



TRƯỜNG ĐẠI HỌC FPT

CAPSTONE PROJECT REPORT

Cosmotopia: AI-Powered Cosmetic Shopping – Mobile Programming Specification

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I. Record of Changes

Date	A* M, D	In charge	Change Description
	A		Create docs and synthesize diagrams
	A		
	A		Create use case diagram
	A		Added use case specification
	M		Modify use-case diagram
	A		Create activity diagram
	A		Create activity diagram
	A		Create activity diagram
	A		Create sequence diagram
	A		Create sequence diagram
	A		Create class diagram
	A		Create sequence diagram
	A		Create sequence diagram

*A - Added M - Modified D - Deleted

II. Software Requirement Specification

1. Overall Description

1.1 Product Overview

Cosmotopia is a cross-platform e-commerce application focused on the cosmetic industry. The system is composed of a mobile application for end-users and a web-based backend for system administrators and managers. The primary goal is to provide a smart, efficient, and user-friendly shopping experience enhanced with AI chatbot interaction and a comprehensive affiliate marketing system. The mobile app was developed using Flutter, while the backend system is built on ASP.NET Core with a centralized SQL Server database.

1.2 Product Background

The cosmetics industry in Vietnam is rapidly expanding, with increasing demands for online accessibility, AI support, and KOL-driven sales strategies. Existing platforms offer basic product listings and purchase functionality, but lack intelligent product suggestions, transparent affiliate commissions, and streamlined management for KOL activities. Cosmotopia is developed to bridge this gap by incorporating AI-driven chat interaction, affiliate link tracking, and dynamic commission calculations.

1.3 Existing Systems

Popular systems like Shopee and Lazada offer cosmetics e-commerce but operate on a general-purpose framework without specialization in AI chatbot features or affiliate transparency. KOL and influencer-driven marketing are managed externally without seamless integration into the platform. Cosmotopia integrates these features directly into its architecture, giving it a competitive edge.

1.4 Business Opportunity

With the growing influence of social media and KOL marketing, brands are actively seeking platforms that can integrate product selling with content creation and affiliate earnings. Cosmotopia allows brands and affiliates to connect directly within the system. Additionally, the AI chatbot helps reduce customer service overhead by responding to common inquiries, thus improving overall operational efficiency.

1.5 Software Product Vision

Cosmotopia aims to become a leading specialized cosmetic platform in the Vietnamese market by integrating:

- A modern mobile shopping experience
- AI-powered customer assistance via Google Gemini Chat
- Full affiliate system support with link generation, referral tracking, and commission payout
- Backend management tools for administrators and product managers
- Analytical tools for sales and commission monitoring

1.6 Project Scope & Limitations

Scope:

- Mobile app with user registration, product browsing, cart management, order placement, and AI chatbot interaction
- Backend with user role-based management, affiliate configuration, product and order tracking
- AI chatbot integration using Gemini API

Limitations:

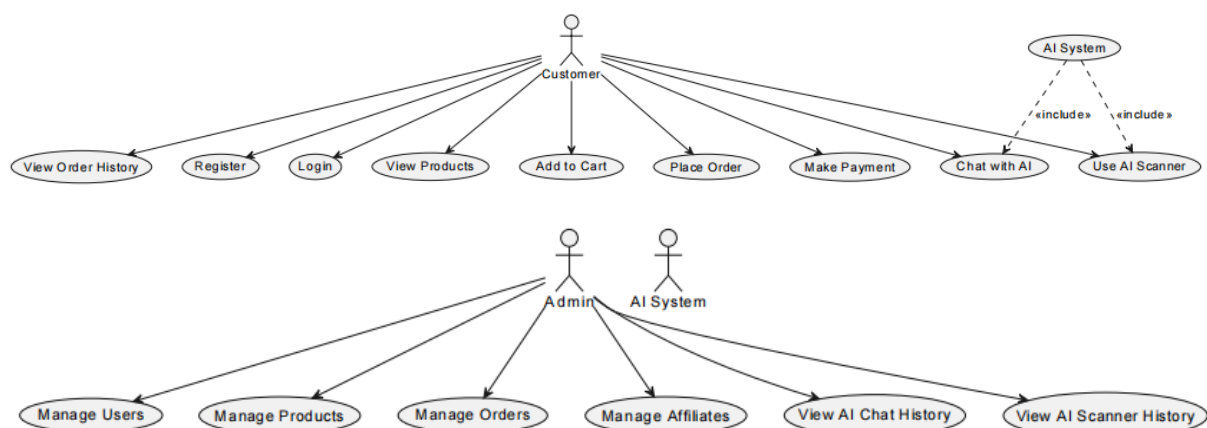
- AI Chatbot currently supports only Vietnamese input and has limited contextual memory
- The project is not integrated with real payment gateways and uses simulated payment flow
- Shipping and inventory management modules are basic and require future enhancements

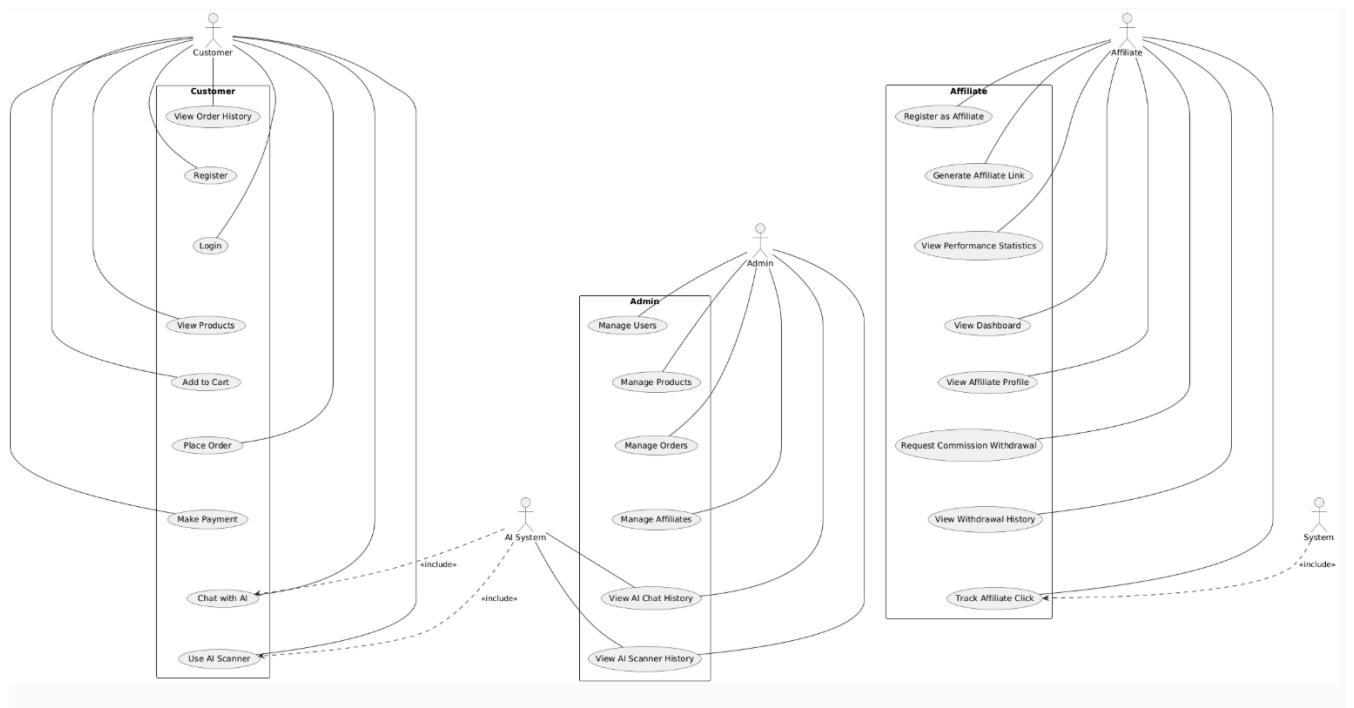
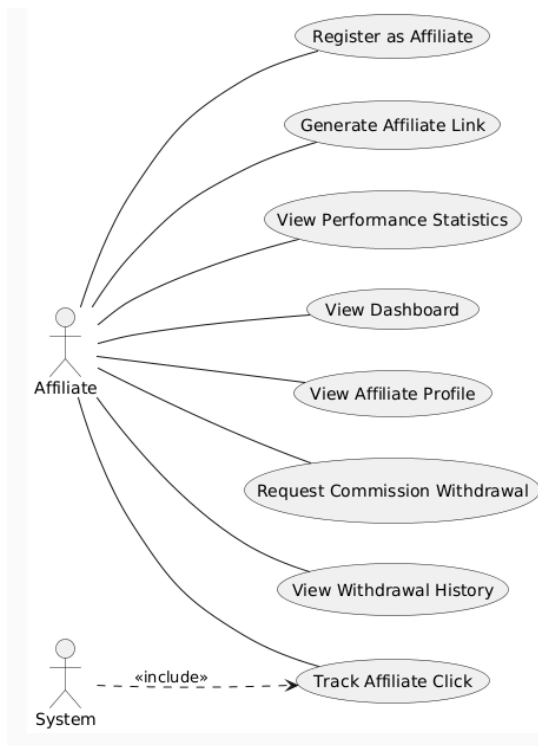
2. User Requirements

2.1 System Actors

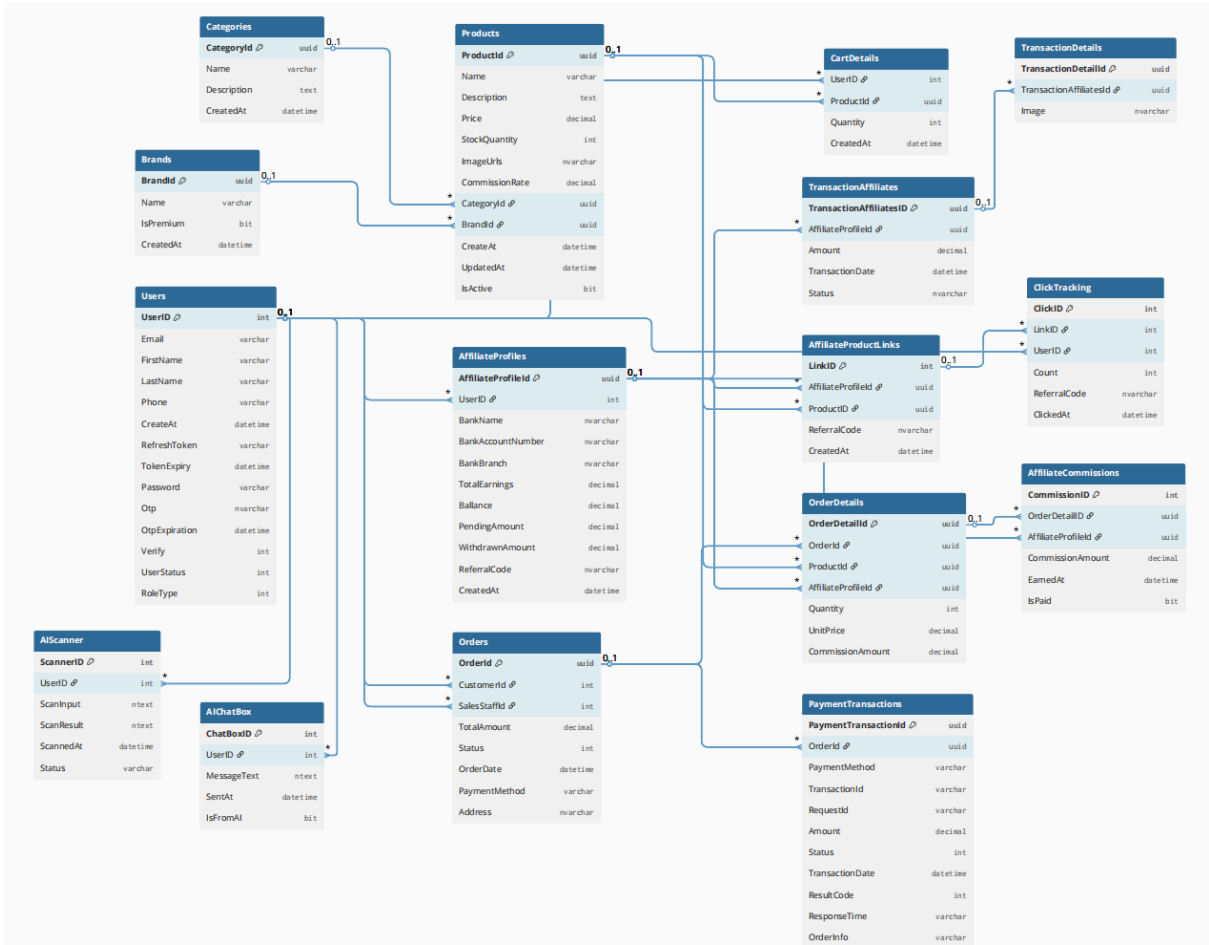
#	Actor	Description
1	Customer	A registered user who can browse products, add items to the cart, place orders, make payments, view order history, and interact with the AI Chatbot and AI Scanner.
2	Admin	An authorized user with administrative privileges who can manage users, products, orders, affiliates, and review AI chat and scanner histories.
3	Payment Gateway	An external system responsible for processing customer payments securely.
4	AI System	An integrated intelligence system that provides automated responses for chat interactions and processes data from the AI Scanner.

2.2 Use Cases Diagram





ERD Diagram:



2.2.2 Descriptions

ID	Use Case	Actors	Use Case Description
UC_01	Register	Customer	The system allows users to create a new account to use its features.
UC_02	Login	Customer	Users can log into the system to access personalized features.
UC_03	View Products	Customer	The system enables customers to view product listings and their detailed information.
UC_04	Add to Cart	Customer	Customers can add products to their personal shopping cart.
UC_05	Place Order	Customer	Customers can purchase items in the shopping cart.
UC_06	Make Payment	Customer, Payment Gateway	The system facilitates users to make payment for an order.
UC_07	View Order History	Customer	Users can view previously placed orders.
UC_08	Chat with AI	Customer, AI System	Customers can receive automated support and advice from the AI.
UC_09	Use AI Scanner	Customer, AI System	The system enables users to utilize AI scanning functionality (e.g., barcode scan, product inspection).
UC_10	Manage Users	Admin	Admins can view, edit, delete, and lock/unlock user accounts.
UC_11	Manage Products	Admin	Admins can add, edit, and delete products, categories, and brands.
UC_12	Manage Orders	Admin	Admins can view, update the status of, and process orders.
UC_13	Manage Affiliates	Admin	Admins can manage affiliate profiles, commissions, and transactions.
UC_14	View AI Chat History	Admin	Admins can review chat history between users and the AI.
UC_15	View AI Scanner History	Admin	Admins can review the history of user AI Scanner usage.
UC_16	Respond to Chat	AI System	The AI System automatically responds to user messages.
UC_17	Process AI Scanner	AI System	The AI System processes scanned data from users and returns results.

2.3 Use Case Specification

2.3.1 Customer

2.3.1.1: Register

Use Case Specification			
Use Case ID and Name:	UC_01 – Register		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	N/A
Description:	The system allows users to create a new account to use its features.		
Pre-conditions:	PRE-1: The user does not have an existing account.		
Post-conditions:	POST-1: A new account is created, and the user can log in.		
Normal Flow:	<ol style="list-style-type: none">1. The Customer accesses the registration page.2. The Customer enters information: email, password, full name, phone number.3. The System validates the input (e.g., email not already registered, password strength).4. The System sends a verification code (if applicable).5. The Customer confirms the code (if applicable).6. The System creates a new account and notifies of successful registration.		
Alternative Flows:	<p>3a. Email already exists: The System displays an error and prompts for a different email.</p> <p>3b. Invalid data: The System displays an error and prompts for re-entry.</p> <p>4a. Incorrect/Expired verification code: The System displays an error and allows resending the code.</p>		
Exceptions:	System error, unable to send verification code.		
Priority:	High		
Frequency of Use:	Low		
Business Rules:	BR-1, BR-2, BR-3		
Other Information:	Email/SMS verification can be added.		
Assumptions:	<p>A-1: Users have an internet connection to access the registration page.</p> <p>A-2: The system has the capability to send email/SMS verification codes.</p>		

2.3.1.2: Login

Use Case Specification			
Use Case ID and Name:	UC_02 – Login		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	N/A
Description:	Users can log into the system to access personalized features.		
Pre-conditions:	PRE-1: The customer has already registered an account. PRE-2: The customer has a stable internet connection.		
Post-conditions:	POST-1: The customer will be logged in POST-2: The system is redirected into the login page.		
Normal Flow:	<ol style="list-style-type: none">1. The Customer accesses the login page.2. The Customer enters email and password.3. The System authenticates the provided information.4. If authentication is successful, the Customer is redirected to the home page.		
Alternative Flows:	3a. Incorrect credentials: The System displays an error and allows re-entry. 3b. Account locked/unverified: The System displays an error and provides instructions for resolution.		
Exceptions:	1-EF: At any time, the app cannot communicate with the server/core system (due to network malfunction/technical issues), the system displays an error message. 2-EF: The data in the registration form is in the wrong format.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	BR-4, BR-5		
Other Information:	N/A		
Assumptions:	A-3: Users remember their passwords or a password recovery mechanism is in place. A-4: The system has a mechanism to handle consecutive failed login attempts (e.g., temporary logout).		

