



FPT UNIVERSITY

Farmers's Market

| **Hi! Group**

Members:

- | | |
|---------------------|----------|
| ● Kiều Hiếu Thành | CE140026 |
| ● Nguyễn Duy Thanh | CE140573 |
| ● Lê Nhật Quang | CE130082 |
| ● Nguyễn Nhật Thanh | CE130311 |

Mentor: Lương Hoàng Hưởng

Table of Contents

I.	Problem Definition.....	4
II.	User Requirements	5
	1. Functions.....	5
	2. System Requirements	7
III.	Schedule and Roles.....	8
	1. Project Plan and Role	8
	2. Specific Schedule	10
IV.	Diagrams	12
	1. System Organization Diagram.....	12
	2. Database Diagram	13
	3. Class Diagram.....	14
	4. Activity Diagram	22
	5. Use Case Diagram	25
	6. Sequence Diagram.....	28
	7. State Machine	29
V.	Table Structure.....	30
VI.	Maintenance and Updating	34
	1. Maintenance	34
	2. Updating.....	34
VII.	Check List	35



FPT UNIVERSITY

hi!

I. Problem Definition

This application is a place for traders to search for agricultural products to buy and at the same time help farmers to be more active in finding sources of agricultural products.

This Application designed suitable for users to order products easily, conveniently or not proficient in technology, use cheap phones (small screen, low-end OS), easy-to-use interface, good UX, fast response time, low capacity, easy to see in the dark (should have dark mode).

The current payment method is cash only, which will integrate with future wallet / banking methods.



FIGURE 1: FOOD AND AGRICUTURAL PRODUCTS

II. User Requirements

1. Functions

Create an account by phone number (because traders, farmers rarely use accounts from other services. Also, it makes communication easier for both parties).

a) User account/Customer account:

Both users and in-app traders can both sell and buy products. When user/traders log in to the application, they will have a page that content page with certain functions, rights and actions like what user have and include more:

- Login, logout
- Create a warehouse (equivalent to shop in other e-commerce applications)
- Locate the warehouse
- Only buy 1 warehouse / time and can view the detailed information of the warehouse's agricultural products
- Post and sell farm produce in warehouse
- List price, volume and standard shipping price (VND / volume) or not
- Spend money to advertise their farm / warehouse.

User/buyers have available following options available (after viewing produce):

- **Appointment to see the warehouse:** the customer chooses the time, writes a message and then clicks Appointment. The App will notify the seller that someone will come to see the goods in person and create an event reminder in the app
- **Event prompt:** 24h prompt, when pressed will display detailed information, directions, call the seller, etc.
- **Add to cart:** add product to cart
- **Cart:** shows selected produce, total price, **Buy** button. If the seller has not provided the shipping fee, the **Buy** button

changes to request a shipping charge. The application status will now change to pending.

- **Request to charge the ship:** (because the application does not support the ship, the seller will contact the own carrier -> the shipping fee is not fixed): when clicking will send the request to the seller. The seller will find the own carrier and then update the shipping fee, expected shipping time. If the buyer finds it reasonable, click **Buy**.
- **Purchase:** formally placed order. The application's mission here ends.

b) Administrators account:

When Administrators logged into the site to post their agricultural product. The page will include some functions as looking, rating, choose and purchasing perfume. All functions, rights and actions include:

- Login, logout
- Create, view and update user's profile
- Change password
- View, search and choose product
- Manage cart: add product to cart or delete product from cart
- Track order
- View favorite list, add or delete favorite product
- Manage product: add, update, delete product
- Manage delivery
- Manage bill: income and outcome
- View income report: monthly, quarterly, yearly
- View product report: best sell, unmarketable
- Browse, Search for agricultural product
- Create accounts for other users
- Can access/update all information of non-admin account (except account's password)
- Manage database

2. System Requirements

	Device
Hardware Requirement	+ CPU: 32-bit ARMv7 + RAM: 512 MB + Storage: 1 GB of free disk space
Software Requirement	OS: Android 4.4 and up

III. Schedule and Roles

1. Project Plan and Role

- Start time: 26/9/2020
- Deadline: 13/11/2020

Role	Member	Responsibilities
Leader	ThanhKH	Creating Schedule and Check List, Assigning assignment to team members
Secretary	QuangLN	Taking note
Analyst & Design	ThanhKH, ThanhNN, QuangLN, ThanhND	Table of content, Problem Defining, User Requirement. Interface Designing
Database	QuangLN	Design Table And Relationship Of Attributes
Coder	ThanhKH, ThanhNT, QuangLN, ThanhND	Programing all functions for applications

Tester	ThanhNN, ThanhND	Testing all functions
Maintenance	ThanhKH, QuangLN	Checking and backup data

2. Specific Schedule

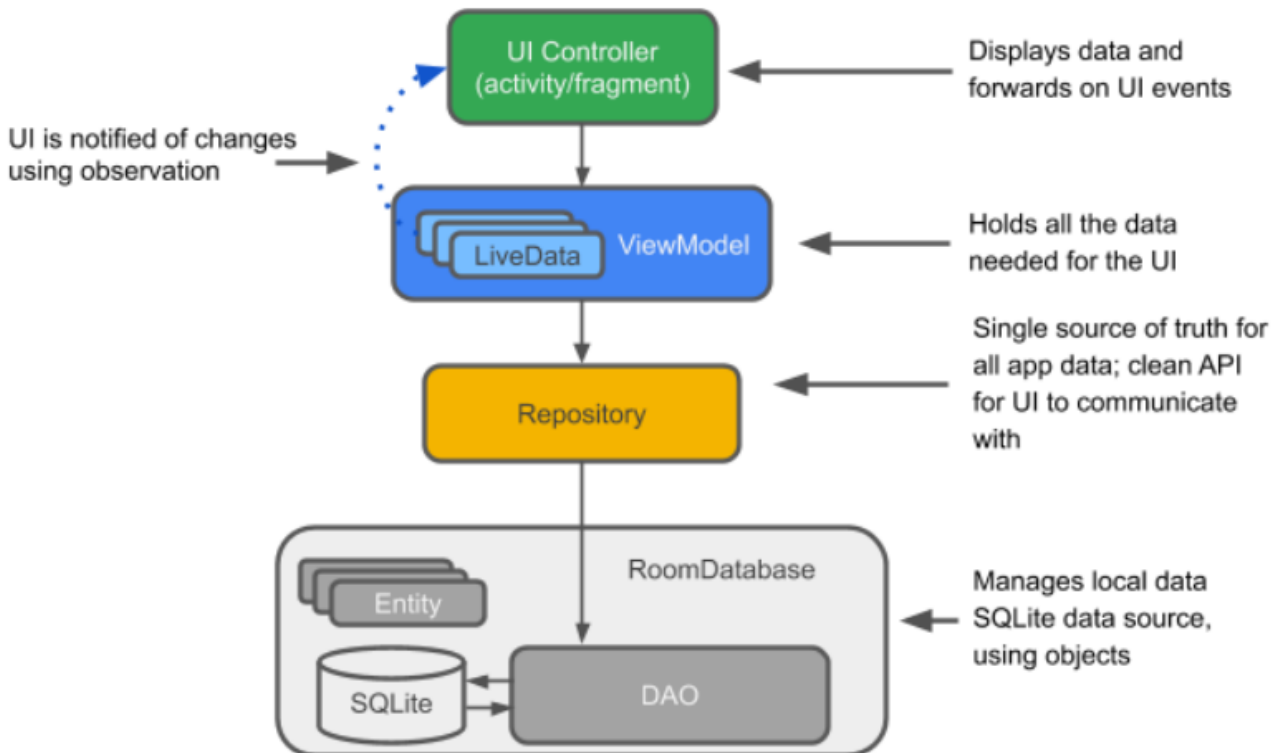
No.	Assignment	Member	Start Time	ETF ¹ (hrs)	Deadline
1	Problem Definition	ThanhNT	26/09/2019	2	23h50 26/09/2019
2	User Requirement and System Requirement	ThanhNT	27/09/2019	4	23h50 27/09/2019
3	Analysis	ThanhKH	28/09/2019	48	23h50 30/09/2019
4	Database Diagram	QuangLN ThanhKH	01/10/2019	18	23h50 02/10/2019
5	Class Diagram	ThanhKH, QuangLN, ThanhND	03/10/2019	36	23h50 05/10/2019
6	Use-case Diagram	ThanhND, Quang LN	05/10/2019	36	23h50 07/10/2019
7	User Interface Design	ThanhKH, QuangLN	08/10/2019	72	20h 11/10/2019
8	Exception & Model Coding	ThanhKH, QuangLN, ThanhNN, ThanhND	08/10/2019	36	23h50 10/10/2019

