Software Requirements Specification

Project Theme: Design and implementation of an application for a store managment.

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Version	Date	Author
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1. Introduction

This document outlines the Software Requirements Specification (SRS) for StockGenus, a web application aims to automate and streamline various store operations, ultimately enhancing efficiency and store management.

1.1. Purpose

The primary purpose of this application is to automate and streamline various store operations . This will address current challenges in areas like inventory management and items processing, ultimately improving efficiency and customer service. The application will offer functionalities such as product management, real-time inventory tracking, transactions management, and customer data management.

1.2. Scope

The StockGenus application will provide a robust set of features , The system will accommodate different user roles, including administrators, inventory agents, storekeepers and suppliers.
Key functionalities will include:

- User Authentication : the user can register to the system , log in and logout .
- Product Management: list products in store , create search and delete a product .

Additional functionalities may be incorporated as the project progresses.
The system will be designed to be user-friendly .

1.3. Definitions And Abbreviations

1.3.1. Definitions

- **Software Requirements Specifications:** a document that describes what will the product do and how it is expected to perform.

- **Use Case Diagram:** a visual representation of how users will interact with a system, showing the relationship between actors (users) and use cases (system functions).

1.3.2. Abbreviations

- **SRS:** Software Requirements Specifications.
- **IEEE:** Institute for Electrical and Electronics Engineers Academic Science Electronics.
- **UC:** Use case.

1.4. References

- IEEE Recommended Practice for Software Requirements Specifications.
- Best Guide on Software Requirements Specification 2023 by Zainab Aftab.
- How to Write a Software Requirements Specification (SRS Document) By Gerhard Krüger and Charles Lane.

1.5. Overview

This document is written following the IEEE Std 830-1998 document, it is organized as follows:

- **Section 1:** Introduces the document and presents the platform **StockGenus**.
- **Section 2:** Gives an Overall description of the platform **StockGenus**.
- **Section 3:** Describes the specific requirements, divided into external interfaces, functional requirements and non-functional requirements.

1.6. Description :

The stock management system is designed to provide a robust and efficient solution for inventory management, aiming to reduce customer complaints and inventory costs. It involves four main actors: the administrator, inventory manager, store manager, and supplier, each with specific roles such as authentication, inventory updates, and order processing. Key features include user authentication, item management (adding, removing, replacing), order placement, invoice and receipt generation, item search, price updates, and summary report generation, all aimed at automating and improving inventory management.

1.7. User Characteristics

To ensure customer satisfaction, prevent conflicts, and maintain security, **StockGenus** categorizes its users into distinct roles, each with corresponding access permissions. This systematic approach ensures that each role has appropriate access to system functionalities and information, while also upholding necessary security measures.
The identification process of actors results in the designation of the following roles:

1.7.1. Administrator

The administrator authenticates users registered in the system and performs crucial inventory modifications, such as updating prices and removing expired items.

1.7.2. Inventory Manager

The inventory manager handles the inventory, associated items, and transactions within the inventory, ensuring efficient and accurate stock management.

1.7.3. Store Manager

The store manager efficiently manages stored items brought in by suppliers and ships them when requested, ensuring optimal stock management.

1.7.4. Supplier

The supplier provides the items requested by the store, responding to orders placed at regular intervals, ensuring a constant supply of stock.

2. Specification Of Requirements

2.1. App interfaces

register Interface

This interface permit the user to register in the app .

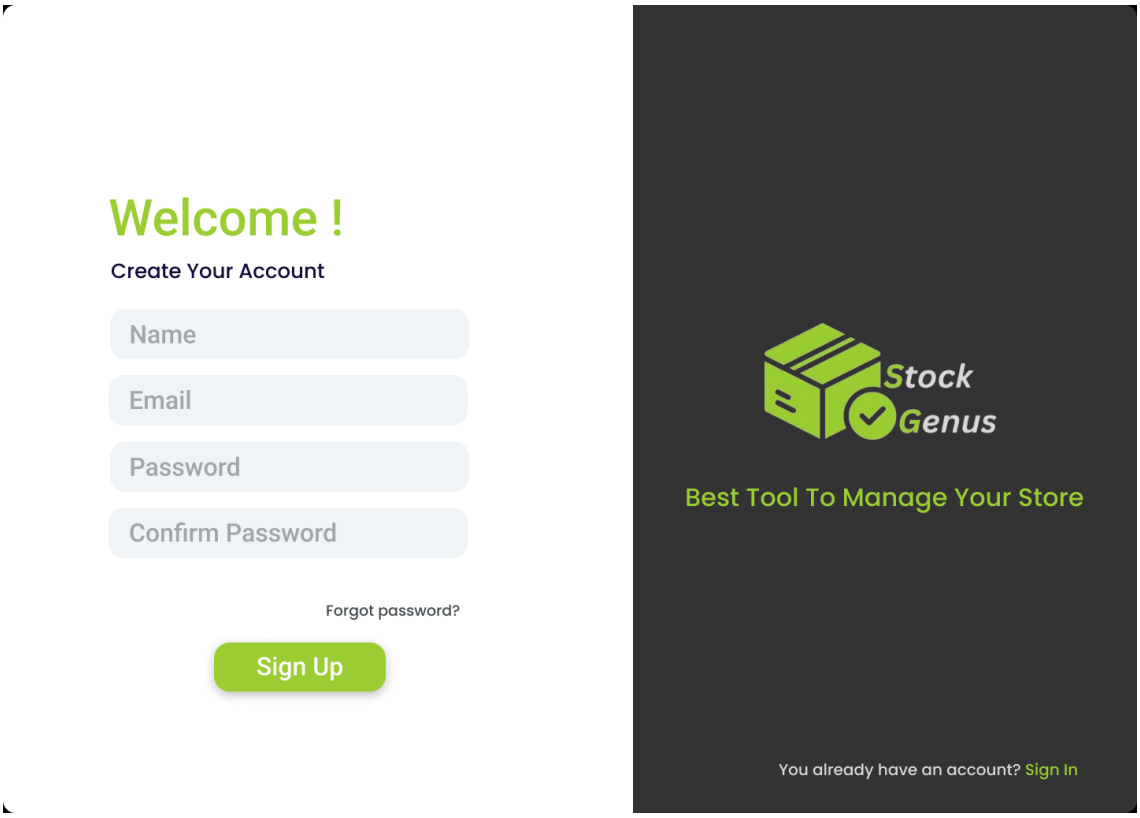

Figure 1: Register Interface

Log In Interface

This interface permit the user to log in to his account .

