Darshan University

A Project Report on

"Online property selling"

Under the subject

Software Engineering (2301CS405)

B. Tech, Semester – V

Computer Science & Engineering Department

Submitted By

Student Name: Krishna Vara   Enrollment No.: 23010101659

Academic Year

(2024-2025)

Internal Guide	Dean-DIET
Prof. R.B.Gondaliya	Dr. Gopi Sanghani
Darshan University	Darshan University

Computer Science & Engineering Department
Darshan University

DECLARATION

We hereby declare that the SRS, submitted along with the **Software Engineering (2305CS405)** for entitled **"Online property selling"** submitted in partial fulfilment for the Semester-5 of **Bachelor Technology (B. Tech)** in **Computer Science and Engineering (CSE)** Department to Darshan University, Rajkot, is a record of the work carried out at **Darshan University, Rajkot** under the supervision of R. B. Gondaliya and that no part of any of report has been directly copied from any students' reports, without providing due reference.

Krishna Vara

Student's Signature

Date: _____

Computer Science & Engineering Department
Darshan University

CERTIFICATE

This is to certify that the SRS on **"Online property selling" has** been satisfactorily prepared by **Krishna Vara(23010101659)** under my guidance in the fulfillment of the course **Software Engineering (2305CS405)** work during the academic year 2023-2024.

Internal Guide   Dean-DIET
Prof., R. B. Gondaliya   Dr. Gopi Sanghani
Darshan University   Darshan University

ACKNOWLEDGEMENT

I wish to express my sincere gratitude to my project guide Prof. R. B. Gondaliya and all the faculty members for helping me through my project by giving me the necessary suggestions and advices along with their valuable co-ordination in completing this work.

I also thank my parents, friends and all the members of the family for their precious support and encouragement which they had provided in completion of my work. In addition to that, I would also like to mention the Darshan University personals who gave me the permission to use and experience the valuable resources required for the project from the University premises.

Thus, in conclusion to the above said, I once again thank the faculties and members of **Darshan University** for their valuable support in completion of the project.

Thanking You

Krishna Vara

ABSTRACT

An Online Property selling platform that facilitates seamless real estate transactions for various user roles, including property owners, buyers, real estate agents, brokers, and administrators. The platform provides secure registration and authentication, robust property listing management, advanced search and filtering capabilities, comprehensive property details, and efficient communication tools. Key functionalities for brokers include client management, appointment scheduling, negotiation tools, commission tracking, and integration with CRM systems. Administrators are equipped with features for user and content management, system configuration, security monitoring, and support. Emphasizing a user-friendly interface, responsive design, robust security, and compliance with legal regulations, the platform addresses the specific needs of each user type. This comprehensive approach ensures enhanced user engagement, efficient property transactions, and a streamlined real estate process, making the platform an essential tool for modern property selling and buying activities.

Main purpose of this system is to reduce human efforts as much as possible.

Table Of Contents

List of Figures

List of Tables

1 Introduction

1.1 Product perspective

This project aims to update the traditional property selling process into an internet-based application, allowing users to manage and view details related to property listings, inquiries, and transactions. It supports a multi-user environment and takes care of fundamental functions of an online property selling platform such as property listing, buyer inquiries, property searches with filters, payment processing, and seller-buyer communication. This system can efficiently handle all the basic operations of a property marketplace, making it ideal for small to medium-sized property sellers and buyers.

1.2 Product features

1.2.1 There are three different users who will be using this product:

- **Property Seller** who will be managing their property listings.
- **Property Buyer** who will be browsing and inquiring about properties.
- **Guest User** who can browse properties and request registration to become a buyer or seller.

1.2.2 The features required for the Property Seller are:

- List properties for sale or rent, including details such as location, price, and description.
- Upload multiple images and videos of the property.
- Track the status of listed properties and view inquiries from potential buyers.
- Edit or update the information of existing property listings.
- Respond to buyer inquiries directly through the platform.
- View statistics on property views and interest from potential buyers.
- Set filters and categorize properties (e.g., residential, commercial, land).
- Manage and update payment details for listing fees.
- Can view reports of sold or rented properties.

1.2.3 The features required for the Property Buyer are:

- Can browse property listings and apply filters based on price, location, property type, etc.
- Can create an account to save favorite listings and track inquiries.
- Can inquire directly with the seller through the platform.
- Can view details such as amenities, property features, and images for each listing.
- Can schedule viewings or request more information from sellers.
- Can submit inquiries for specific properties of interest.
- Can receive notifications for price drops or newly added properties based on search preferences.

1.2.4 The features required for the Guest User are:

- Can browse property listings without needing an account.
- Can apply basic filters to view relevant properties.
- Can request to create an account to become a buyer or seller.
- Limited access to inquiry and saving favorite listings until registration.

1.3 Functional Requirement

1.3.1 Buyers

- **Registration:** Buyers can create an account on the platform to access services.
- **Login:** Buyers can securely log in to their accounts.
- **Select property type:** Buyers can choose from various property types like apartments, houses, or commercial spaces.
- **Search property:** Buyers can search for properties based on location, price, or other criteria.
- **Add filter by budget:** Buyers can refine search results based on their budget constraints.
- **Add filter by BHK:** Buyers can filter properties based on the number of bedrooms (BHK).
- **Add filter by construction status:** Buyers can filter properties based on whether they are under construction, ready-to-move-in, etc.
- **Add filter by posted by:** Buyers can filter properties based on who listed them (e.g., owner, agent).
- **Add filter by Area:** Buyers can filter properties based on the size of the property or land.
- **View property details:** Buyers can see detailed information about each property listing, including photos and descriptions.
- **Like property:** Buyers can save properties they are interested in by liking them, making it easier to revisit later.

1.3.2 Sellers

- **Registration:** Sellers can create an account on the platform to list properties.
- **Login:** Sellers can securely access their accounts.
- **Post property:** Sellers can list properties for sale or rent with detailed information.
- **Edit property:** Sellers can modify property details, such as price or description.
- **Delete property:** Sellers can remove listings from the platform.
- **View Buyers information:** Sellers can access contact details and preferences of potential buyers.
- **View likes:** Sellers can see which buyers have shown interest in their properties.
- **Accept booking request:** Sellers can approve requests for property viewings or bookings.
- **Reject booking request:** Sellers can decline requests for property viewings or bookings.
- **Accept payment:** Sellers can receive payments securely through the platform.
- **Upload property brochure:** Sellers can provide additional details about the property.
- **Send receipt:** Sellers can issue receipts for payments received.
- **Rating:** Sellers can rate buyers based on their interactions.
- **Share feedback:** Sellers can provide feedback on buyer behavior and transactions.

1.3.3 Admin

- **Login:** Admin can securely access the administrative dashboard.
- **Delete property:** Admin can remove property listings from the platform.
- **Block buyers:** Admin can restrict access or actions for specific buyers.
- **Block sellers:** Admin can restrict access or actions for specific sellers.
- **View buyers:** Admin can access and manage information related to registered buyers.
- **View sellers:** Admin can access and manage information related to registered sellers.
- **Notification:** Admin receives alerts and updates regarding platform activities and issues.
- **View rating:** Admin can see ratings provided by sellers or buyers.
- **View feedback:** Admin can review feedback provided by users regarding their experiences on the platform.

1.4 Non-Functional Requirement

1.4.1 Usability:

- The UI should be simple enough for everyone to understand and get the relevant information without any special training. Different languages can be provided based on the requirements.

1.4.2 Accuracy:

- The data stored about the books and the fines calculated should be correct, consistent, and reliable.

1.4.3 Availability:

- The System should be available for the duration when the library operates and must be recovered within an hour or less if it fails. The system should respond to the requests within two seconds or less.

1.4.4 Maintainability:

- The software should be easily maintainable and adding new features and making changes to the software must be as simple as possible. In addition to this, the software must also be portable.

