Software Requirements Specification

ONLINE SHOPPING MART

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Author: Athidya U

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ABSTRACT

Online Shopping Mart System is an efficient and user-friendly e-commerce platform that aims to provide hassle-free shopping for customers while providing easy management for administrators. This Software Requirements Specification (SRS) document describes the functional and non-functional requirements of the system. Key features include user registration and login, product browsing and search, adding items to cart, secure online payments, order tracking, and customer feedback. Administrators have access to manage products, categories, user accounts, orders and generate reports for business analysis.

The system ensures security through encryption of sensitive data, secure authentication mechanisms and protection against common cyber threats. It also prioritizes accessibility and provides a responsive web interface compatible with different devices and browsers with adaptive styling and high user-friendly UI.

Compliance with relevant regulations such as data protection laws and payment card industry standards are integral to the system's design.

REQUIREMENTS

Functional requirements

User Registration and Login:

Users must be able to create accounts with unique usernames and passwords.

Users should have the option to log in securely using their credentials.

Product Browsing and Searching:

Users should be able to browse products by categories and subcategories.

Users must be able to search for products using keywords or filters.

Product Details:

Each product should have detailed information including name, description, price, and availability status.

Adding Items to Cart:

Users should be able to add products to their shopping cart.

Users should have the option to adjust the quantity of items in the cart.

Cart Management:

Users should be able to view and edit the contents of their shopping cart.

Users must have the option to remove items from the cart.

Transaction and delivery Process:

Users should be guided through a secure checkout process.

The system must handle various payment methods securely.

Order Tracking:

Users should be able to track the status of their orders.

Users must receive notifications regarding order updates.

Non-functional requirements

Performance:

The system must be able to handle concurrent user requests efficiently.

Response times for browsing, searching, and checkout processes should be minimal.

Security:

User data, including personal information and payment details, must be encrypted and securely stored.

The system must implement measures to prevent unauthorized access and protect against cyber threats.

Cryptographic algorithms like hashing, and other methodologies should be handled to ensure the CIA and AAA triads in security of information.

Scalability:

The system should be scalable to accommodate an increasing number of users and products.

It should be capable of handling peak loads during seasonal sales or promotional events.