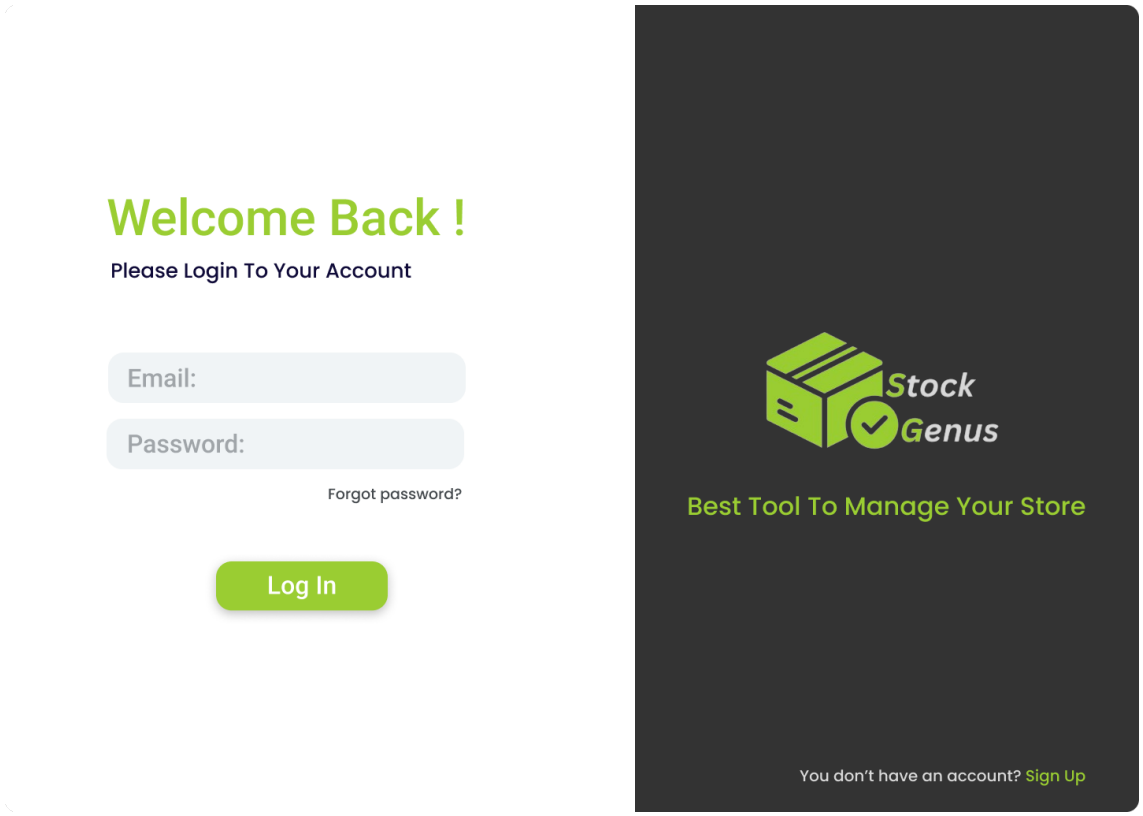

Figure 2: Login Interface

List Products Interface

This interface shows the store's produts

Figure 3: Products Interface

Add product Interface

This interface permit inventory manager to add a product to the store .

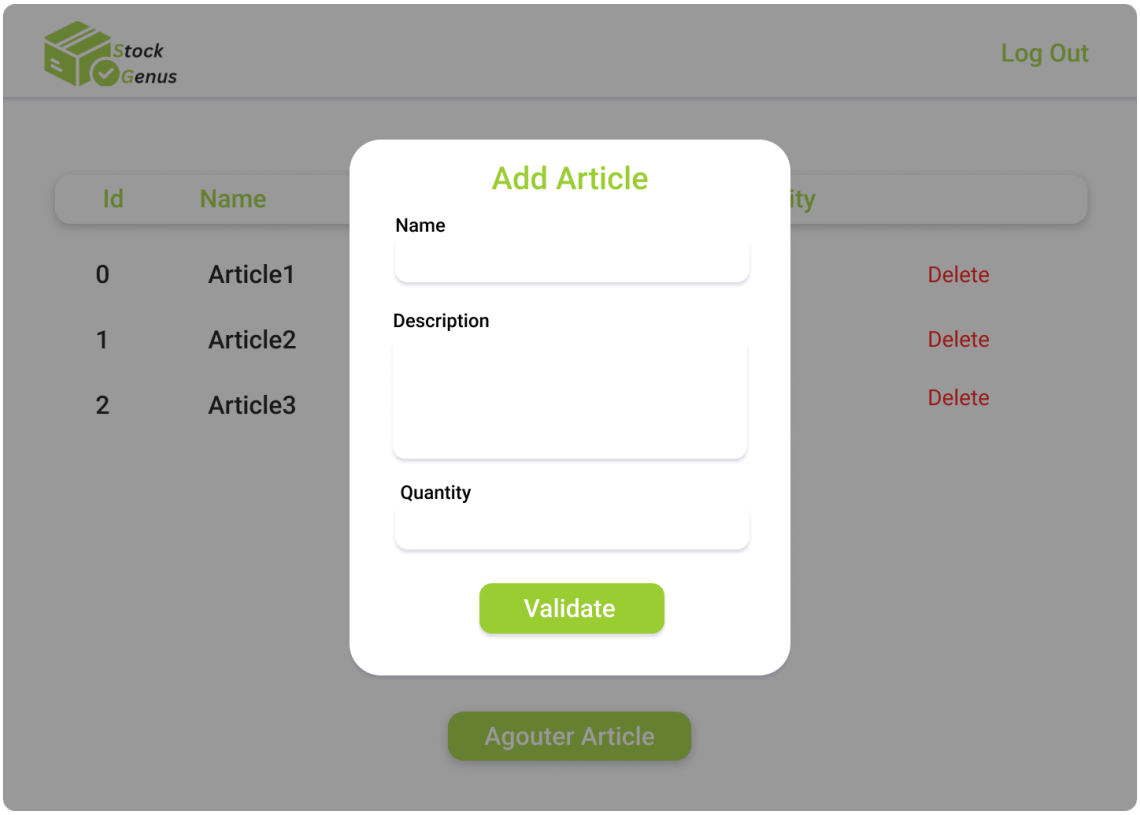

Figure 4: add product Interface

Show product Interface

This interface permit to see the details of a product .

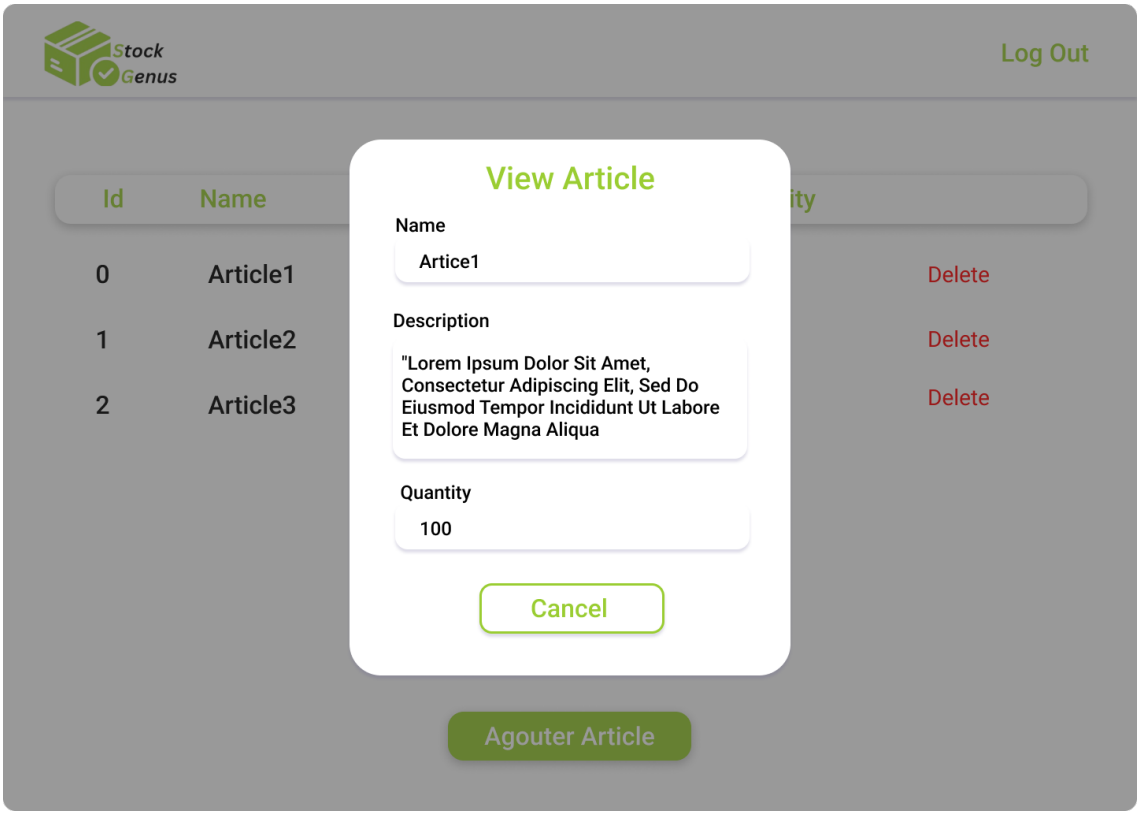

Figure 5: view product Interface

Delete product Interface

This interface permit to delete a specific product from the store .