2.Design and Implementation Constraints

2.1 Use case diagram
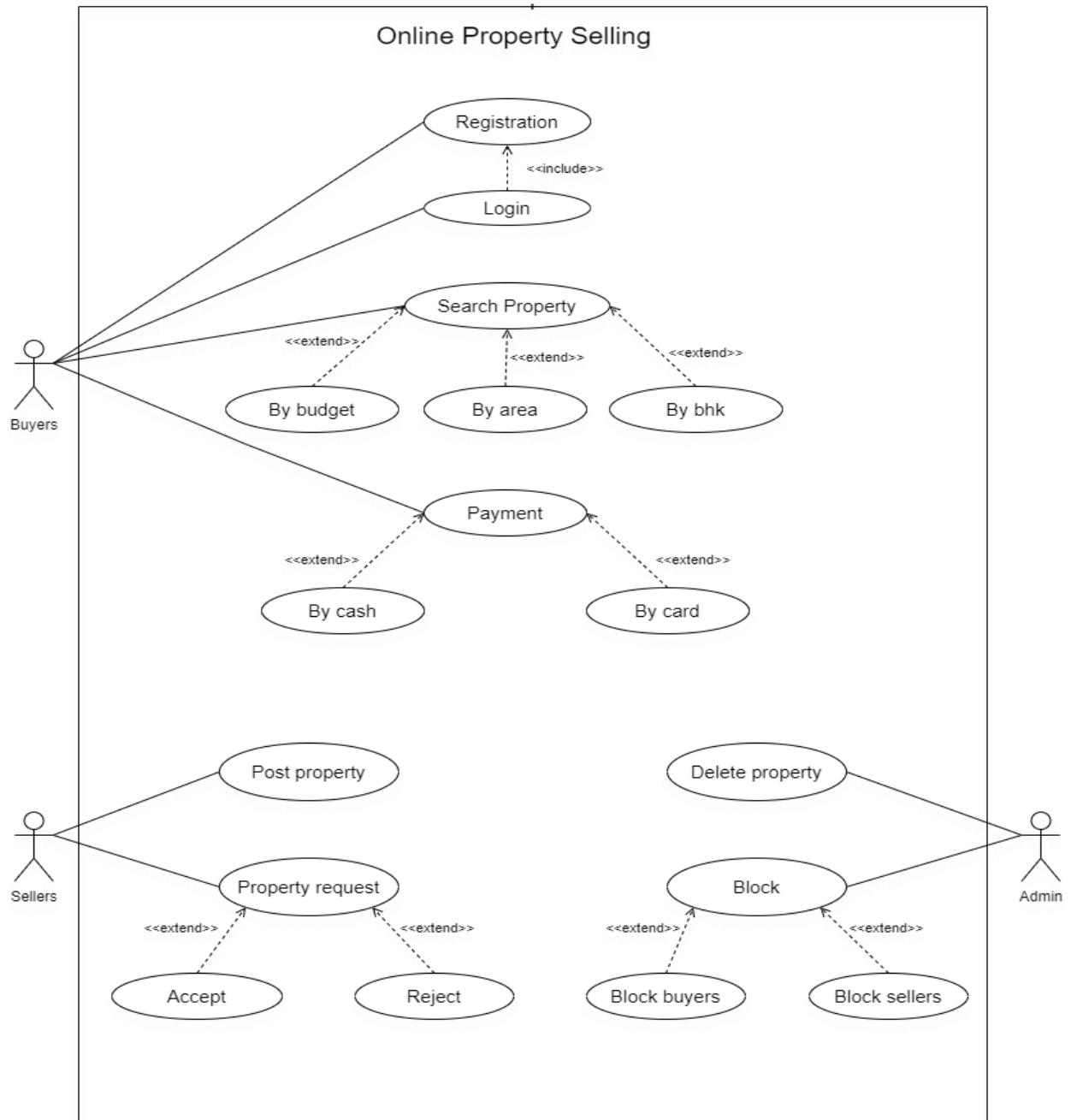
Figure 2.1-1 Use case diagram for Online property selling

## 2.2 Activity diagram and Swimlane diagram
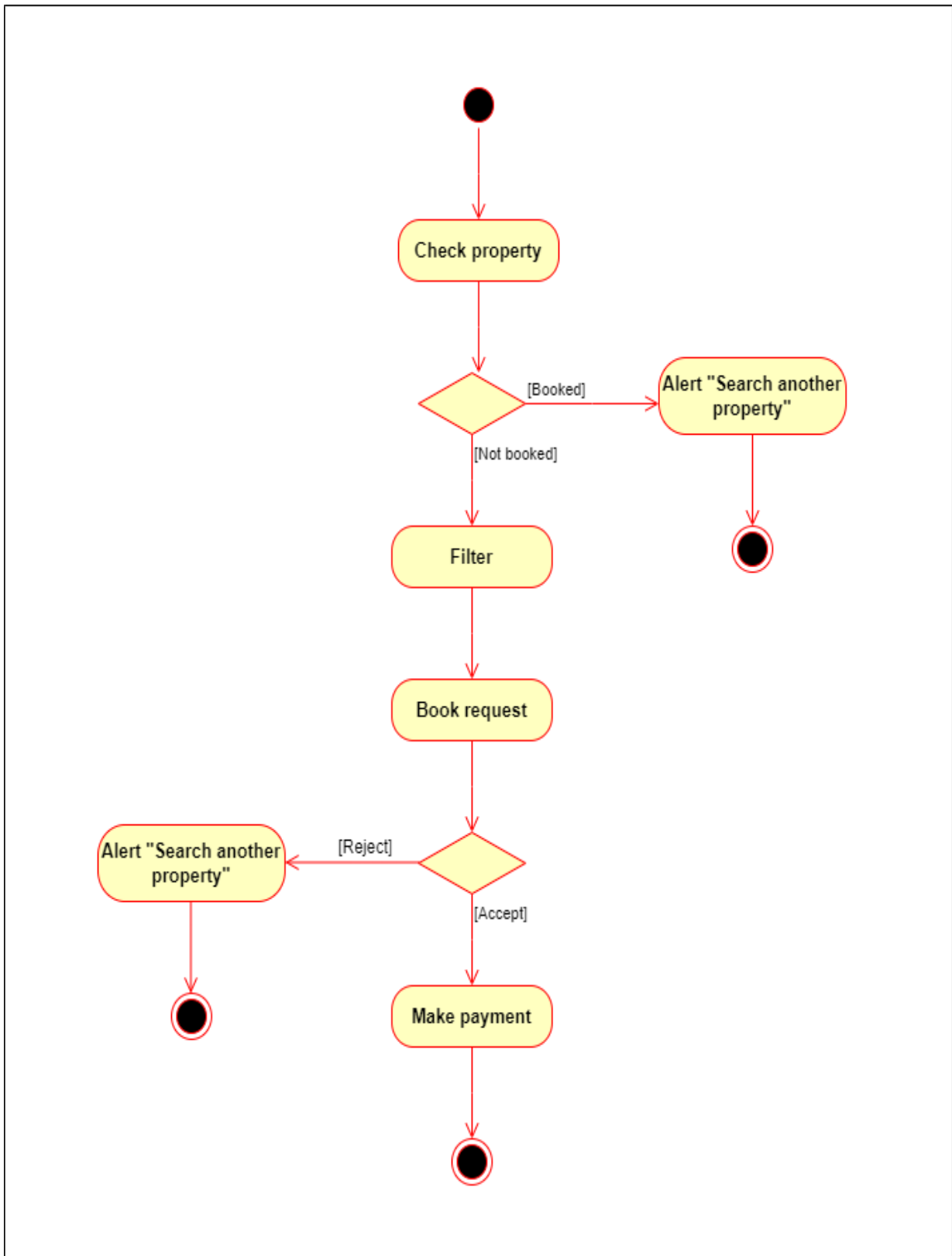
*Figure 2.2-1 Activity diagram for Checking property*
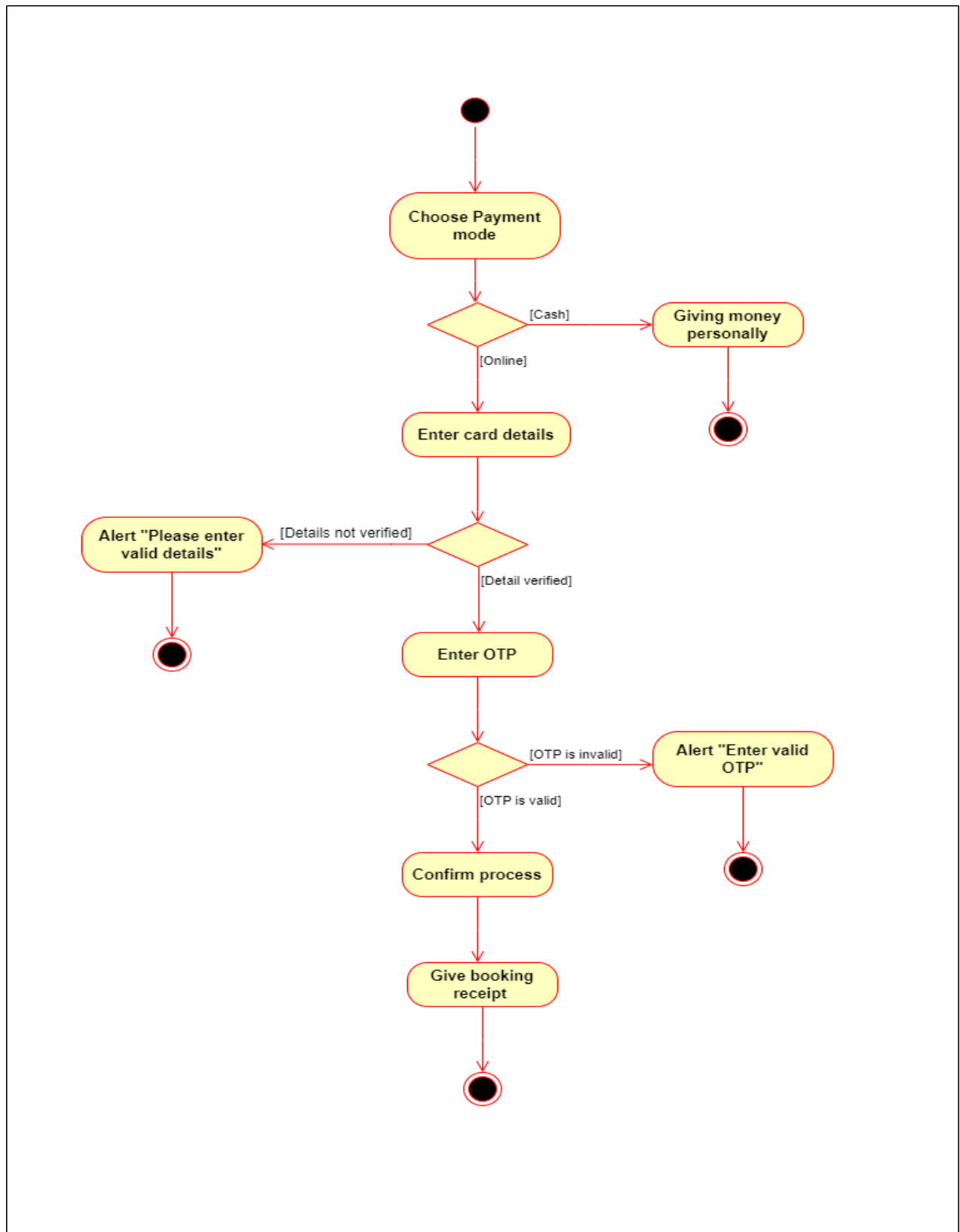
*Figure 2.2-2 Activity diagram for Choose payment mode*