2.3.1.3: View Products

Use Case Specification

Use Case ID and Name:	UC_03 – View Products		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	N/A
Trigger:	Customer accesses the public product catalog or product search results.		
Description:	The system enables customers to view product listings and their detailed information.		
Pre-conditions:	PRE-3: No login required.		
Post-conditions:	POST-3: Product information is displayed.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer accesses the product page. 2. The System displays the list of products. 3. The Customer selects a product to view its details. 4. The System displays the product details. 		
Alternative Flows:	N/A		
Exceptions:	<p>1-EF: At any time, the app cannot communicate with the server/core system (due to network malfunction/technical issues), the system displays an error message.</p> <p>2-EF: The data in the registration form is in the wrong format.</p>		
Priority:	High		
Frequency of Use:	Very High (Continual)		
Business Rules:	BR-6, BR-7		
Other Information:	Product filtering and search functionality can be implemented.		
Assumptions:	<p>A-5: Product data is managed and updated regularly.</p> <p>A-6: The system has sufficient performance to load and display products quickly.</p>		

2.3.1.4: Add to Cart

Use Case Specification			
Use Case ID and Name:	UC_04 – Add to Cart		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	N/A

Trigger:	Customer accesses the public product catalog or product search results.
Description:	Customers can add products to their personal shopping cart.
Pre-conditions:	PRE-4: Customer is logged in.
Post-conditions:	POST-4: The product is added to the shopping cart.
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer selects a product and clicks "Add to Cart". 2. The System checks product stock availability. 3. If sufficient stock, the System updates the shopping cart. 4. The System displays a success notification.
Alternative Flows:	2a. Out of stock: The System displays an error and prevents adding the product.
Exceptions:	System error, unable to update shopping cart.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-8, BR-9, BR-10
Other Information:	Quantity updates within the cart can be allowed.
Assumptions:	A-7: Product stock information is updated in real-time. A-8: The shopping cart is persistently stored across user login sessions.

2.3.1.5: Place Order

Use Case Specification			
Use Case ID and Name:	UC_05 – Place Order		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	N/A
Trigger:	Customer proceeds to checkout from the shopping cart.		
Description:	Customers can purchase items in the shopping cart.		
Pre-conditions:	PRE-5: Customer is logged in, and the shopping cart is not empty.		
Post-conditions:	POST-5: A new order is created.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer accesses the shopping cart and reviews products. 2. The Customer enters shipping information, selects a payment method. 3. The Customer confirms the order. 4. The System checks stock availability, creates a new order. 5. The System displays a successful order placement notification. 		

Alternative Flows:	4a. Product out of stock: The System displays an error and prompts for cart update.
Exceptions:	System error, unable to create order.
Priority:	High
Frequency of Use:	Low to Medium
Business Rules:	BR-11, BR-12, BR-13, BR-14
Other Information:	Saving shipping addresses can be implemented.
Assumptions:	A-9: Users provide accurate shipping information. A-10: The system can integrate with selected payment methods.

2.3.1.6: Make Payment

Use Case Specification			
Use Case ID and Name:	UC_06 – Make Payment		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	Payment Gateway
Trigger:	Customer selects a pending order and initiates the payment process.		
Description:	The system facilitates users to make payment for an order.		
Pre-conditions:	PRE-6: An order exists in a "pending payment" status.		
Post-conditions:	POST-6: The order status is updated to "paid".		
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer selects the order to be paid. 2. The Customer chooses a payment method (e.g., credit card, e-wallet). 3. The System redirects to the payment gateway. 4. The System receives confirmation of successful payment. 5. The System updates the order status. 		
Alternative Flows:	4a. Payment failure: The System displays an error and allows retry.		
Exceptions:	System error, unable to update order status.		
Priority:	High		
Frequency of Use:	Low to Medium		
Business Rules:	BR-15, BR-16, BR-17		
Other Information:	Payment confirmation emails can be sent.		
Assumptions:	A-11: The payment gateway operates stably and can be integrated.		

	A-12: Users have sufficient balance/credit to complete the payment.
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2.3.1.7: View Order History

Use Case Specification			
Use Case ID and Name:	UC_07 – View Order History		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	N/A
Trigger:	Customer accesses their "Order History" section in their account.		
Description:	Users can view previously placed orders.		
Pre-conditions:	PRE-7: Customer is logged in.		
Post-conditions:	POST-7: Order history is displayed.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer accesses the order history page. 2. The System displays a list of the user's orders. 3. The Customer selects an order to view its details. 		
Alternative Flows:	N/A		
Exceptions:	System error, unable to load data.		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-18, BR-19		
Other Information:	Order filtering by status can be implemented.		
Assumptions:	A-13: Order data is fully stored and retrievable. A-14: Order history loading performance is not affected by a large number of orders.		

2.3.1.8: Chat with AI

Use Case Specification			
Use Case ID and Name:	UC_08 – Chat with AI		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	AI System
Trigger:	Customer clicks on the "Chat with AI" or "Support Chat" button.		
Description:	Customers can receive automated support and advice from the AI.		

Pre-conditions:	PRE-8: Customer is logged in.
Post-conditions:	POST-8: Chat history is saved.
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer opens the AI chat interface. 2. The Customer enters a question/sends a message. 3. The System sends the message to the AI System. 4. The AI System processes and generates a response. 5. The System displays the AI's response to the user. 6. The System saves the chat history.
Alternative Flows:	N/A
Exceptions:	System error, AI unable to respond.
Priority:	Medium
Frequency of Use:	Medium to High (depending on user engagement)
Business Rules:	BR-20, BR-21
Other Information:	File/image attachments to AI can be enabled.
Assumptions:	<p>A-15: The AI System operates independently and has an API integrated with the main system.</p> <p>A-16: The AI System has natural language processing capabilities and can provide helpful responses.</p>

2.3.1.9: Use AI Scanner

Use Case Specification			
Use Case ID and Name:	UC_09 – Use AI Scanner		
Created By:		Date Created:	
Primary Actor:	Customer	Secondary Actors:	AI System
Trigger:	Customer activates the AI Scanner feature within the application.		
Description:	The system enables users to utilize AI scanning functionality (e.g., barcode scan, product inspection).		
Pre-conditions:	PRE-9: Customer is logged in.		
Post-conditions:	POST-9: Scan history is saved.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer accesses the AI Scanner feature. 2. The Customer inputs data to be scanned (image, code, text...). 3. The System sends the data to the AI System. 4. The AI System processes and returns the result. 5. The System displays the result to the user. 		

	6. The System saves the scan history.
Alternative Flows:	N/A
Exceptions:	System error, AI unable to return results.
Priority:	Medium
Frequency of Use:	Low to Medium
Business Rules:	BR-22, BR-23
Other Information:	Support for multiple data types for scanning can be expanded.
Assumptions:	A-17: The AI System has specific image/code/text processing modules for the scanning function. A-18: Data sent to the AI System is in a standardized format.

2.3.2 Admin

2.3.2.1: Manage Users

Use Case Specification			
Use Case ID and Name:	UC_10 – Manage Users		
Created By:		Date Created:	
Primary Actor:	Admin	Secondary Actors:	N/A
Trigger:	Admin navigates to the "User Management" section of the admin panel.		
Description:	Admins can view, edit, delete, and lock/unlock user accounts.		
Preconditions:	PRE-10: Admin is logged in with administrative privileges.		
Post-conditions:	POST-10: User information is updated.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Admin accesses the user management page. 2. The Admin views a list, searches, and filters users. 3. The Admin selects a user to view/edit/delete/lock. 4. The System updates the corresponding user information. 		
Alternative Flows:	AF-1: Product no longer exists – system notifies affiliate		
Exceptions:	System error, unable to update data.		
Priority:	High		

Frequency of Use:	Medium
Business Rules:	BR-24, BR-25, BR-26
Other Information:	User list export to file can be enabled.
Assumptions:	A-19: There is a clear permission system for Admins. A-20: User data is securely stored and modifiable.

2.3.2.2: Manage Products

Use Case Specification			
Use Case ID and Name:	UC_11 – Manage Products		
Created By:		Date Created:	
Primary Actor:	Admin	Secondary Actors:	N/A
Trigger:	Admin accesses the "Product Management" section of the admin panel.		
Description:	Admins can add, edit, and delete products, categories, and brands.		
Preconditions:	PRE-11: Admin is logged in with administrative privileges.		
Post-conditions:	POST-11: Product data is updated.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Admin accesses the product management page. 2. The Admin adds new/edits/deletes products, categories, and brands. 3. The System updates the data. 		
Alternative Flows:	N/A		
Exceptions:	System error, unable to update data.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	BR-27, BR-28, BR-29		
Other Information:	Product data import/export can be enabled.		
Assumptions:	A-21: The Admin has sufficient product information and images for data entry.		

	A-22: The system has a content moderation mechanism (if applicable).
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2.3.2.3: Manage Orders

Use Case Specification			
Use Case ID and Name:	UC_12 – Manage Orders		
Created By:		Date Created:	
Primary Actor:	Admin	Secondary Actors:	N/A
Trigger:	Admin accesses the "Order Management" section of the admin panel.		
Description:	Admins can view, update the status of, and process orders.		
Preconditions:	PRE-12: Admin is logged in with administrative privileges.		
Post-conditions:	POST-12: Order status is updated.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Admin accesses the order management page. 2. The Admin views the list and details of orders. 3. The Admin updates the order status (e.g., confirmed, shipped, cancelled). 4. The System saves the changes. 		
Alternative Flows:	N/A		
Exceptions:	System error, unable to update status.		
Priority:	High		
Frequency of Use:	High		
Business Rules:	BR-30, BR-31, BR-32		
Other Information:	Order filtering by status can be implemented.		
Assumptions:	<p>A-23: The Admin has a clear understanding of the order processing workflow.</p> <p>A-24: The system is capable of handling a large volume of orders.</p>		

2.3.2.4: Manage Affiliates

Use Case Specification

Use Case ID and Name:	UC_13 – Manage Affiliates		
Created By:		Date Created:	
Primary Actor:	Admin	Secondary Actors:	N/A
Trigger:	Admin accesses the "Affiliate Management" section of the admin panel.		
Description:	Admins can manage affiliate profiles, commissions, and transactions.		
Preconditions:	PRE-13: Admin is logged in with administrative privileges.		
Post-conditions:	POST-13: Affiliate data is updated.		
Normal Flow:	<ol style="list-style-type: none"> 1. The Admin accesses the affiliate management page. 2. The Admin views, approves, and edits affiliate profiles, commissions, and transactions. 3. The System updates the data. 		
Alternative Flows:	N/A		
Exceptions:	System error, unable to update data.		
Priority:	Medium		
Frequency of Use:	Low to Medium		
Business Rules:	BR-33, BR-34, BR-35		
Other Information:	User list export to file can be enabled.		
Assumptions:	A-25: There is a mechanism to track orders generated from affiliates. A-26: The affiliate approval and commission payment processes are pre-defined.		

2.3.2.5: View AI Chat History

Use Case Specification			
Use Case ID and Name:	UC_14 – View AI Chat History		
Created By:		Date Created:	
Primary Actor:	Admin	Secondary Actors:	N/A

Trigger:	Admin navigates to the "AI Chat History" section of the admin panel.
Description:	Admins can review chat history between users and the AI.
Preconditions:	PRE-14: Admin is logged in with administrative privileges.
Post-conditions:	POST-14: Chat history is displayed.
Normal Flow:	<ol style="list-style-type: none"> 1. The Admin accesses the AI chat history page. 2. The Admin views detailed conversations.
Alternative Flows:	N/A
Exceptions:	System error, unable to update data.
Priority:	Low to Medium
Frequency of Use:	Low (for review/audit)
Business Rules:	BR-36, BR-37
Other Information:	Filtering by user and time can be implemented.
Assumptions:	A-27: The AI System has the capability to store interaction history. A-28: The system provides an easy-to-read interface for displaying chat history.

2.3.2.6: View AI Scanner History

Use Case Specification			
Use Case ID and Name:	UC_15 – View AI Scanner History		
Created By:		Date Created:	
Primary Actor:	Admin	Secondary Actors:	N/A
Trigger:	Admin navigates to the "AI Scanner History" section of the admin panel.		
Description:	Admins can review the history of user AI Scanner usage.		
Preconditions:	PRE-15: Admin is logged in with administrative privileges.		
Post-conditions:	POST-15: Scan history is displayed.		

Normal Flow:	<ol style="list-style-type: none"> 1. The Admin accesses the AI Scanner history page. 2. The Admin views details of user AI scans.
Alternative Flows:	N/A
Exceptions:	System error, unable to update data.
Priority:	Low to Medium
Frequency of Use:	Low (for review/audit)
Business Rules:	BR-38, BR-39
Other Information:	Filtering by user and status can be implemented.
Assumptions:	A-29: The AI System has the capability to store scan history. A-30: The system provides a clear interface for displaying scan history.

2.3.3 AI System

2.3.3.1: Respond to Chat

Use Case Specification			
Use Case ID and Name:	UC_16 – Respond to Chat		
Created By:		Date Created:	
Primary Actor:	AI System	Secondary Actors:	N/A
Trigger:	The AI System receives a message from the main system, forwarded from a Customer's chat interface.		
Description:	The AI System automatically responds to user messages.		
Preconditions:	PRE-16: A message is received from a user.		
Post-conditions:	POST-16: The response is sent to the user.		
Normal Flow:	<ol style="list-style-type: none"> 1. The AI System receives a message from the system. 2. The AI System processes and generates a response. 3. The AI System sends the response back to the system. 		
Alternative Flows:	N/A		

Exceptions:	AI error, unable to generate a response.
Priority:	High
Frequency of Use:	Very High (depending on user chat volume)
Business Rules:	BR-40, BR-41, BR-42
Other Information:	Advanced AI integration can be implemented.
Assumptions:	<p>A-31: The AI System has sufficient computational resources to handle concurrent requests.</p> <p>A-32: There is a knowledge base or large language model for the AI to draw upon for responses.</p>

2.3.3.2: Process AI Scanner

Use Case Specification			
Use Case ID and Name:	UC_17 – Process AI Scanner		
Created By:		Date Created:	
Primary Actor:	AI System	Secondary Actors:	N/A
Trigger:	The AI System receives scanned data from the main system, submitted via the Customer's AI Scanner interface.		
Description:	The AI System processes scanned data from users and returns results.		
Preconditions:	PRE-17: Scanned data is received from a user.		
Post-conditions:	POST-16: The response is sent to the user.		
Normal Flow:	<ol style="list-style-type: none"> 1. The AI System receives scanned data from the system. 2. The AI System analyzes and processes the data. 3. The AI System returns the result to the system. 		
Alternative Flows:	N/A		
Exceptions:	AI error, unable to return a result.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-43, BR-44, BR-45		

Other Information:	Expansion to support various scan types can be implemented.
Assumptions:	A-33: The AI System is trained with a large and diverse dataset. A-34: The system can efficiently send input data to the AI System.

