جامعة ٦ أكتوبر
October 6 University

علوم الحاسب ونظم المعلومات
Info Sys & Comp Science

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Faculty of Information Systems and Computer Science

SALES SYSTEM

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1.0 System Description

A fully integrated sales system designed to manage sales, purchases, invoices, inventory, and reports through multiple linked interfaces that ensure smooth operation and fast access to accurate data.

1.1 Interface 1: Point of Sale (POS)

This is the main screen used to perform sales operations.

Features:

- Displays all available products with organized view.
- Each product contains **price, description, code, category, and available quantity**.
- When a product is selected, it is added directly to the **shopping cart**.
- Ability to modify quantity, remove items, or apply discount if needed.
- After confirming the purchase, an **invoice is generated** and automatically transferred to the Sales Invoices interface.

1.2 Interface 2: Sales Invoices

All invoices created through the POS are stored here.

Features:

- View all past sales invoices.
- Full invoice details (date, products, prices, totals, payment method).
- Search and filter by date, invoice number, product, or customer.
- Ability to reprint or refund a sale if required.

1.3 Interface 3: Reports Dashboard

A powerful analytical dashboard to track system performance.

You can generate:

- **Daily / Weekly / Monthly / Annual sales reports**
- **Profit and loss report** based on buying and selling margins
- **Top-selling and most demanded products**
- **Current inventory value and remaining product quantities**

This interface supports strategic decision-making with accurate numbers and analytics.

1.4 Interface 4: Product Management

Administrative interface for adding and modifying products.

Features:

- Add new product (name – price – description – quantity – image – category)
- Edit existing product details (price, description, code, stock)
- Delete or deactivate unavailable products
- Product information is linked directly to sales and purchases for

1.5 How the System Works Together

✓ Sales → Generates invoices automatically

✓ Reports → Analyze business performance

✓ Product Management → Updates and controls inventory data

User Requirement

User Requirements

These requirements describe what each user can do in the system.

A) User (Customer / Cashier)

- The user shall be able to **log in** to the system.
- The user shall be able to **determine a product**.
- The user shall be able to **determine the quantity** of a product.
- The user shall be able to **add products to the cart**.
- The user shall be able to **select a payment method**.
- The user shall be able to **checkout**.
- The user shall be notified when a **product is not available**.

B) Admin

- The admin shall be able to **manage products**.
- The admin shall be able to **add a product**.
- The admin shall be able to **update a product**.
- The admin shall be able to **delete a product**.
- The admin shall be able to **set product prices**.
- The admin shall be able to **set discounts**.
- The admin shall be able to **view transactions**

System Requirement

System Requirements

These requirements describe what the system must do internally.

- The system shall **validate user credentials** during login.
- The system shall **display an error message** if login fails.
- The system shall **check product availability** before adding a product to the cart.
- The system shall **display a "product not available" message** when the product is unavailable.
- The system shall **manage prices**, including prices and discounts.
- The system shall **support product management** operations.
- The system shall **display transactions** to the admin.

Non-functional Requirement

Non-Functional Requirements

- The system shall be **easy to use**.
- The system shall ensure **secure login**.
- The system shall provide **fast response time** for cart, checkout, and payment actions.
- The system shall be **reliable** when managing products, prices, and transactions.

Functional Requirement

Functional Requirements

Authentication

- The system shall allow users to **log in**.
- The system shall **validate credentials** during login.
- The system shall **display an error message** for invalid login attempts.

Product and Cart

- The system shall allow the user to **determine a product**.
- The system shall allow the user to **determine the quantity**.
- The system shall **check product availability**.
- The system shall allow the user to **add products to the cart**.
- The system shall **display a message** if the product is not available.