FLOWCHART

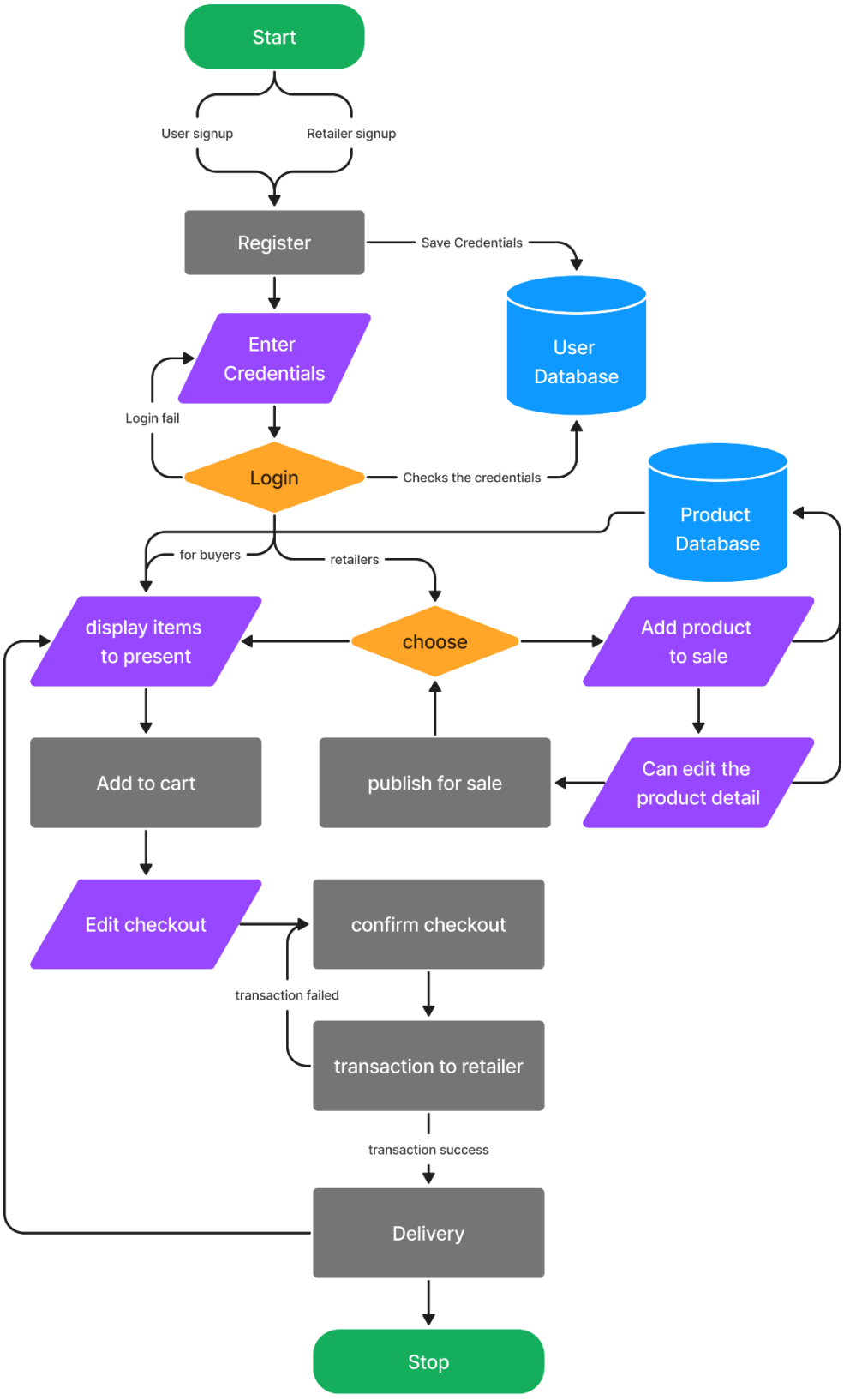

Fig 1: Flowchart of online shopping mart

i) The process commences with the registration of buyers and retailers, where they provide necessary credentials such as username, email, and password to create their accounts.

ii) Upon registration, these credentials are securely stored in a dedicated user database, ensuring the integrity and confidentiality of user information.

iii) Users can access their accounts by logging in with their valid credentials, which are authenticated against the stored data in the user database, ensuring only authorized access.

iv) Once logged in, normal users or buyers are presented with a dashboard or homepage displaying a comprehensive list of available items for purchase.

v) Retailers have the capability to add new items to the platform using their unique identification credentials. They provide essential details about the products, making them available for purchase by users.

vi) Details of the added items, including product descriptions, prices, and availability, are stored in the product database, ensuring accurate representation and easy retrieval.

vii) Retailers have the flexibility to manage their listed items by adding new products, editing existing details, or removing items from the platform as needed, ensuring up-to-date and relevant product information.

viii) Buyers can conveniently add desired items to their shopping cart, where they can adjust quantities and review individual product prices. The system calculates and displays the total bill amount for their reference and verification.

ix) Secure transactions between buyers and retailers are facilitated through third-party transaction APIs, ensuring encrypted data transmission to safeguard sensitive information and maintain transaction integrity.

x) Upon successful completion of the transaction, the retailer arranges for the delivery of the purchased items from their side to the customer's specified location, ensuring a seamless end-to-end shopping experience.