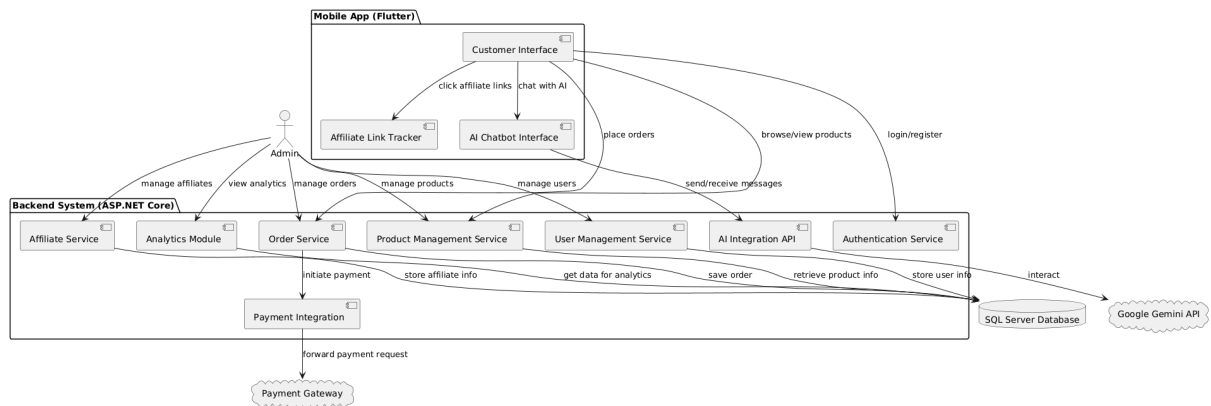
3. Business rules

ID	Rule Definition
BR-01	ID will be generated by the System
BR-02	ID is unchangeable
BR-03	Email must be unique
BR-04	Acknowledge receipt of orders promptly through automated confirmation emails
BR-05	Email must be in standard email format
BR-06	Email must be registered before it can be use for login with email
BR-07	Phone number length must be 10 characters (standard phone number length in Vietnam)
BR-08	Users must bought a product before they can rating that product
BR-09	Accept multiple payment methods to accommodate customer preferences
BR-10	User can only change their account password
BR-11	Admin and Staff must log in before using the system
BR-12	Admin and Staff can buy products
BR-13	Admin and Staff have to login by admin and staff accounts
BR-14	Staff must provide a valid email to admin to create a staff account
BR-15	Status default of new account is Active
BR-16	All accounts have two possible statuses: Active or Inactive
BR-17	All products listed on the website must be accurately described, including dimensions, materials, colors, and other relevant details
BR-18	Admin can create a Staff account
BR-19	Admin can update the account status of Staff or Customer
BR-20	Only staff, admin can update order status

BR-21	Staff can create a product
BR-22	Only admin can update a product
BR-23	Only admin can disable a product
BR-24	Order is created by Customer and must be approved by the system
BR-25	An Order can have 4 statuses: Pending, Shipping, Delivered, Canceled
BR-26	To buy a product, the Customer must be logged into the system
BR-27	Customers can only buy as many items as there are available
BR-28	Customers can only cancel orders when the order has not been approved
BR-31	Orders are non-refundable
BR-32	Only Admins can delete staff and customer accounts
BR-33	Only admin and staff can approve custom order
BR-34	The system only accepts for booking date and time in the future