¹ Estimate Time to Finish

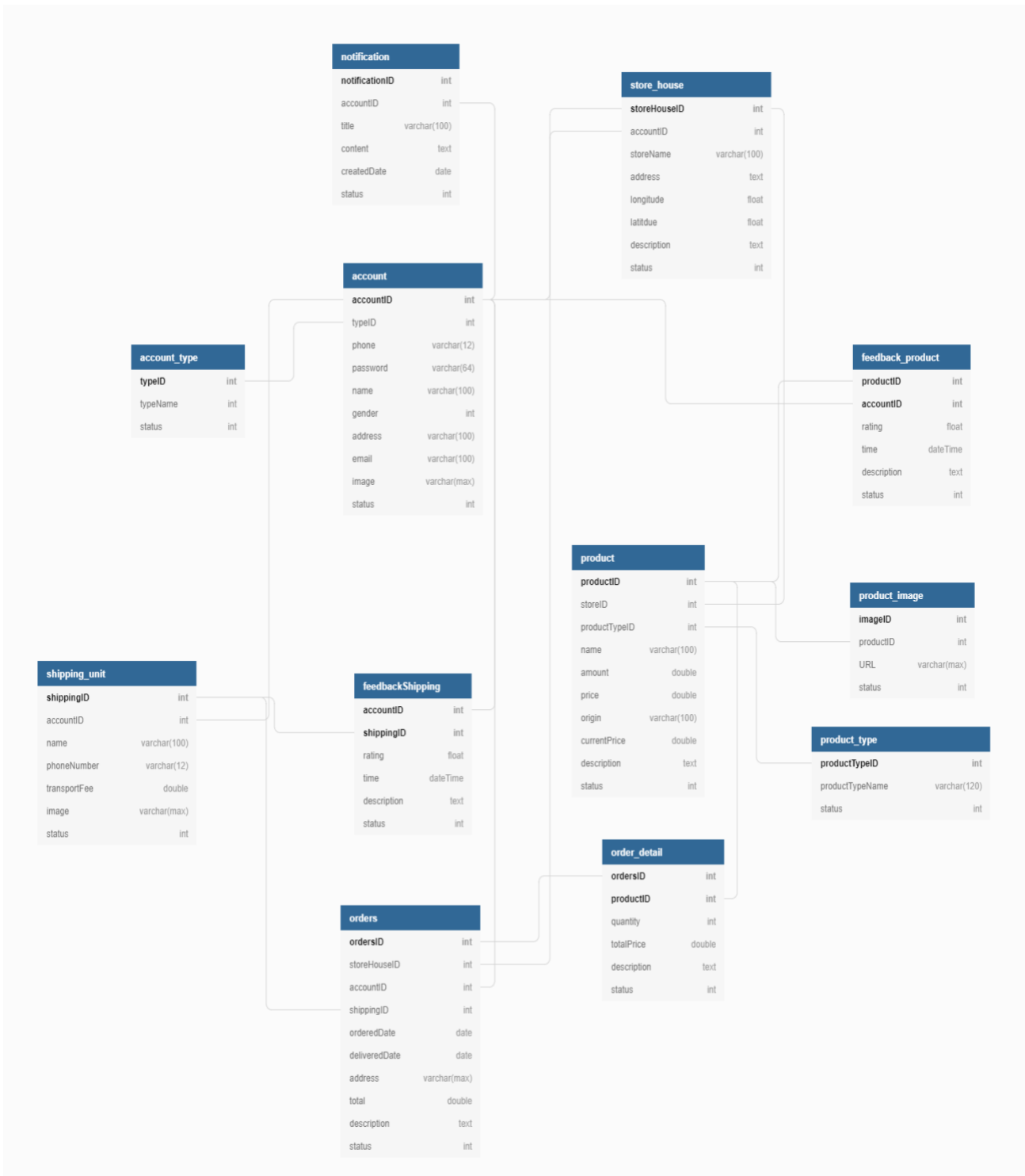
9	User Interface Coding	ThanhKH, QuangLN	12/10/2019	168	23h50 18/10/2019
10	Admin Interface Design	ThanhNN, ThanhND	18/10/2019	48	23h50 20/10/2019
11	Admin Interface Coding	ThanhNN, ThanhND	27/10/2019	144	23h50 1/11/2019
12	Testing & Debugging	ThanhKH, ThanhND	8/11/2020	36	23h50 10/11/2020
13	Document Finishing	ThanhNN	11/11/2019	72	12h 14/11/2019
14	Presentation	ThanhKH, QuangLN, ThanhNN, ThanhND	16/11/2020	2	14h15 16/11/2020
15	Deployment	ThanhKH, QuangLN	17/11/2020	3	12h00 17/11/2020