Figure 2.2-1 Swimlane diagram for Checking property
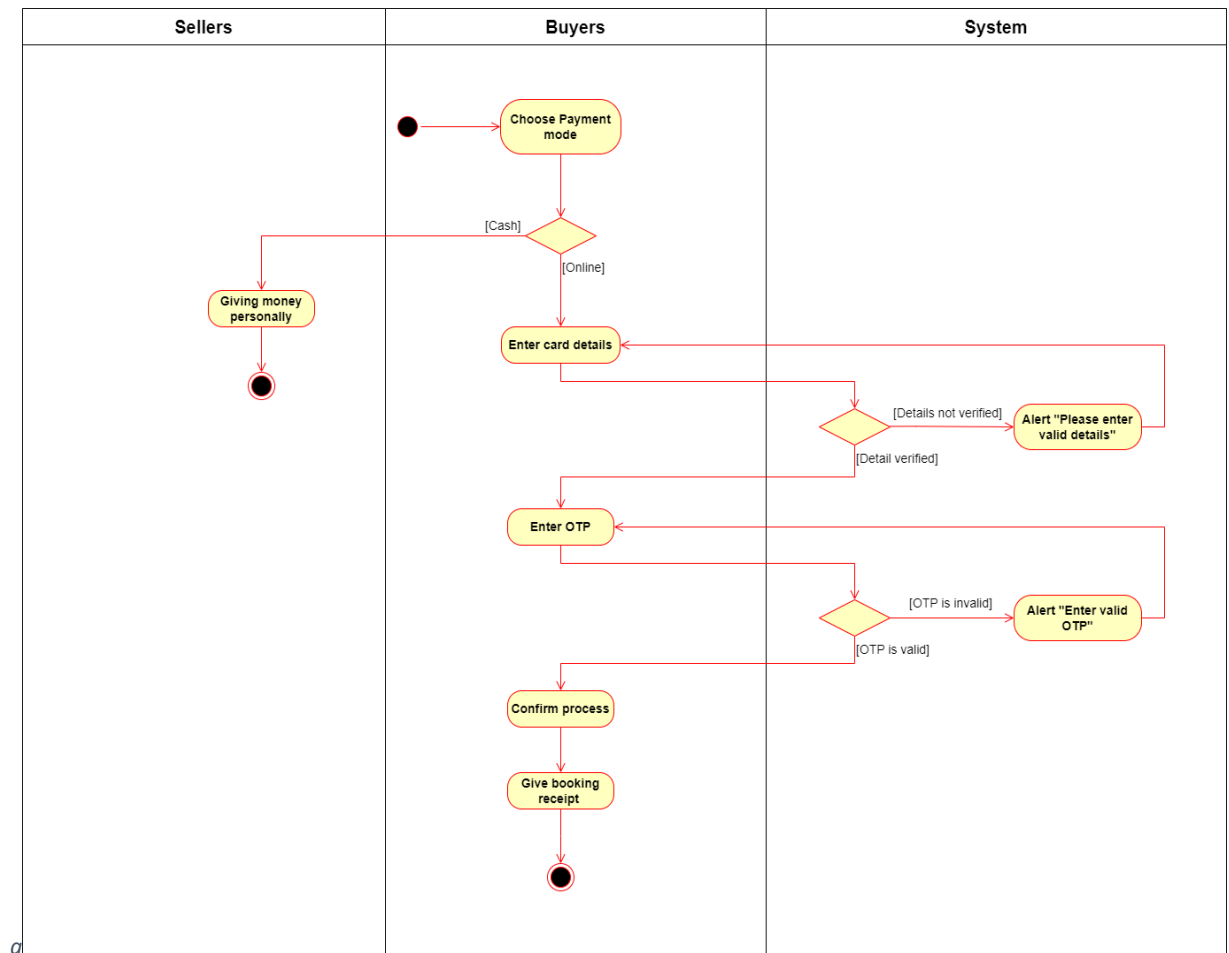
Figure 2.2-1 Swimlane diagram for Checking property

