# SUMMARY

Topic title: Real estate business

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Student ID: 102210195. Class: 21TCLC\_DT2

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| DA NANG UNIVERSITY  **UNIVERSITY OF SICIENCE AND TECHNOLOGY**  FALCUTY………………………………………… | **THE SOCIALIST REPUBLIC OF VIETNAM**  Independence - Freedom - Happiness |

# GRADUATION PROJECT REQUIREMENTS

Student Name: …..…………….………….…….. Student ID :………………...

Class:…………… Faculty:..................................... Major:…………...........................

1. *Topic title:*

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1. *Project topic :* ☐*has signed intellectual property agreement for final result*
2. *Initial figure and data:*

……………………………………..……………………………………………..……......……………………………………………………………………………………………..………………………………….…..………………………..………………………*Content of the explanations and calculations:*

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1. *Drawings, charts (specify the types and sizes of drawings):*

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| 1. *Name of instructor:* | *Content parts:* |
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1. *Date of assignment: ……../……./201…..*
2. *Date of completion: ……../……./201…..*

|  |  |
| --- | --- |
|  | *Đà Nẵng, date month year 201* |
| **Head of Division**…………………. | **Instructor** |

# PREFACE

# ASSURRANCE

I hereby declare that:

1. The graduation project report, Topic name: Real Estate Business System, is my own research work under the direct guidance of the lecturer ................................
2. I have read, researched, translated documents and synthesized the knowledge that has made this report and ensure that it has not been copied anywhere.
3. The theories in the thesis are all used from the documents as I have referred to in the reference section in the report.

If there is any violation, I will take full responsibility.

Student Performed

Nguyen Duc Van

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# LIST OF SYMBOL, ACRONYM

# INTRODUCTION

## Purpose of implementation

* Searching and buying real estate today is difficult, especially in determining the real value of the property, comparing suitable options and accessing transparent information. Buyers often spend a lot of time searching for properties that meet their needs in terms of location, area, amenities and finance, while sellers have difficulty reaching potential customers.
* Therefore, an online real estate business system can help display information visually, support filtering and comparing options, and integrate price prediction technology to help buyers and sellers make more accurate decisions

## Objective of the topic

### System Target

* Help users quickly post and search for suitable real estate based on filters with many characteristics.
* The real estate valuation feature provides a reference price close to the market, helping users minimize the risk of incorrect valuation, supporting the brokerage team or real estate sellers and buyers to save time in valuation and negotiation.
* The system will also support predicting real estate fluctuations to support customers' buying or selling decisions.
* Integrating VNPAY, safe and convenient online payment when customers want to upgrade their account to use more features of the application.

### Features

* For guest
  + Search and filter by needs: price, area, location, property type, ...
  + View property details with images, prices and legal information, ...
  + Displays detailed information of the property along with the price determined by the property valuation system.
* For member
  + Post real estate with full information: images, descriptions, prices, legal status, ...however, the number of posts will be limited to 3.
  + You can save posts that interest you as well as upgrade your account to be able to use more features of the application.
* For brokers
  + Customers with upgraded accounts will be supported by the system to predict future real estate price compared to the market.
  + The number of posts posted by the brokerage account will also be up to 30.
* For admins:
  + Manage user accounts.
  + View transaction history.
  + View article details and moderate it.
  + Statistics and reports on business activities.

## Scope

* Property type: house, land.
* Geographical scope: Da Nang
* Language: Vietnamese

## Target customers

* Real Estate Buyers/Sellers
* Real Estate Companies or Brokers

## Development technology

* Project management and hosting: Github
* Language: Java, Python, Reactjs
* Framework: Spring boot
* Database: Mysql
* Testing tool: Selenium
* Encryption & security: Security, HTTPS Token

# THEORETICAL FOUNDATION

# SYSTEM DESIGN AND ANALYSIS



## Business analysis

### Buyer's business

* **Visiting customers**
  + View property list: can view all properties posted on the system.
  + Search and filter properties: search by keyword, filter by location, price, area, type, etc.
  + View property details: view description, images, price, area, number of rooms, etc. and information of the poster. At the same time, the real estate price will be displayed as determined by the system.
  + Register account: if you want to save information or make transactions, visitors must register an account.
* **Members** are those who have registered an account and can use all the features:
  + All rights of visitors.
  + Update profile and account information: Change avatar, contact information and change password when needed.
  + Upgrade account: choose an account upgrade package to use more features and pay directly through the payment gateway.
  + View transaction history: track completed or pending transactions.
  + Buyer accounts can also post properties for sale, but are limited to 3
  + Manage post: edit, update, or delete posted real estate listings.
  + Save to favorites: add properties to your favorites list for easy access later.

### Broker's business

* Brokerage account is a registered and upgraded account
* Having all rights of member
* This account will be used for additional features of the system: predict real estate trends.
* The article limits the posts that can be posted by this account to 30

### Admin's business

* User management: view list of buyers, brokers as well as add, edit and delete users.
* Post moderation: review, approve or reject real estate posts.
* System statistics and reports: track transactions, number of users, posts