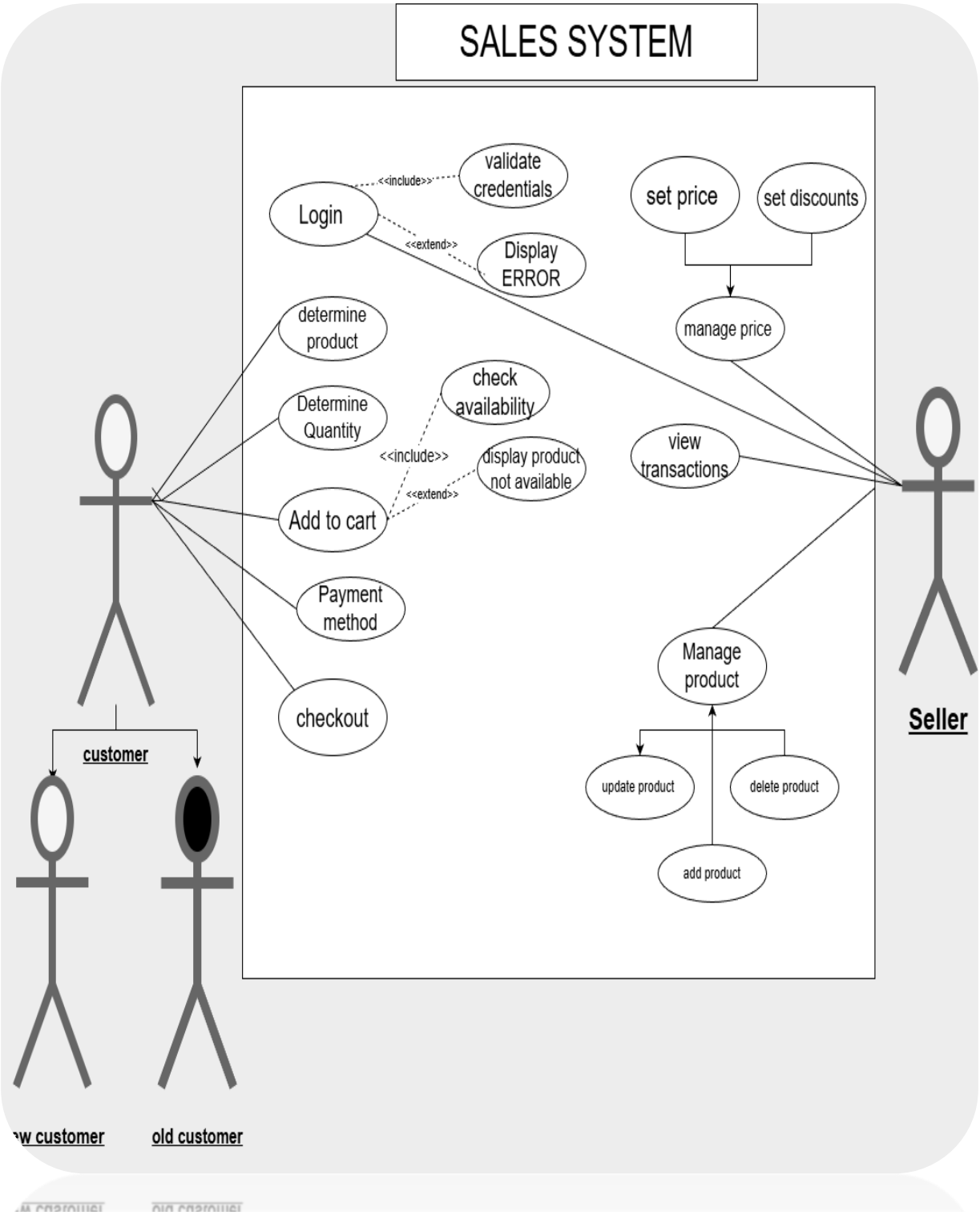
Payment and Checkout

- The system shall allow the user to **select a payment method**.
- The system shall allow the user to **checkout**.