IV. Diagrams

1. System Organization Diagram



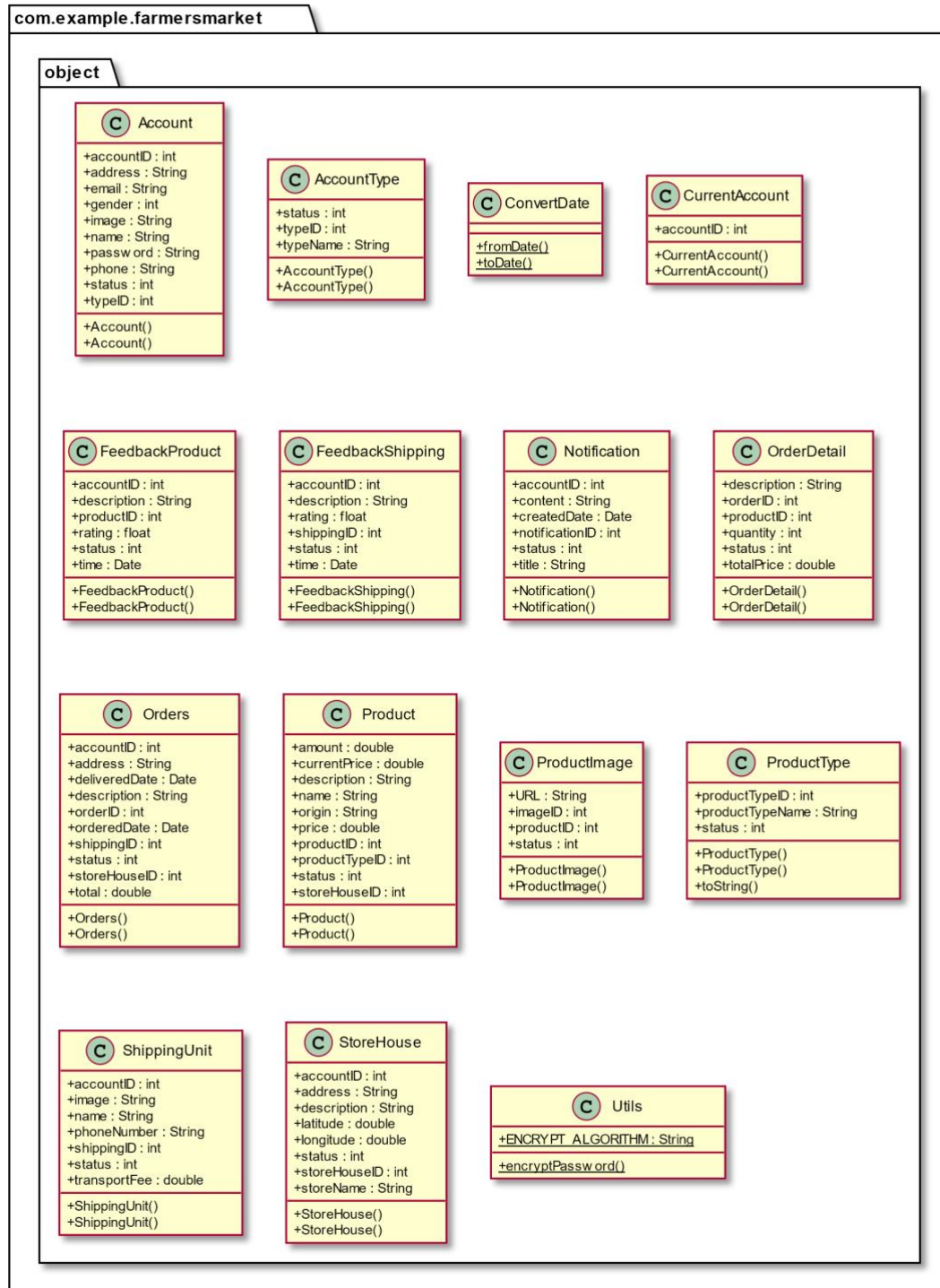
2. Database Diagram



3. Class Diagram

a) Entities

OBJECT's Class Diagram

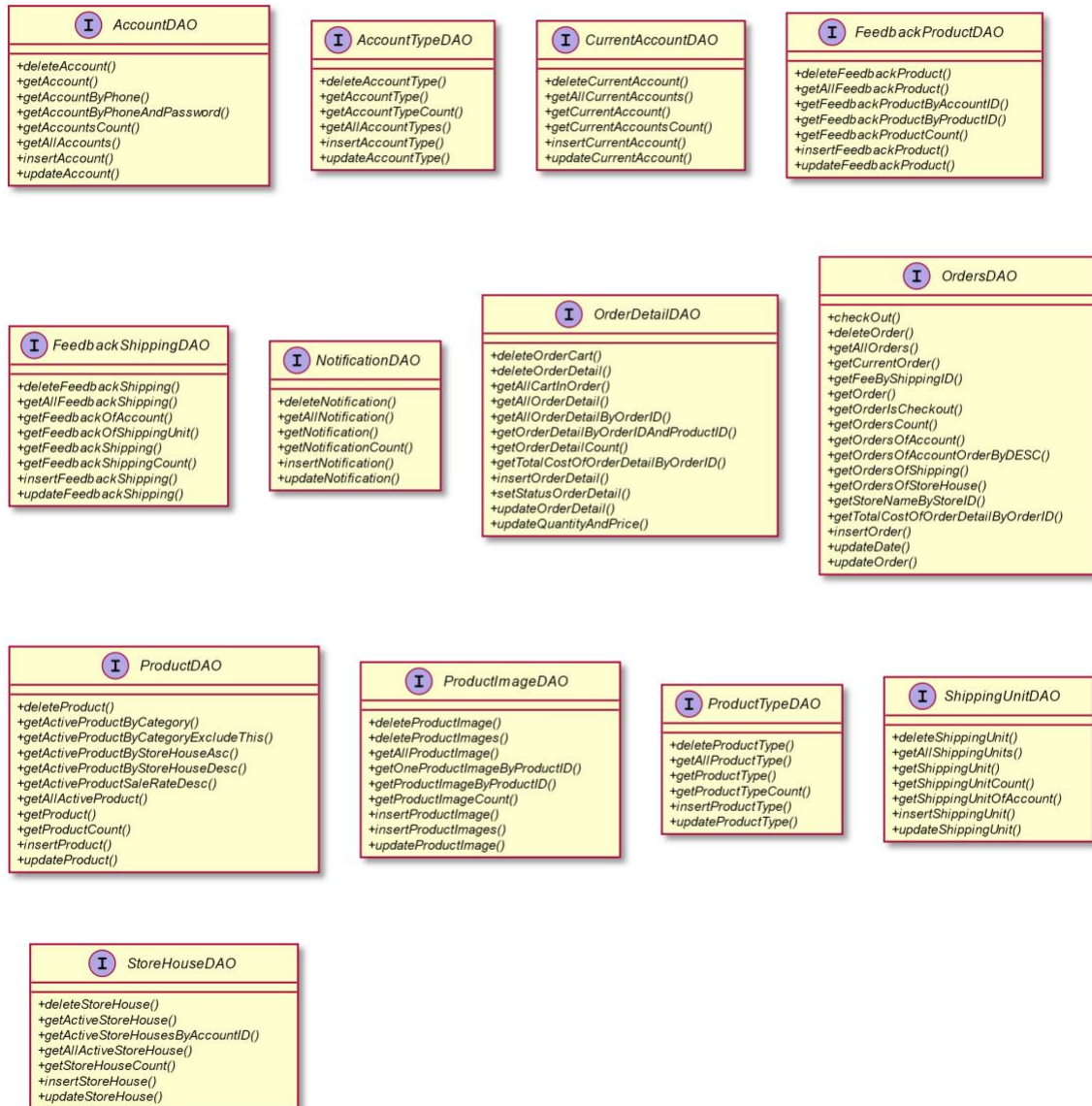


b) DAOs

DAO's Class Diagram

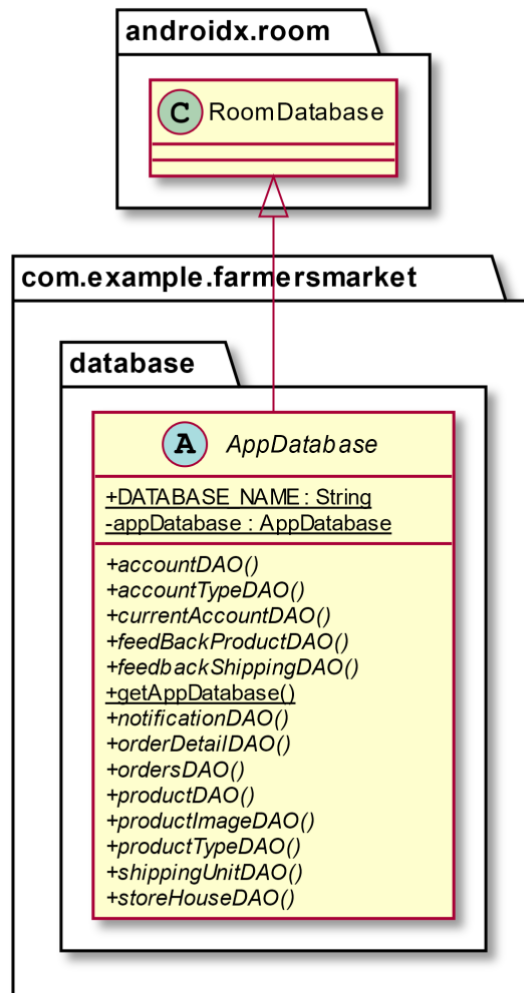
com.example.farmersmarket

dao



c) Database

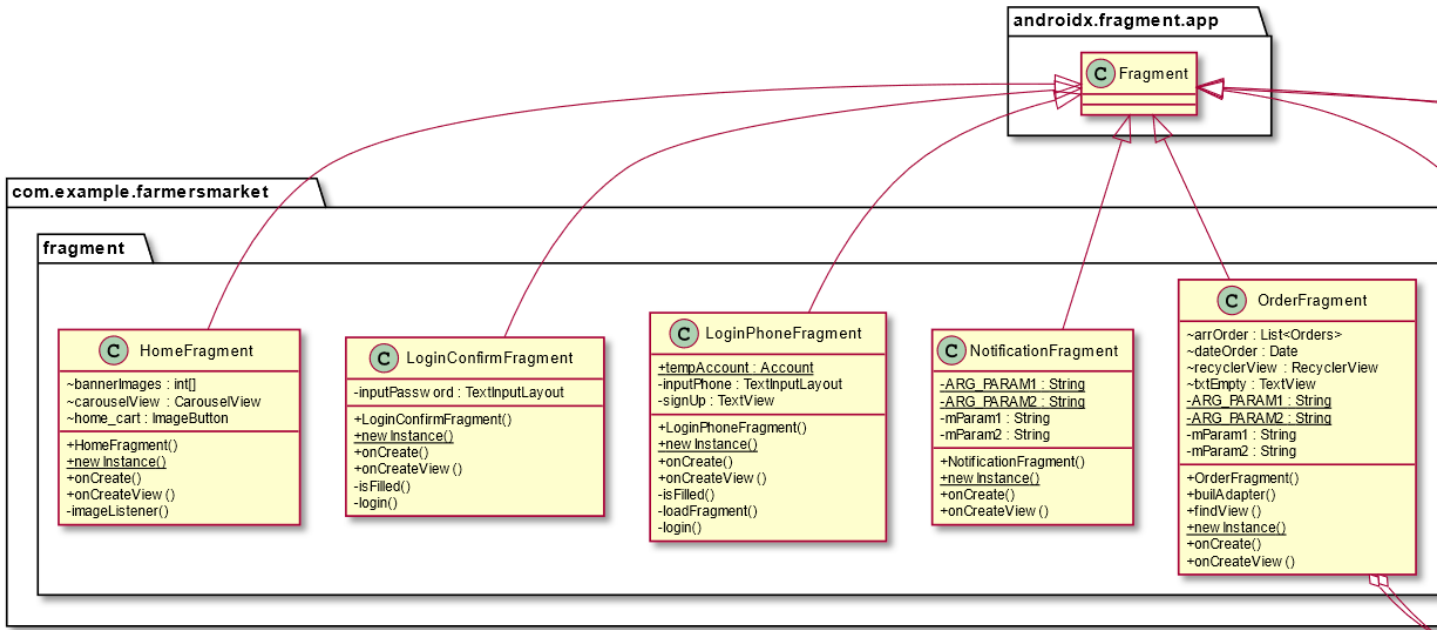
DATABASE's Class Diagram



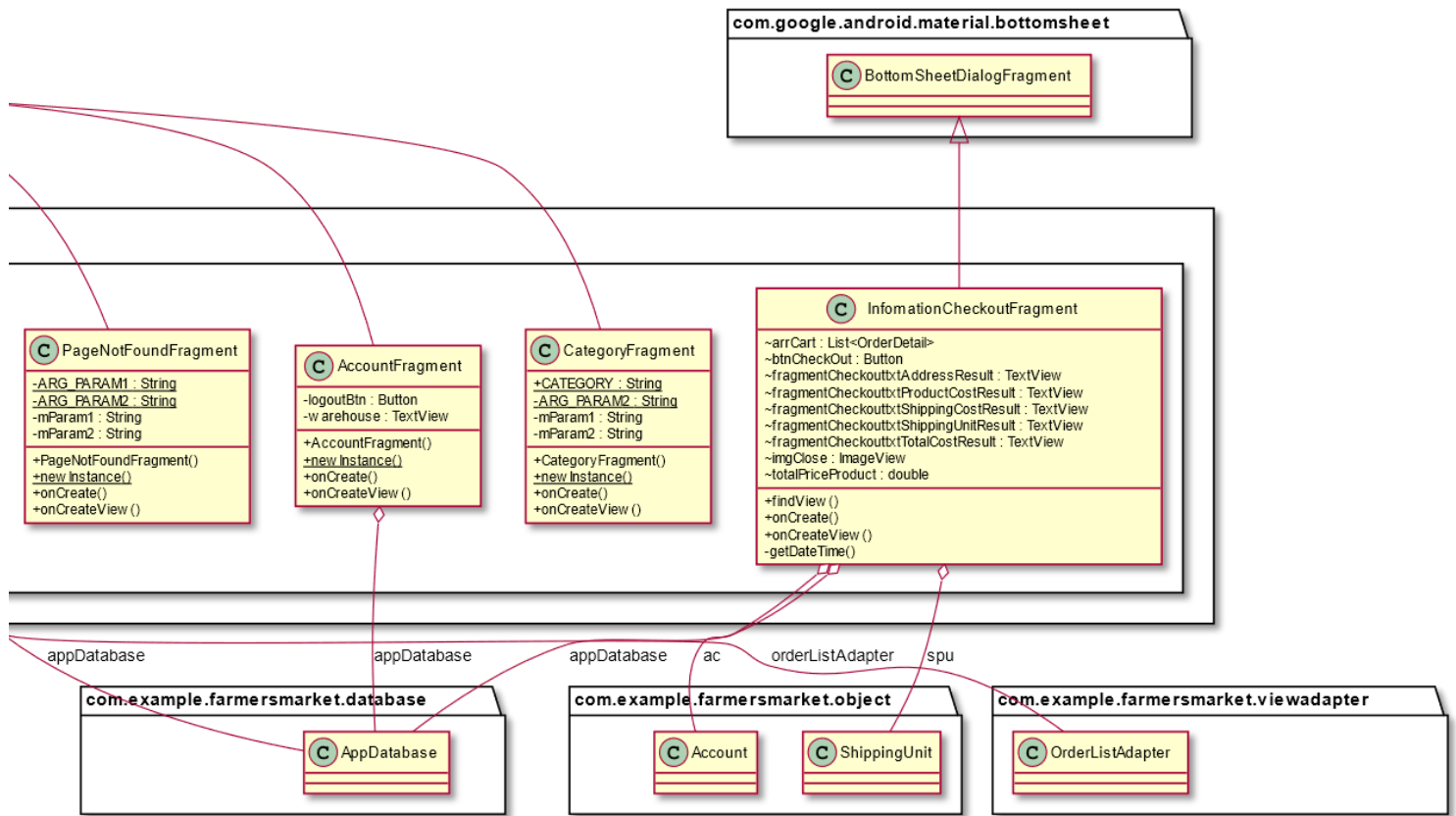
d) UI controllers

i. Fragment

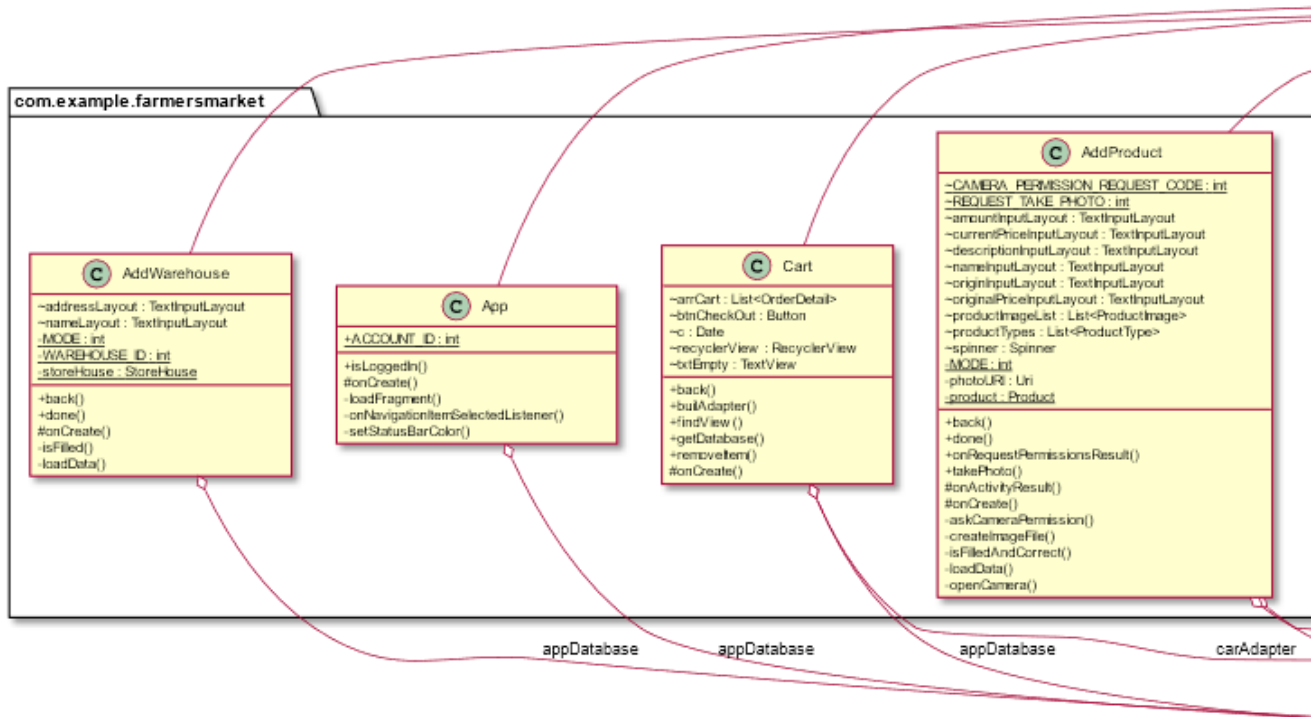
FRAGMENT's C



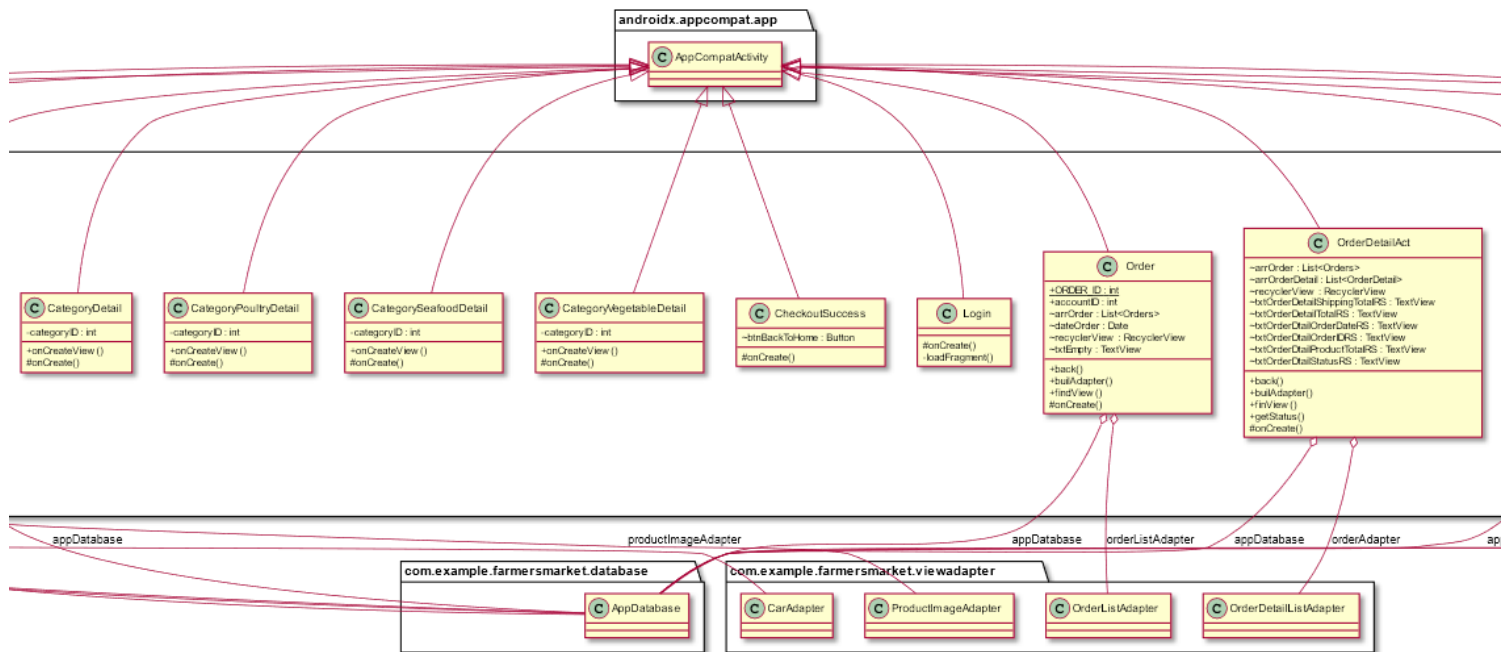
Class Diagram

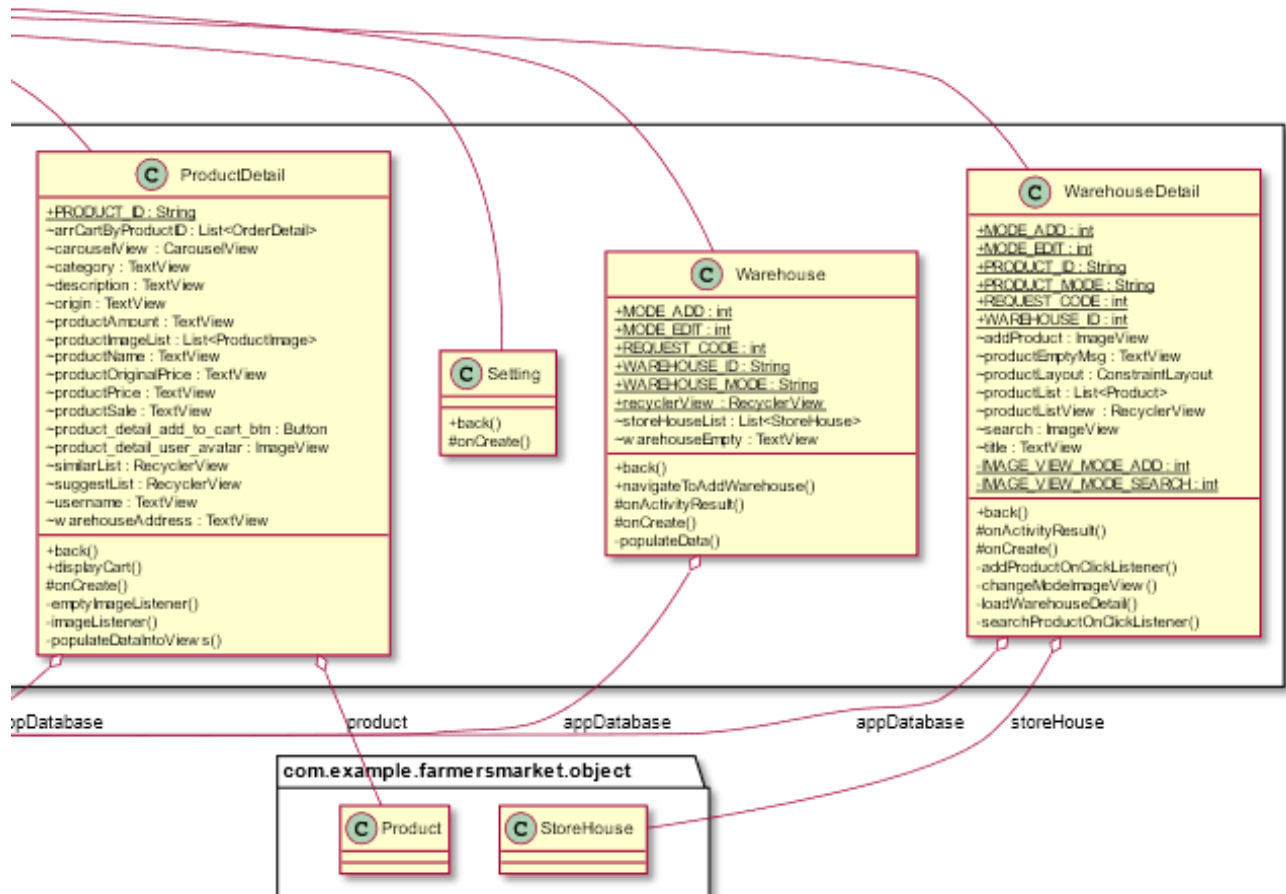


ii. Activities



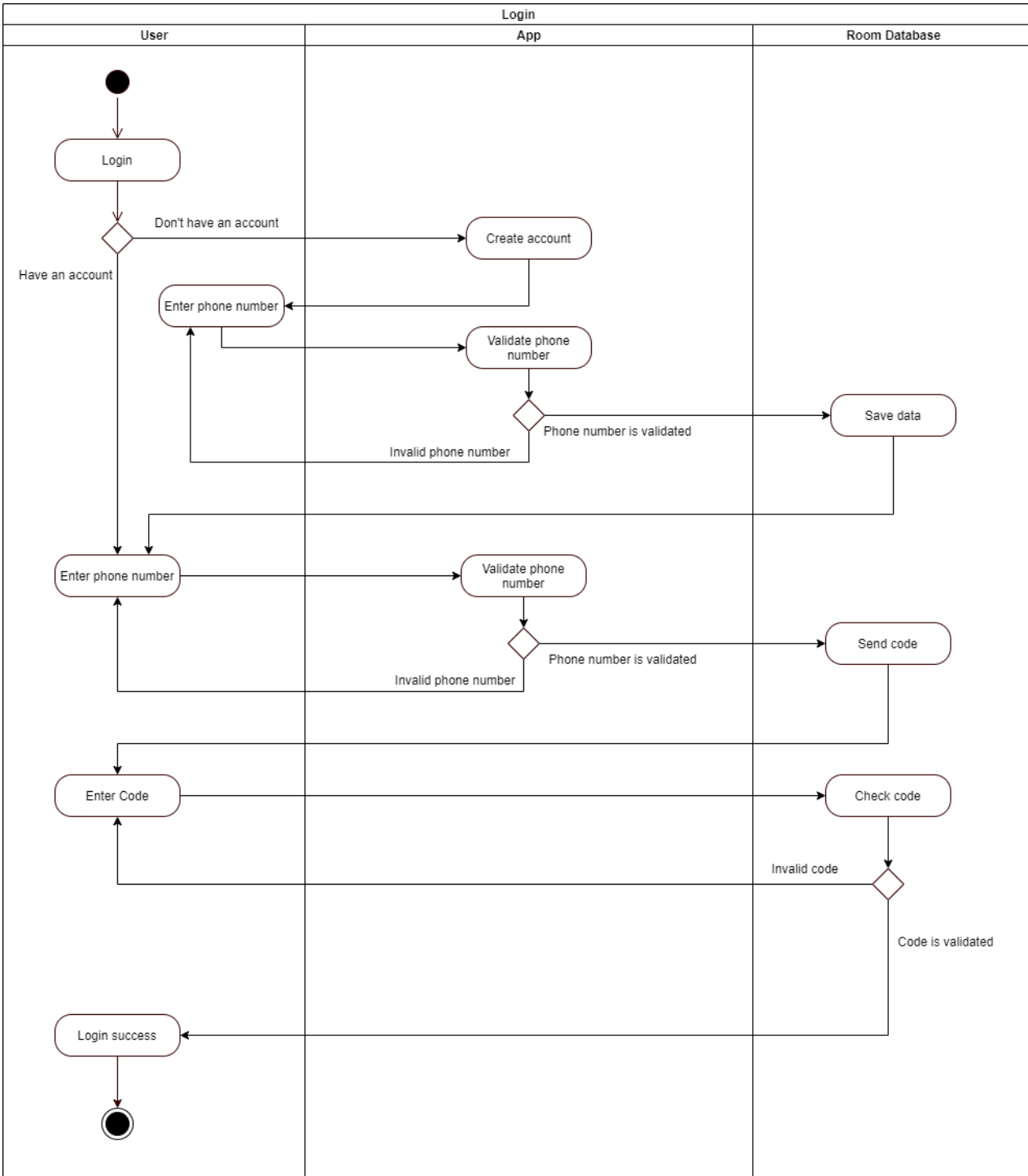
FARMERSMARKET's Class Diagram



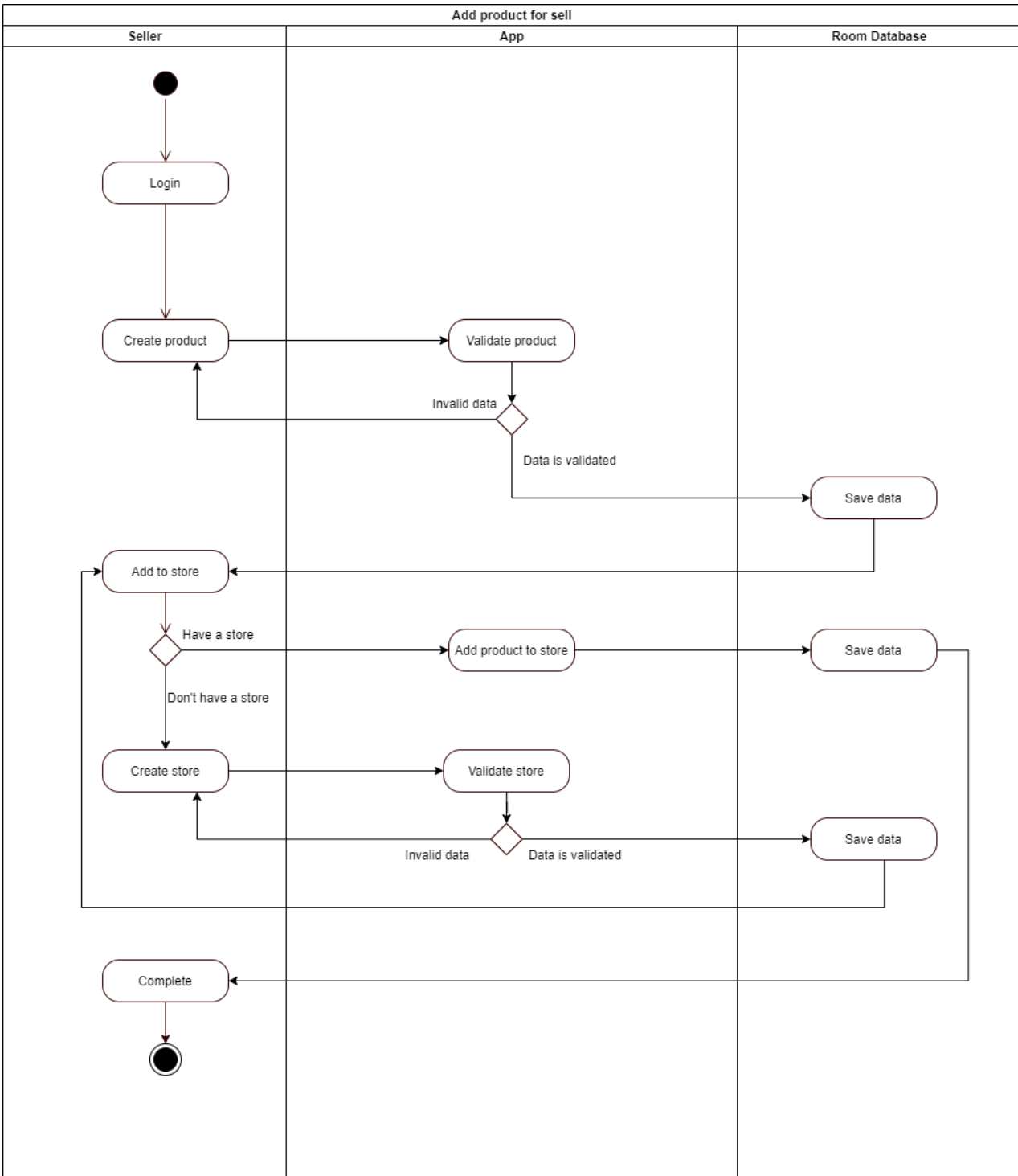


4. Activity Diagram

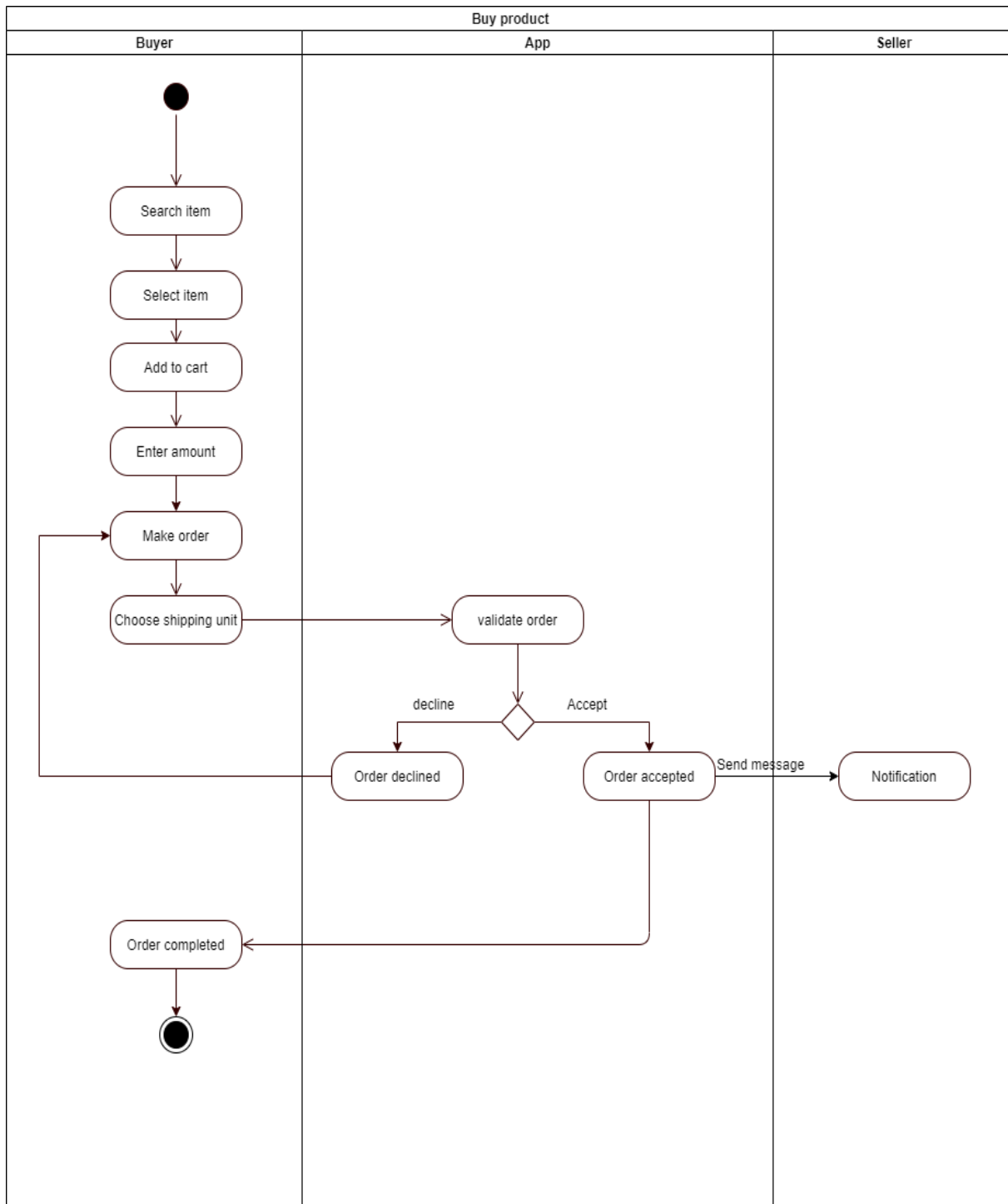
a) Login



b) Add Product



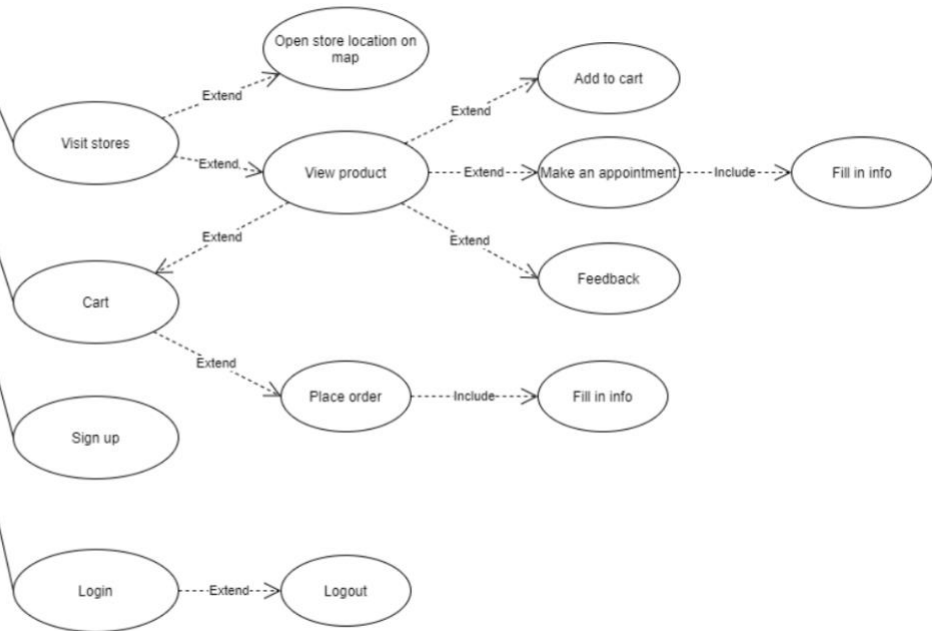
c) Buy Product



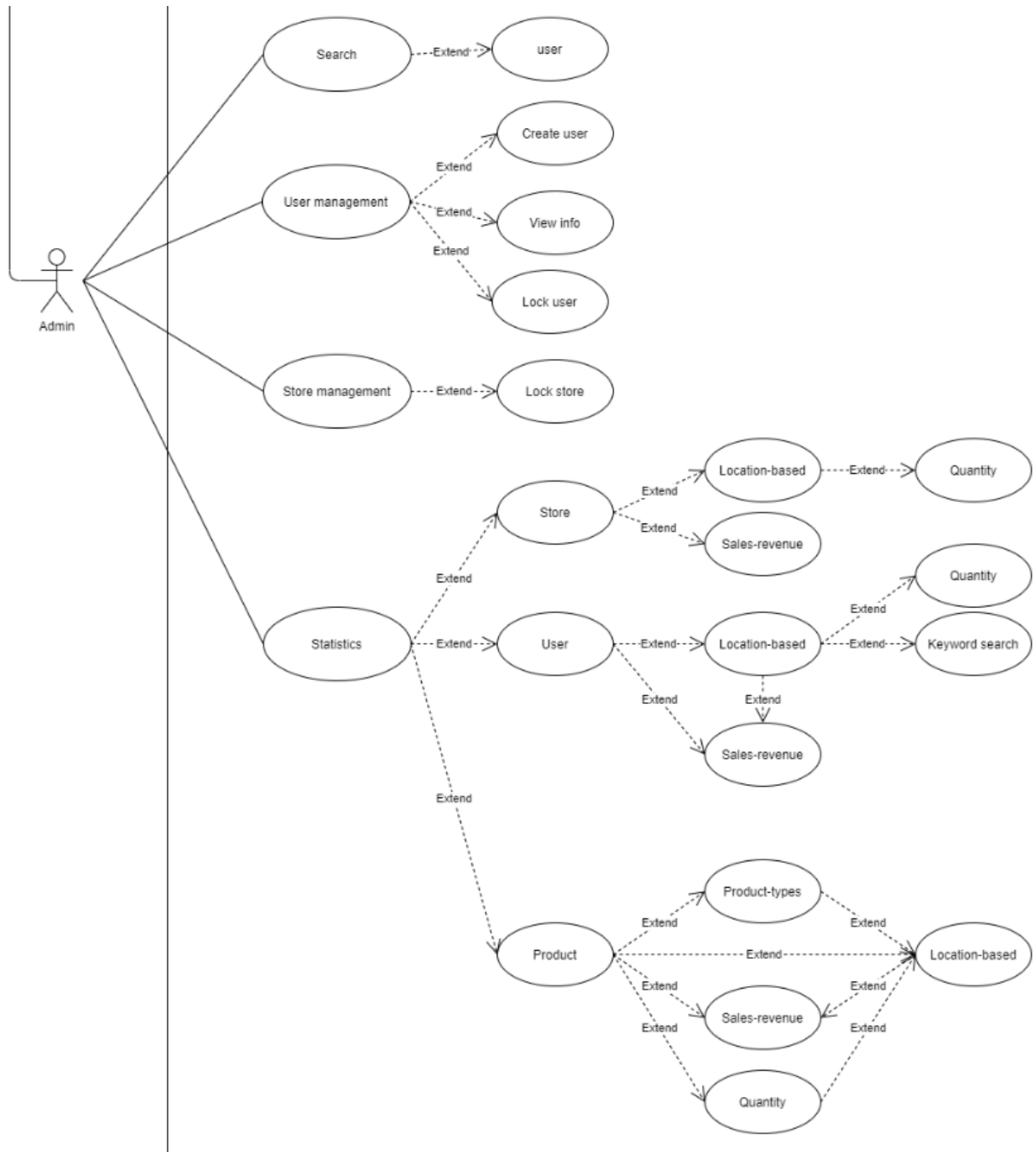
5. Use Case Diagram

a) User



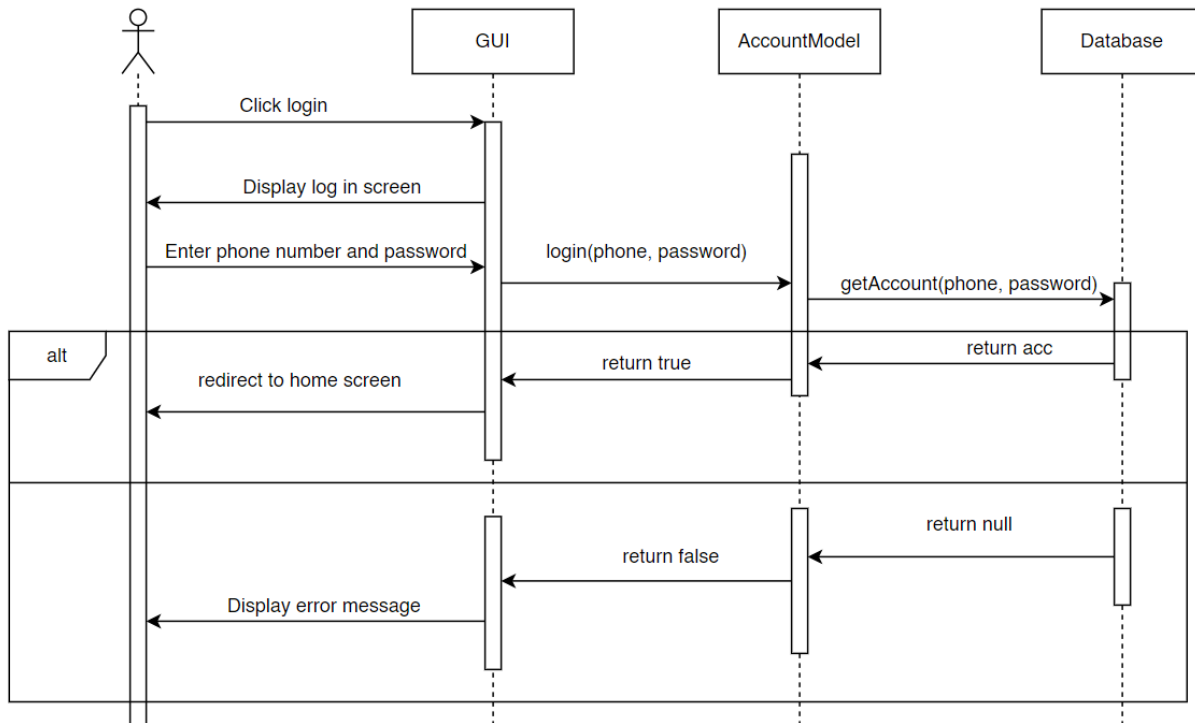


b) Admin

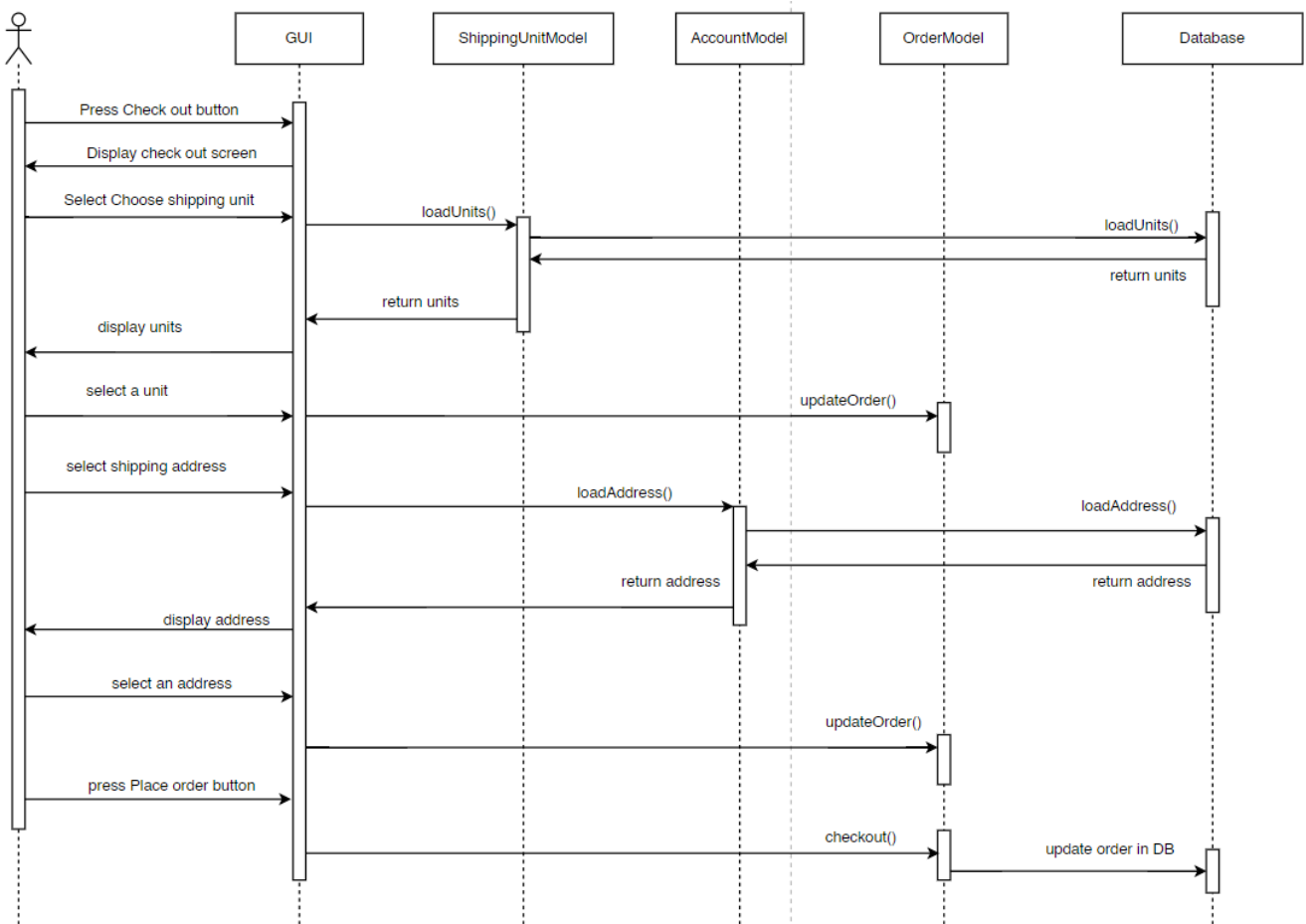


6. Sequence Diagram

a) Login

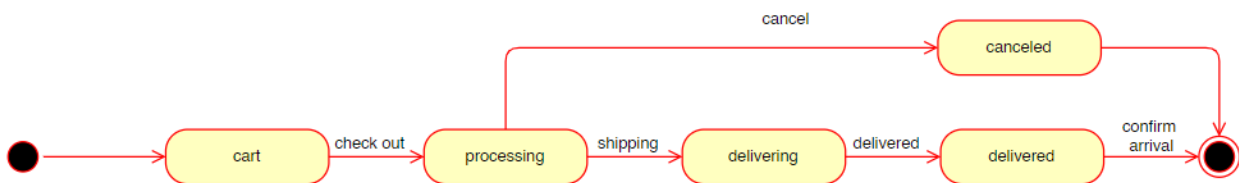


b) Check out

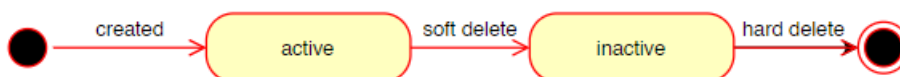


7. State Machine

a) Order



b) Others



V. Table Structure