## System design

### Use-case diagram

#### General use-case diagram

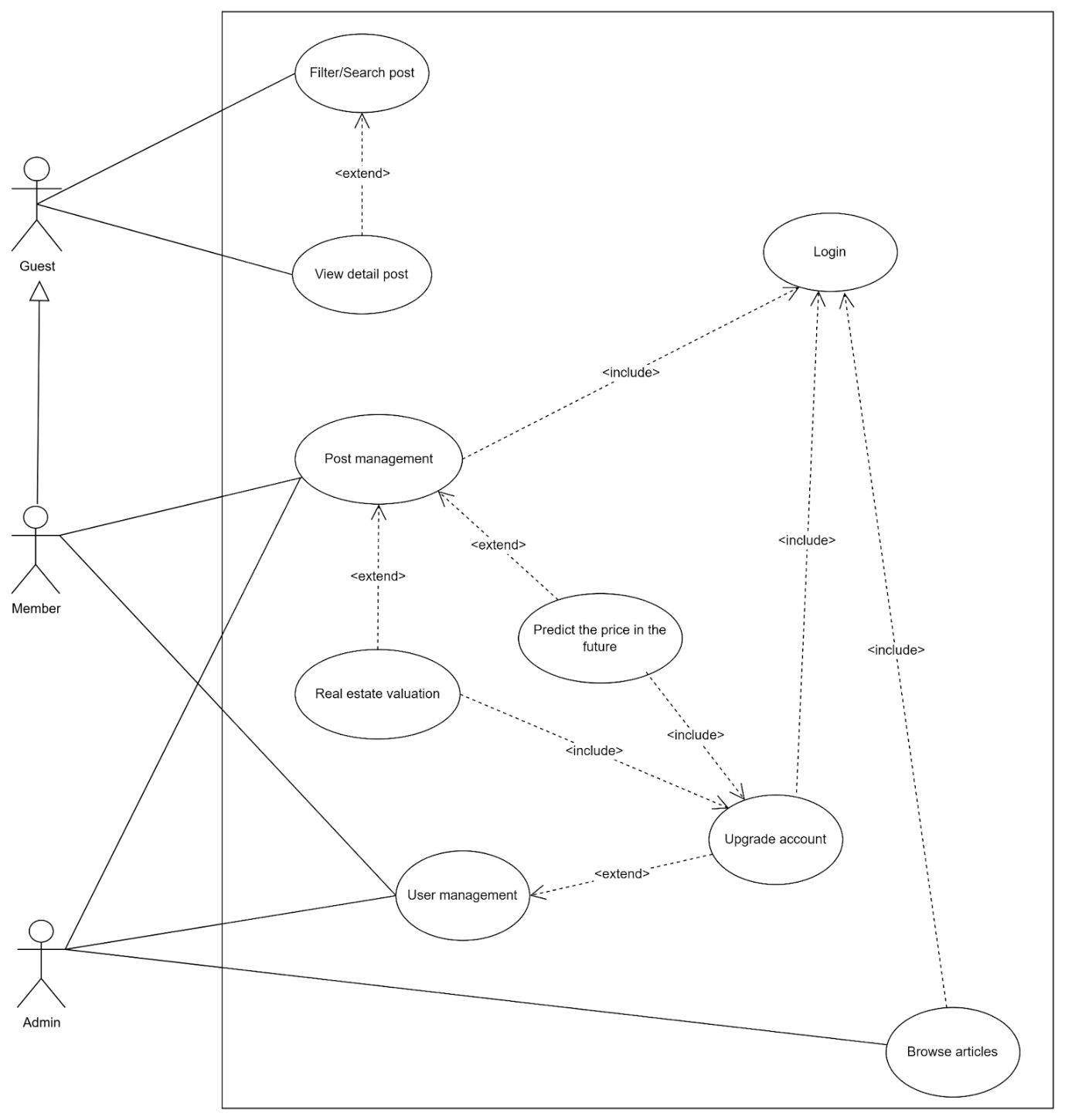


Figure 2.1 General use case diagram

#### Admin use-case diagram

* User management

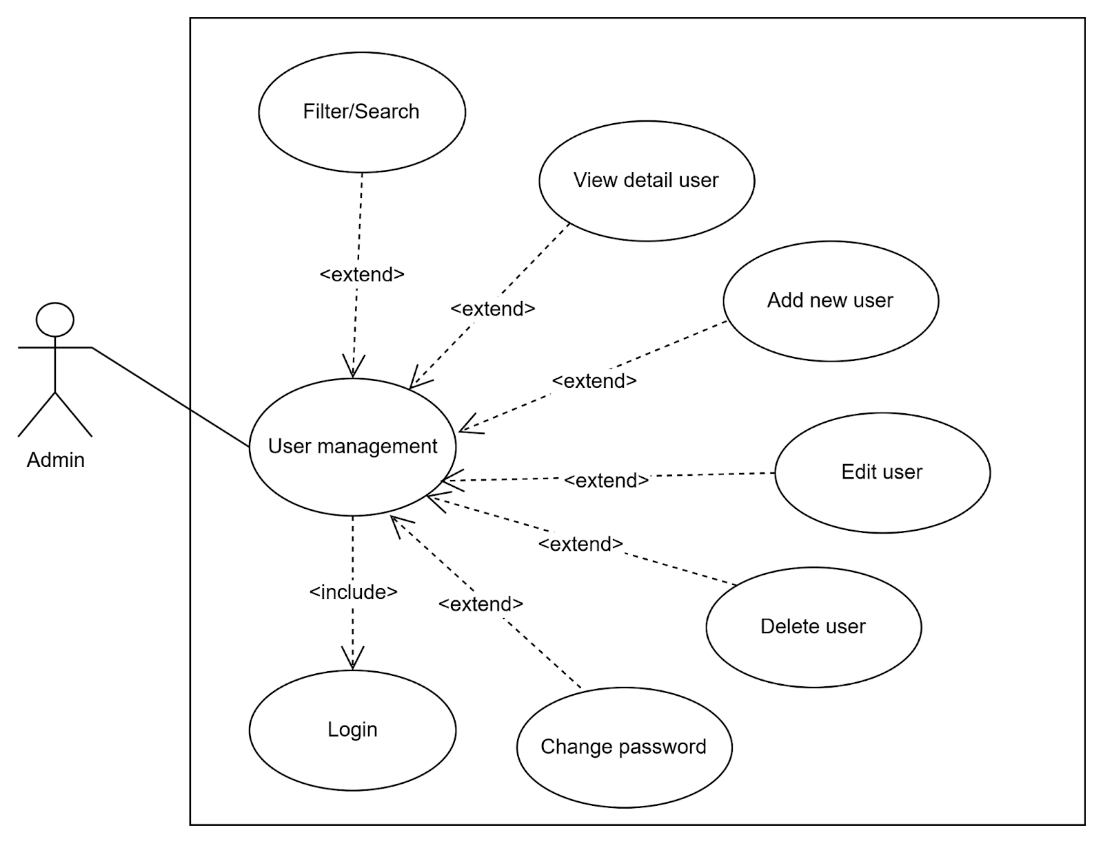


Figure 2.2 User management use-case diagram