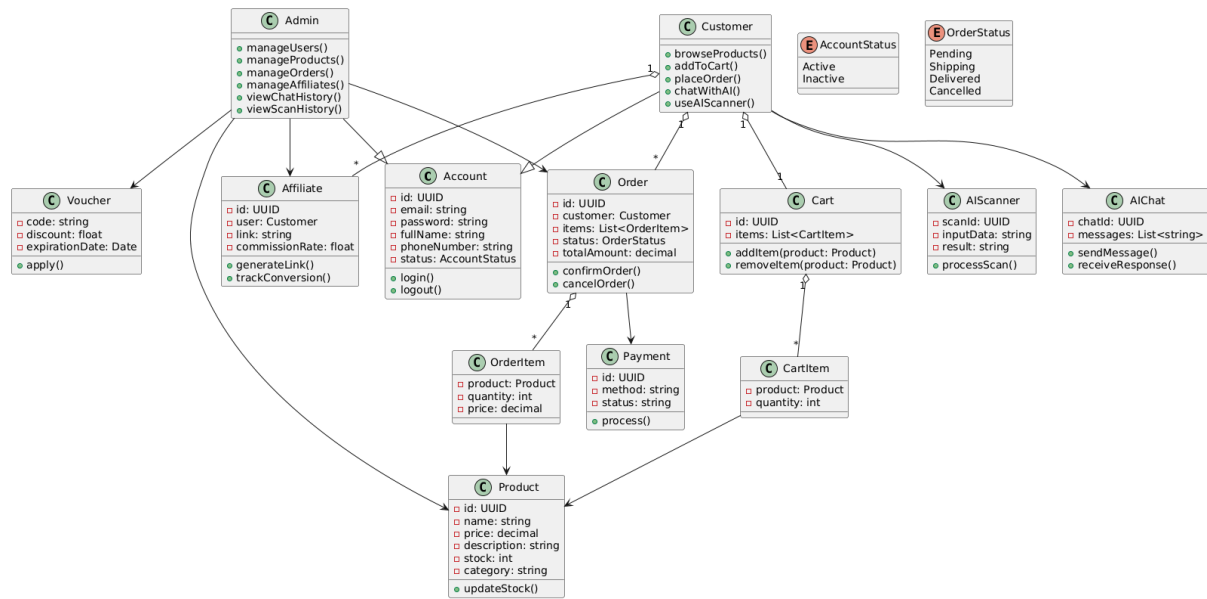
III. Software Design Document

1. System Design



2. Database Design

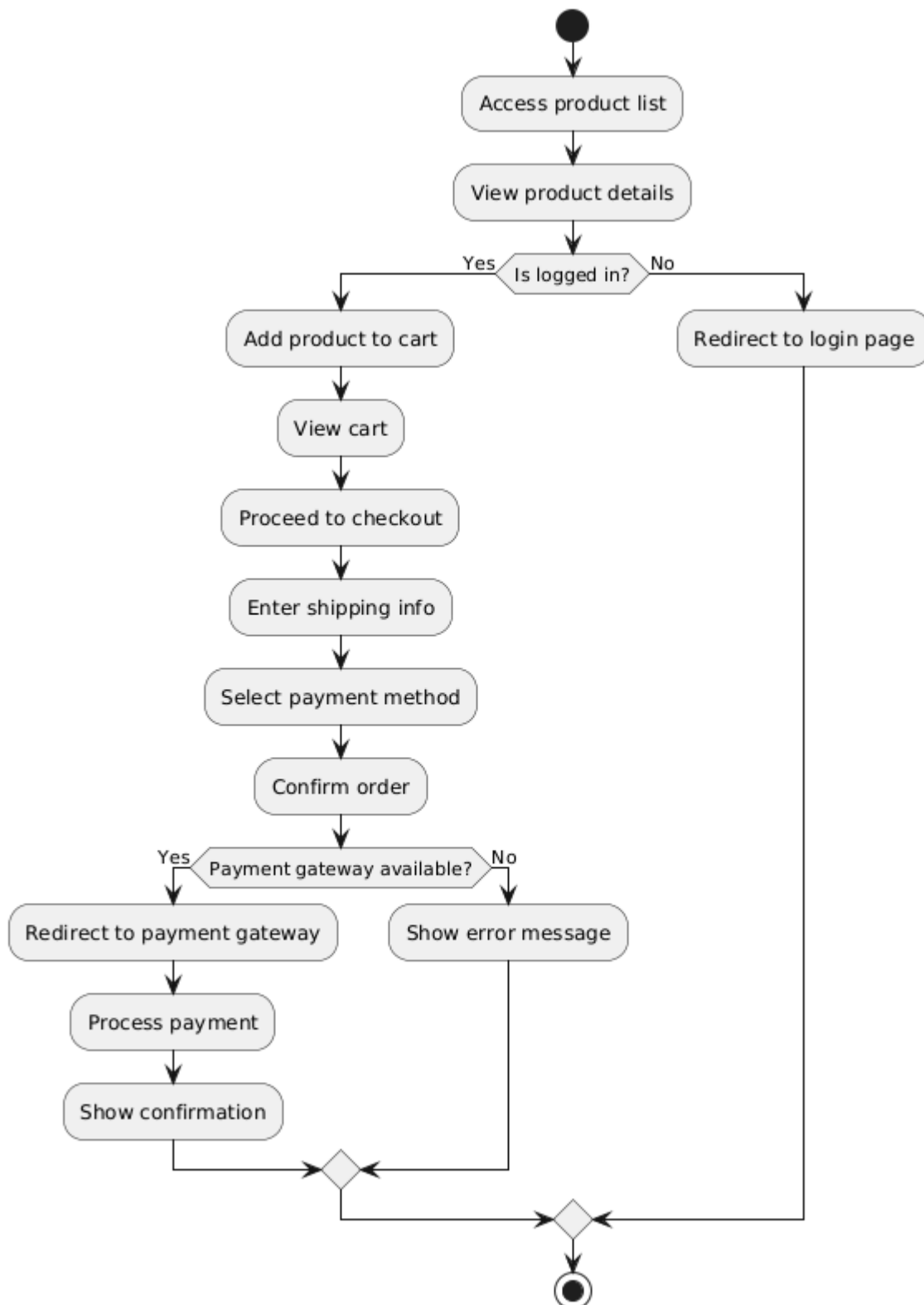
2.1 Class Diagram



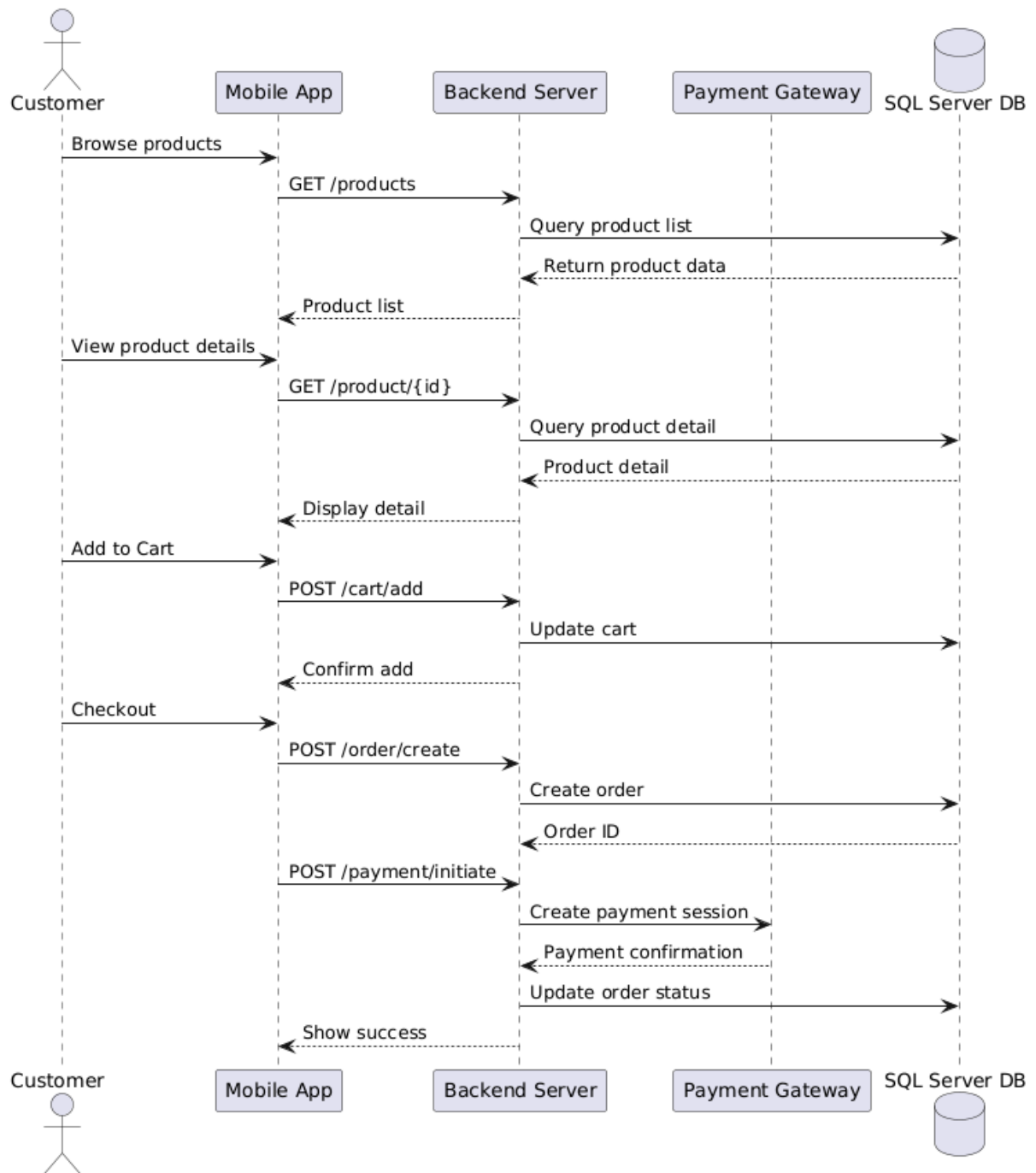
3. System Detail Design

3.1 Main Flow (Customer Buy Product)

3.1.1: Activity Diagram

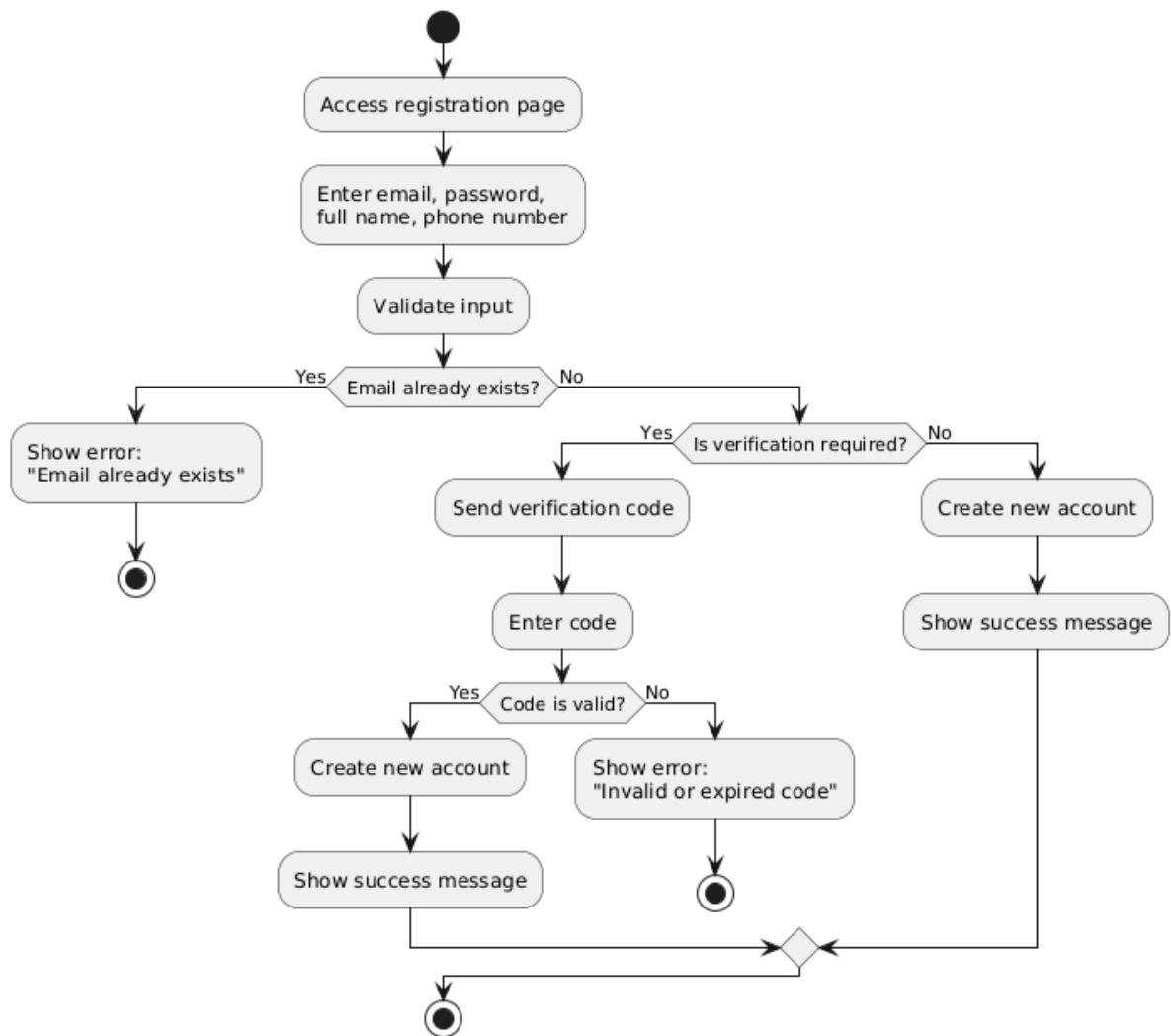


3.1.2: Sequence Diagram

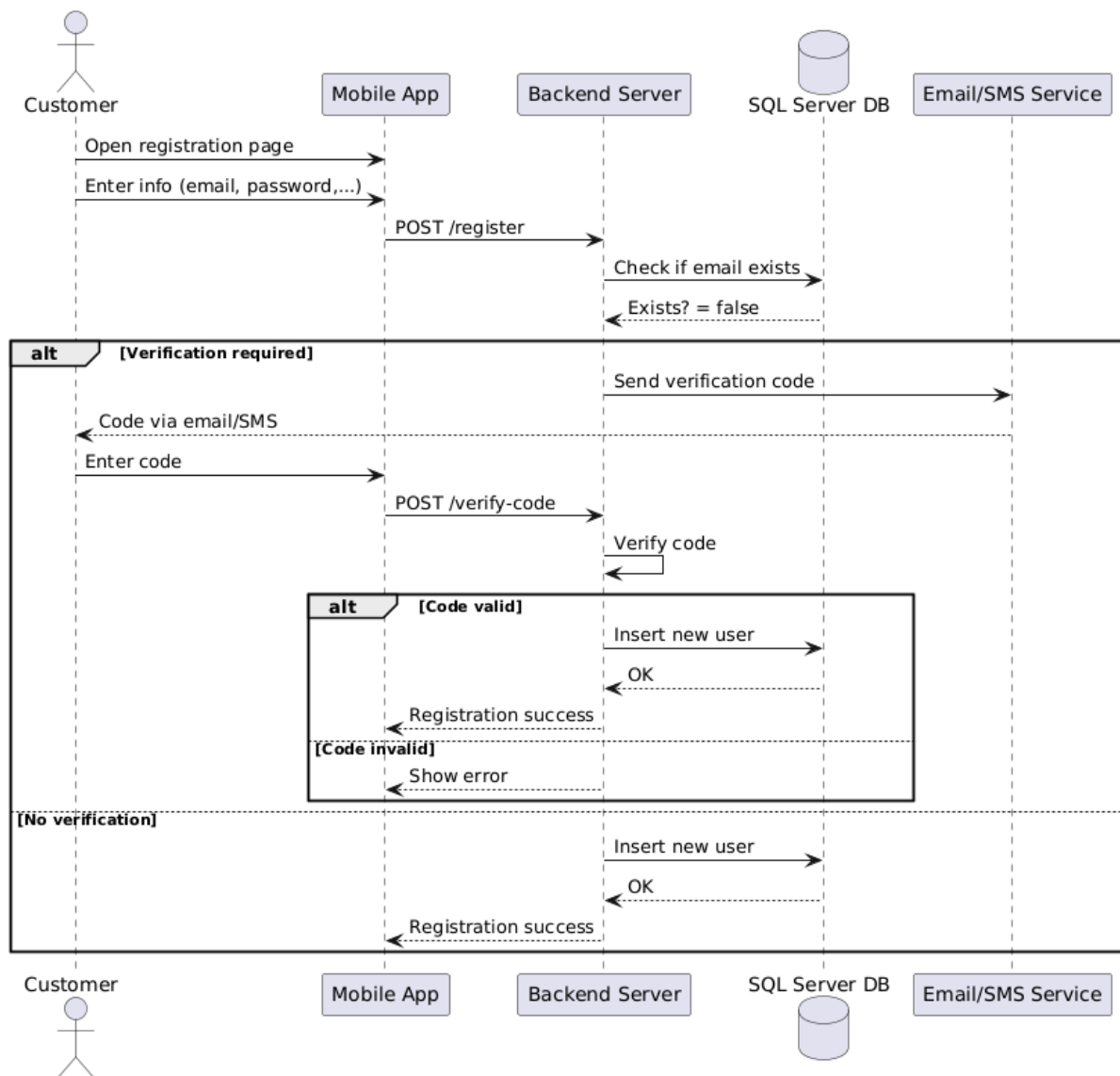


3.2 Customer Registration

3.2.1: Activity Diagram



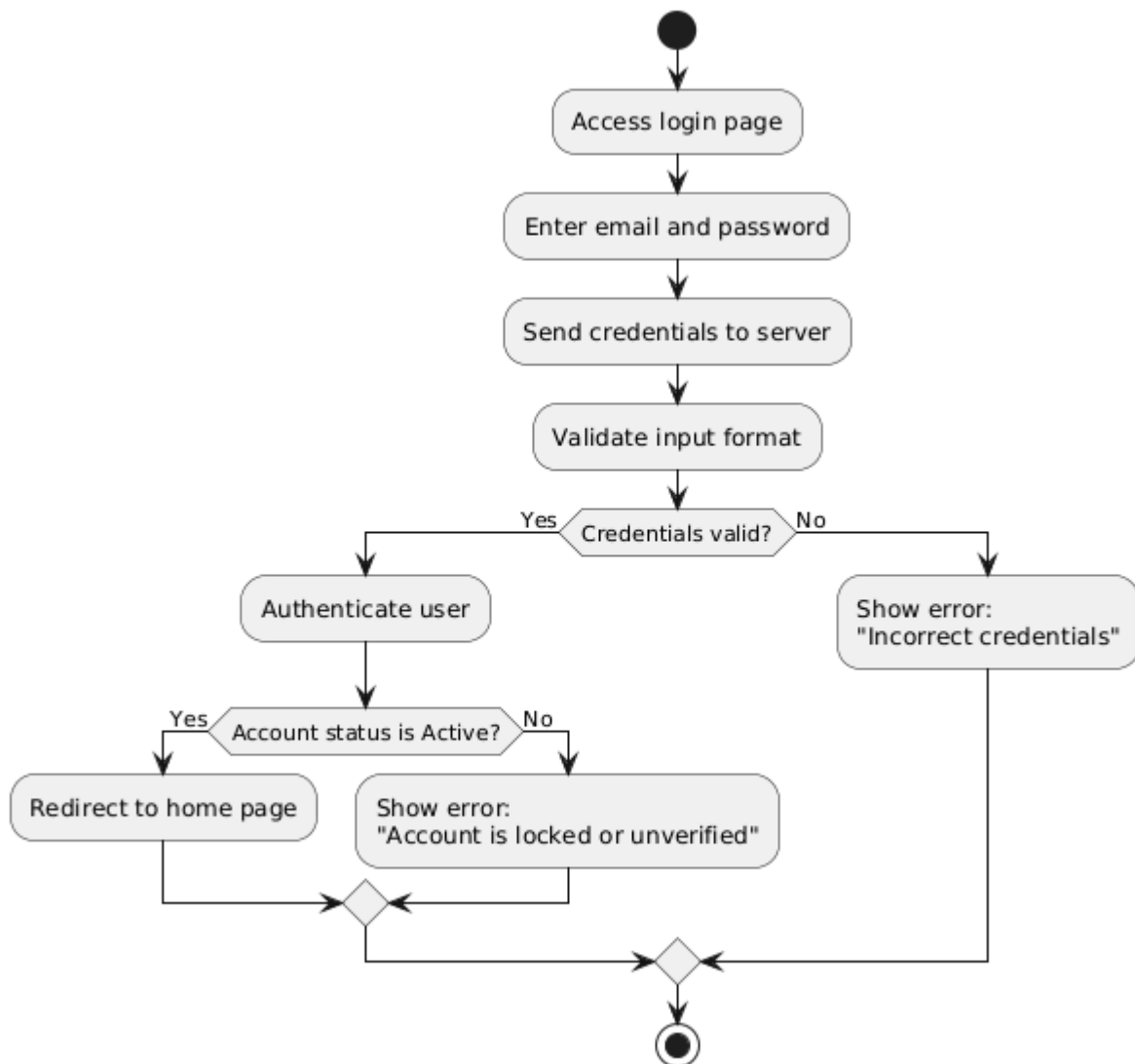
3.2.2: Sequence Diagram



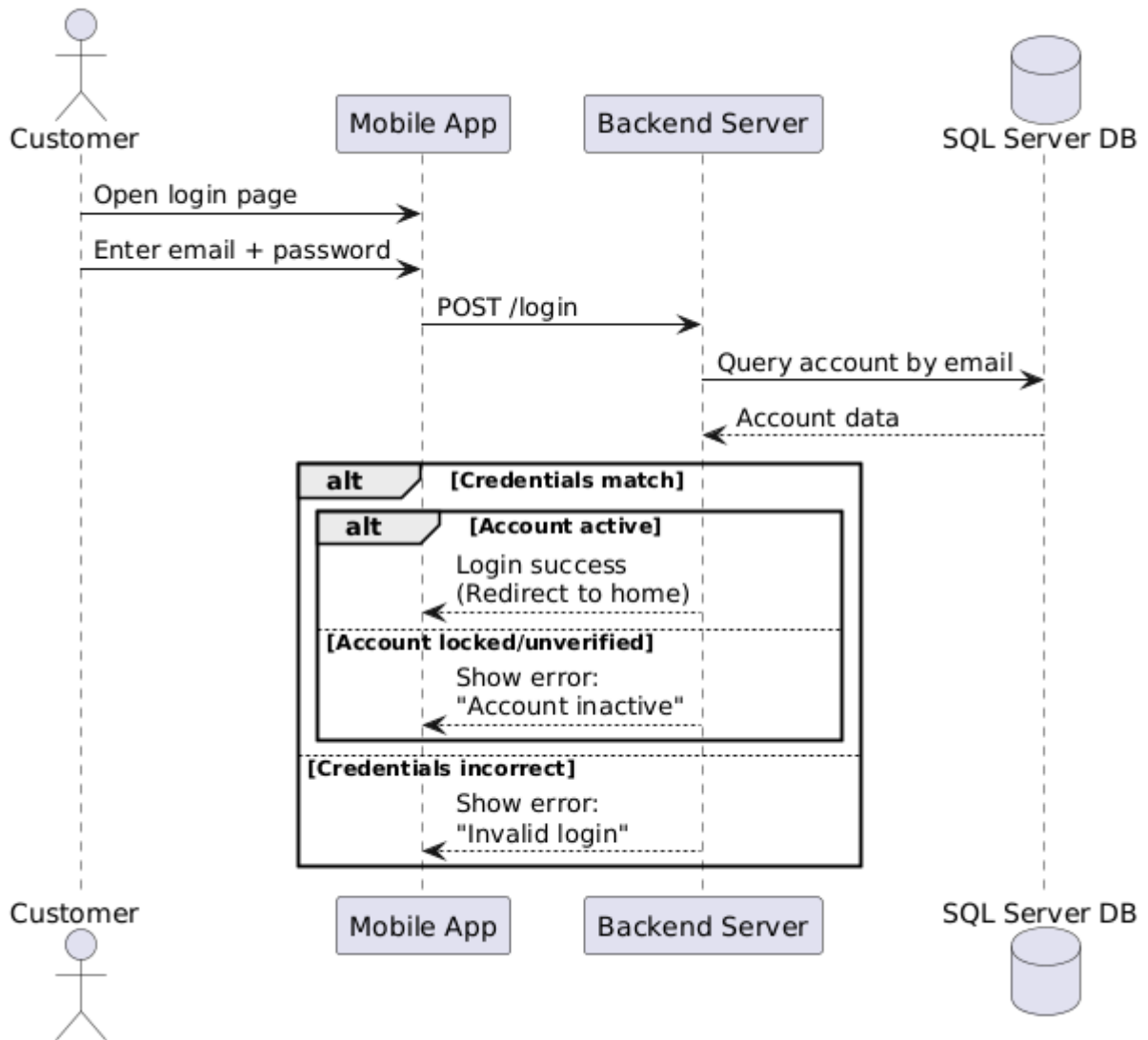
Customer Registration

3.3 Customer Login