1. Account			
Field Name	Data Type	Constraint	Description
accountID	int	PRIMARY KEY	ID of Account
typeID	int	FOREIGN KEY	Type of Account
phone	Varchar (12)	NOT NULL	Phone Number of Account
password	varchar (64)	NOT NULL	Password of Account
name	varchar (100)	NOT NULL	Name of Account
gender	int	NOT NULL	Gender of Account
address	varchar (100)	NOT NULL	Address of Account
email	varchar (100)	NOT NULL	Email of Account
image	varchar (max)	NOT NULL	Image of Account
status	int	NOT NULL	Status of Account

2. Account Type			
Field Name	Data Type	Constraint	Description
typeID	int	PRIMARY KEY	ID of Account Type
typeName	int	NOT NULL	Name of Account Type
status	int	NOT NULL	Status of Account Type

3. Product Type			
Field Name	Data Type	Constraint	Description
productTypeID	int	PRIMARY KEY	ID of Product Type
productTypeName	varchar(120)	NOT NULL	Name of Product Type
status	int	NOT NULL	Status of Product Type

4. Product Image			
Field Name	Data Type	Constraint	Description
imageID	int	PRIMARY KEY	ID of Product Image
productID	int	FOREIGN KEY	Name of Product Image
URL	int	NOT NULL	URL of Product Image
status	int	NOT NULL	Status of Product Image

5. Product			
Field Name	Data Type	Constraint	Description
productID	int	PRIMARY KEY	ID of Countries