* Post modaration

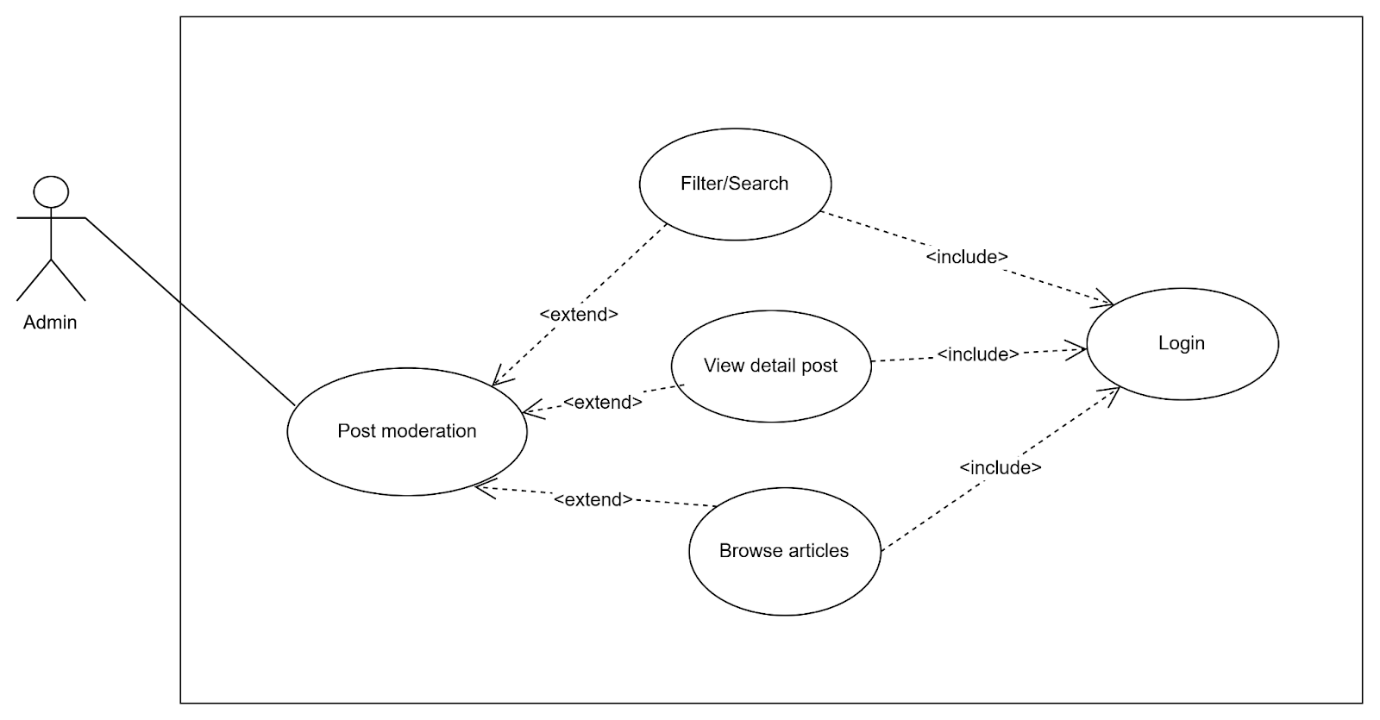


Figure 2.3 Post management use case diagram

#### User use-case diagram

* User management

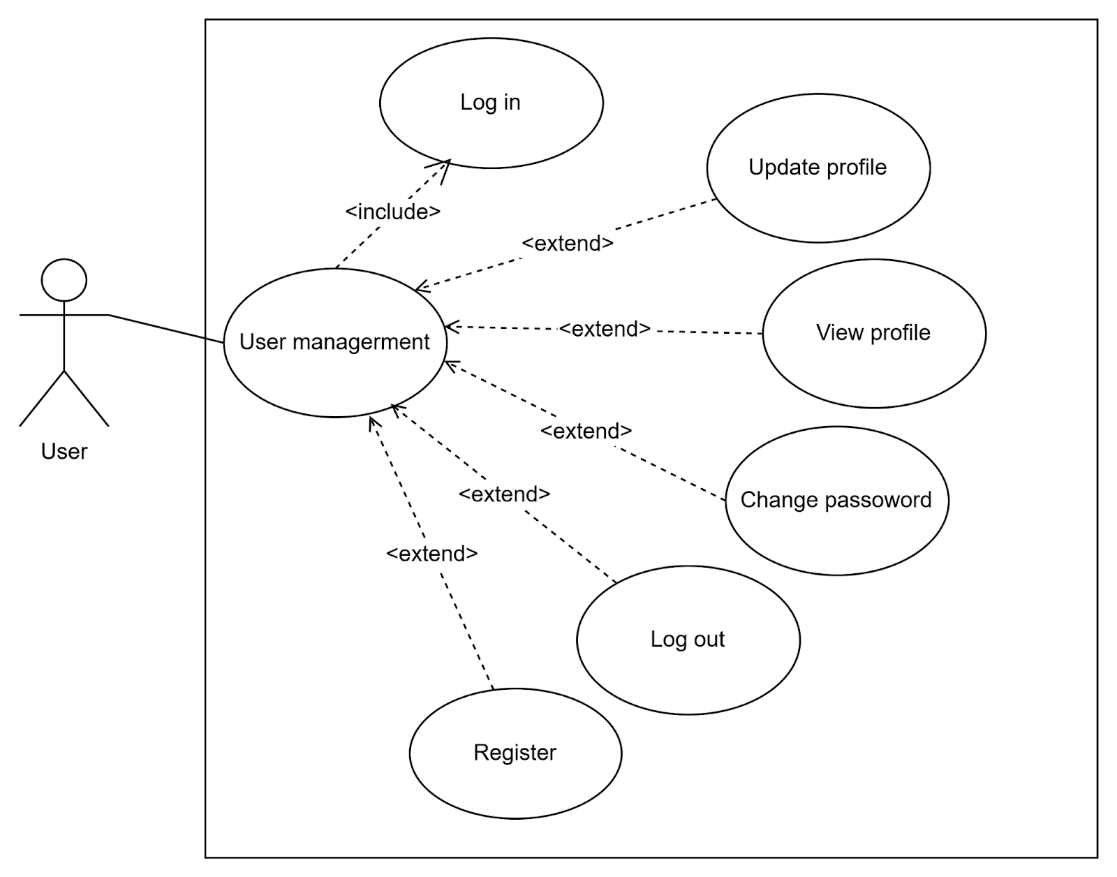


Figure 2.4 User management use case diagram