USECASE DIAGRAM

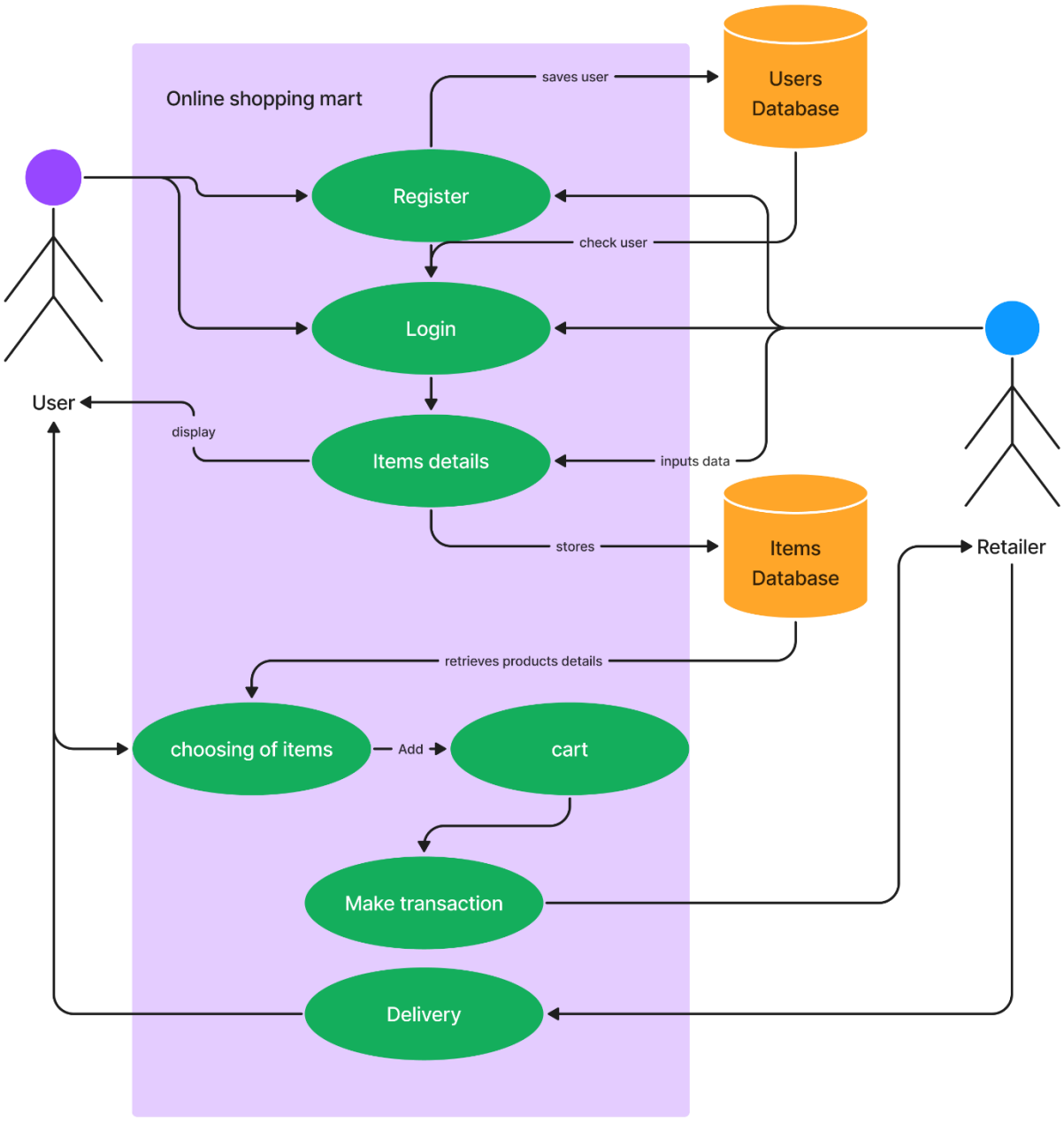

Fig 2: Use case diagram of online shopping mart

CLASS DIAGRAM

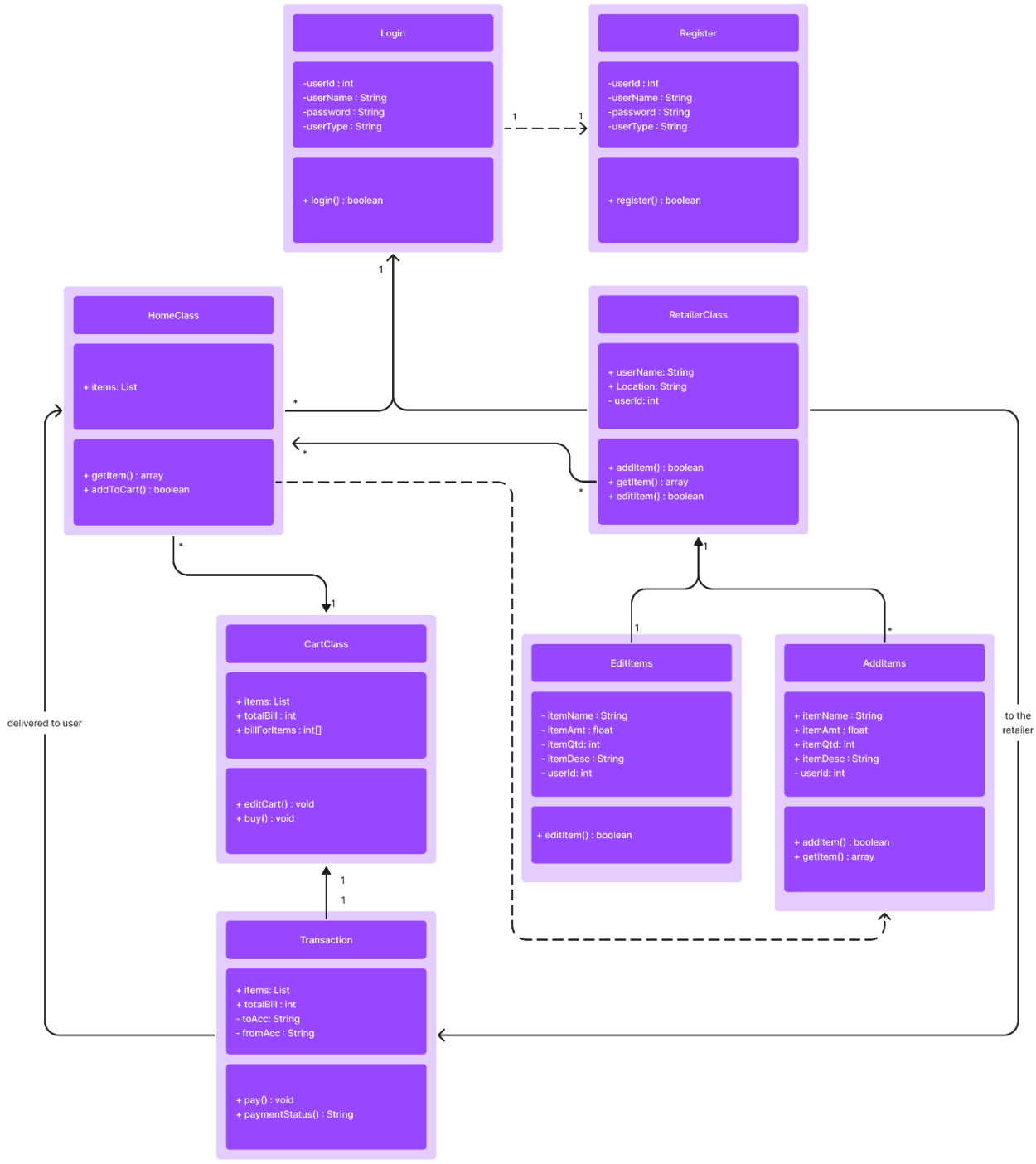

Fig 3: Class diagram of online shopping mart

SEQUENCE DIAGRAM

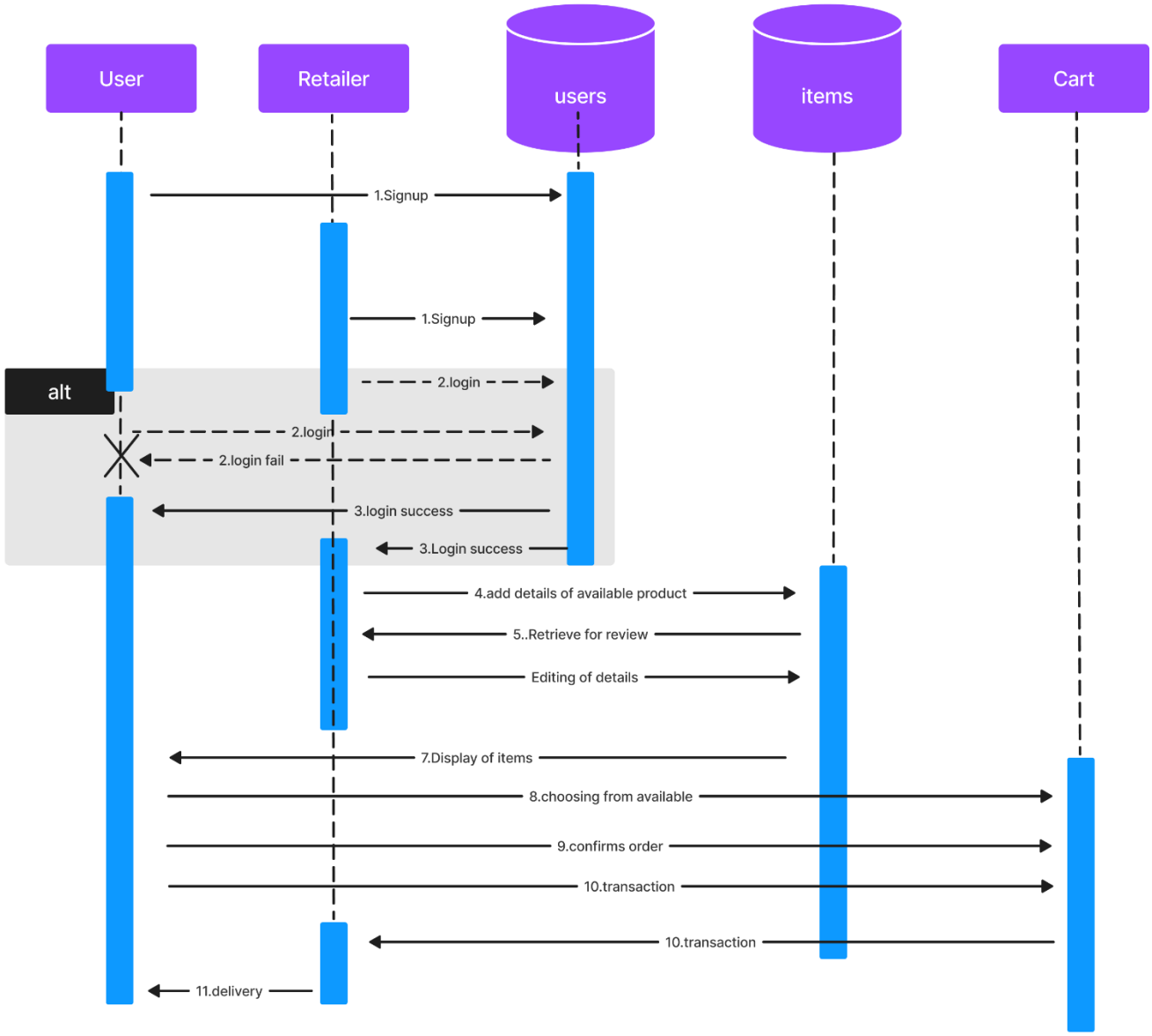

Fig 4: Sequence diagram of online shopping mart

TESTCASES

Registration:

- Verify that a new user can successfully register with valid credentials.
- Ensure that registration fails if the username or email is already in use.
- Validate that all mandatory fields are required during registration.

Login:

- Confirm that registered users can log in with valid credentials.
- Ensure that login fails with incorrect username or password.
- Check for session timeout functionality after a period of inactivity.

Users:

- Perform the regression testing for both users' buyers as well as retailers

Product Browsing:

- Verify that users can browse products by categories and subcategories like descriptions.
- Ensure that search functionality returns relevant results based on keywords.
- Validate that the displayed products match the selected category or search criteria.

Cart Management:

- Confirm that users can add items to the shopping cart.
- Ensure that the quantity of items in the cart can be adjusted.
- Verify that adding items to the cart updates the total bill amount accurately.
- Validate that users can view and edit the contents of their shopping cart.
- Ensure that users can remove items from the cart successfully.
- Confirm that the cart retains its contents after user logout and login.

REFERENCES

- flowchart reference (link)
- class diagram (link)
- sequence diagram (link)
- source of images in raw form of editing in Figma (link)