2.3 Sequence diagram

Property Checker As PC
Property Database As PD
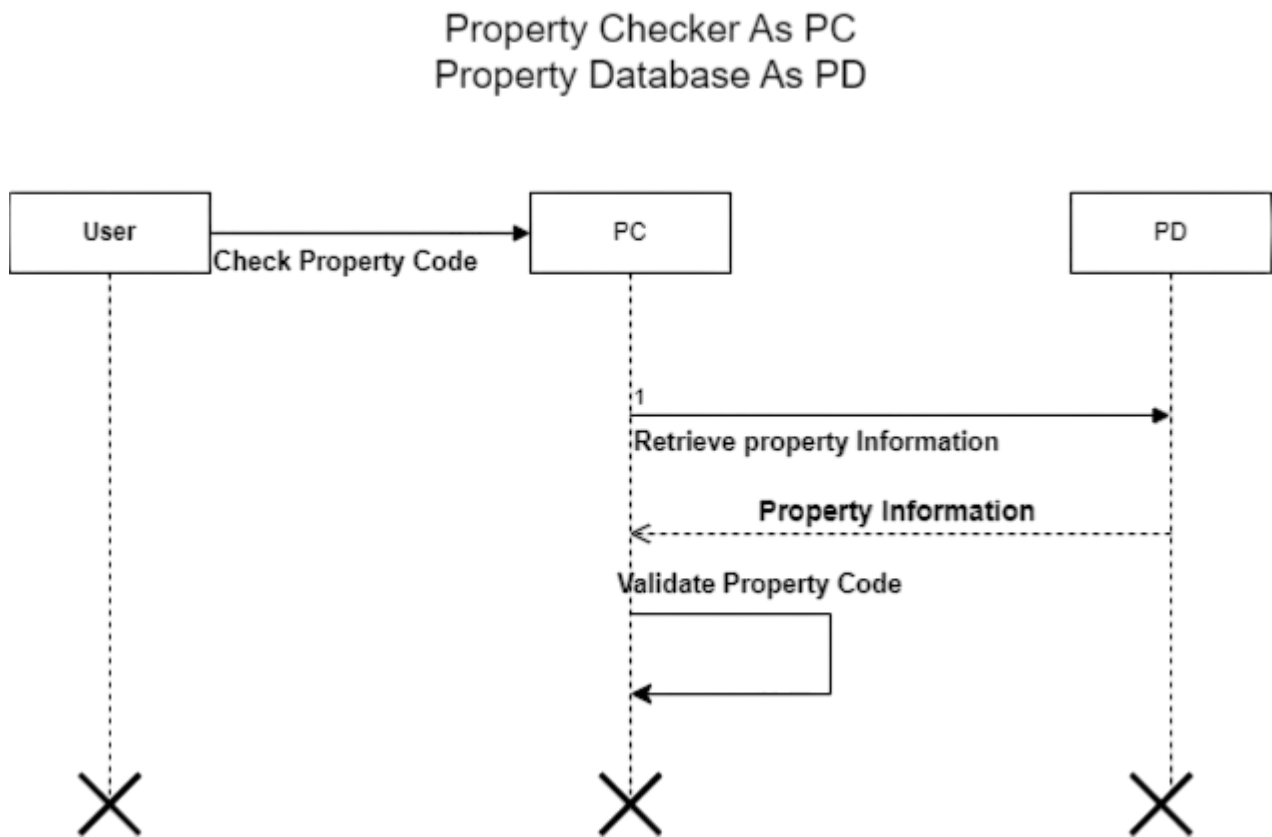
Figure 2.-3-1 Sequence diagram for Checking Property
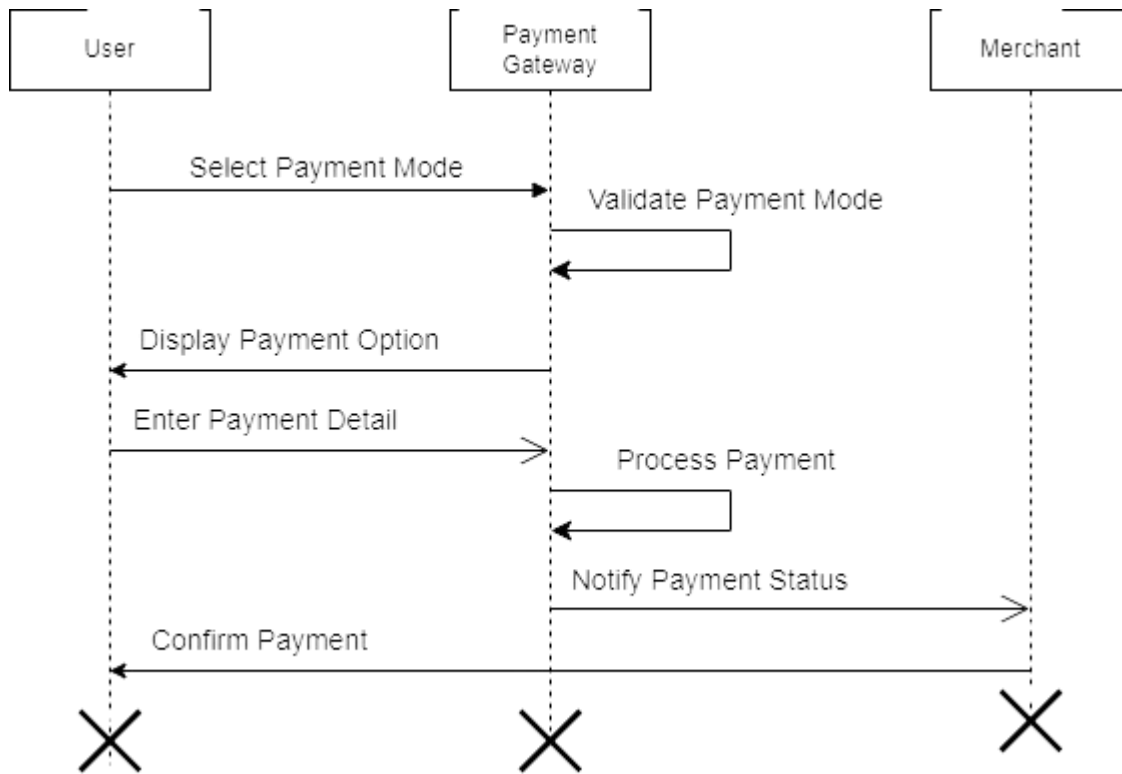
*Figure 2.2-2 Sequence diagram for Choose Payment Mode*