* Account upgrade management

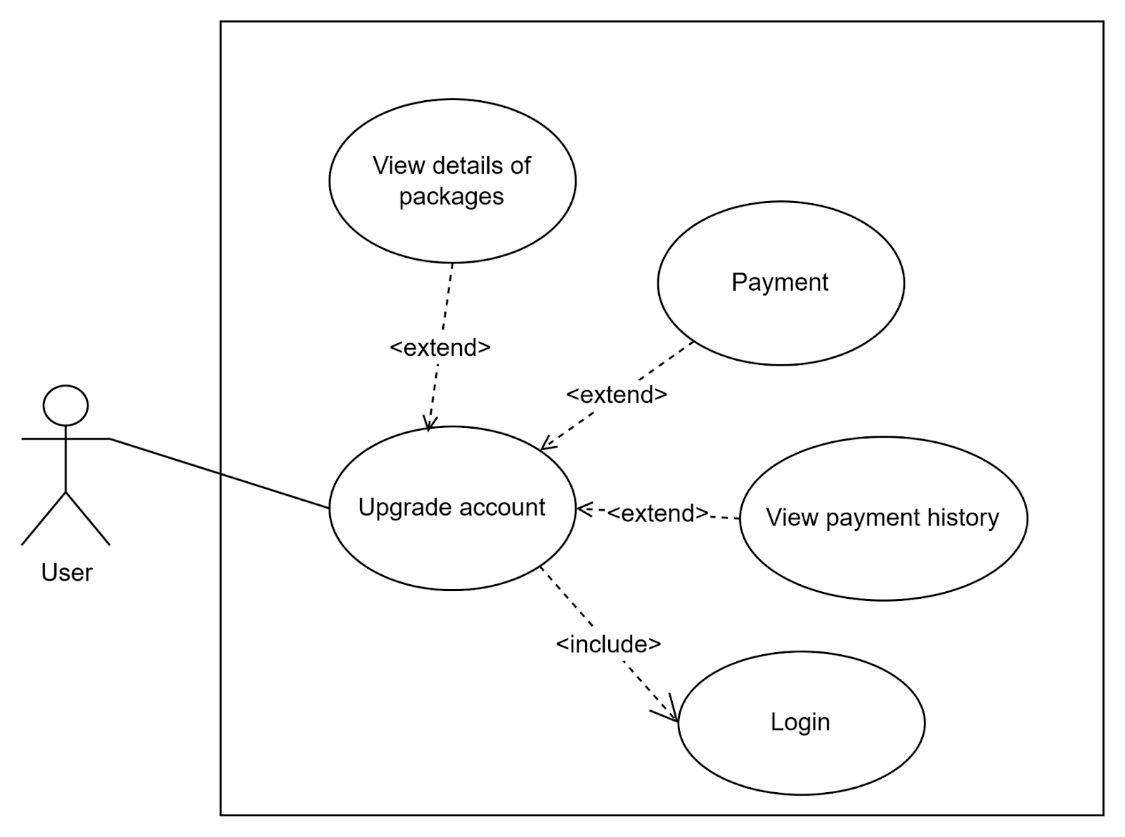


Figure 2.5 Account upgrade management use case diagram

* Post management

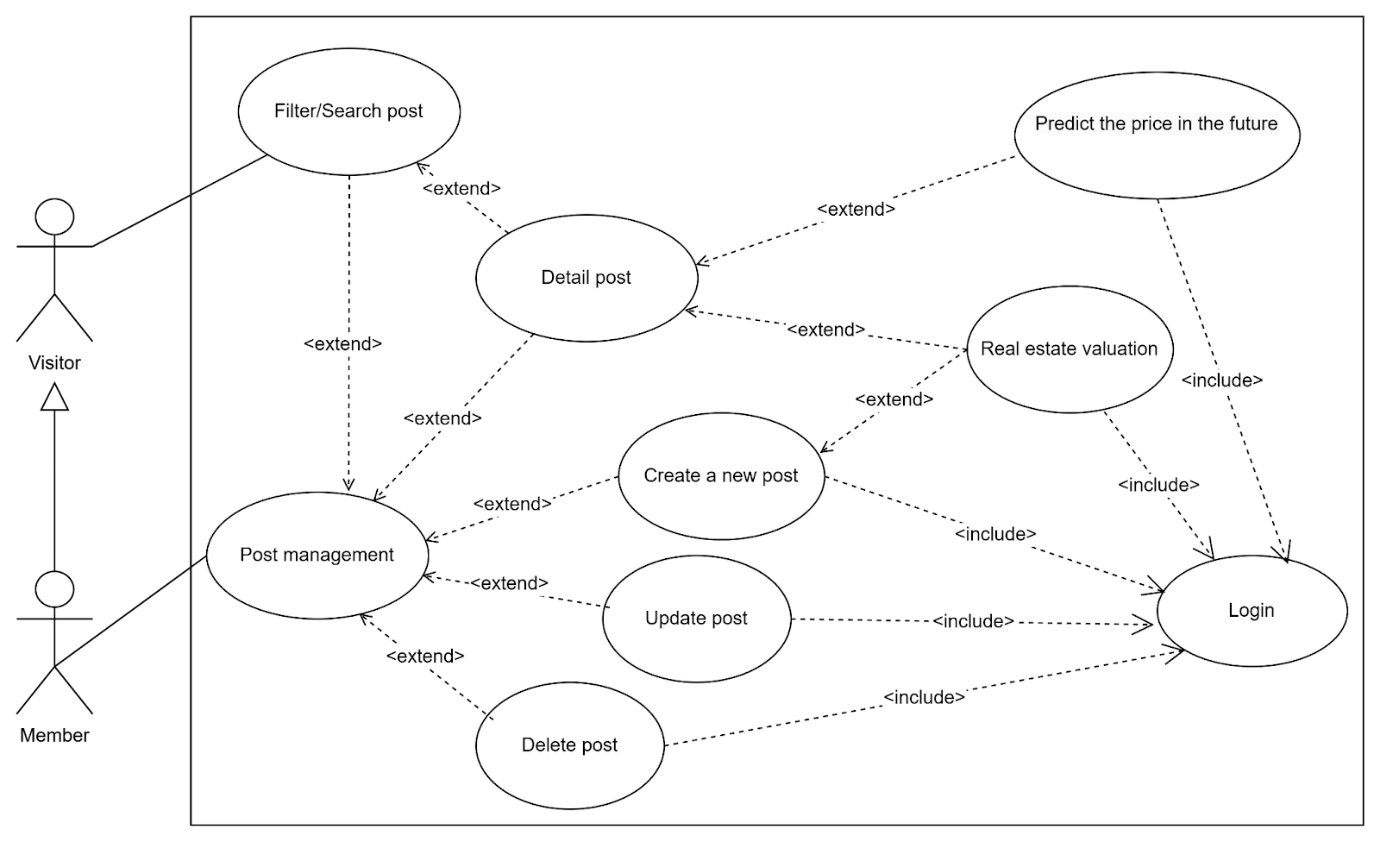


Figure 2.6 Post management use case diagram

* Favourite post management