3.3.1: Activity Diagram

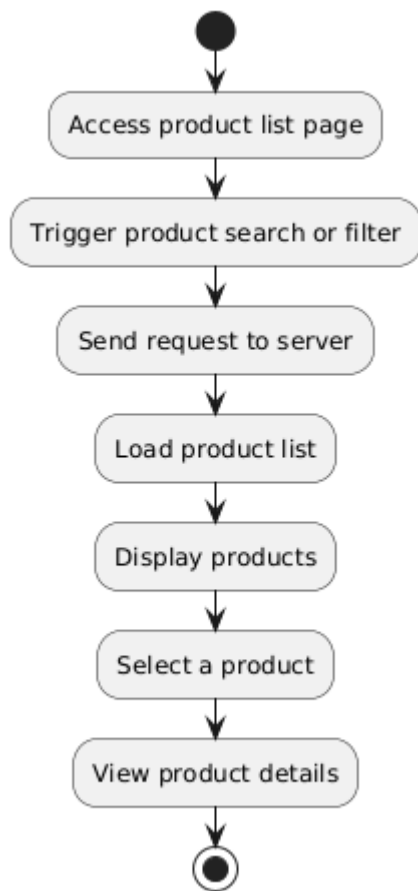


3.3.2: Sequence Diagram

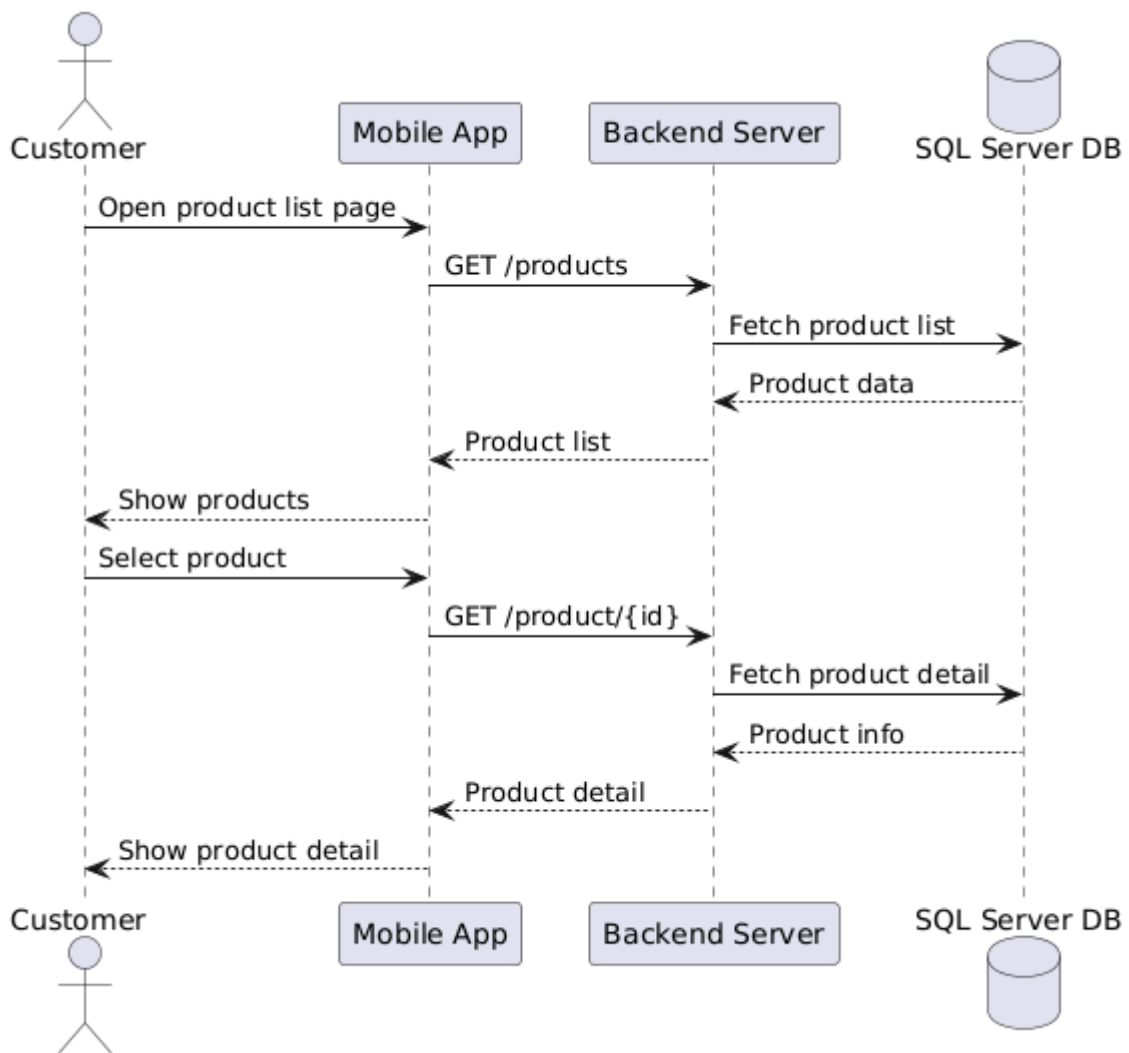


3.4 Customer View Products

3.4.1: Activity Diagram

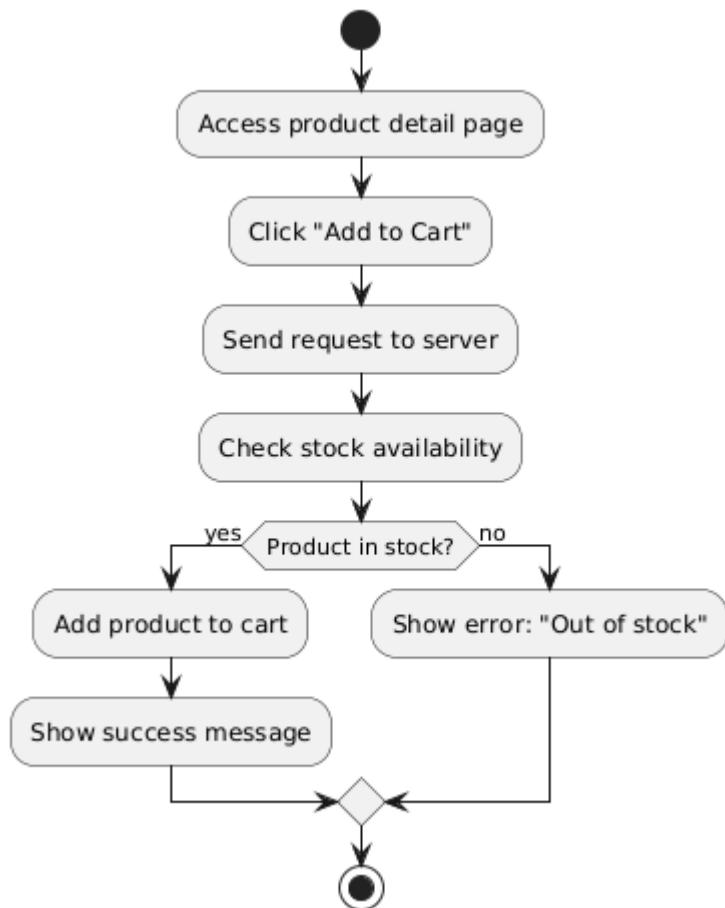


3.4.2: Sequence Diagram

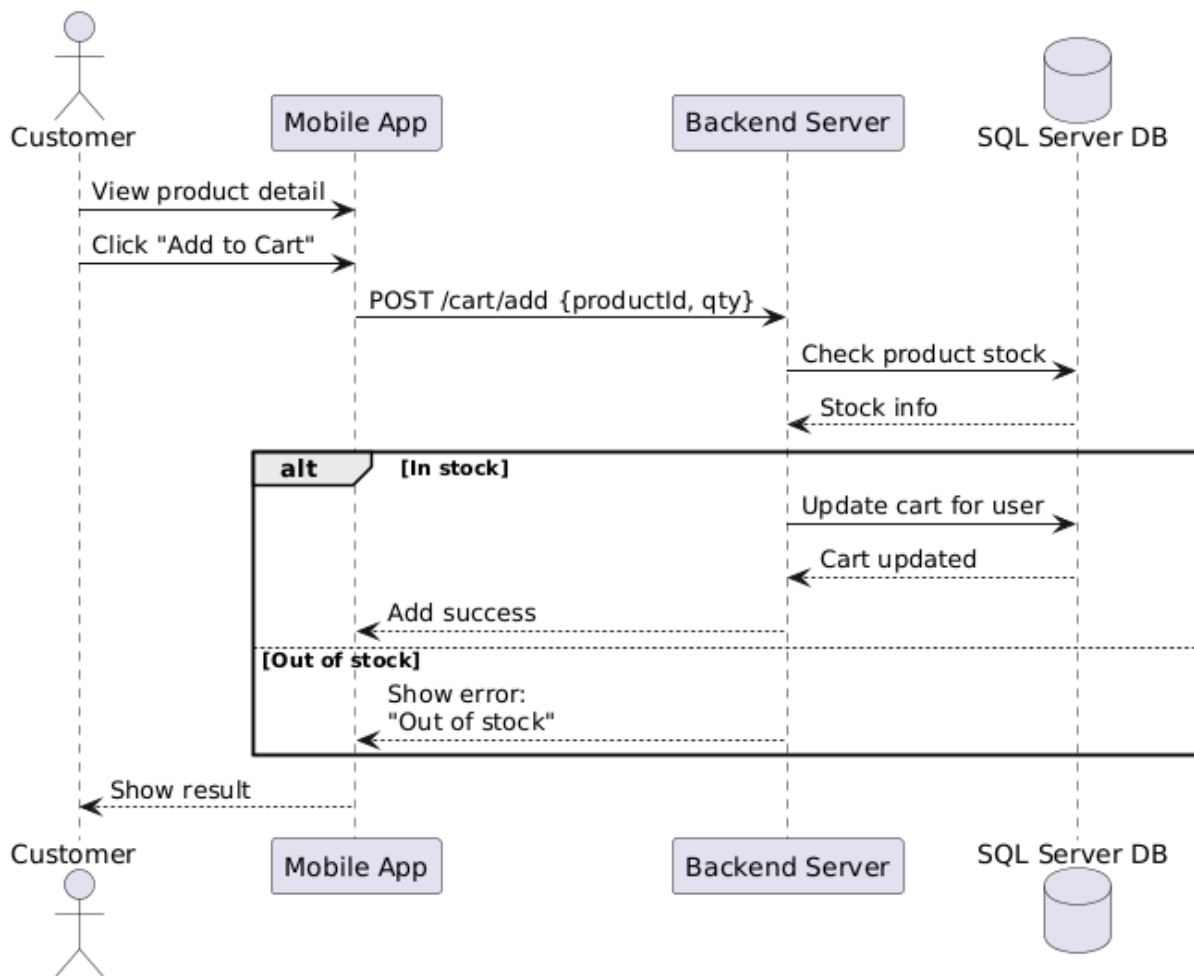


3.5 Customer Add to Cart

3.5.1: Activity Diagram

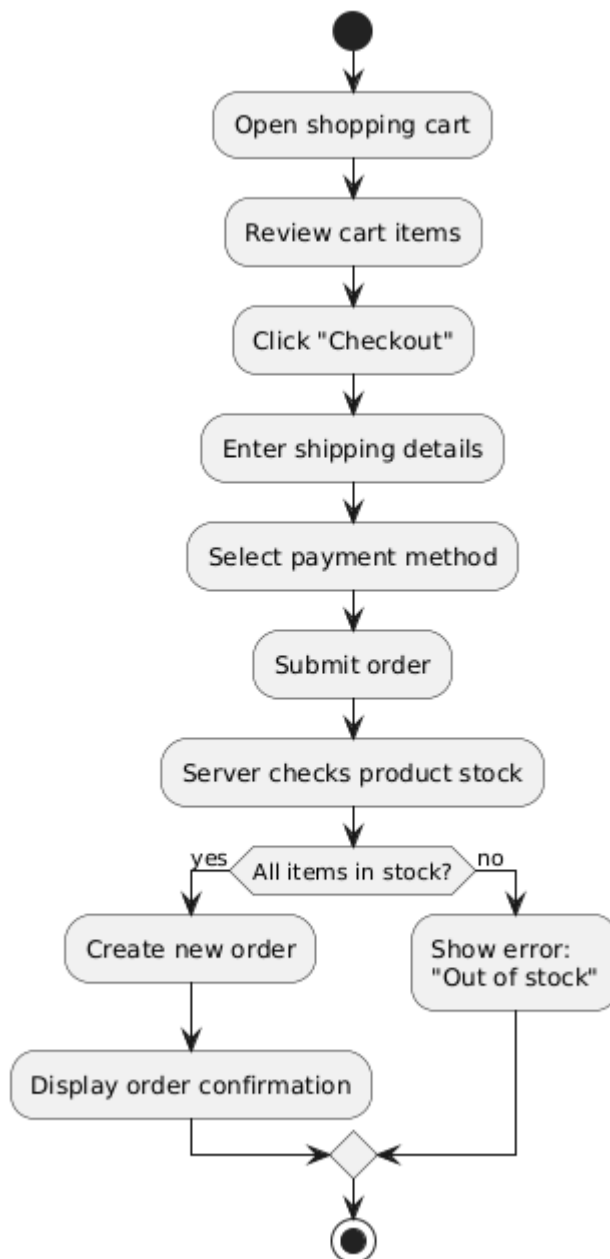


3.5.2: Sequence Diagram

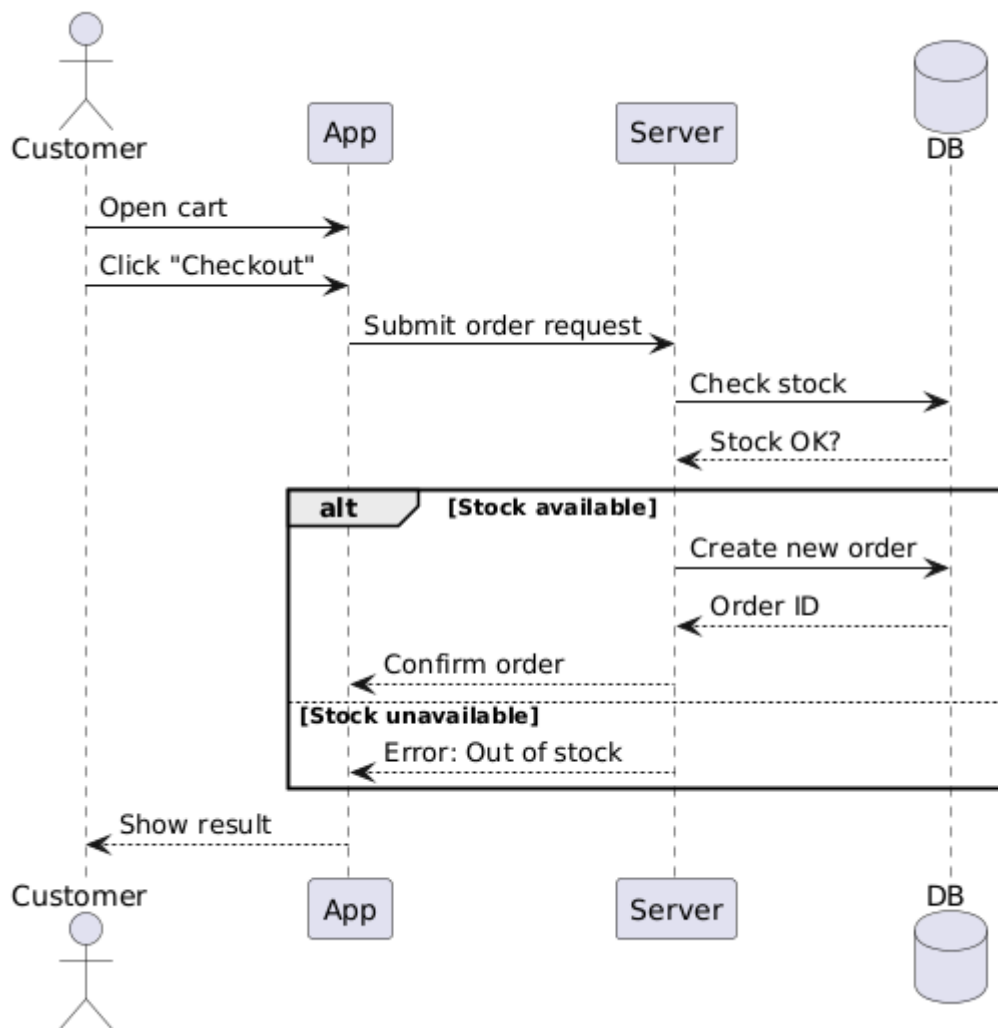


3.6 Customer Place Order

3.6.1: Activity Diagram

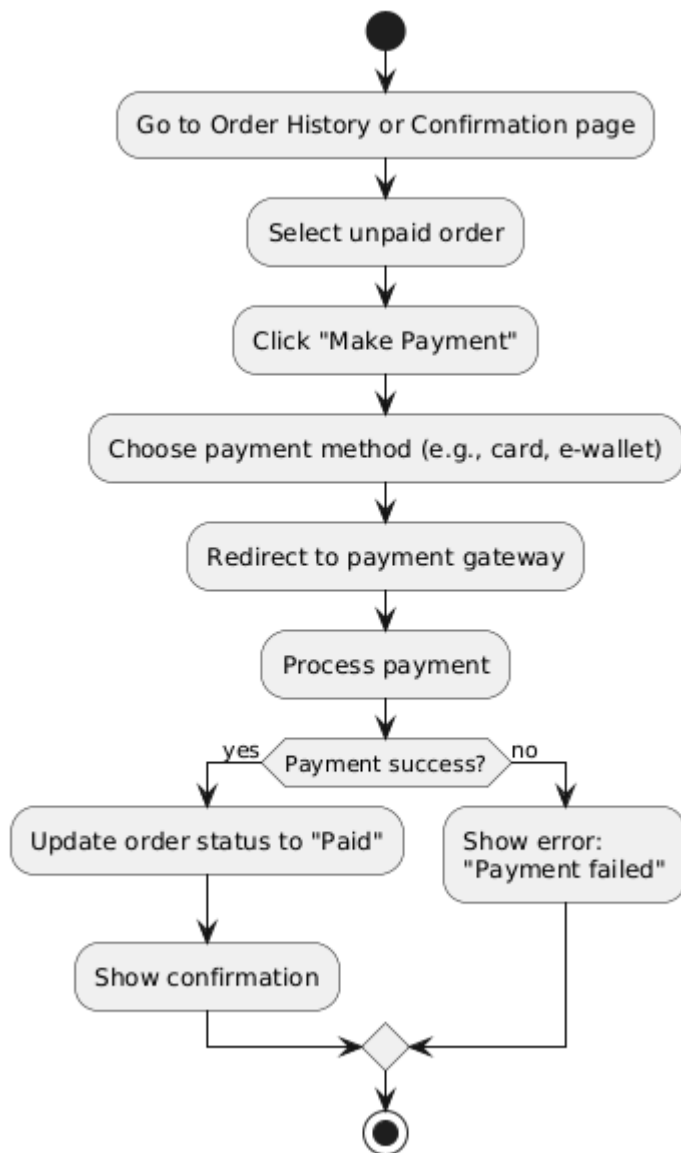


3.6.2: Sequence Diagram

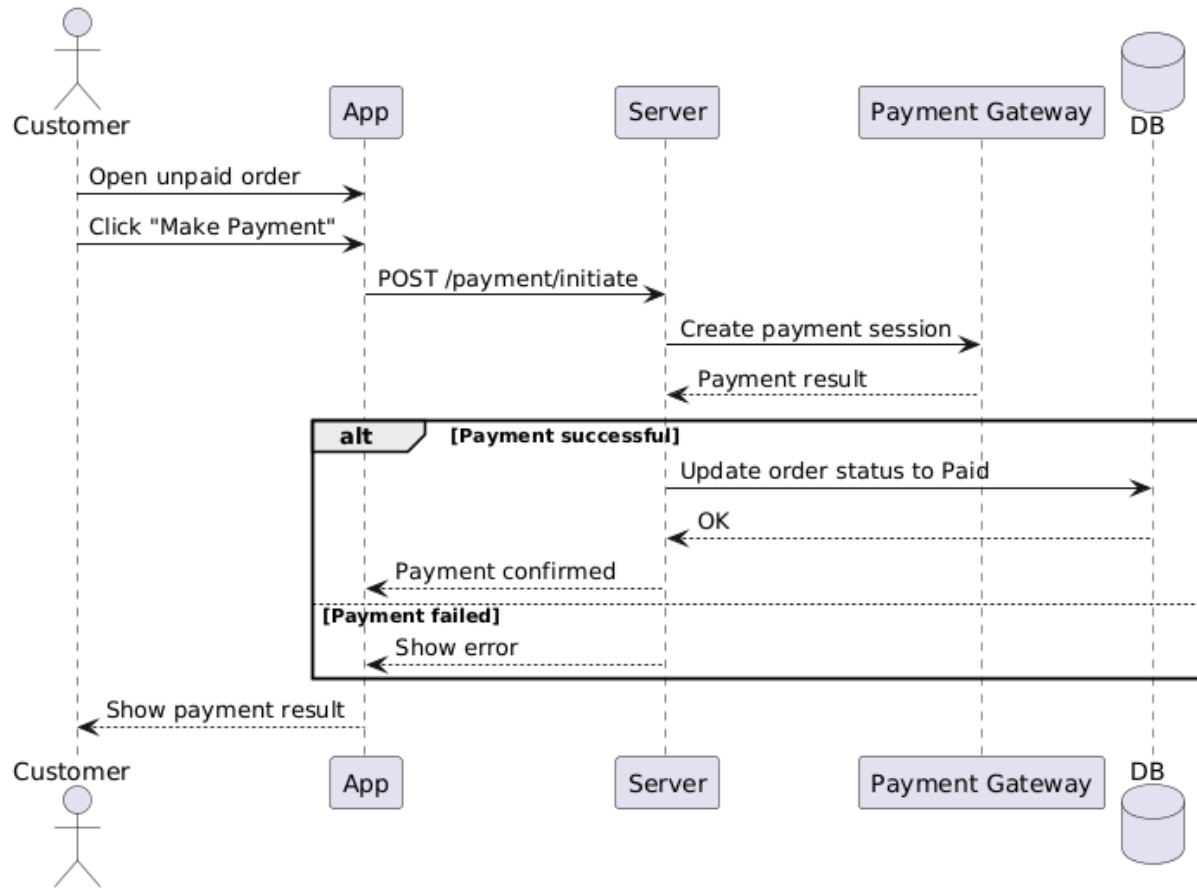