2.4 State diagram
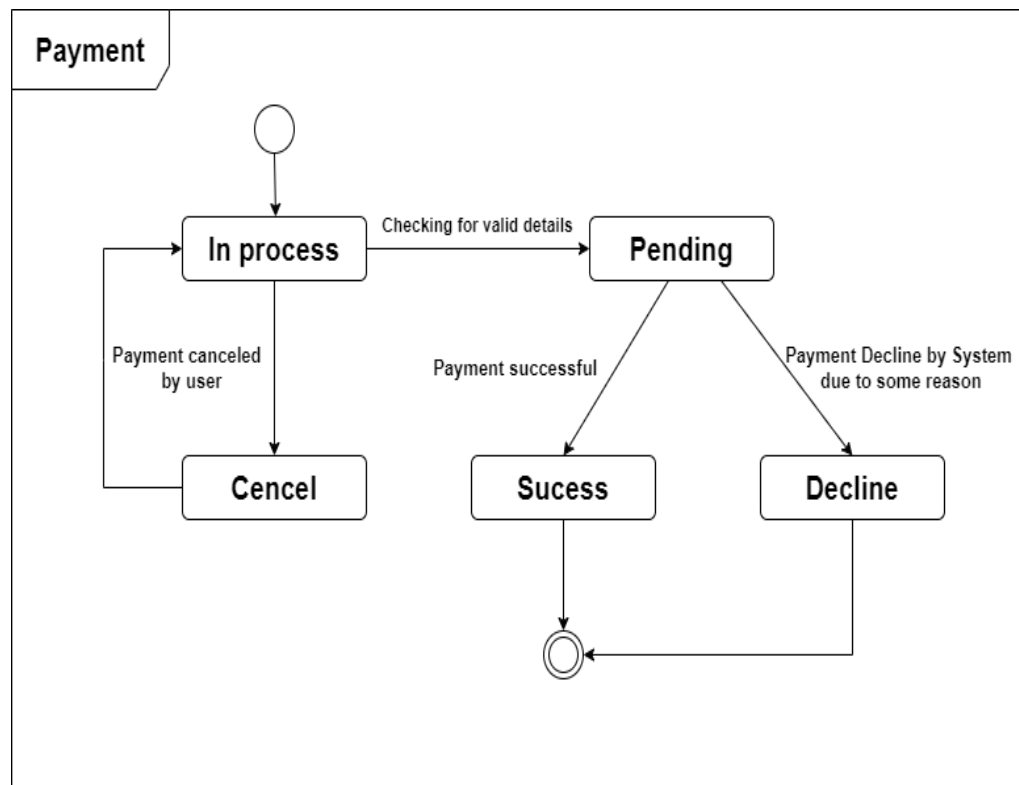
Figure 2.4-1 State diagram of Payment

2.5 Class diagram
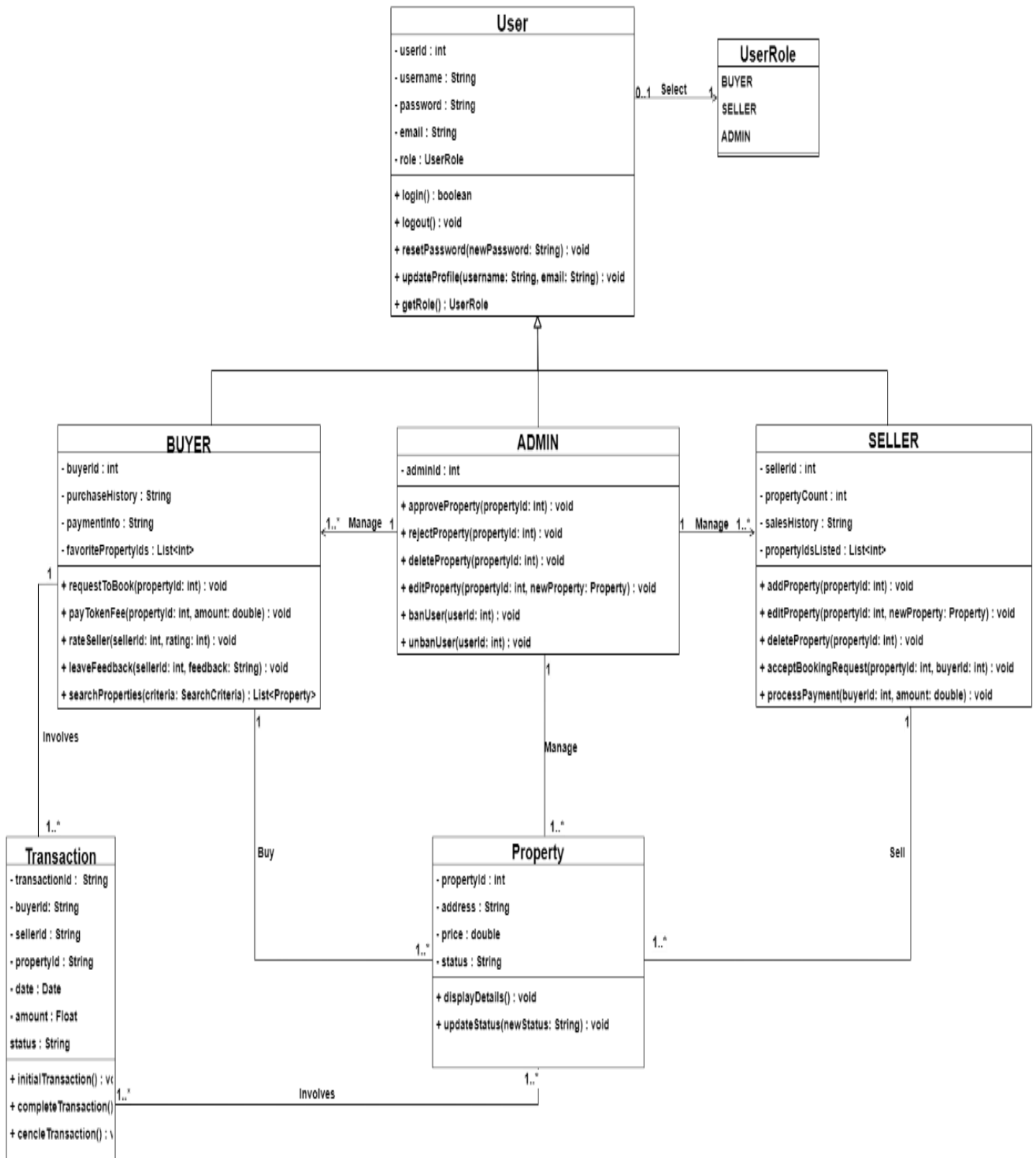
Figure 2.5-1 Class diagram for Online Property Selling

2.6 Data flow diagram

2.6.1 Context diagram (level-0)
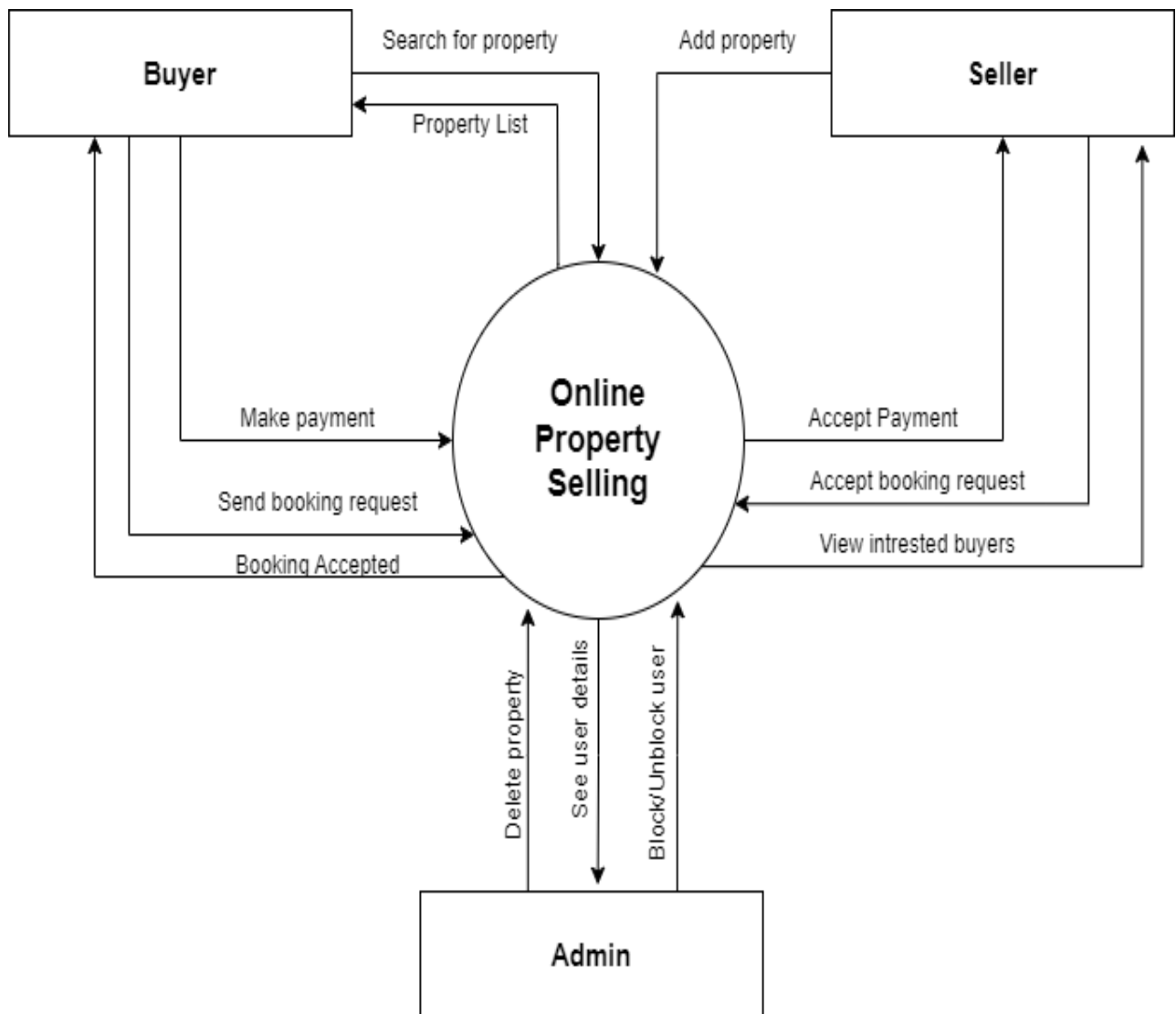
Figure 2.6-1 Context diagram for Online Property Selling