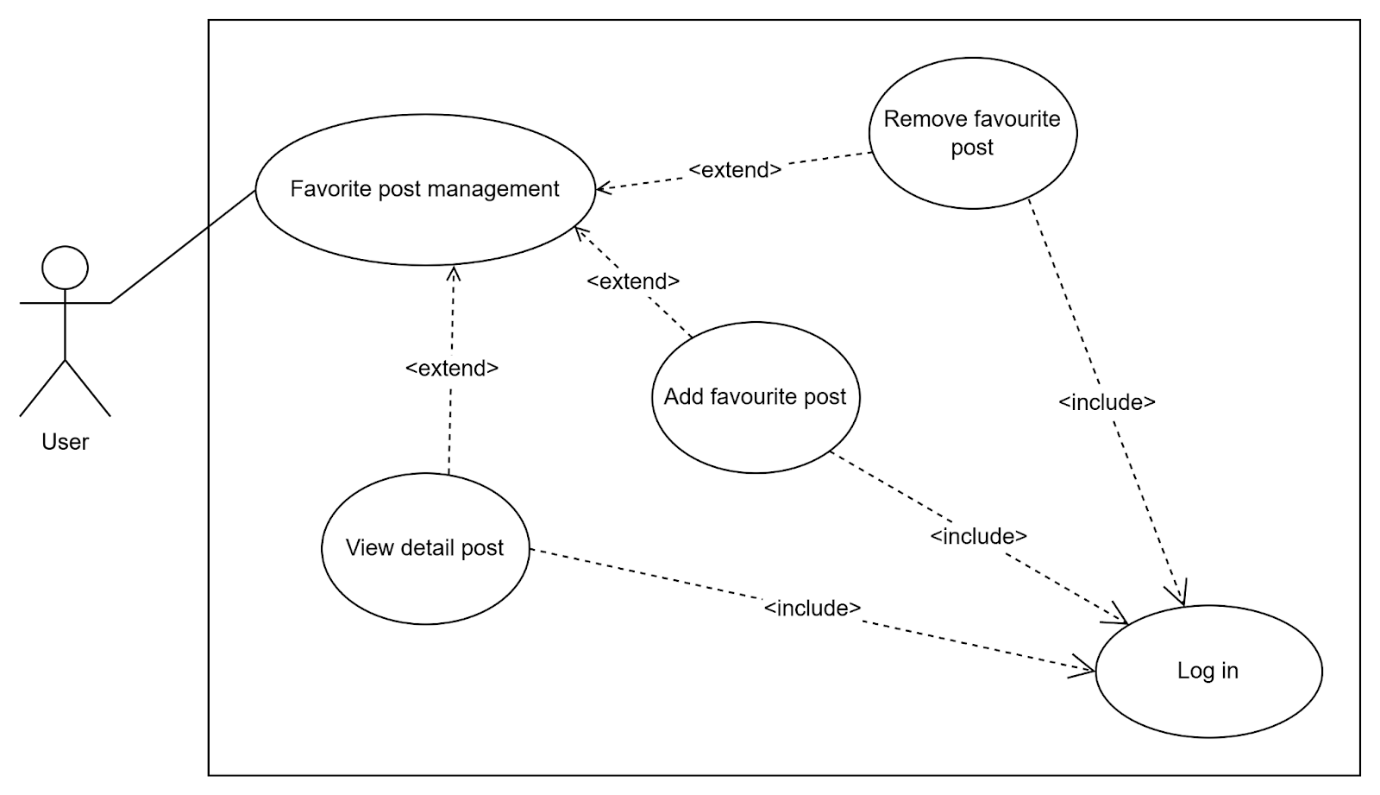


Figure 2.7 Favourite post management use case diagram

### Activity diagram

* The stream of activities access to the buyer/seller 's website

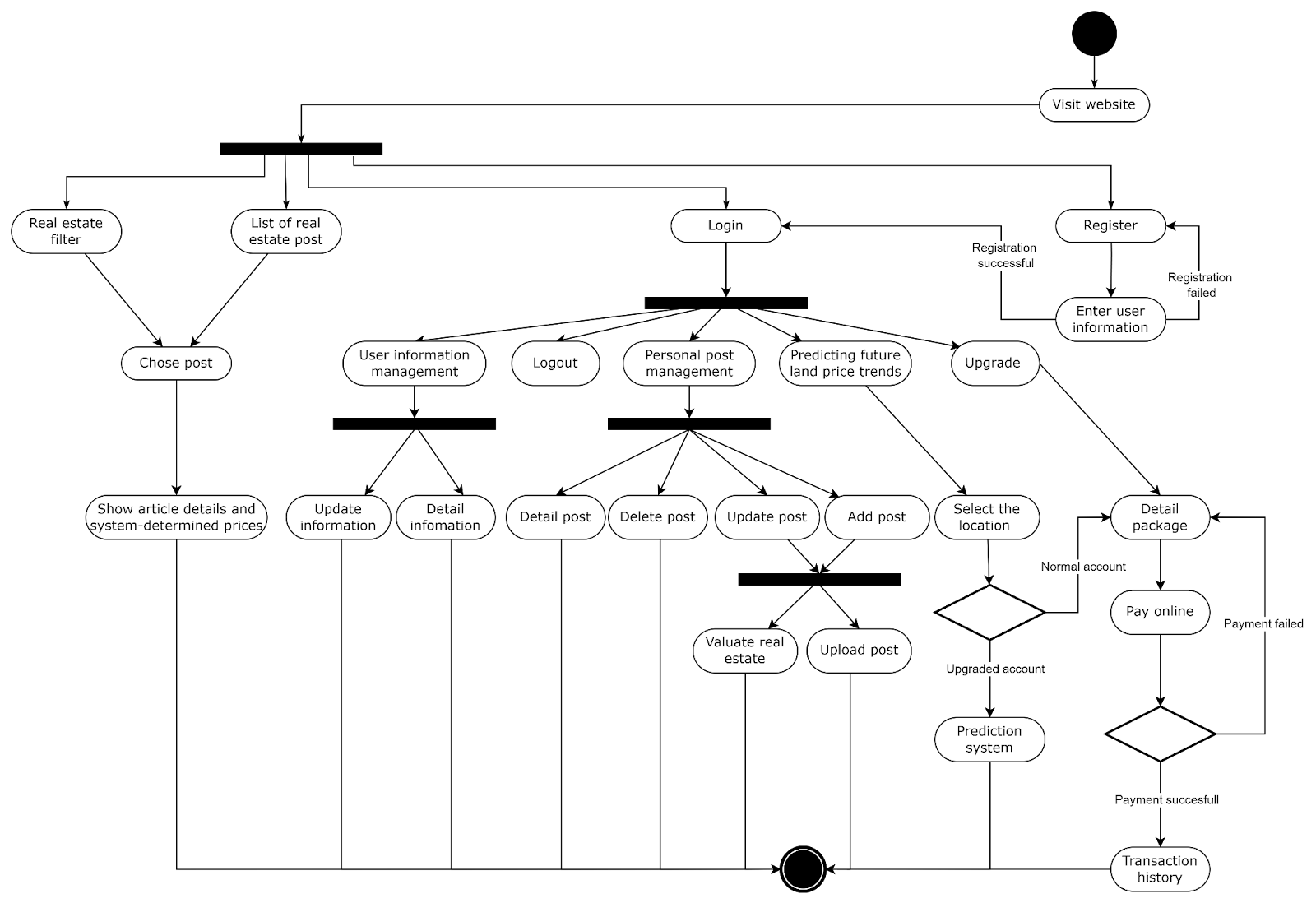


Figure 2.8 Client Operation Principle