3.7 Customer Make Payment

3.7.1: Activity Diagram

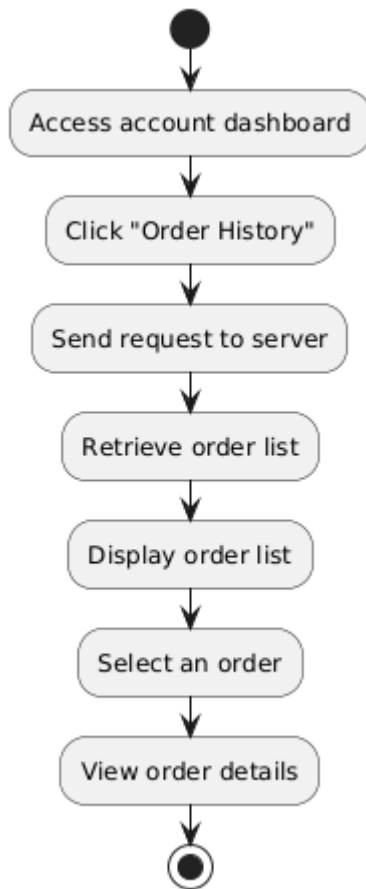


3.7.2: Sequence Diagram

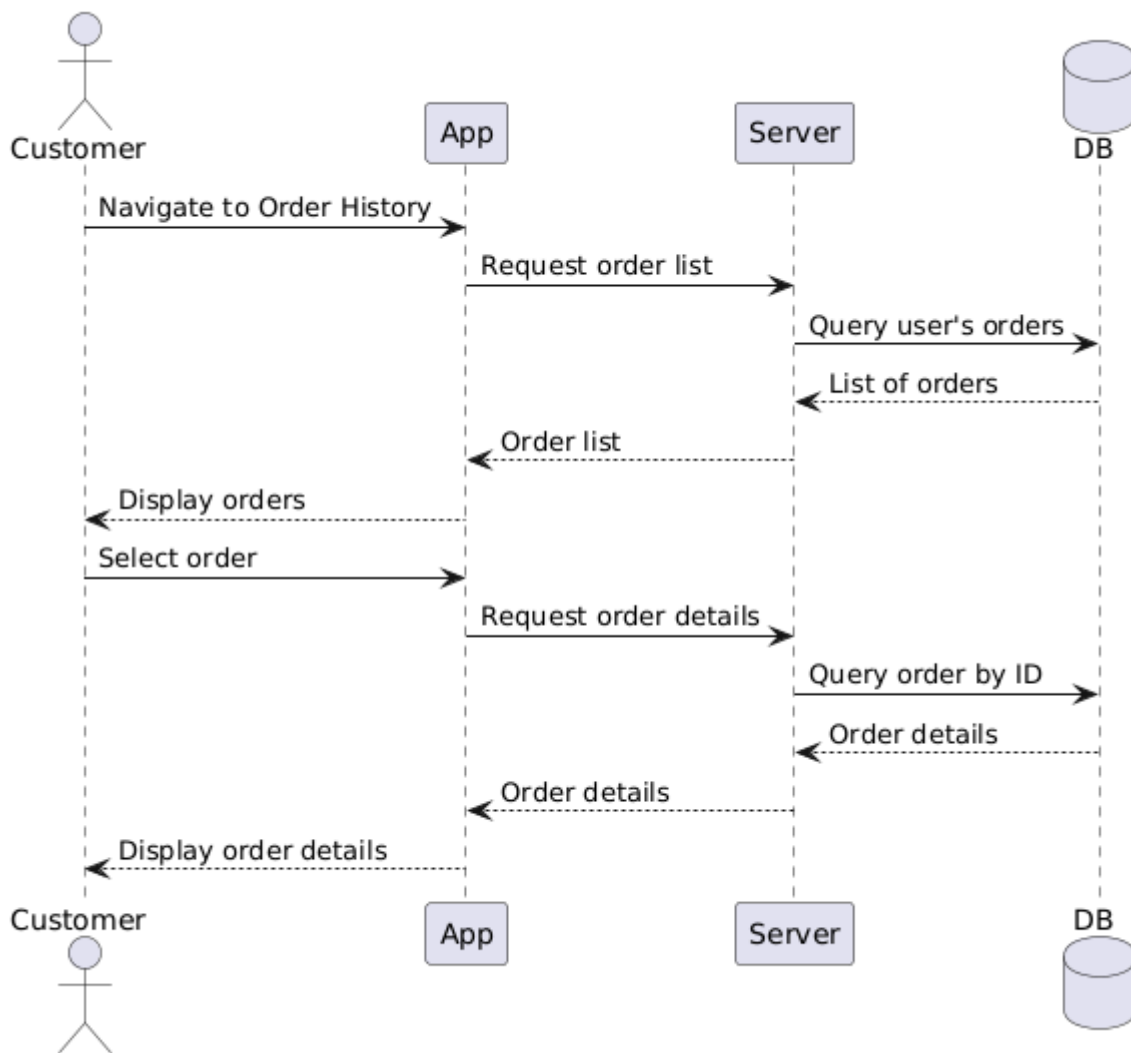


3.8 Customer View Order History

3.8.1: Activity Diagram

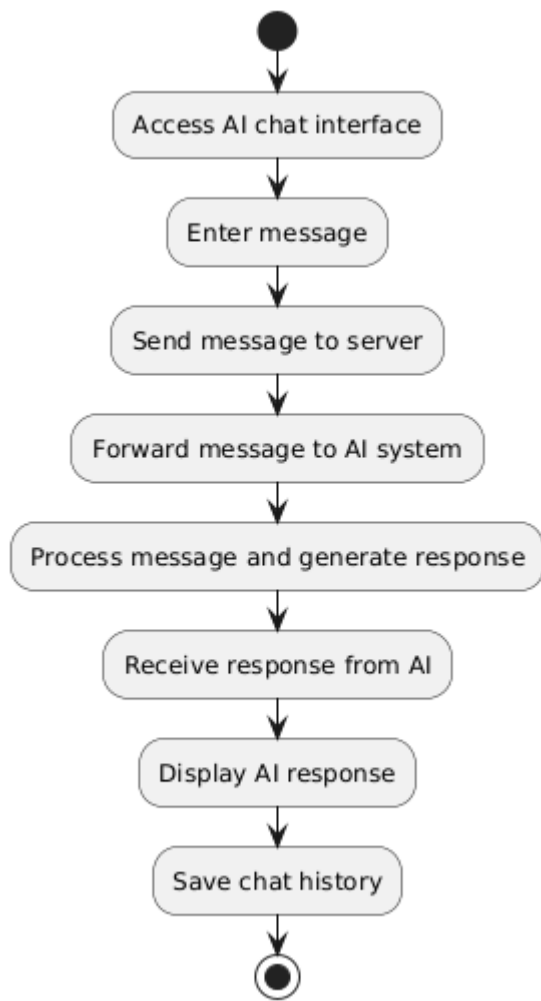


3.8.2: Sequence Diagram

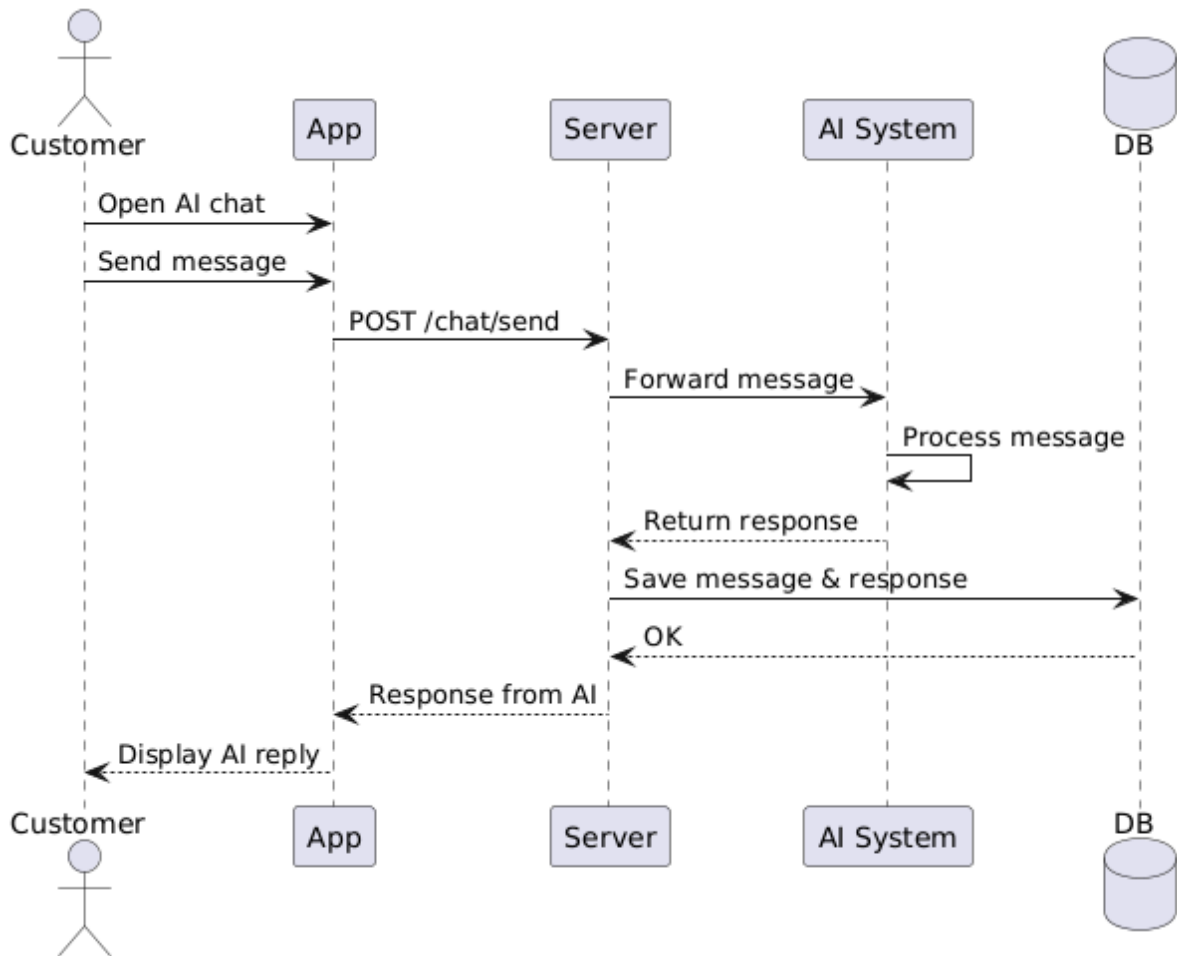


3.9 Customer Chat with AI

3.9.1: Activity Diagram

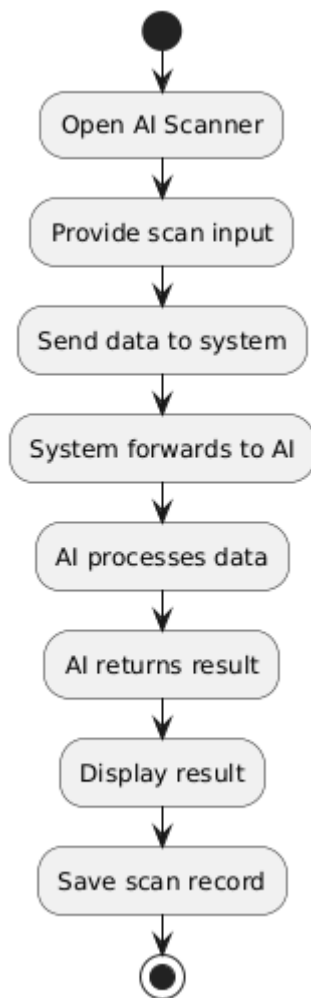


3.9.2: Sequence Diagram

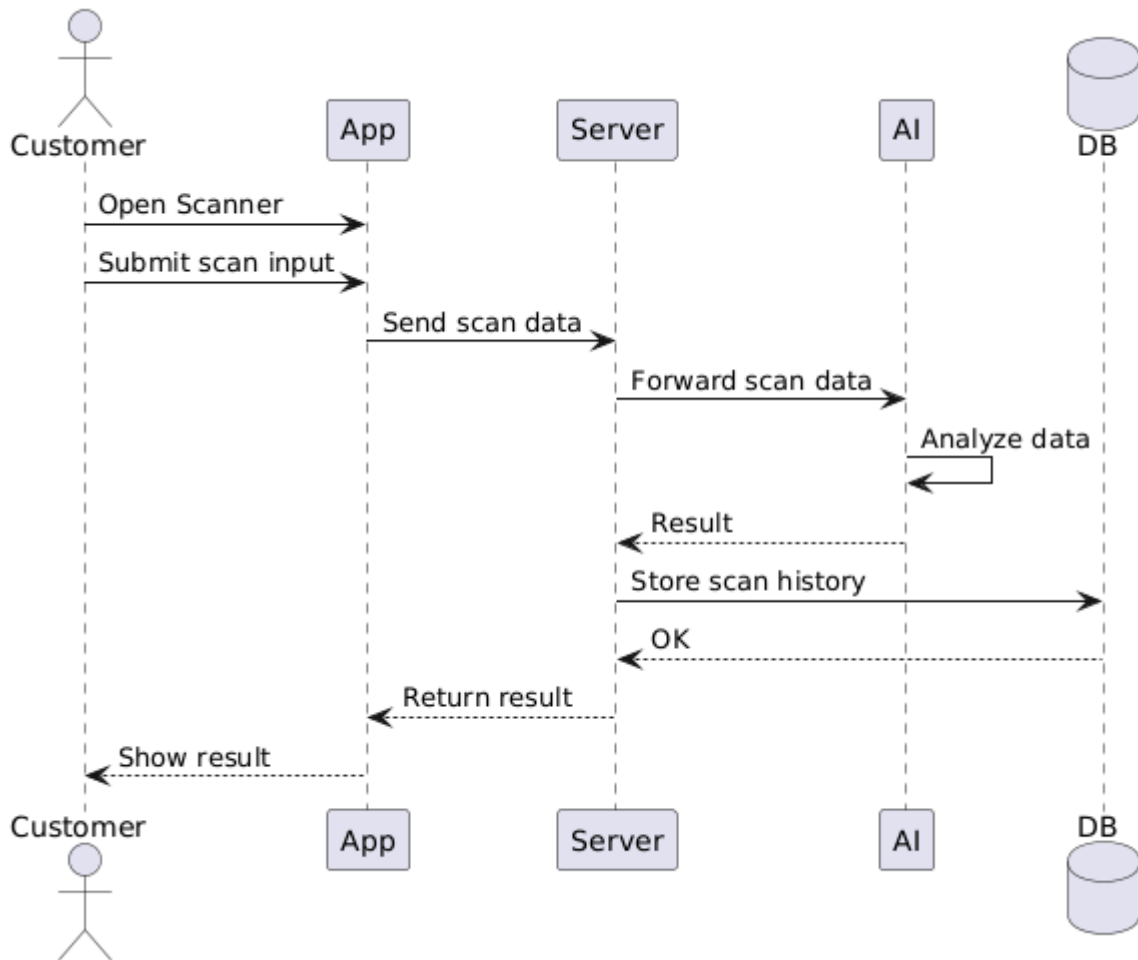


3.10 Customer Use AI Scanner

3.10.1: Activity Diagram

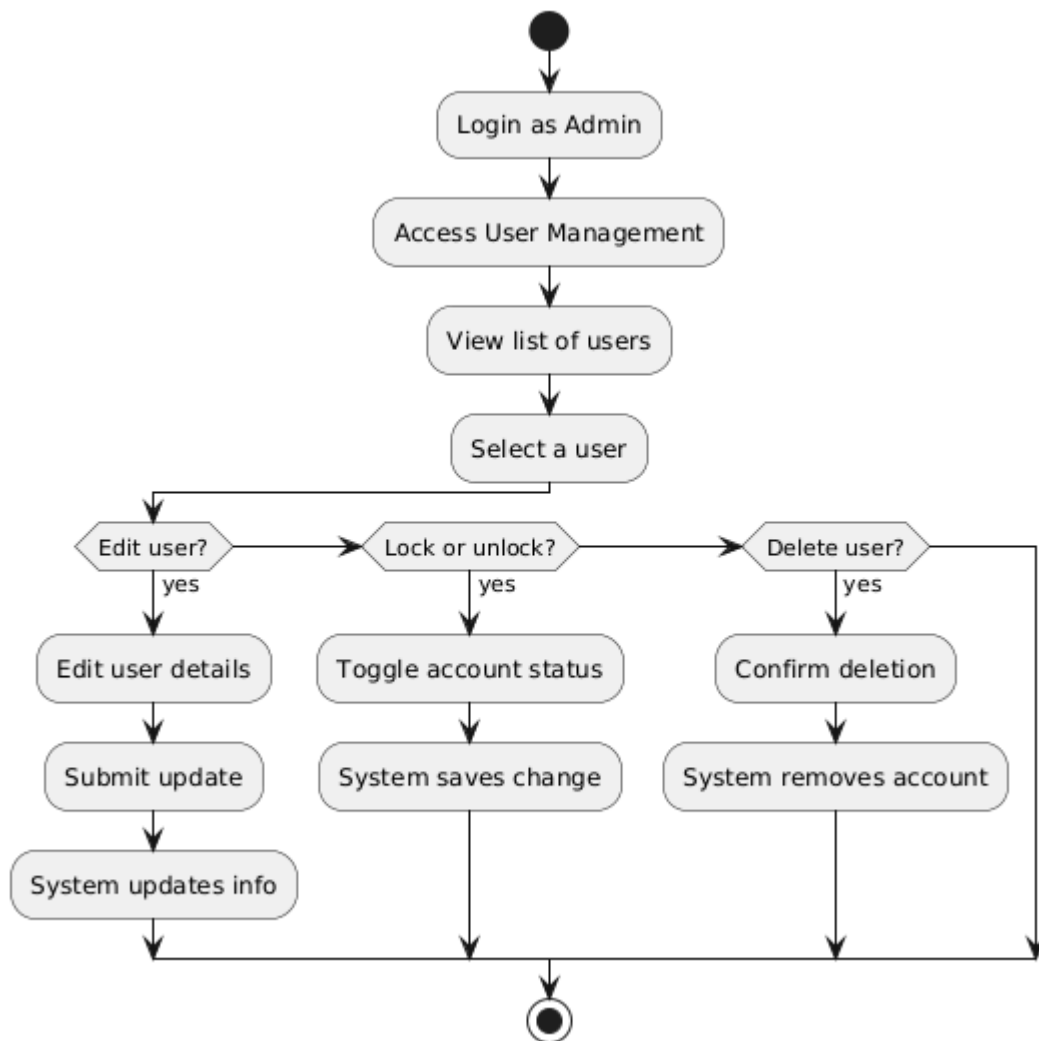


3.10.2: Sequence Diagram