2.3.2 DFD Level-1
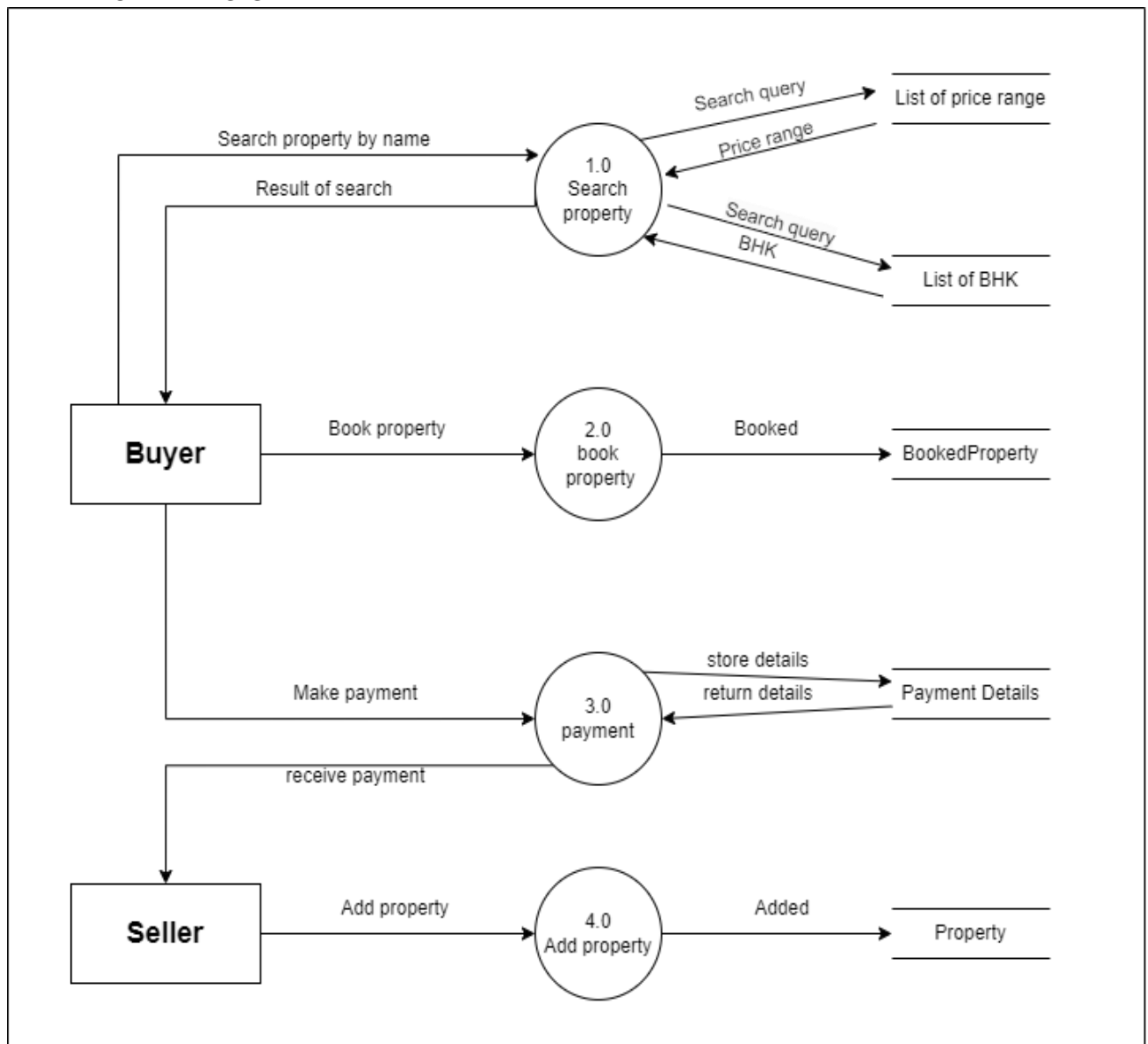
Figure 2.3-2 DFD level-1 for Online Property Selling

3 External interface requirement (Screens)

3.1 Screen-1: Home Page
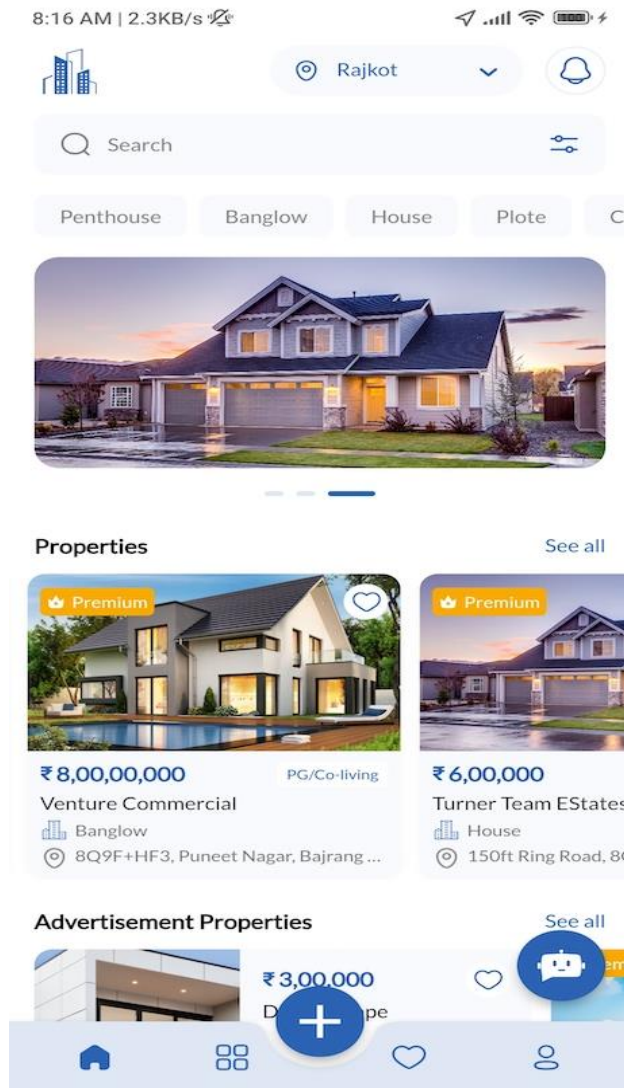
Figure 3-1 Screen-1: Home Page

Purpose: To define the external interface requirements for the user interface elements of the real estate property application.

Table 0-1 Screen element of Home page

| Sr. No	Screen Element	Input Type	O/M	1/N	Description
1	City Dropdown	Dropdown	M	1	Selects the city (default: Rajkot)
2	Search Bar	Text Input	O	1	Allows users to search for properties
3	Filter Button	Button	O	1	Opens filter options for property search
4	Property Category Tabs	Tab Selection	M	1	Options include Penthouse, Banglow, House, Plot, etc.
5	Featured Property Image	Image	O	1	Displays featured property with an image slider
6	Premium Tag (Property Cards)	Icon/Label	O	1	Indicates premium properties
7	Property Name (Property Cards)	Text	M	1	Displays the name of the property (e.g., "Venture Commercial")
8	Property Price (Property Cards)	Text	M	1	Displays the price of the property
9	Property Type (Property Cards)	Text	O	1	Displays property type (e.g., Banglow, House)

| 10	Property Location (Property Cards)	Text	O	1	Displays the location of the property
11	Advertisement Properties Section	Section Header	O	N	Displays advertisements for other properties
12	Add Property Button	Button	M	1	Button to add a new property
13	Navigation Icons (Bottom)	Icon Button	M	1	Navigation options include Home, Listings, Profile, etc.