Management

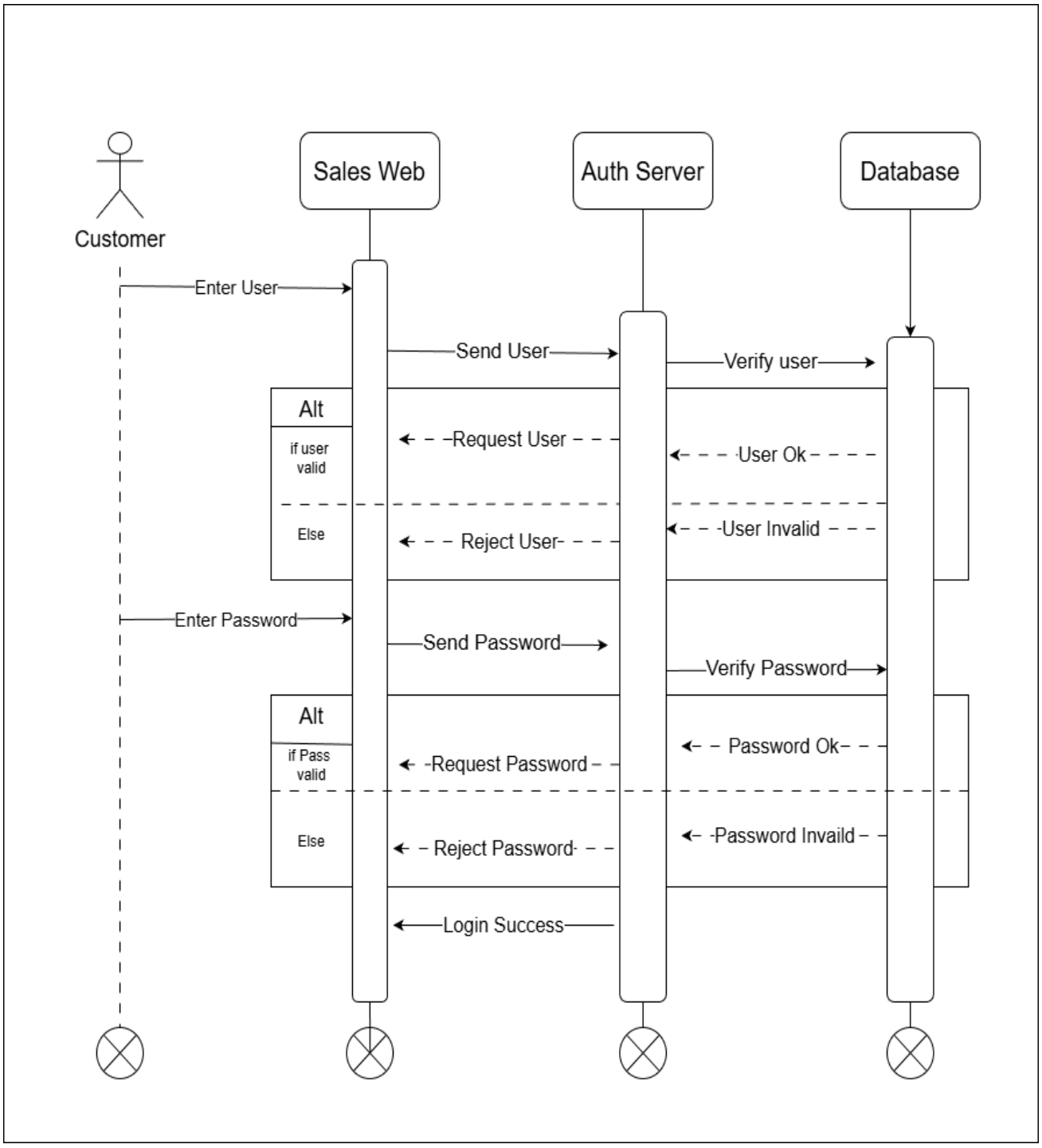
- The system shall allow the admin to **manage products**.
- The system shall support:
    - **Add product**
    - **Update product**
    - **Delete product**
- The system shall allow the admin to **manage prices**, including:
    - **Set price**
    - **Set discounts**
- The system shall allow the admin to **view transactions**.