storeID	varchar (100)	FOREIN KEY	Name of Countries
productTypeID	int	FOREIN KEY	Status of Countries
amount	double	NOT NULL	Amount of Product
price	double	NOT NULL	Price of Product
currentPrice	double	NOT NULL	Current Price of Product
description	text	NOT NULL	Description of Product
status	int	NOT NULL	Status of Product

6. Order			
Field Name	Data Type	Constraint	Description
ordersID	int	PRIMARY KEY	ID of Order
storeHouseID	int	NOT NULL	Name of Order
accountID	int	FOREIGN KEY	Username of Account
shippingID	int	FOREIGN KEY	ID of Shipping
orderedDate	datetime	NOT NULL	Ordered Date
deliveredDate	datetime	NOT NULL	Delivered Date
address	varchar(max)	NOT NULL	Address of Order
total	double	NOT NULL	Total of Order
description	text	NOT NULL	Description of Order
status	int	NOT NULL	Status of Order

7. Order Detail			
Field Name	Data Type	Constraint	Description
orderID	int	PRIMARY KEY	ID of Order Detail
productID	int	FOREIGN KEY	ID of Product
quantity	int	NOT NULL	Quantity of Order Detail
totalPrice	varchar	NOT NULL	Total Price of Order Detail
description	text	NOT NULL	Description of Order Detail
status	int	NOT NULL	Status of Order Detail

8. Feedback Product			
Field Name	Data Type	Constraint	Description
product_id	int	FOREIGN KEY PRIMARY KEY,	ID of Product