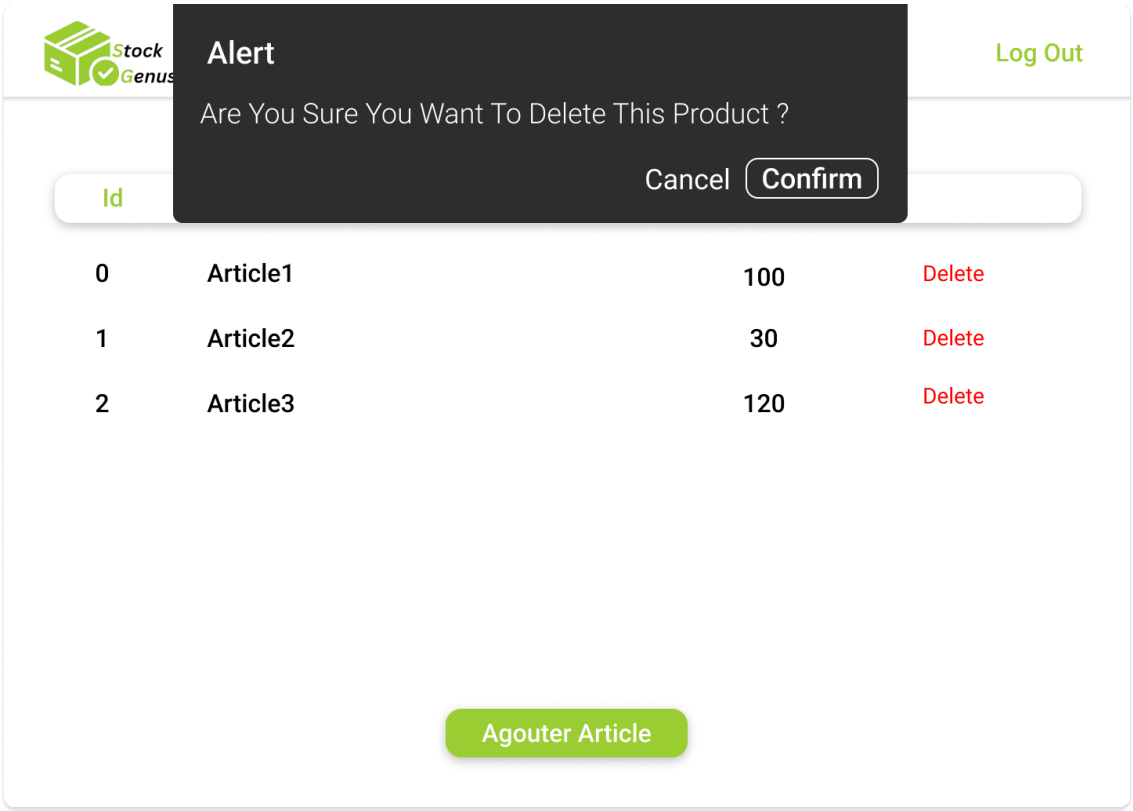

Figure 6: delete product Interface

2.2. Functional Requirements

Functional requirements represent the actions that the system must perform, it does not becomes operational only if it satisfies them. The application to be carried out must cover mainly the functional needs which are cited below.

2.2.1. Authentication

UseCase:

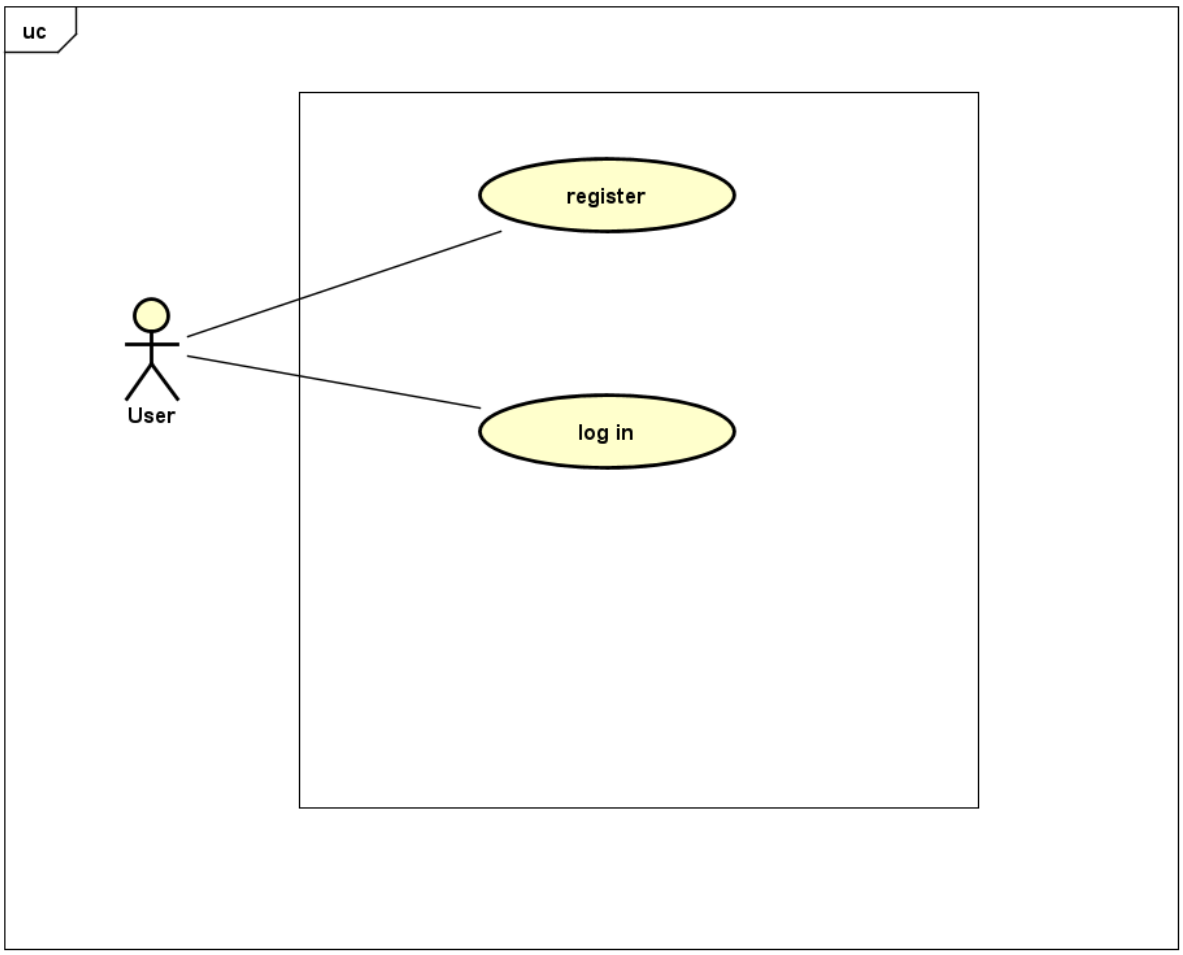

Figure 7: Authentication Use-Case Diagram

Table 1: Register

Use Case Name	Register
Description	Allows a new user to create an account in the system.
Entries	User details (name, email, password, etc.)
Source	User
Sorties	Account creation confirmation, Welcome message
Destination	User database, User interface confirmation message
Required Actions	Validate user details, Save user information to the database
Preconditions	User is not already registered
Postconditions	New user account is created, User sees a confirmation message
Effet de Bord	Initialization of user settings, Possible verification email sent