Usecase Diagram



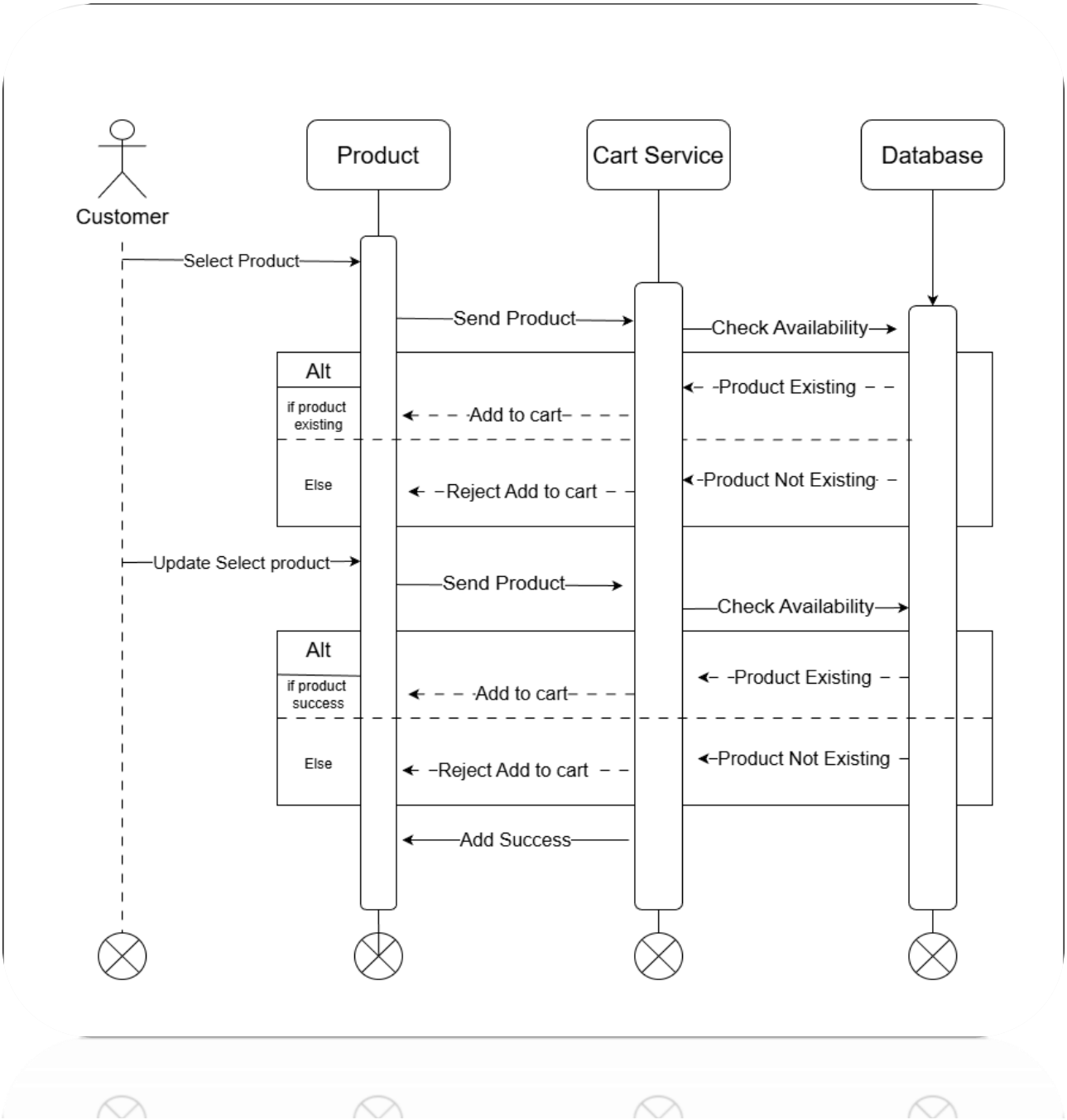
Sequence Diagram

Login Web Page