3.2 Screen-2:Add new place

Figure 3-2 Screen-2:Add New Place

Purpose: To define the external interface requirements for the "Add New Place" screen in the real estate property application.

Table 0-1 Screen element of Add New Place

Sr. No	Screen Element	Input Type	O/M (Optional/Mandatory)	1/N (Single/Multiple)	Description
1	Back Button	Button	M	1	Navigates the user back to the previous screen.
2	Add New Place Header	Text	M	1	Displays the header text "Add New Place."
3	Select Land Document Button	File Upload	M	1	Allows users to upload a land document.
4	Select Images Button	File Upload	O	N	Allows users to upload one or more images of the property.
5	Description Text Box	Text Area	M	1	A large text area for users to describe the property details.
6	Pick From Map Button	Button	M	1	Lets users pick the property's location using the map interface.
7	Use Current Location Button	Button	O	1	Allows users to automatically use their current location for the property.
8	Map View	Map View	M	1	Displays a map interface for selecting the property's location.
9	Send For Approval Button	Button	M	1	Submits the entered property information for approval by the admin or system.

3.3 Screen-3: Create Account

Figure 3-3 Screen-3: Create Account

Purpose: To define the external interface requirements for the "Create Account" screen .

Table 3.3-1 Screen element of Create Account

Sr. No	Screen Element	Input Type	O/M	1/N	Description
1	Email	Text	M	1	Email address of the user
2	Password	Password	M	1	Password of the user
3	Sign Up	Button	M	1	Button to create an account
4	Sign In	Button	O	1	Button to login
5	Checkbox	Checkbox	O	1	Checkbox to agree with the privacy policy
6	Google	Button	O	1	Button to login with Google account
7	Facebook	Button	O	1	Button to login with Facebook account
8	Apple	Button	O	1	Button to login with Apple account

Table 3.3-1 Screen element of Create Account

3.4 Screen-4 Details Page
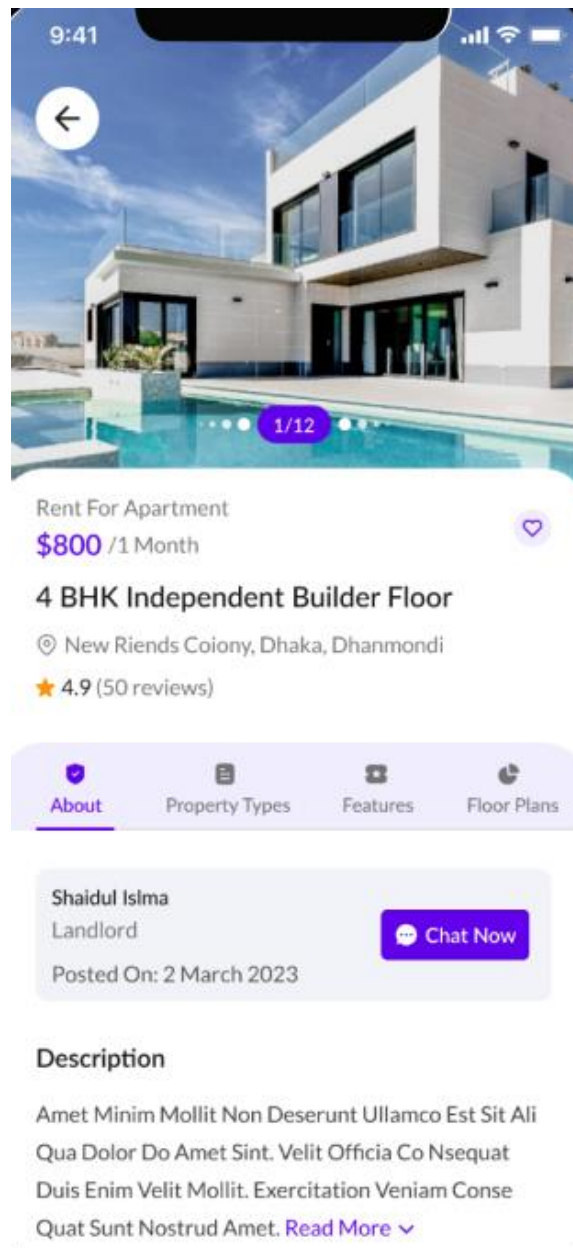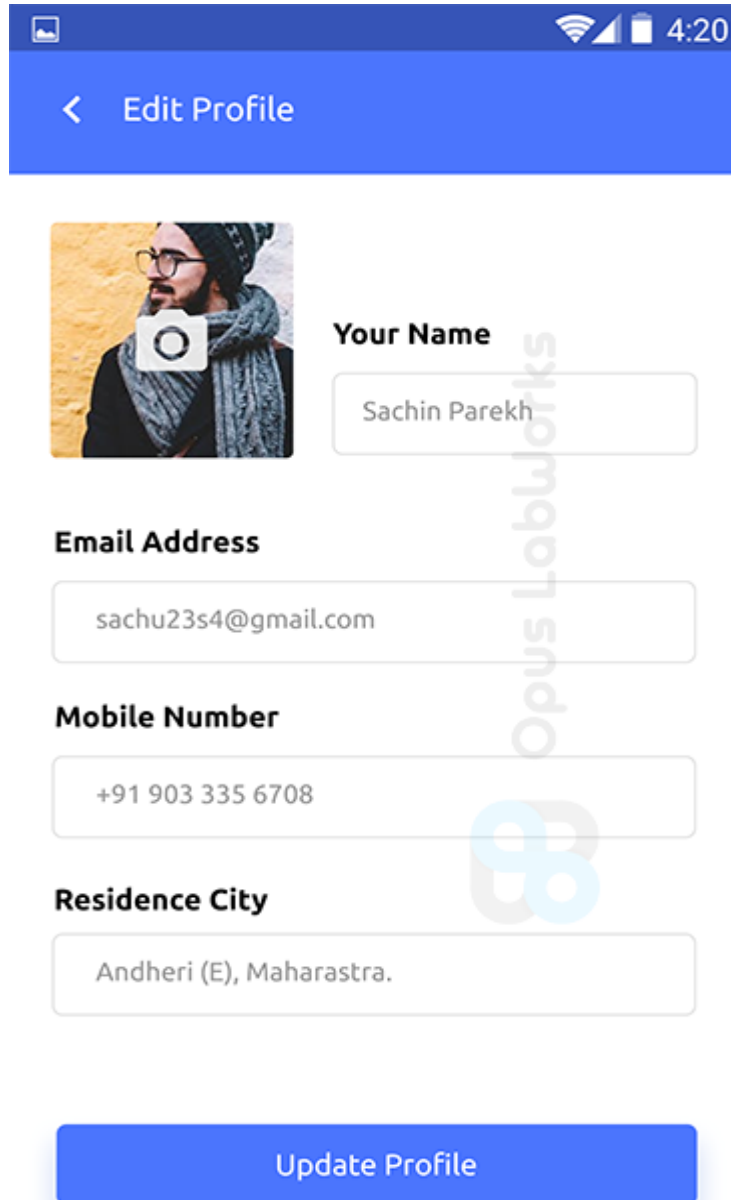
Figure 3-4 Screen-4: Detail Page

Purpose: Screen elements in an apartment listing. The specific elements and their requirements may vary depending on the platform, target audience, and desired user experience.