Table 2: Log In

Use Case Name	Log In
Description	Allows an existing user to log into the system.
Entries	Username, Password
Source	User
Sorties	Authentication status (success or failure), User role
Destination	System dashboard, Error message
Required Actions	Verify user credentials, Load user profile and role
Preconditions	User has a valid account
Postconditions	User is logged into the system or receives an error message
Effet de Bord	Session initialization, Access rights assignment

2.2.2. Product Managemenet

UseCase:

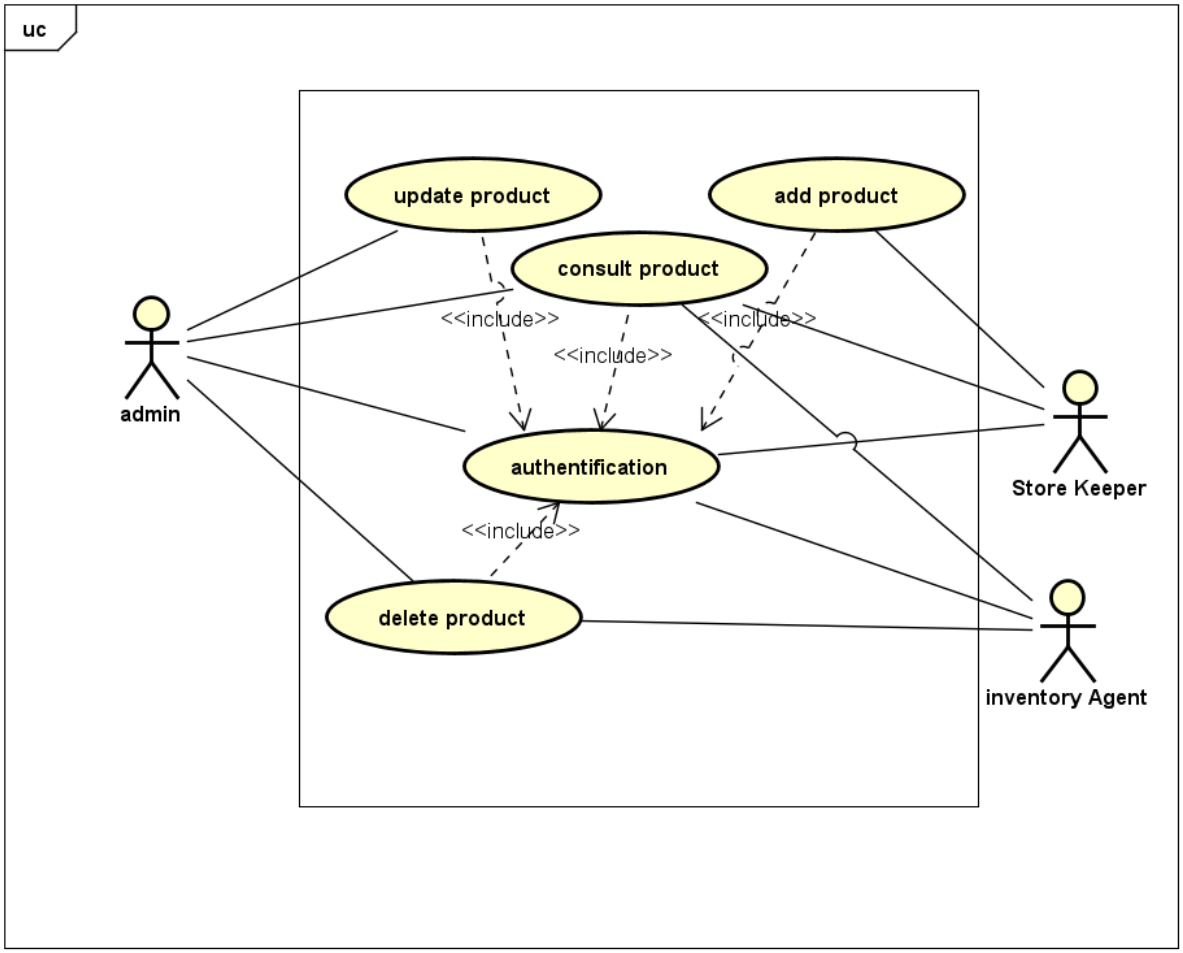

Figure 8: product Managment Use-Case Diagram

Table 3: Authentication

Use Case Name	Authentication
Description	Allows users (admin, store keeper, inventory agent) to log into the system.
Entries	Username, Password
Source	User (admin, store keeper, inventory agent)
Sorties	Authentication status (success or failure), User role
Destination	System dashboard, Error message
Required Actions	Verify user credentials, Load user profile and role
Preconditions	User has a valid account
Postconditions	User is logged into the system or receives an error message
Effet de Bord	Session initialization, Access rights assignment

Table 4: Add Product

Use Case Name	Add Product
Description	Allows authenticated users to add new products to the inventory.
Entries	Product details (name, category, price, quantity, etc.)
Source	User (admin, store keeper, inventory agent)
Sorties	Confirmation of product addition, Updated inventory list
Destination	Inventory database, User interface confirmation message
Required Actions	Validate product details, Save product to the database
Preconditions	User is authenticated and has the necessary permissions
Postconditions	Product is added to the inventory, User sees a confirmation message
Effet de Bord	Inventory count update, Possible reordering trigger if stock levels are low

Table 5: Update Product

Use Case Name	Update Product
Description	Allows authenticated users to update details of existing products in the inve
Entries	Product ID, Updated product details (name, category, price, quantity, etc.)
Source	User (admin, store keeper, inventory agent)
Sorties	Confirmation of product update, Updated inventory list
Destination	Inventory database, User interface confirmation message
Required Actions	Validate updated details, Save changes to the database
Preconditions	User is authenticated, Product exists in the inventory
Postconditions	Product details are updated in the inventory, User sees a confirmation messa
Effet de Bord	Inventory count and product details update, Possible notification to relevant

Table 6: Consult Product

Use Case Name	Consult Product
Description	Allows authenticated users to view details of products in the inventory.
Entries	Search criteria (product ID, name, category, etc.)
Source	User (admin, store keeper, inventory agent)
Sorties	Product details matching the search criteria
Destination	User interface displaying product details
Required Actions	Validate search criteria, Retrieve product details from the database
Preconditions	User is authenticated, Product exists in the inventory
Postconditions	Product details are displayed to the user
Effet de Bord	None

Table 7: Delete Product

Use Case Name	Delete Product
Description	Allows authenticated users to remove products from the inventory.
Entries	Product ID
Source	User (admin, store keeper, inventory agent)
Sorties	Confirmation of product deletion, Updated inventory list
Destination	Inventory database, User interface confirmation message
Required Actions	Verify product exists, Remove product from the database
Preconditions	User is authenticated, Product exists in the inventory
Postconditions	Product is removed from the inventory, User sees a confirmation message
Effet de Bord	Inventory count update, Possible notification to relevant parties

Activity diagrams:

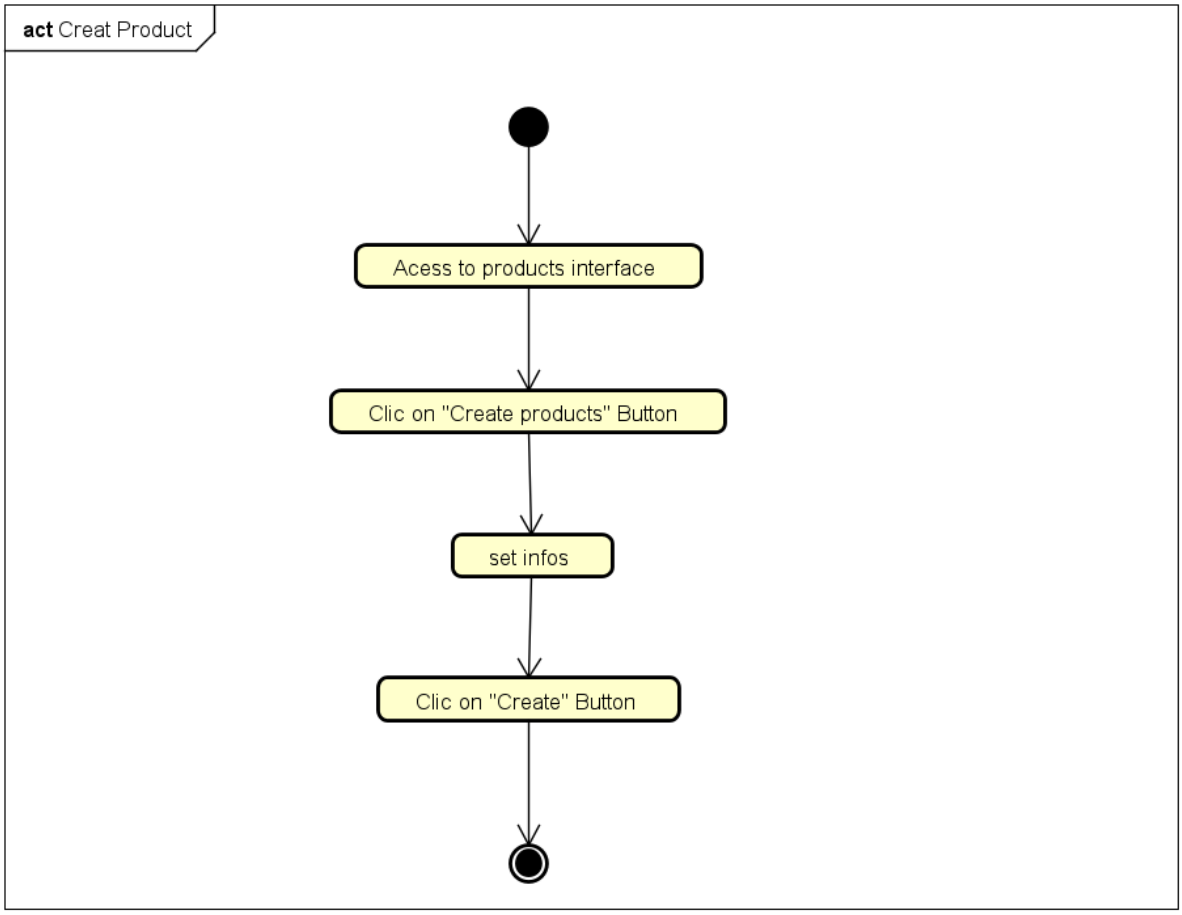

Figure 9: Add product Activity Diagram

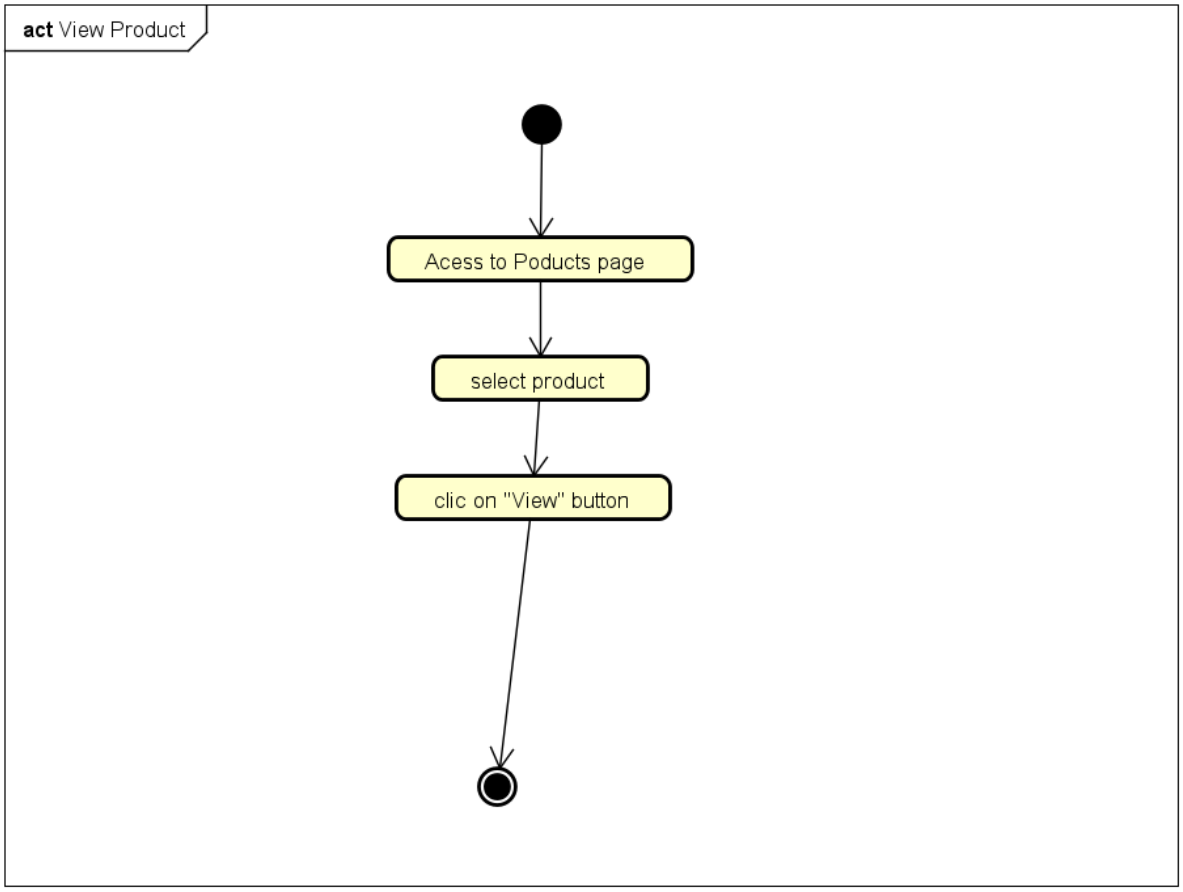

Figure 10: View product Activity Diagram

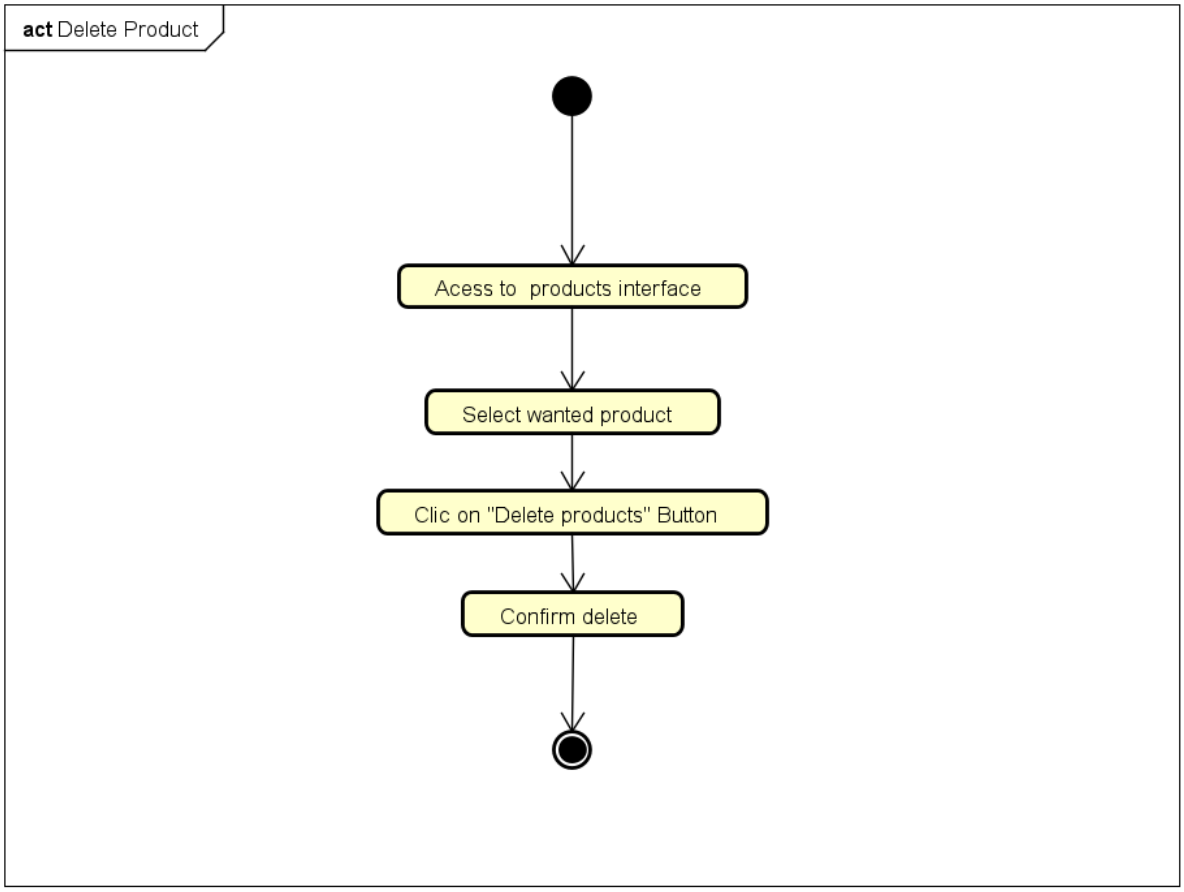

Figure 11: Delete product Activity Diagram

Sequence Diagrams :