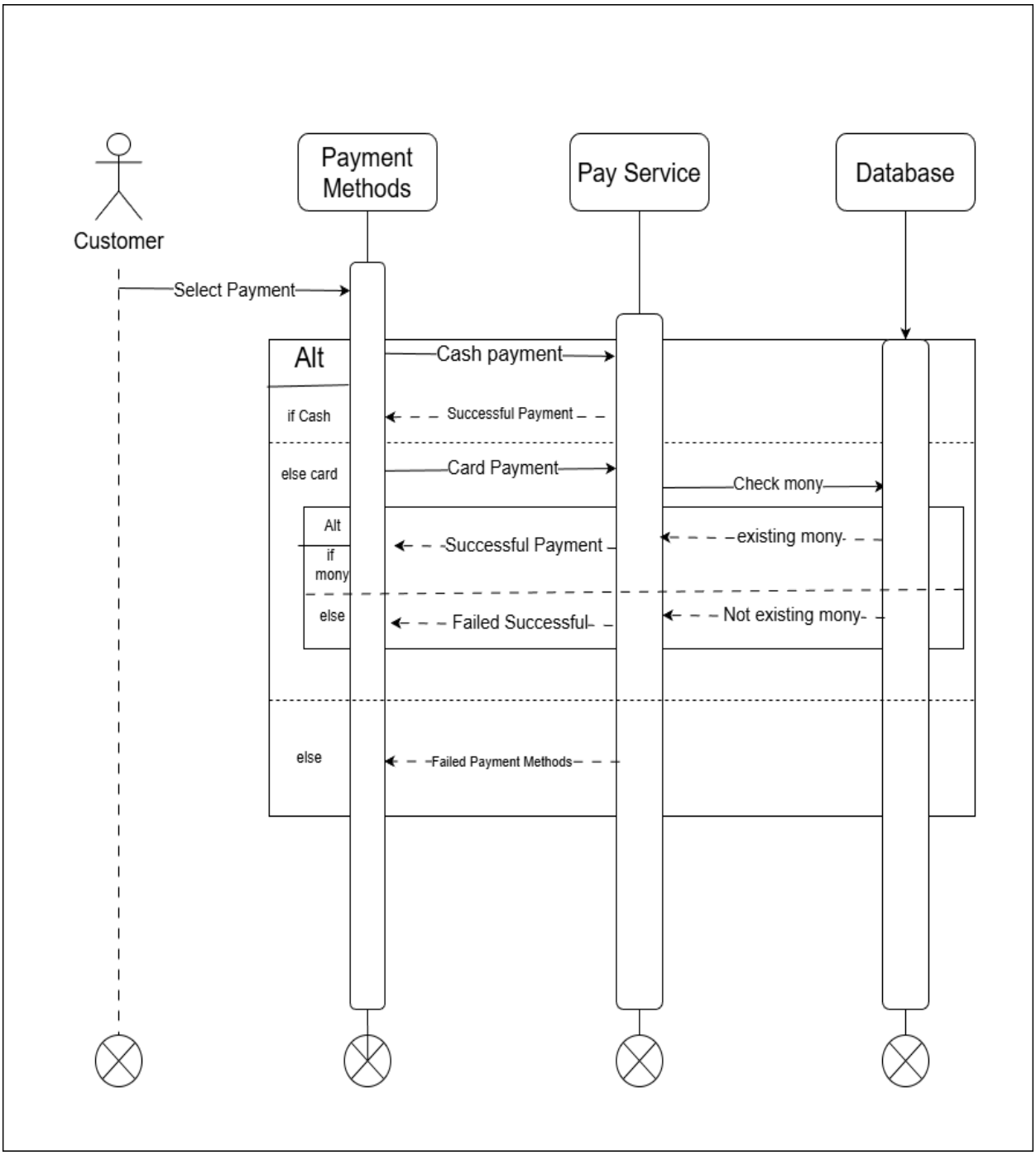
Sequence Diagram

Cart

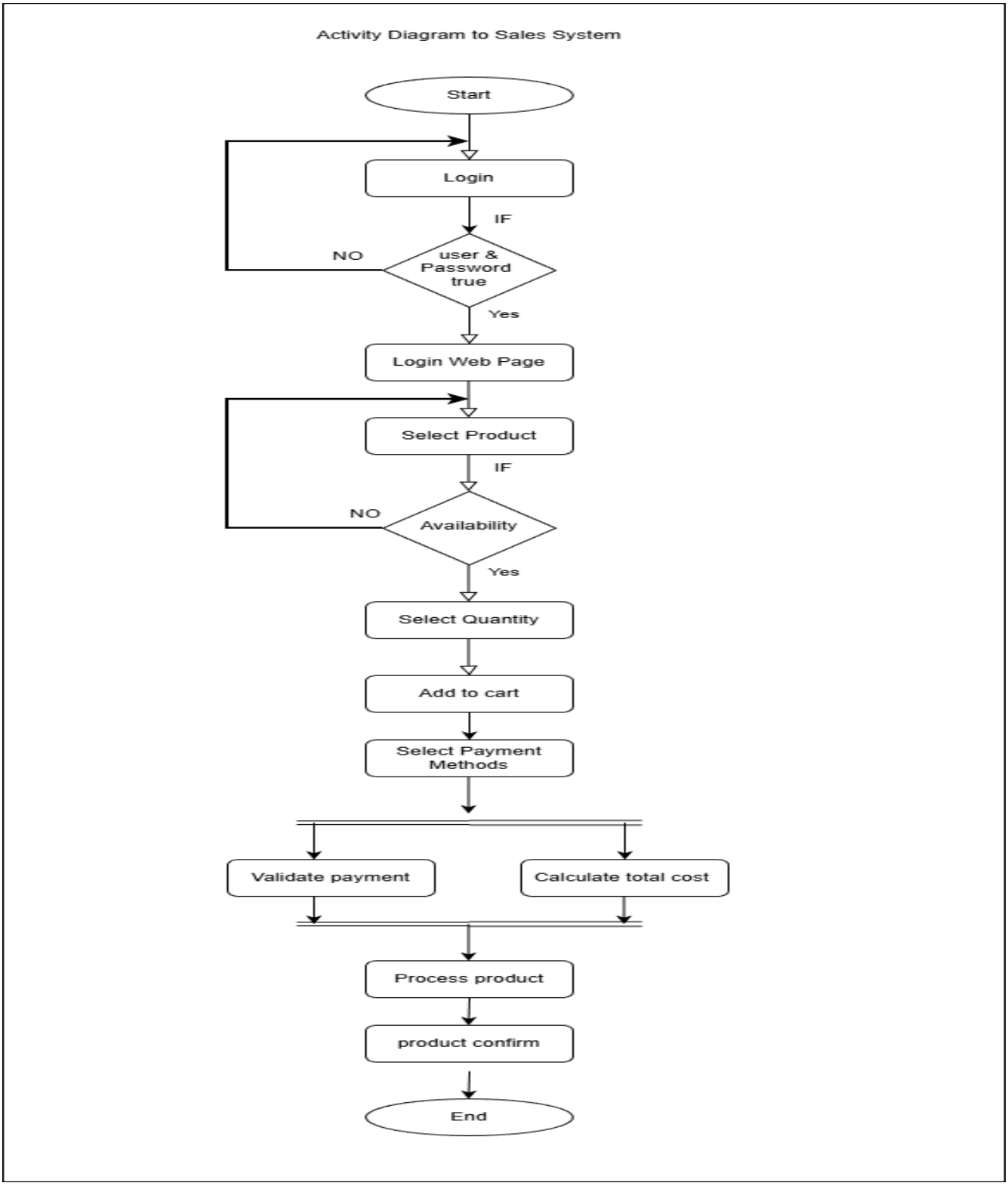