account_id	int	PRIMARY KEY, FOREIGN KEY	ID of Account
rating	float	NOT NULL	Rating of Product
time	dateTime	NOT NULL	Time of Product
description	text	NOT NULL	Description of Product
status	int	NOT NULL	Status of Feedback

9. Feedback Shipping			
Field Name	Data Type	Constraint	Description
shipping_id	int	FOREIGN KEY PRIMARY KEY,	ID of Shipping
account_id	int	PRIMARY KEY, FOREIGN KEY	ID of Account
rating	float	NOT NULL	Rating of Product
time	dateTime	NOT NULL	Time of Product

description	text	NOT NULL	Description of Shipping
status	int	NOT NULL	Status of Feedback

10. Shipping Unit

Field Name	Data Type	Constraint	Description
shipping_id	int	PRIMARY KEY	ID of Shipping
account_id	int	FOREIGN KEY	ID of Account
name	varchar(100)	NOT NULL	Name of Shipping
transportFee	double	NOT NULL	Fee of Shipping
image	varchar(max)	NOT NULL	URL of Image
status	int	NOT NULL	Status of Shipping

11. Storehouse

Field Name	Data Type	Constraint	Description
storeHouseId	int	PRIMARY KEY	ID of Storehouse
account_id	int	FOREIGN KEY	ID of Account
storeName	varchar(100)	NOT NULL	Name of Storehouse
address	text	NOT NULL	Address of Storehouse
longitude	float	NOT NULL	Longitude of Storehouse
latitue	float	NOT NULL	Latitue of Storehouse
description	text	NOT NULL	Description of Storehouse