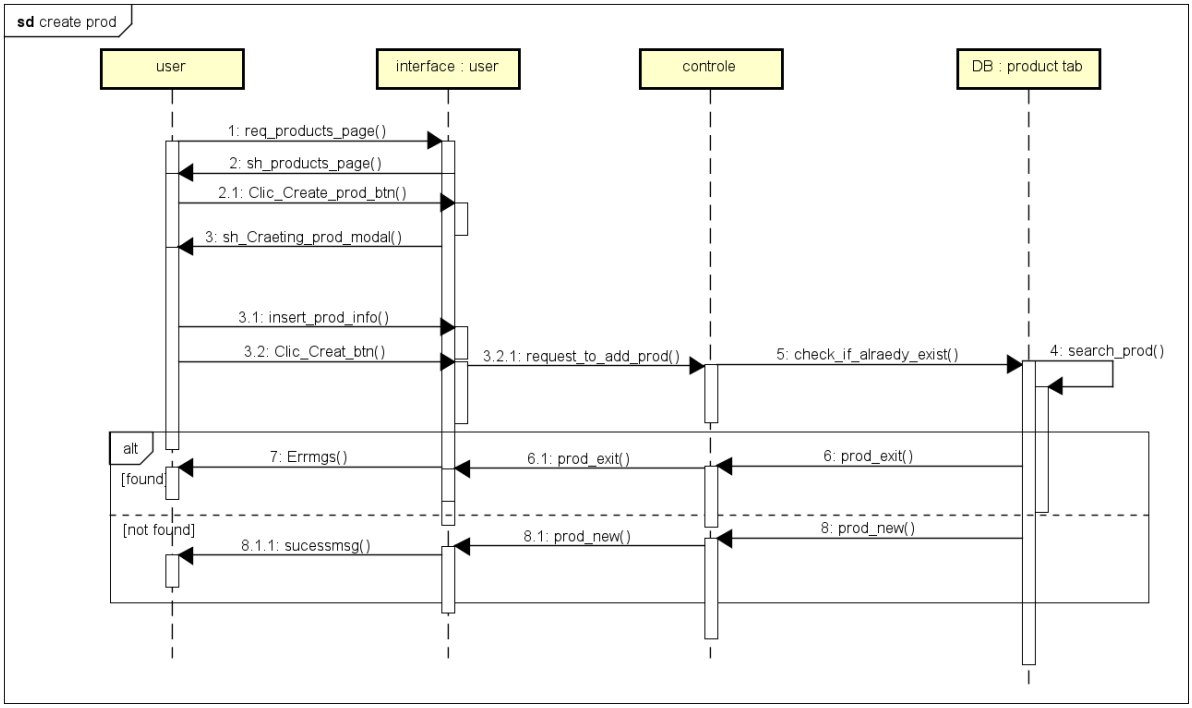

Figure 12: Add product Sequence Diagram

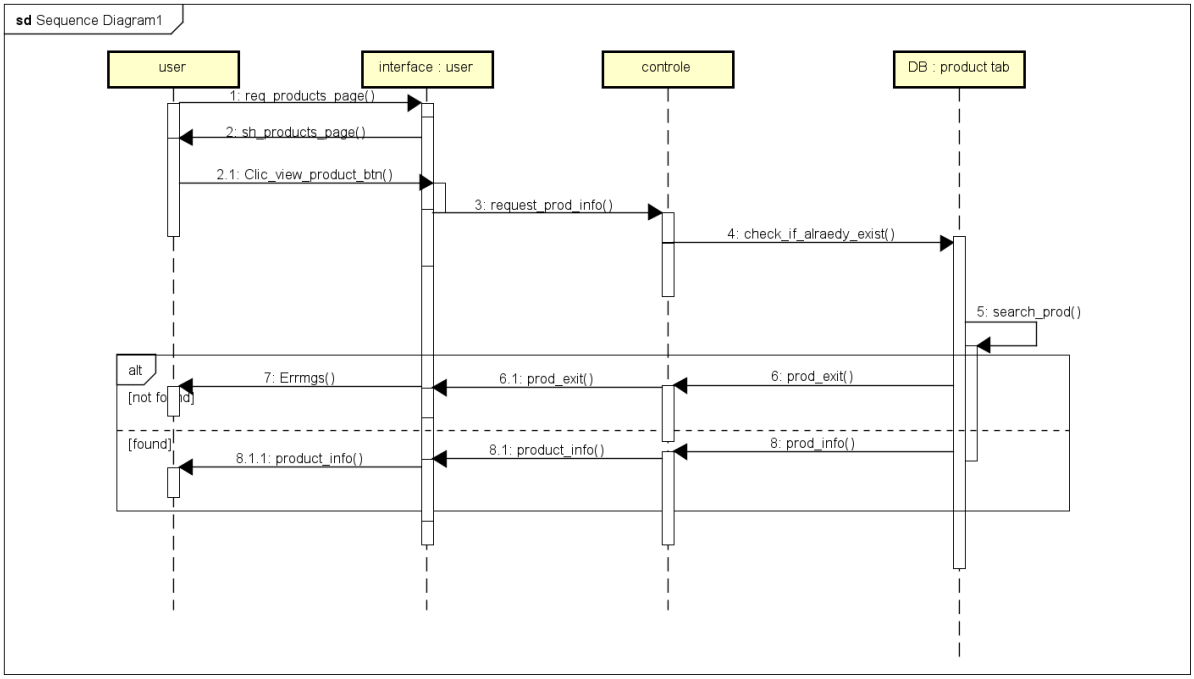

Figure 13: View product Sequence Diagram