Sequence Diagram

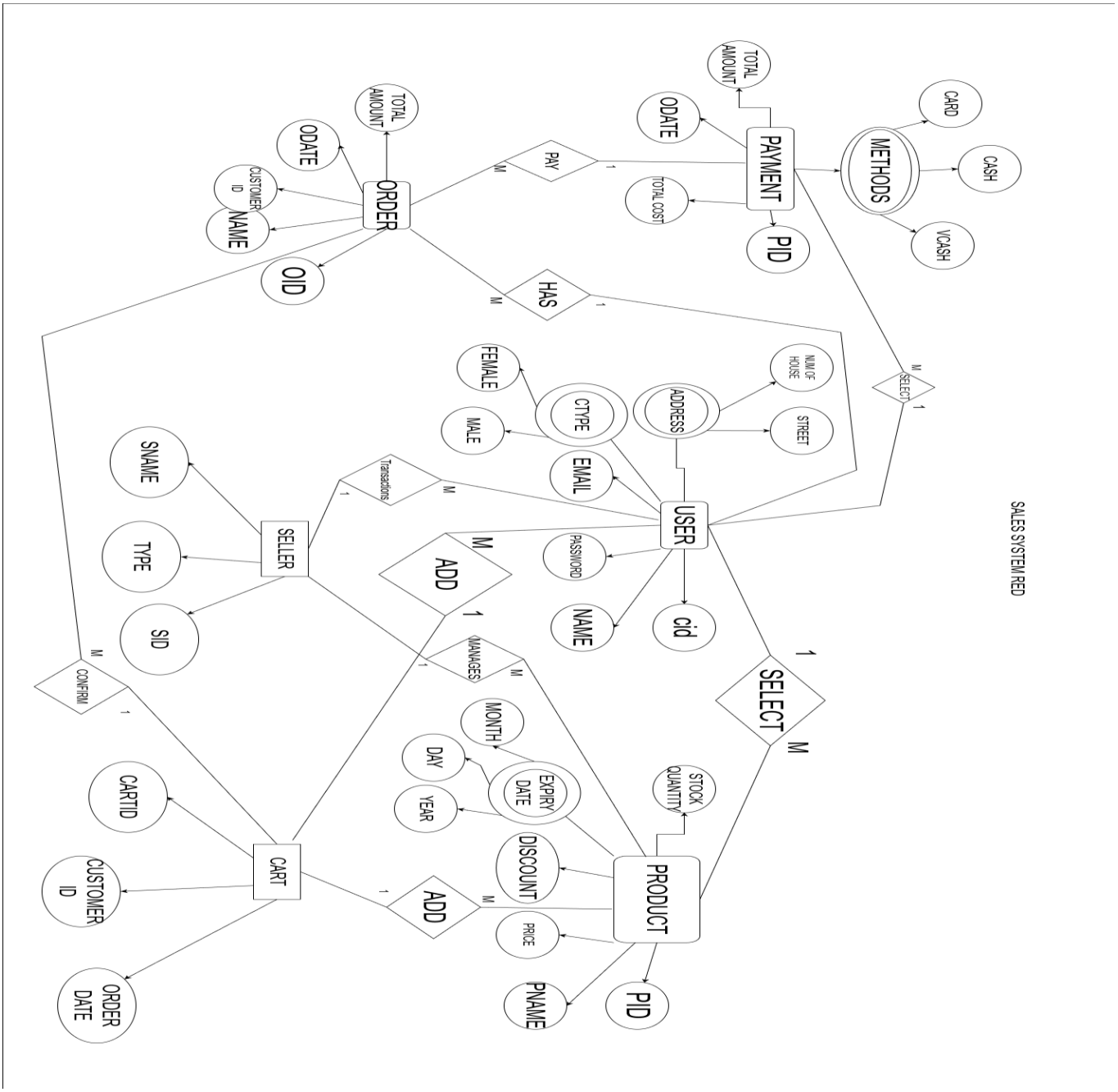
Payment Methods



Activity Diagram