* The stream of activities access to the admin website

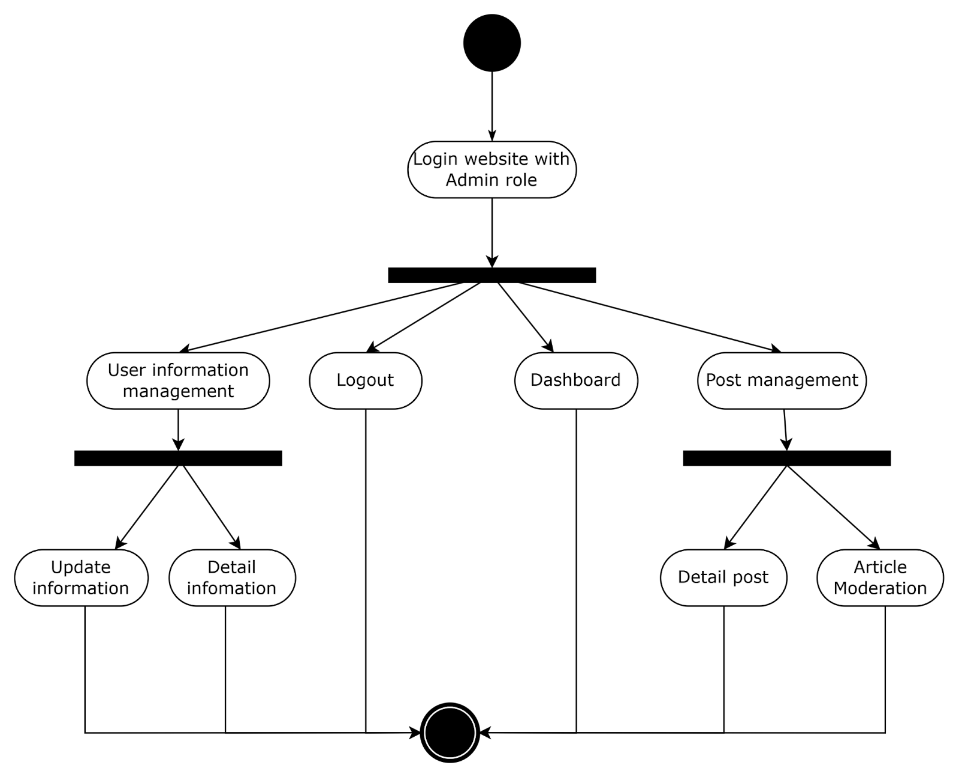


Figure 2.9 Admin Operation Principle

### Sequence diagram

* Login/Signup flow design

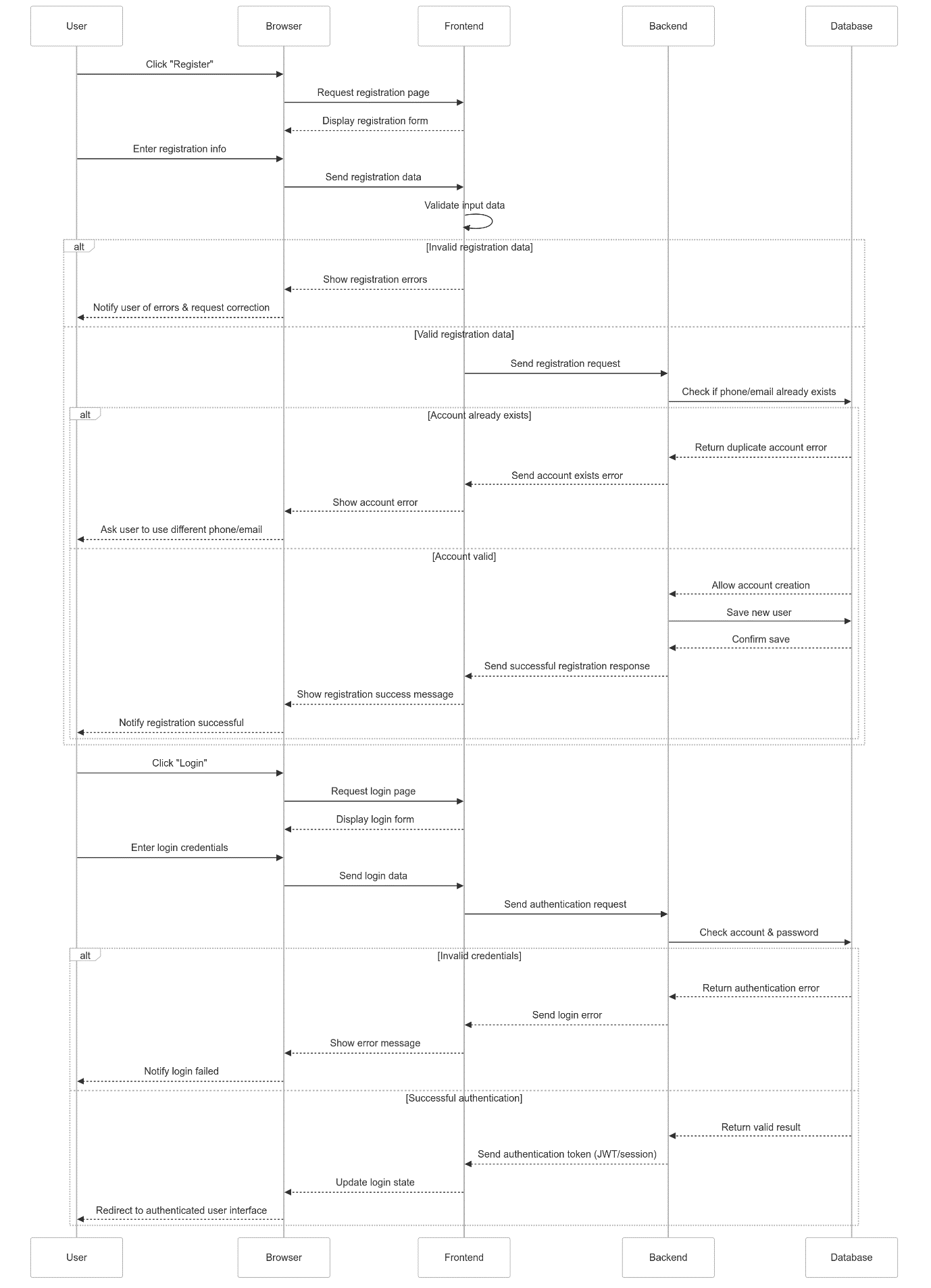
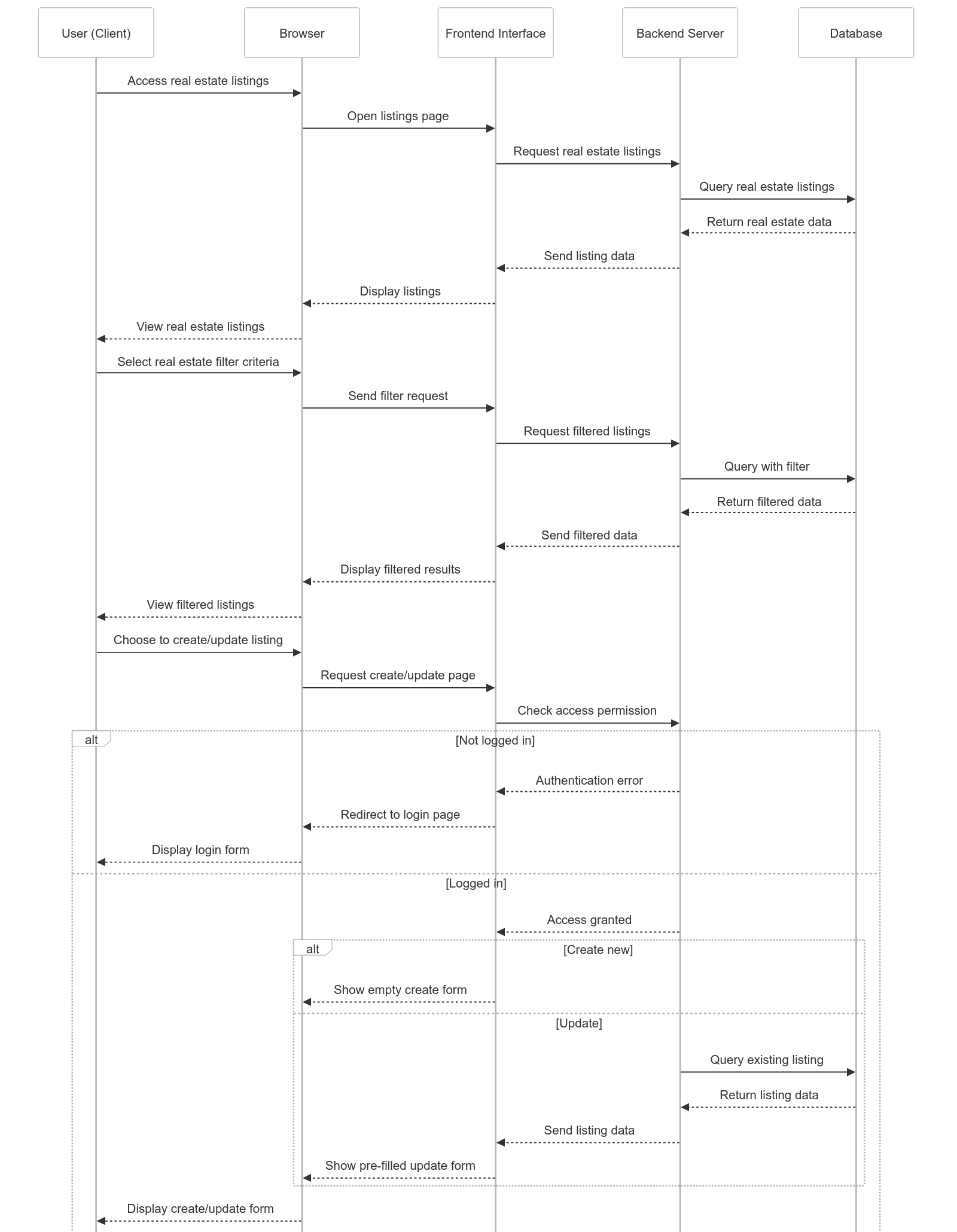


