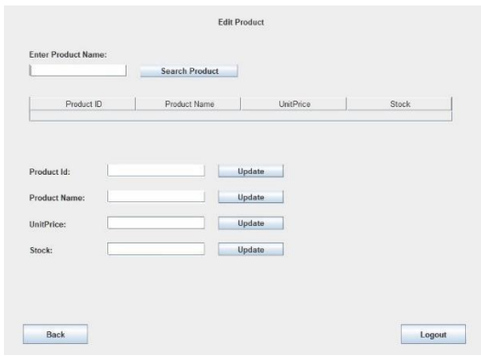

Figure 10: modification of a product

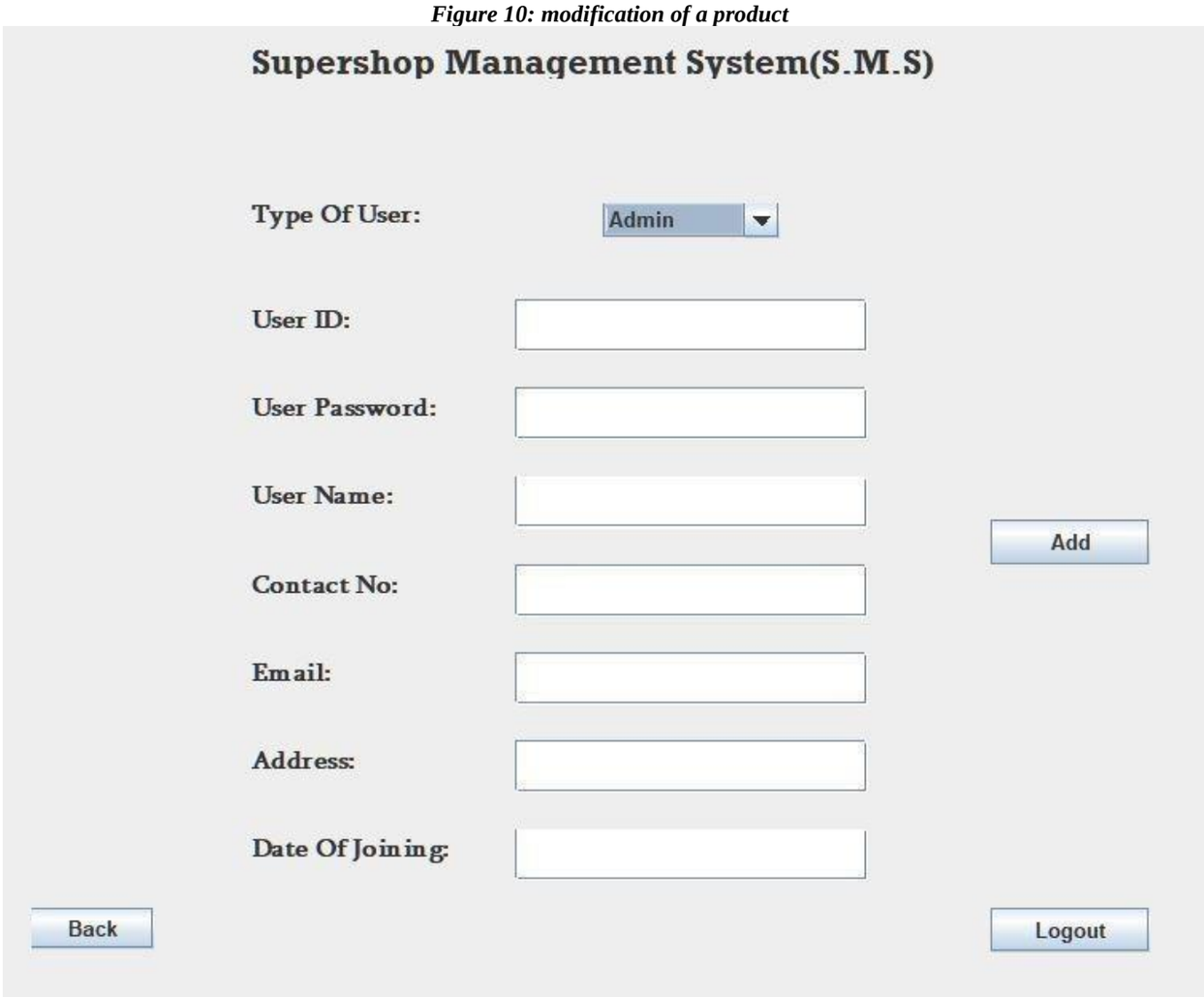

Figure 11: Adding a user

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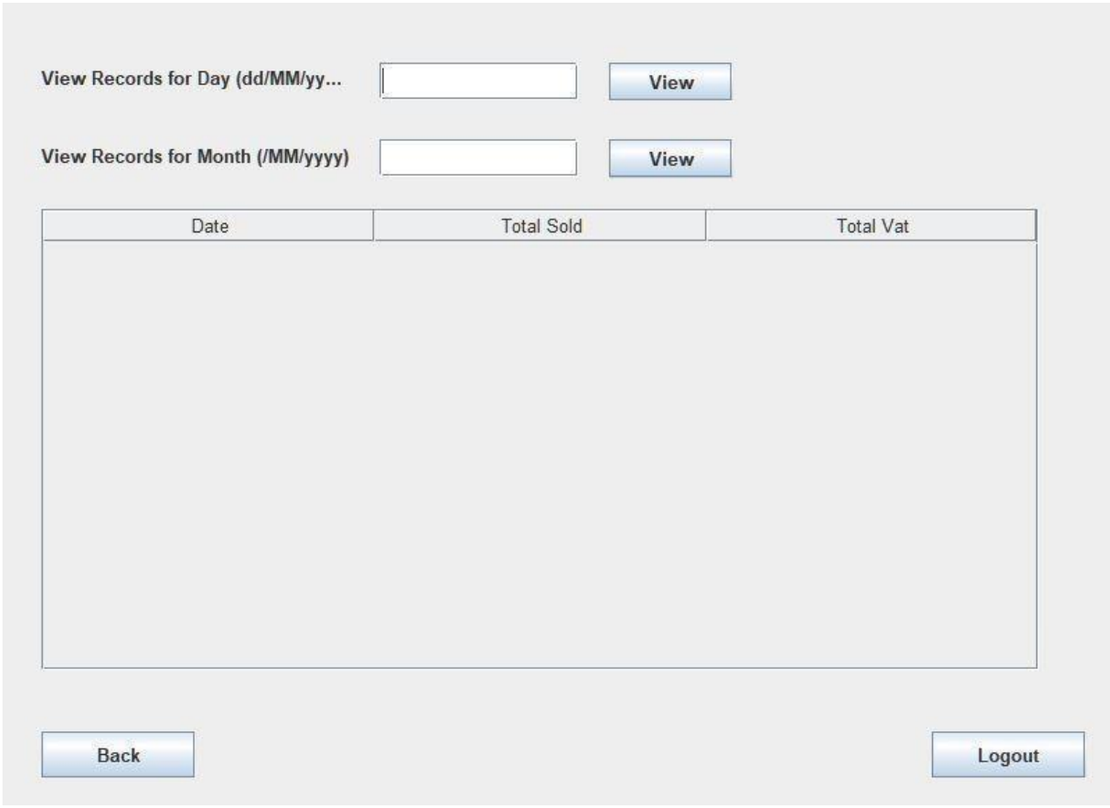

Figure 12: Sales display

CONCLUSION

The development of my application has allowed me to confront a professional experience in the field of application development that we can only describe as enriching. Moreover, it offered me the opportunity to concretize our theoretical knowledge with the help of a real case. Thus, this project has brought me the most concerning programming languages and platforms that we have discovered and practiced.

In this project, i have presented all the necessary steps for the design and the development of a JAVA application. This project also gave me the opportunity to acquire new knowledge about UML and programming languages etc., which will certainly be useful in our future professional lives. Overall, this project has been an exceptional professional experience. One quickly discovers that the practical aspect often exceeds the acquired knowledge and is a quick training.

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