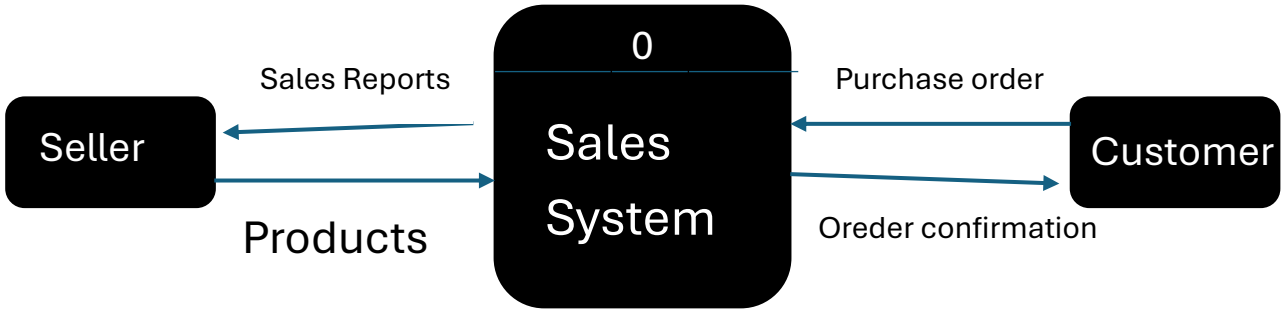
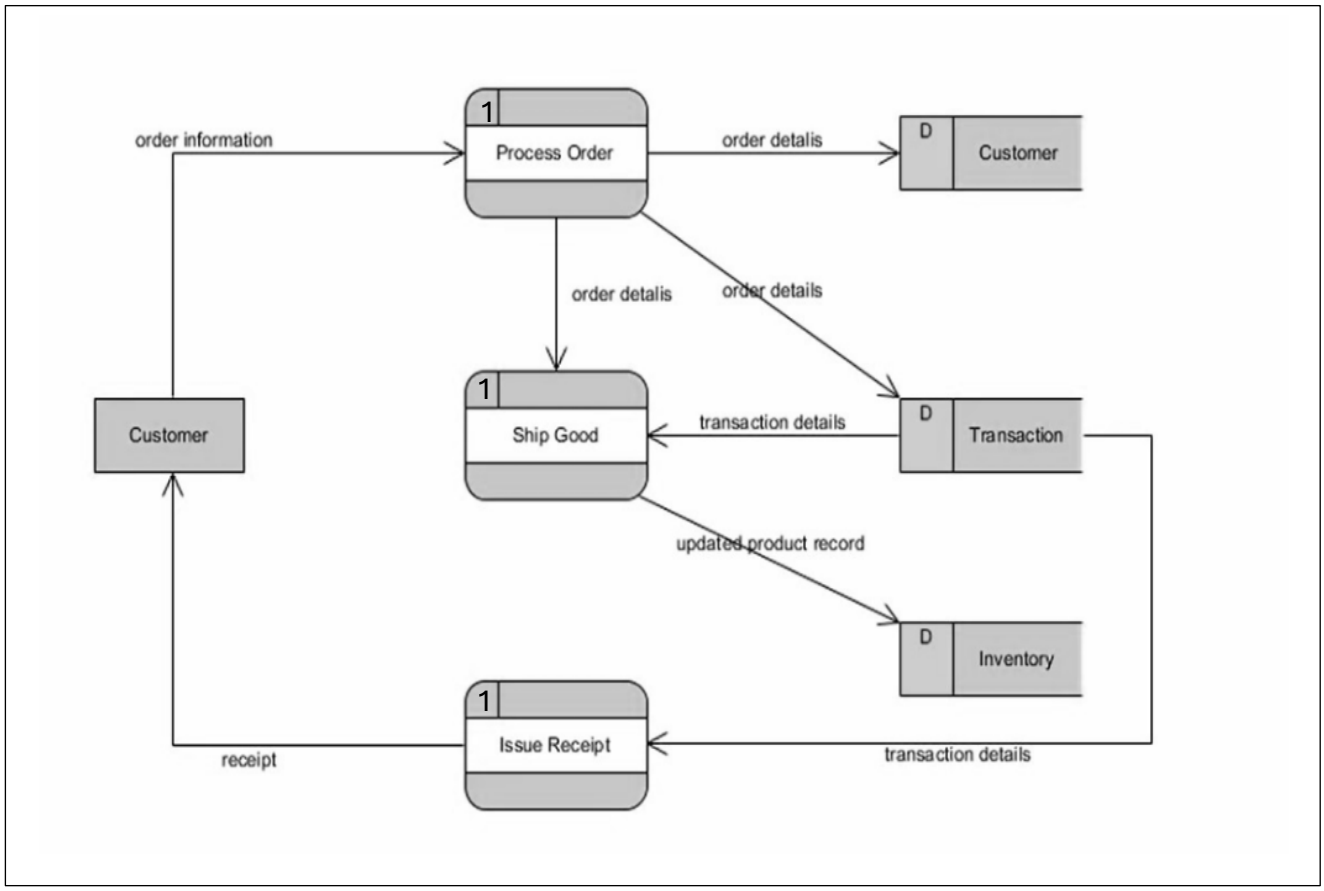
Enhanced Relationship Diagram (ERD)



Data Flow Diagram

(Dfd)

➢ Context diagram level 0:



➢ Context diagram level 1 :