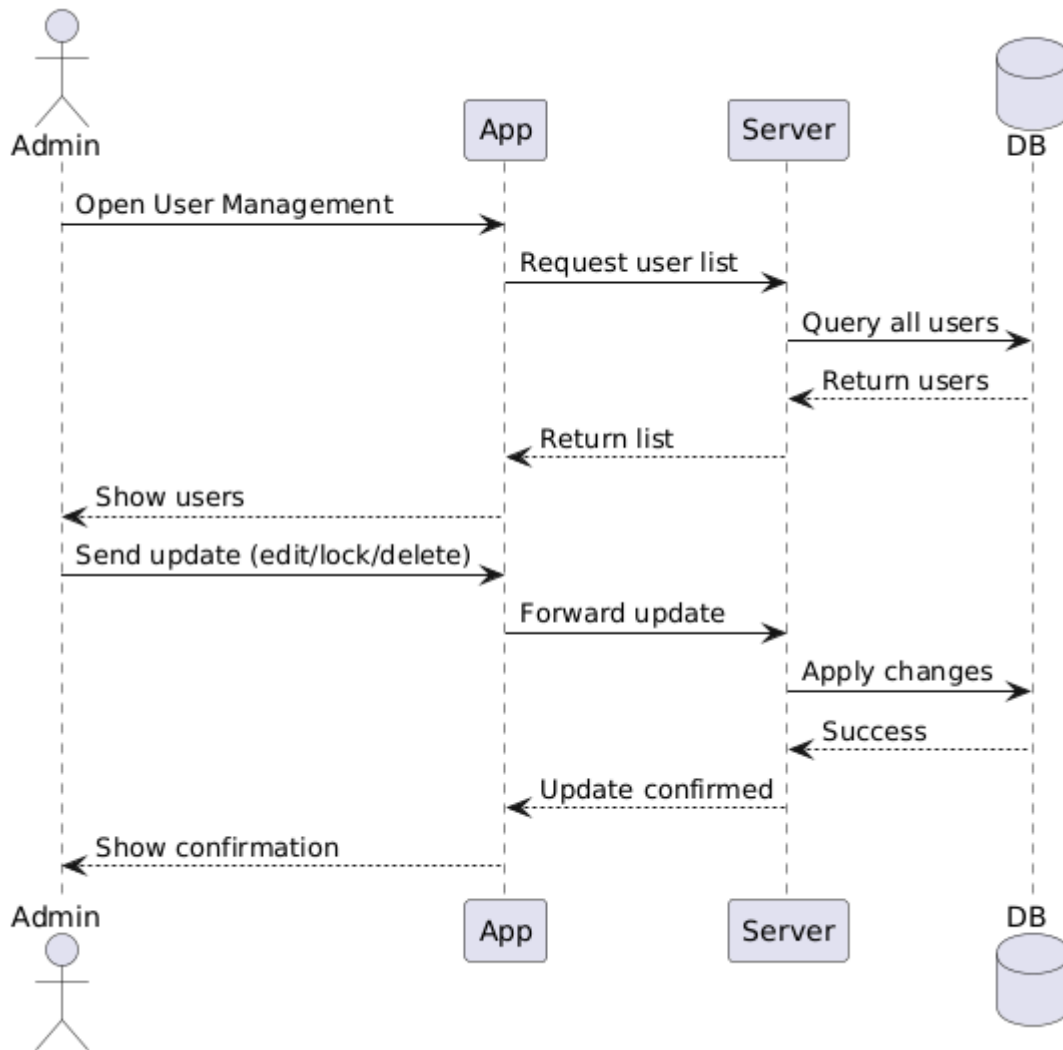


3.11 Admin Manage Users

3.11.1: Activity Diagram

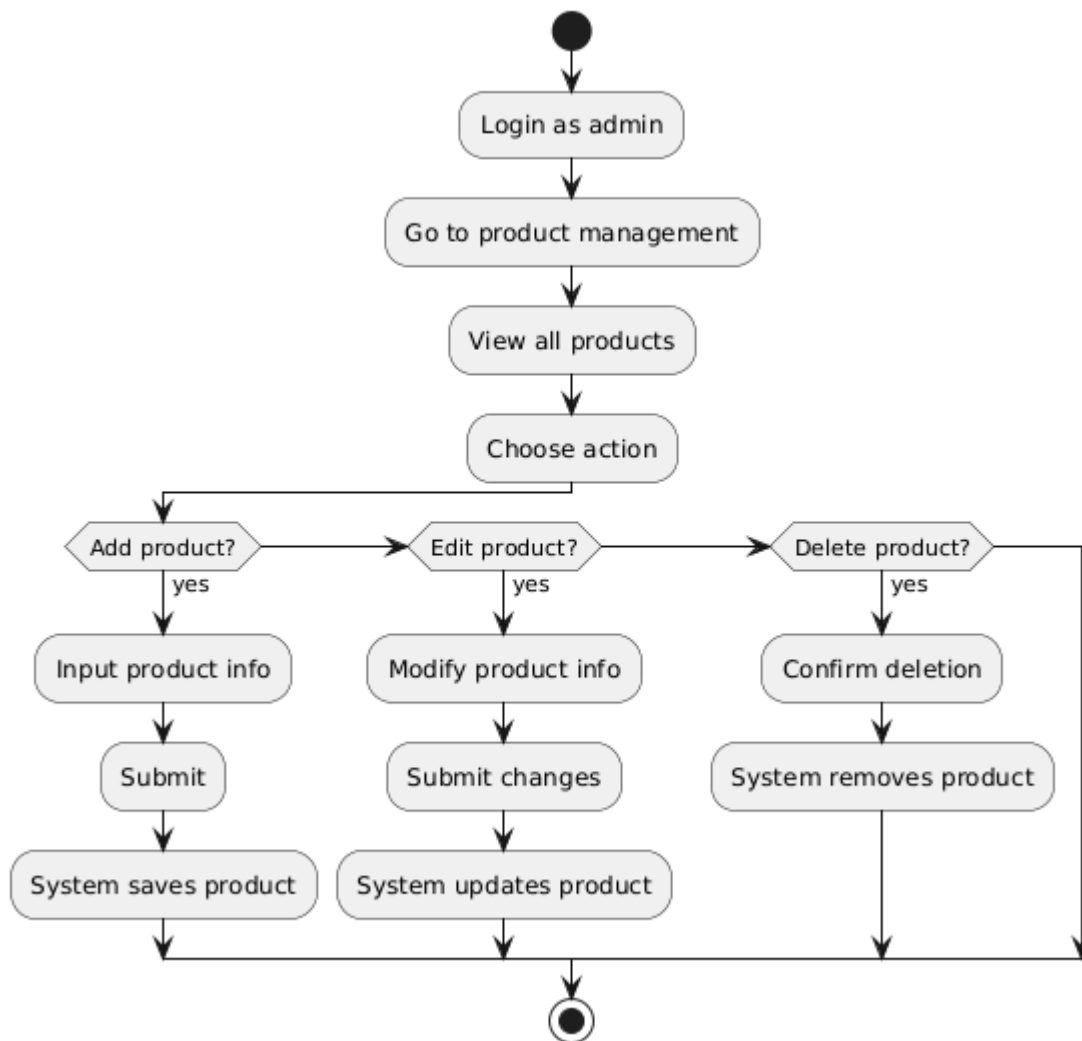


3.11.2: Sequence Diagram

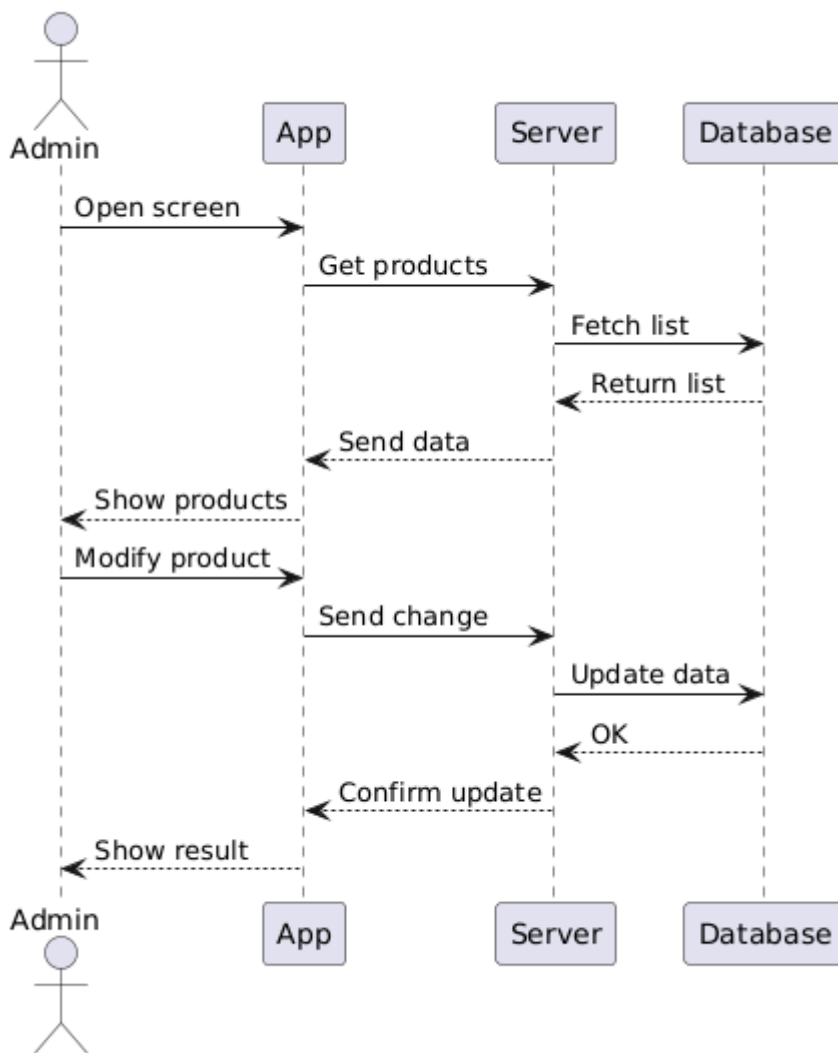


3.12 Admin Manage Products

3.12.1: Activity Diagram

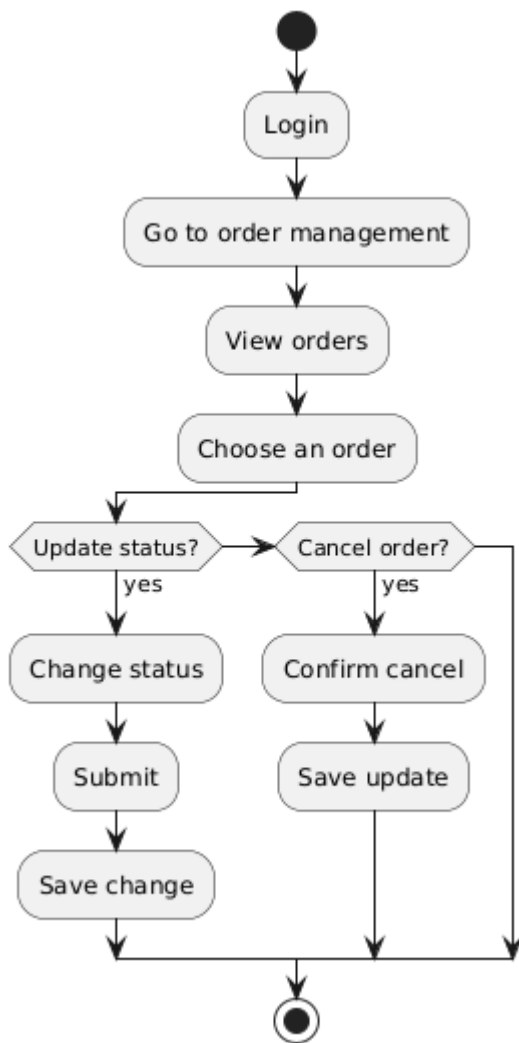


3.12.2: Sequence Diagram

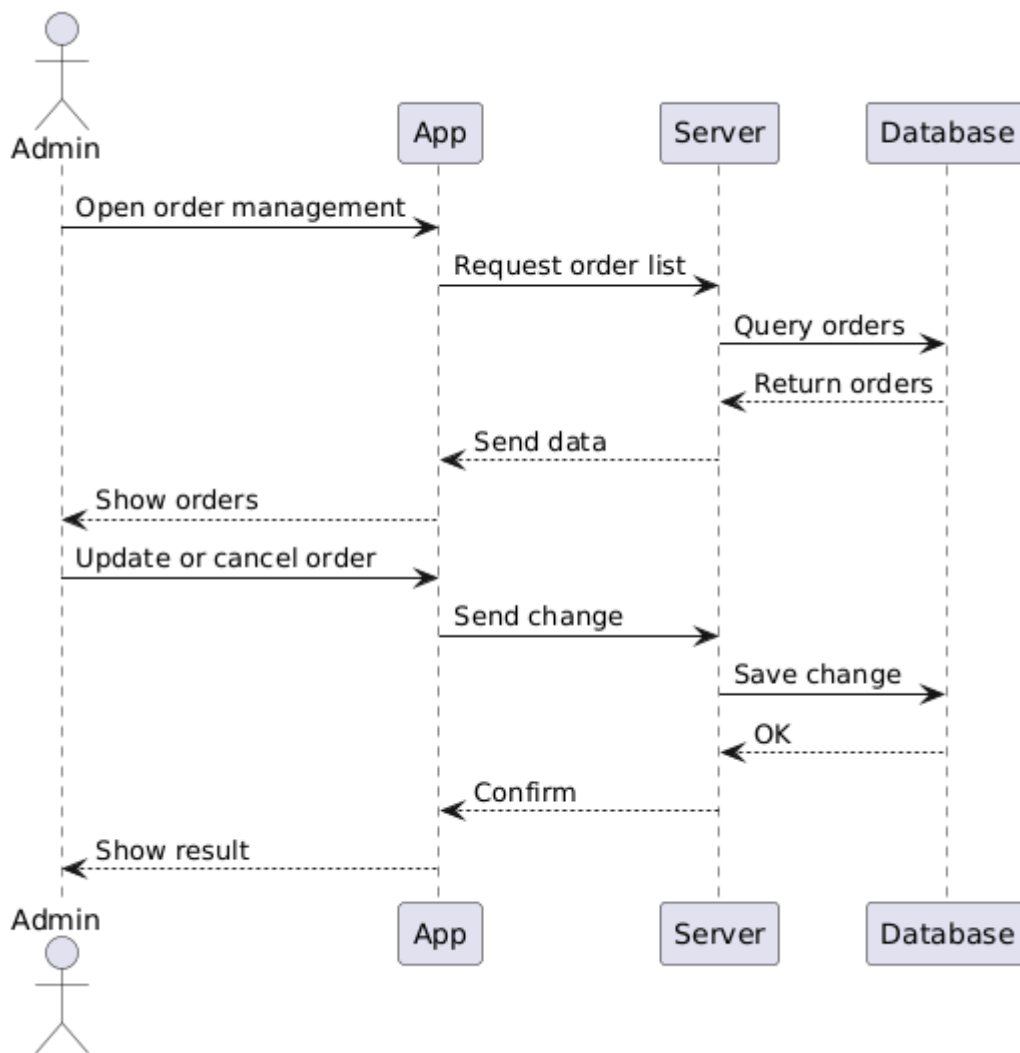


3.13 Admin Manage Orders

3.13.1: Activity Diagram

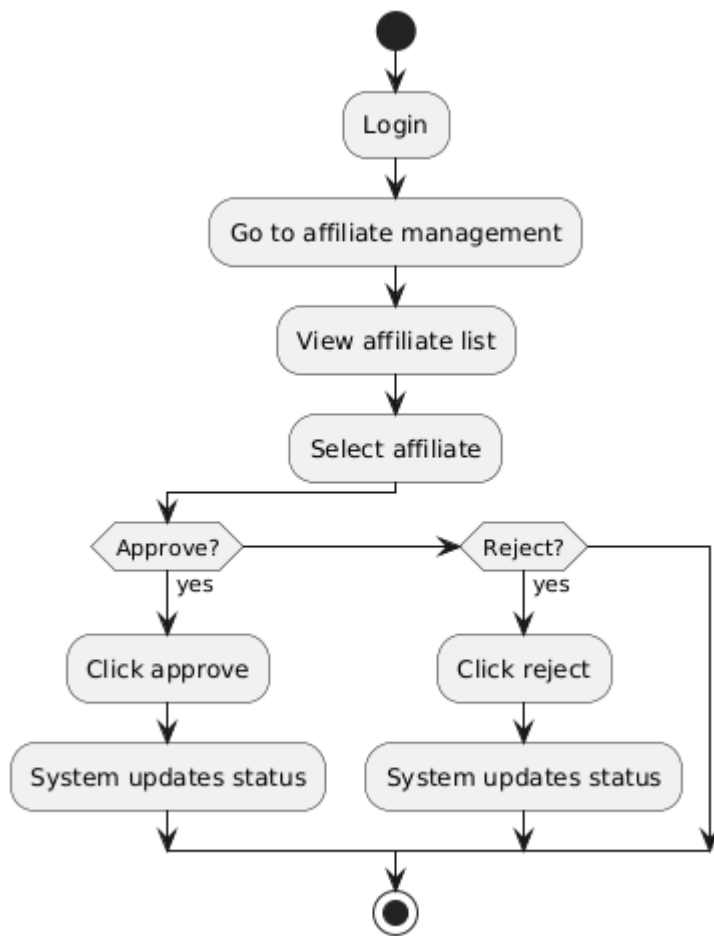


3.13.2: Sequence Diagram

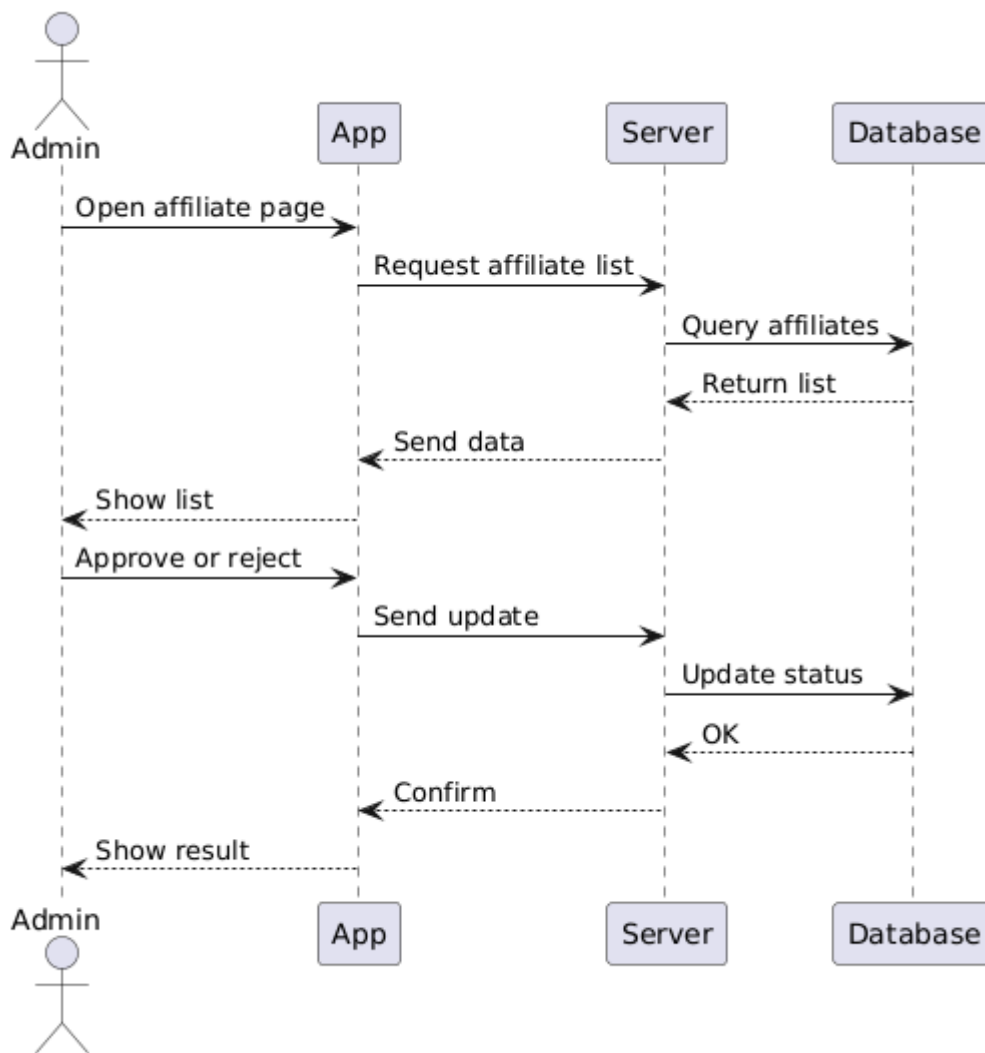


3.14 Admin Manage Affiliates

3.14.1: Activity Diagram

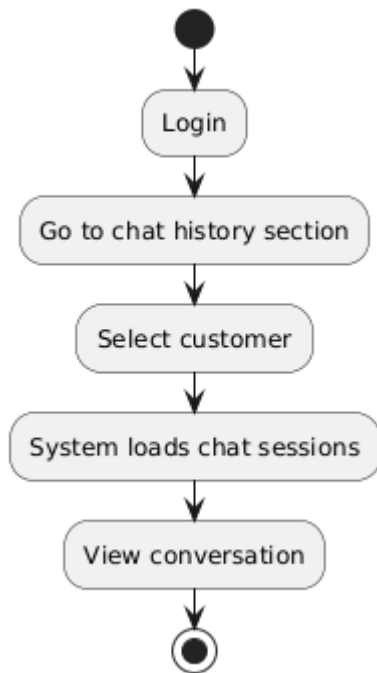