Figure 2.10 Registration/Login Flow

* Real estate article management flow design



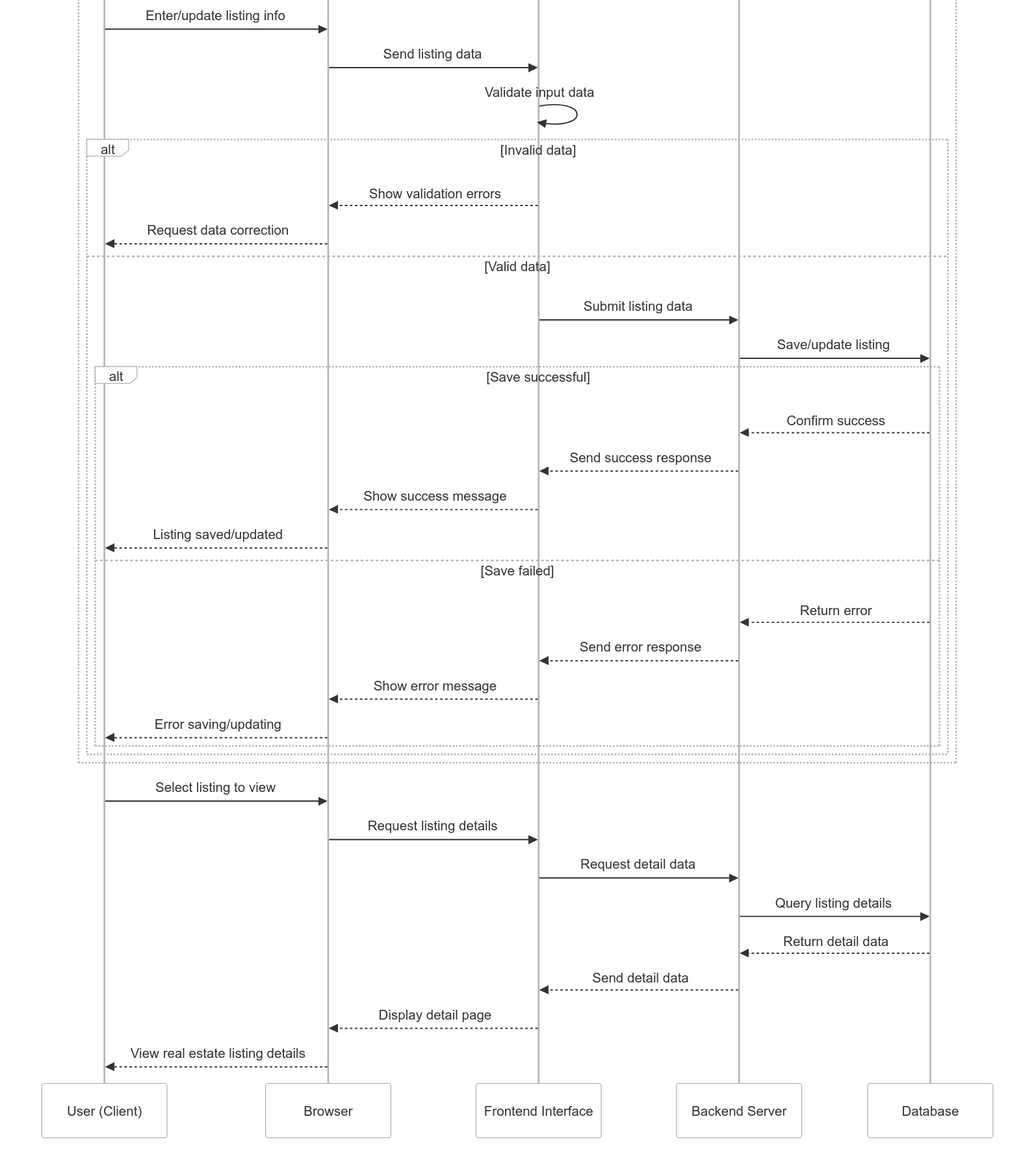


Figure 2.11 Real estate article management flow as a user

* Design of account upgrade flow integrating online payment

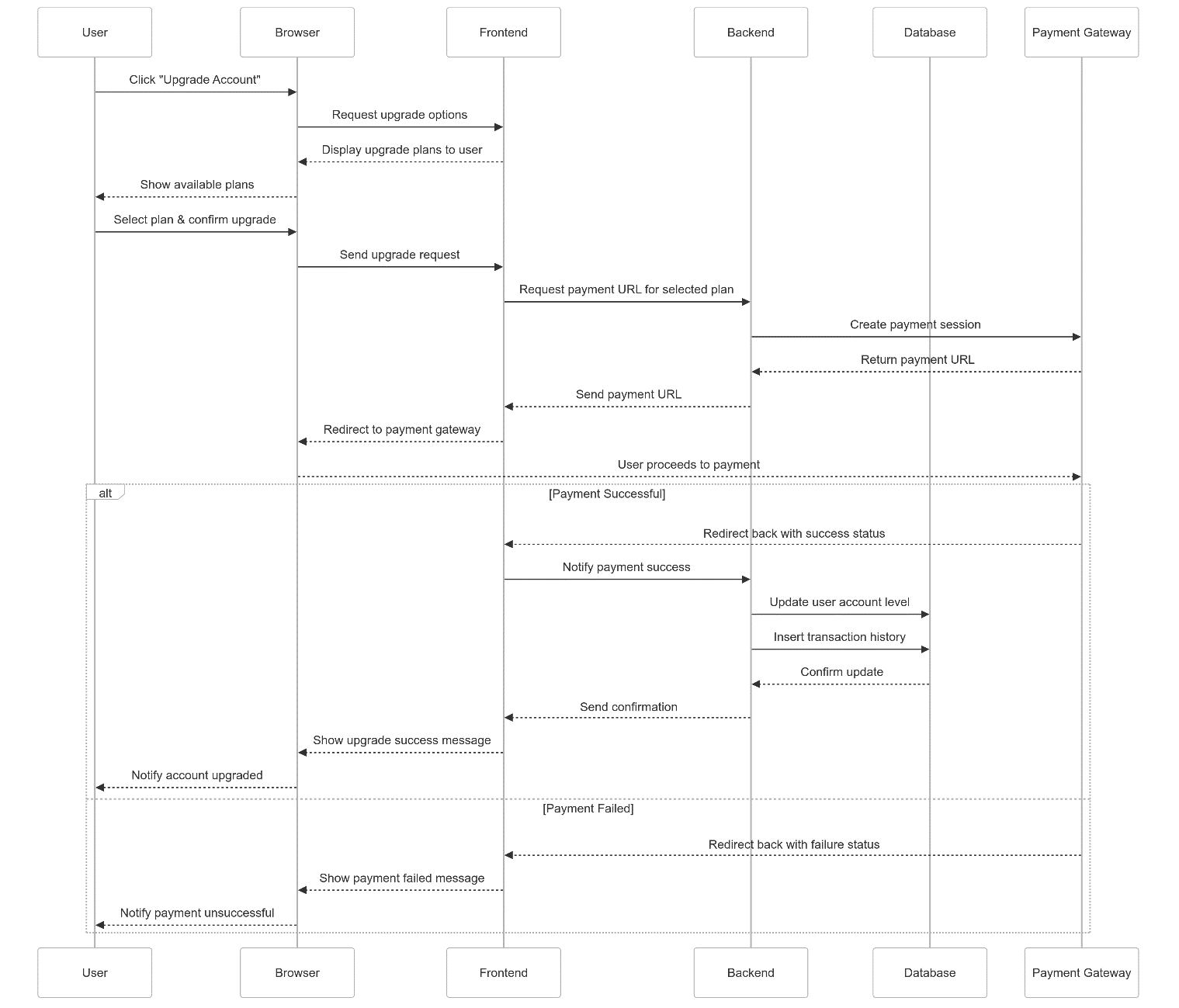


Figure 2.12 Account upgrade flow

## Database design

### ER (entity-relationship)

The ER entity relationship model is represented as