status	int	NOT NULL	Status of Storehouse

VI. Maintenance and Updating

1. Maintenance

- We back up our project to other cloud services like Google Drive, OneDrive every week.
- Functions that are under coding will be stored on group's members devices.
- Using GitHub to upload source code and save them.
- Split into 2 branches on GitHub: "master" stores official source code and "dev" stores developing code. Only leader has permission to merge into "master".



Figure 2 cloud services for backing up

2. Updating

- There are three kinds of update: Big ones, small ones and patches.
 - Big updates: new function(s) or big changes in algorithms.
 - Small ones: include UI update or patches.
 - Patches: bugs fix.
- Our official project will be updated whenever a new version released.
- New functions will only be added to main project when it's has been tested carefully by our group's testers.
- Changes also written in a log file so that members can track all the changes

VII. Check List

Assignment	Member	Actual Start Time	ETF ² (hrs)	Actual End time	Work hours (hrs)	Note
Problem Definition	ThanhNT	8h 26/9/2020	2	10h 26/9/2020	2	Completed
User Requirement and System Requirement	ThanhNN, ThanhKH, ThanhND	13h 26/9/2020	4	17h 26/9/2020	4	Completed
Analysis	ThanhKH QuangLN	8h 27/09/2020	48	12h 29/09/2020	36	Completed
Database Diagram	ThanhKH, QuangLN	8h 30/09/2020	18	17h 30/09/2020	8	Completed
Class Diagram	ThanhKH, ThanhNN, QuangLN	8h 1/10/2020	36	12h 3/10/2019	36	Completed
Use-case Diagram	ThanhKH, ThanhNN, ThanhND, QuangLN	8h 03/10/2020	36	17h 07/10/2020	40	Completed

² Estimate Time to Finish

User Interface Design	ThanhKH, QuangLN	8h 08/10/2020	72	20h 08/10/2019	12	Completed
Exception & Model Coding	ThanhKH, QuangLN	8h 09/10/2020	36	6h 10/10/2020	20	Completed
User Interface Coding	ThanhKH, QuangLN	8h 11/10/2020	168	23h 12/10/2020	40	Completed
Admin Interface Design	ThanhNN, ThanhND	15h 18/10/2020	48	21h 18/10/2020	6	Completed
Admin Interface Coding	ThanhNN, ThanhND	13h 25/10/2020	144	13h 30/10/2020	120	Completed
Testing & Debugging	ThanhKH, ThanhNN, QuangLN, ThanhND	8h 31/10/2020	120	5h 4/11/2020	117	Completed
Document Finishing	ThanhNN, ThanhND	19h 5/11/2020	4	20h 5/11/2020	3	Completed
Maintenance	ThanhKH, ThanhNN, QuangLN, ThanhND	8h 6/11/2020	144	8h 11/11/2020	120	Completed

Association	ThanhKH	8h 12/11/2020	60	20h 14/11/2020	48	Completed
Presentation	ThanhKH, ThanhNN, QuangLN, ThanhND	13h 16/11/2020	3	14h15 16/11/2020	1	Completed
Deployment	ThanhNN	8h 17/11/2020	3	10h 17/11/2020	2	Completed