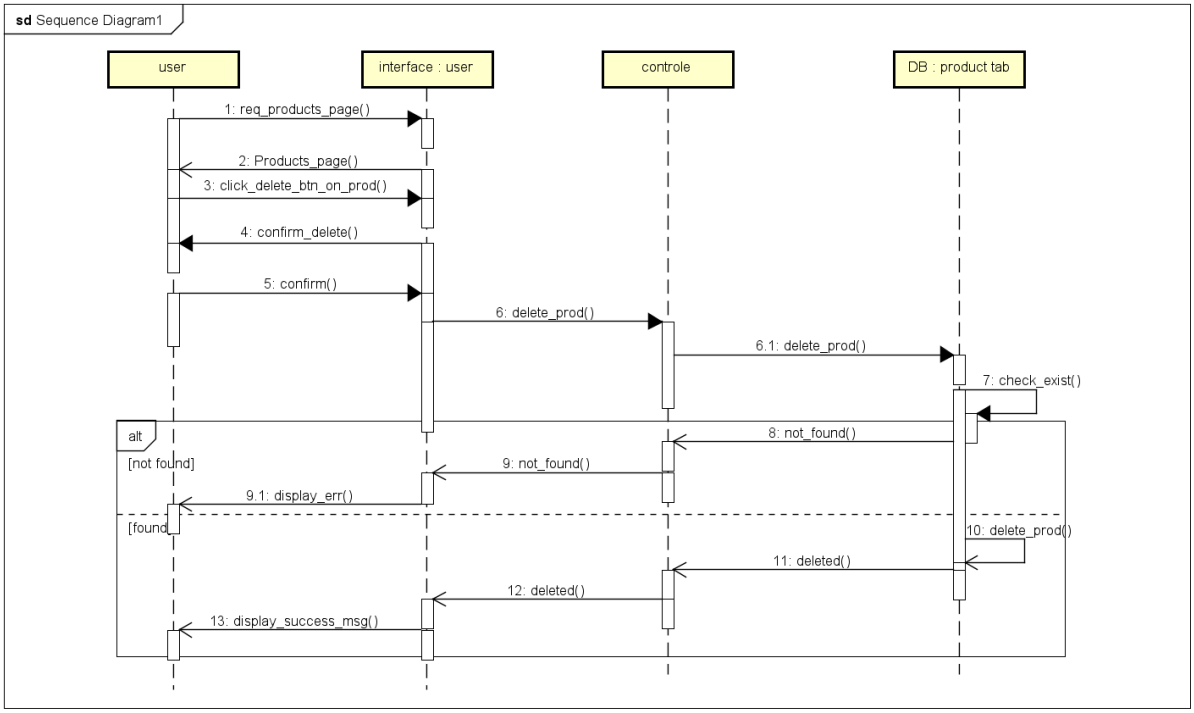

Figure 14: delete product Sequence Diagram

Class Diagram :

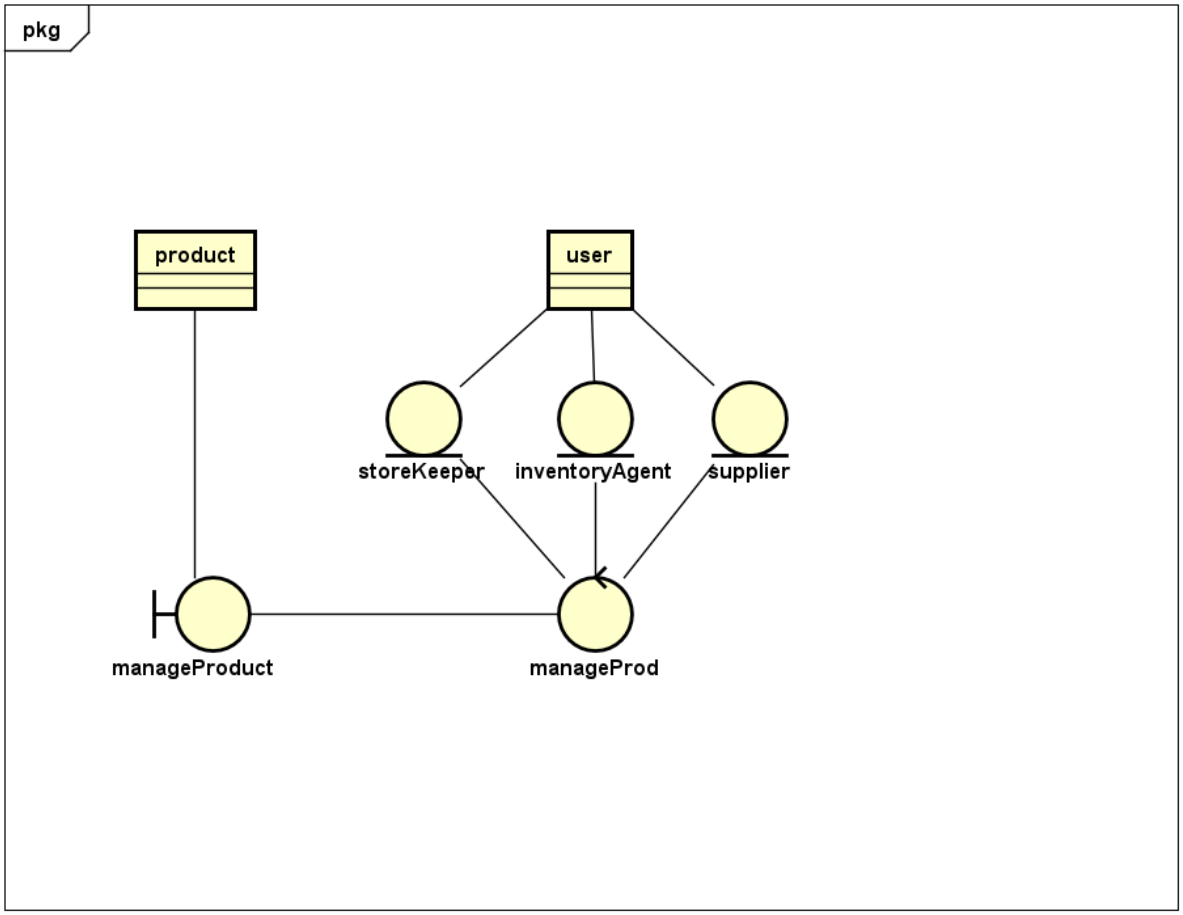

Figure 15: Class Diagram

State Machine Diagram:

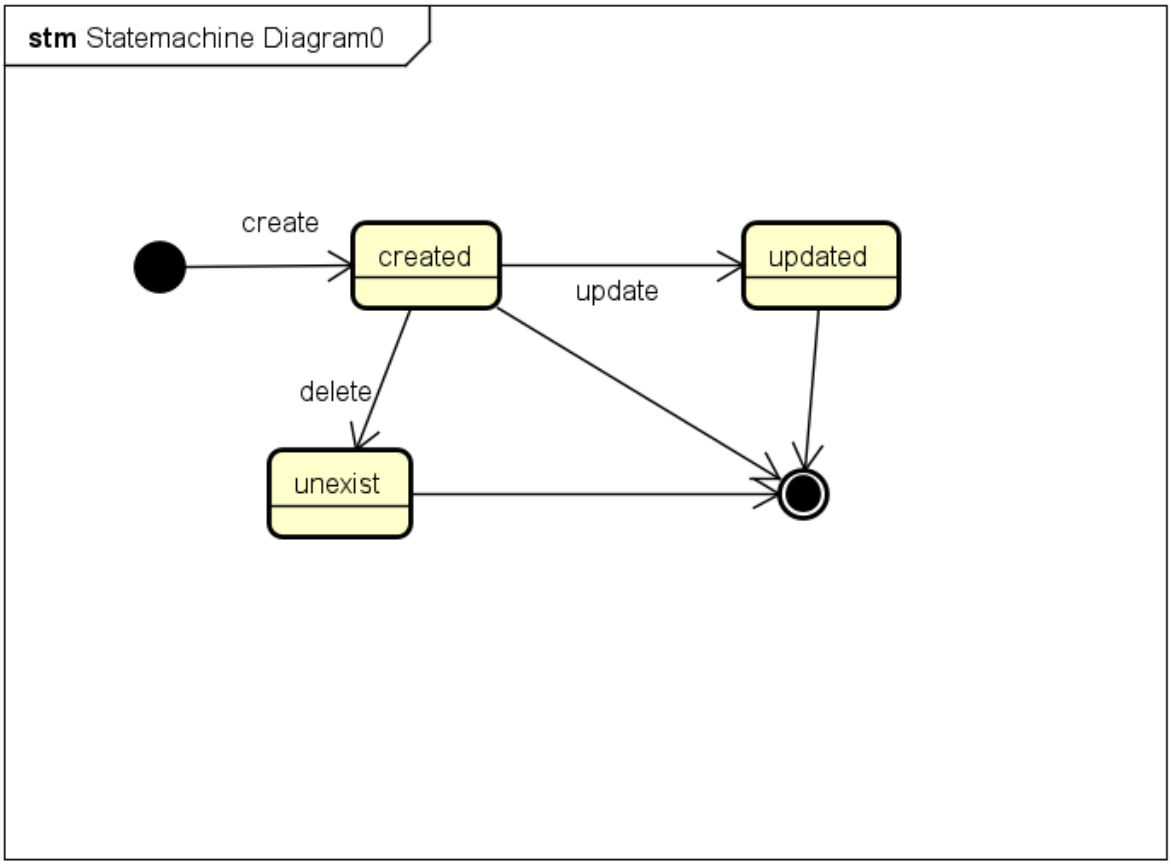

Figure 16: State machine Diagram

Component Diagram:

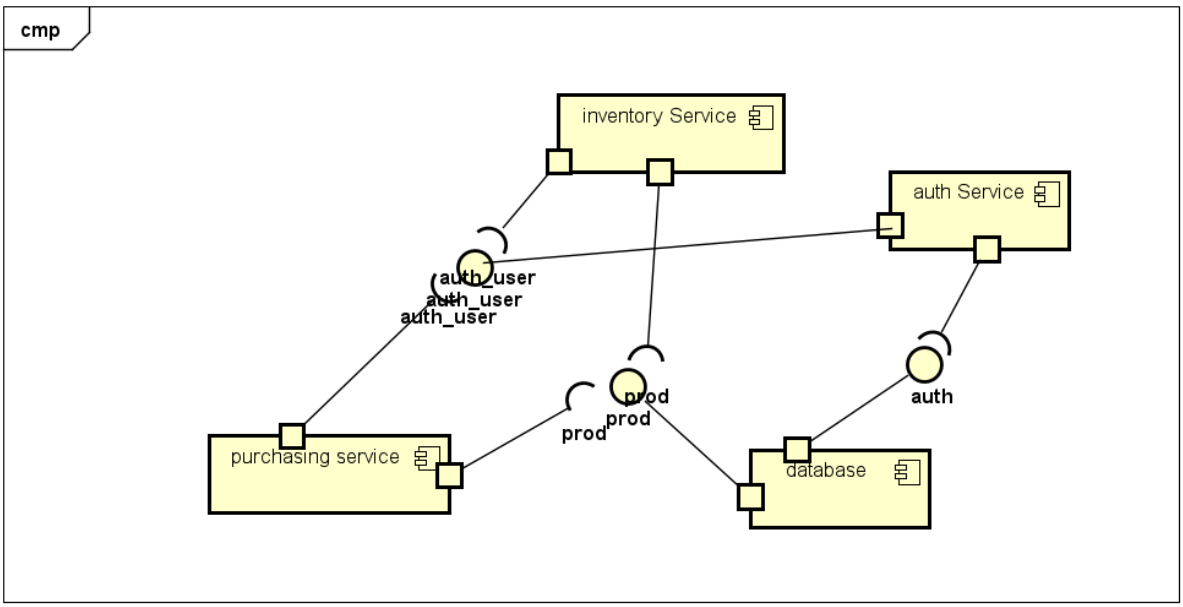

Figure 17: component Diagram

Deployment Diagram:

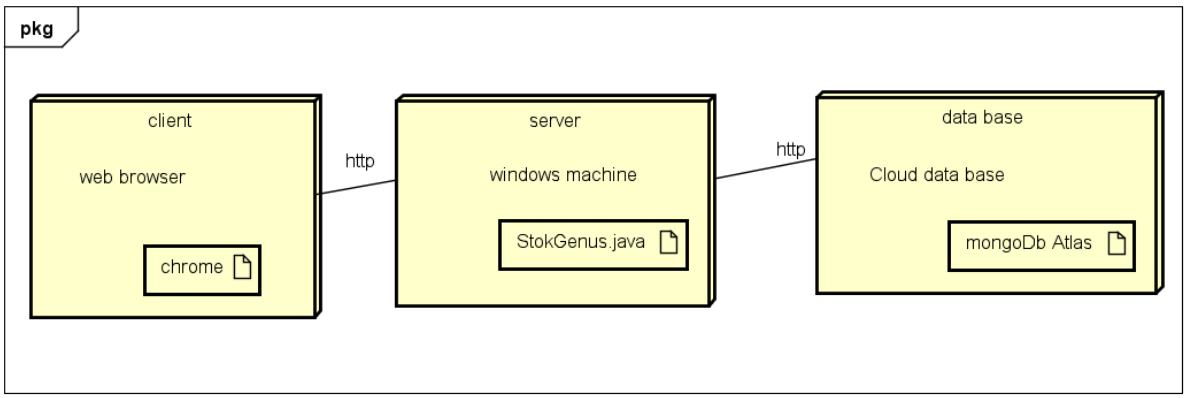

Figure 18: Deployment Diagram

3. Non-functional requirements

A non-functional need is a need that specifies the properties of the system such as constraints related to the environment and implementation.
Therefore, our website must meet the following requirements :

3.1. Security Requirements

- Access to information is only possible after verification of access rights and privileges.

3.2. Performance requirements

- The website must be efficient, that is to say, through its functionalities, meets all the requirements in an optimal manner.

3.3. Reliability requirements

- The website must work consistently without errors and must be satisfactory.

3.4. Accessibility Requirements

- Multiple users can use our system simultaneously.