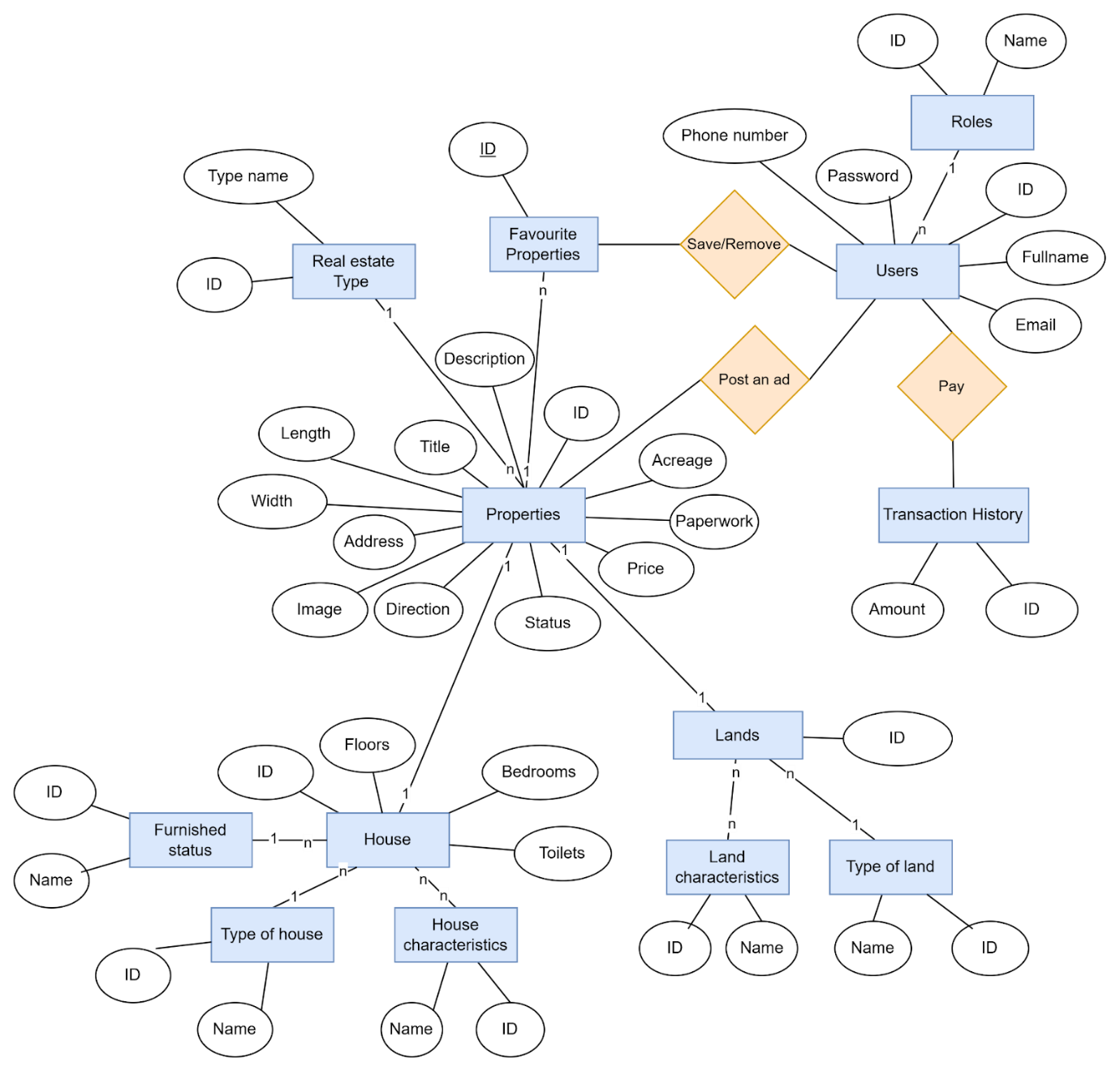


Figure 2.13 The ER entity relationship model

### Converting an implementation model into a system model

### Database schema

## Real estate valuation system development

# IMPLEMENTATION AND RESULTS EVALUATION

# CONCLUSION AND DEVELOPMENT DIRECTION

# REFERENCES

# APPENDIX 1

# APPENDIX 2