3.14.2: Sequence Diagram

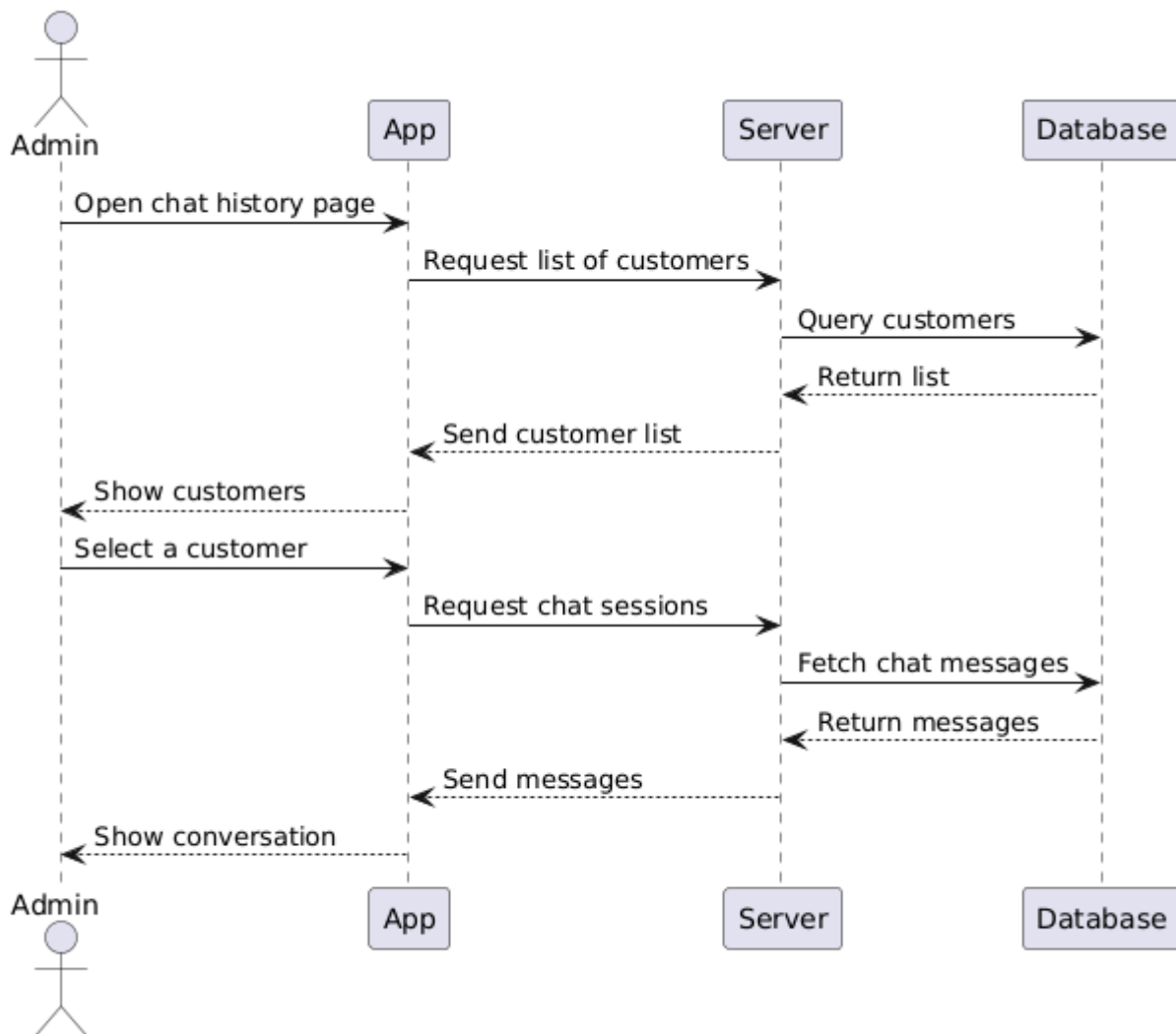


3.15 Admin View AI Chat History

3.15.1: Activity Diagram

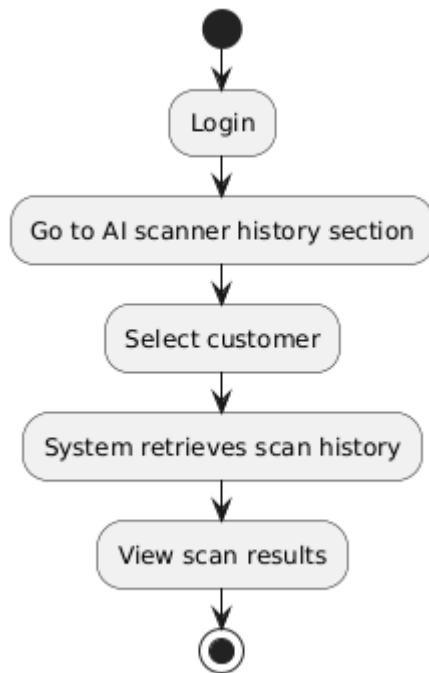


3.15.2: Sequence Diagram

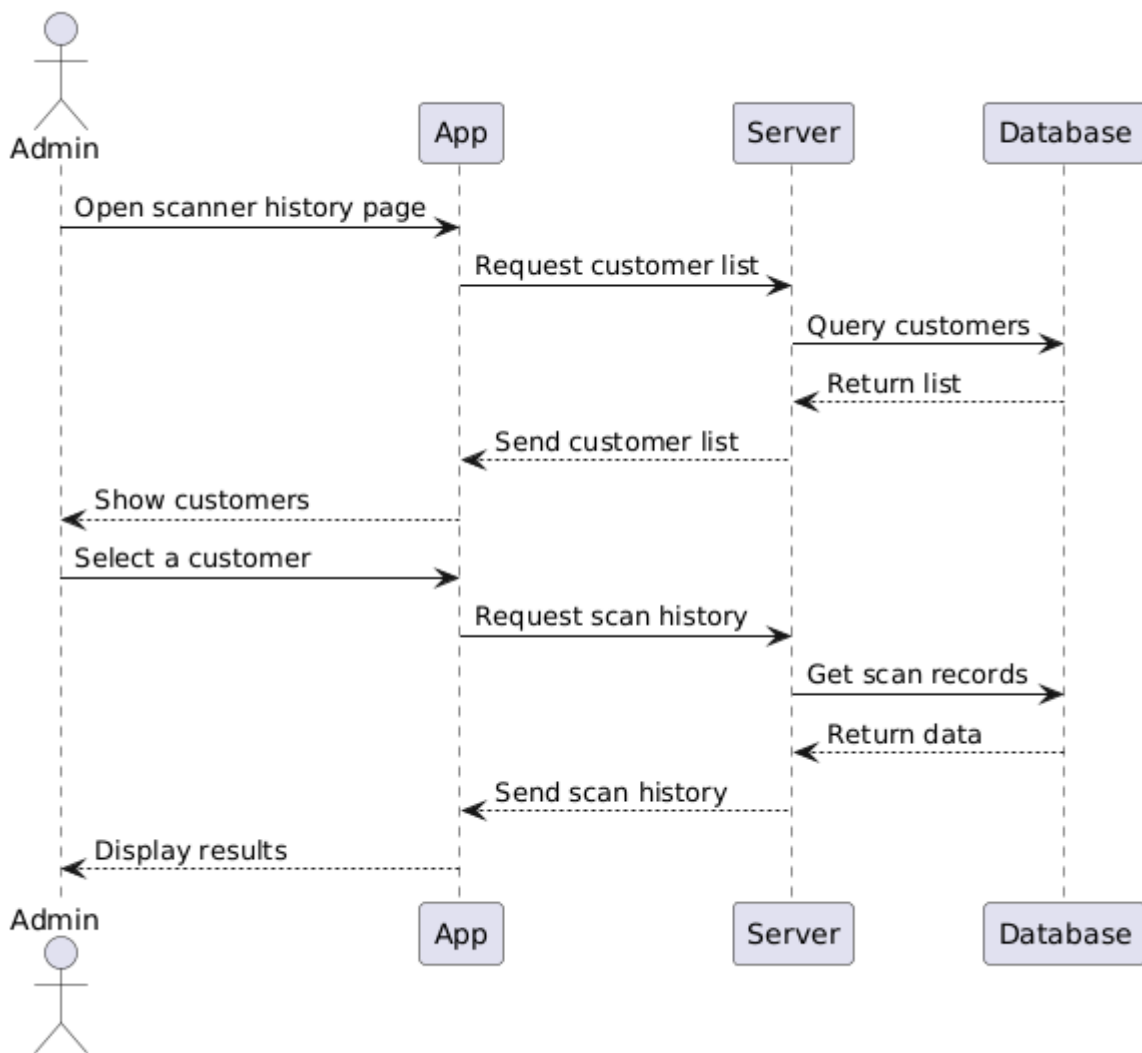


3.16 Admin View AI Scanner History

3.16.1: Activity Diagram

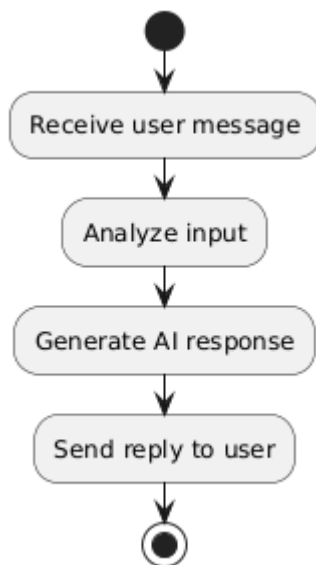


3.16.1: Sequence Diagram

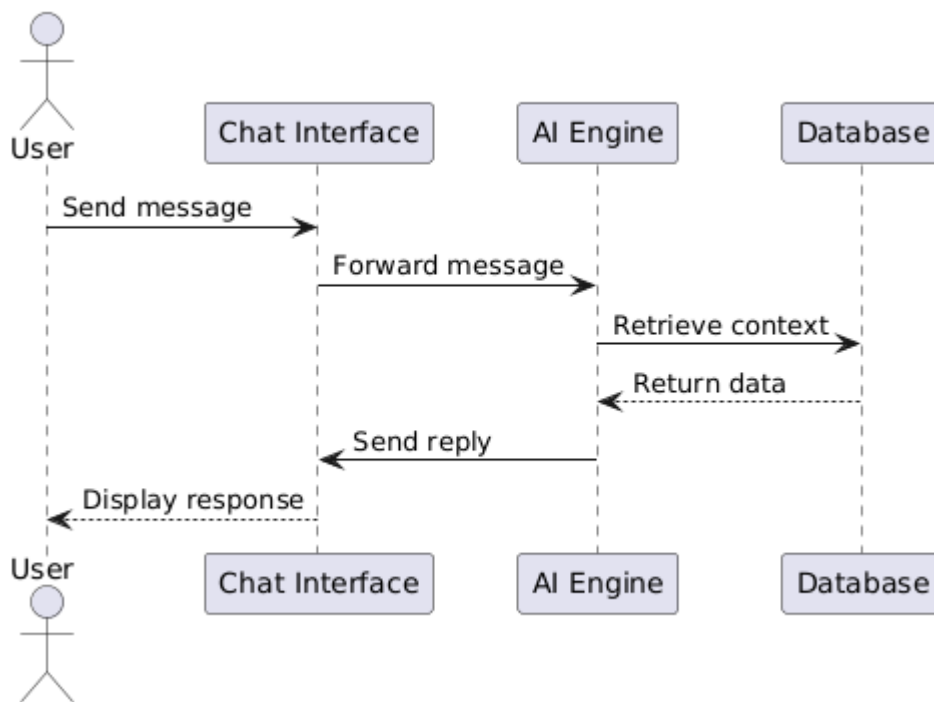


3.17 AI System Respond to Chat

3.17.1: Activity Diagram

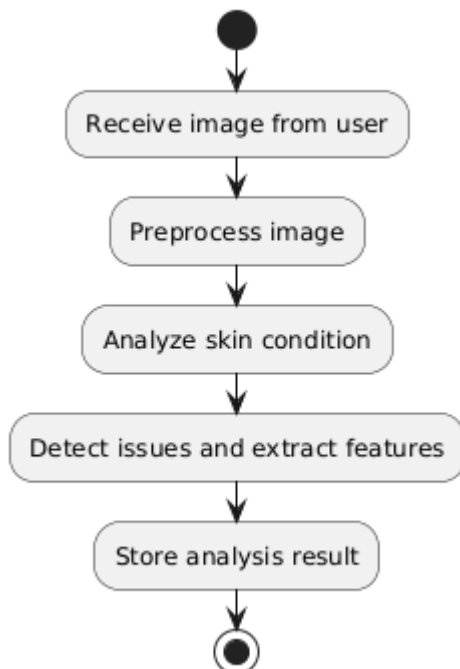


3.17.2: Sequence Diagram



3.18 AI System Process AI Scanner

3.18.1: Activity Diagram



3.18.2: Sequence Diagram