Table 3.4-2 Screen element of Detail Page

Sr. No	Screen Element	Input Type	O/M	1/N	Description
1	Property Image	Image	Mandatory	Multiple (carousel)	Visual representation of the apartment.
2	Rent	Text (numeric)	Mandatory	Single	Monthly rental amount for the apartment.
3	Property Type	Text	Mandatory	Single	Type of property (e.g., apartment, house, villa).
4	Bedroom Count	Number	Mandatory	Single	Number of bedrooms in the apartment.
5	Bathroom Count	Number	Mandatory	Single	Number of bathrooms in the apartment.
6	Property Address	Text	Mandatory	Single	Detailed address of the property.
7	Property Description	Text (textarea)	Mandatory	Single	Detailed description of the property, including features, amenities, and any additional information.
8	Landlord Name	Text	Mandatory	Single	Name of the landlord or property manager.
9	Posted On	Date	Mandatory	Single	Date when the listing was created.
10	Property Rating	Stars	Optional	Single	Average rating of the property based on user reviews.
11	Property Reviews	Text (textarea)	Optional	Multiple	User reviews and comments about the property.
12	Chat Now	Button	Optional	Single	Button to initiate a chat with the landlord or property manager.
13	Save	Button	Optional	Single	Button to save the listing for later reference.
14	Contact	Button	Optional	Single	Button to contact the landlord or property manager directly.

3.5 Screen-5 Edit Profile

Figure 3.5 Screen-5: Edit Profile

Purpose: To define the external interface requirements for the "Edit Profile" screen.

Table 3.5-1 Screen element of Edit Profile

Sr. No	Screen Element	Input Type	O/M	1/N	Description
1	Your Name	Text	M	1	User's full name.
2	Email Address	Email	M	1	User's primary email address.
3	Mobile Number	Phone Number	M	1	User's mobile phone number.
4	Residence City	Text	M	1	City where the user resides.
5	Update Profile	Button	M	1	Button to save changes made to the profile.
6	Profile Picture	Image Upload	O	1	User's Profile Image.

4 Database design
4.1 List of Tables
- User
- Buyer
- Seller
- Property
- Transaction

Table 4.1-1 Table: User

Column	Data Type	Null	Keys & Constrains	Default Value & Description
UserID	int	NN	PK (Auto Increment)	
Username	varchar(100)	NN		
Password	varchar(100)	NN		
Email	varchar(50)	NN		
Role	varchar(50)	NN		

Table 4.1-2 Table: Buyer

Column	Data Type	Null	Keys & Constrains	Default Value & Description
BuyerID	int	NN	PK (Auto Increment)	
BuyerName	varchar(100)	NN		
PurchaseHistory	varchar(100)	NN		
PaymentInfo	varchar(100)	NN		
FavouritePropertyID	int	NN		

Table 4.1-3 Table: Seller

Column	Data Type	Null	Keys & Constrains	Default Value & Description
SellerID	Int	NN	PK (Auto Increment)	
SellerAddress	varchar(100)	NN		
PropertyCount	int	NN		
SalesHistory	varchar(100)	NN		
PropertyListed	varchar(100)	NN		

Table 4.1-4 Table: Property

Column	Data Type	Null	Keys & Constrains	Default Value & Description
PropertyID	int	NN	PK (Auto Increment)	
Address	varchar(100)	NN		
Price	int	NN		
Status	varchar(100)	NN		
Amount	int	NN		
Status	varchar(100)	NN		

Table 4.1-5 Table: Transaction

Column	Data Type	Null	Keys & Constrains	Default Value & Description
TransactionID	int	NN	PK (Auto Increment)	
BuyerID	int	NN	FK	Reference Of Buyer Table.
SellerID	int)	NN	FK	Reference Of Seller Table.
PropertyID	int	NN	FK	Reference Of Property Table.
Amount	int	NN		
Status	varchar(100)	NN		

5. Stories and Scenario

5.1 Story-1 Property Listings for Online Sellers

Story # S1	:	**As a** Property owner , **I want to** sell my property. **So that** I can sell my property efficiently without needing to rely on traditional real estate agents, saving time and money.
Priority	:	High
Estimate	:	XL
Reason	:	Provides sellers with a user-friendly way to list properties. Increases the property visibility to a larger audience. Reduces reliance on intermediaries (agents), making the process faster.

5.1.1 Scenario# S1.1

Scenario# S1.1	:	Listing Property for Sale
Prerequisite	:	The property owner must be logged into their account on the platform.
Acceptance Criteria	:	**Given:** A property owner logs into the online property selling platform. The owner navigates to the "List a Property" section. **When:** The property owner fills in all the required details about the property, including: • Address. • Property type (apartment, house, commercial). • Description of key features (number of rooms, area, amenities). • Price. • Uploads images of the property. The property owner submits the listing. **Then** The platform verifies the listing details. The listing is published, making it visible to potential buyers browsing the site. Interested buyers can view the property, contact the seller via the platform, and arrange viewings.

Story-2: Buyer Inquiry on Listed Properties

Story # S2	:	**As** a Property buyer, **I want to** Send an inquiry to the seller directly from the platform. **So that** I can get more details about the property or schedule a viewing.
Priority	:	High
Estimate	:	XL
Reason	:	Enabling direct communication between buyers and sellers is crucial for progressing toward sales.

5.2.1 Scenario# S2.1

Scenario# S2.1	:	**Sending an Inquiry**
Prerequisite	:	The buyer must be logged into the platform.
Acceptance Criteria	:	**Given:** A buyer finds a property they're interested in. **When:** The buyer clicks "Contact Seller," writes a message, and submits the inquiry. **Then** The seller receives the inquiry and responds to the buyer within the platform.

Story-3: Property Search with Filters

Story # S3	:	**As** Potential buyer, **I want to** Filter listings by location, price range, and property type. **So that** I can easily find properties that match my preferences**.**
Priority	:	Medium
Estimate	:	M
Reason	:	Helps buyers find suitable properties quickly, improving user experience and engagement.

5.3.1 Scenario# S3.1

Scenario# S3.1	:	Filtering Property Search
Prerequisite	:	The buyer must be on the property search page with available listings.
Acceptance Criteria	:	**Given:** A buyer is searching for properties.

	When:	
	The buyer applies filters like price, location, and type.	
	Then The platform displays properties that match the selected filters	

Story-4: Save Favorite Listings

Story # S3	:	**As a** Buyer**,**
		I want to Save my favorite property listings.
		So that I can revisit them later for comparison or decision-making.
Priority	:	Medium
Estimate	:	M
Reason	:	Improves user retention by allowing buyers to track and compare properties.

5.4.1.Scenario# S4.1

Scenario# S4.1	:	Saving Properties to Favorites
Prerequisite	:	The buyer must be logged into the platform.
Acceptance Criteria	:	**Given:** A buyer finds several interesting properties.
		When:
		The buyer clicks "Save to Favorites" on the listing.
		Then The properties are saved, and the buyer can view them later.

Story-5: Secure Payment for Listing Fees

Story # S3	:	**As** Property seller,
		I want to Pay the listing fee securely through available payment options.
		So that I can complete my listing without concerns about security or payment issues.
Priority	:	Medium
Estimate	:	XS
Reason	:	A secure payment process is crucial to allow sellers to list properties seamlessly.

5.5.1Scenario# S5.1

Scenario# S5.1	:	Paying the Listing Fee
Prerequisite	:	The property seller must be logged into their account on the platform
Acceptance Criteria	:	**Given:** A seller is about to list a property.
		When:
		The seller enters payment details and submits payment.
		Then The payment is processed securely, and the listing goes live.

Story-5: Secure Payment for Listing Fees

6. Test cases

Project Name:	Online Property Selling	Test Designed by:	Krishna Vara
Module Name:	Property Management	Test Designed date:	22-08-2024
Release Version:	1.0	Test Executed by:	Krishna Vara
		Test Execution date:	22-08-2024

Pre-condition: User must be logged in and have access to property management functionalities.				
Test Case ID	Test Title	Test Type	Description	Test Case ID
TC_001	Verify that the system allows adding a property with valid data	Functional	Ensure the system allows a seller to successfully add a property with all valid and required details.	
TC_002	Verify error message when mandatory fields are missing	Functional	Check if the system displays an appropriate error message when mandatory fields (e.g., price, location) are left empty.	
TC_003	Verify that a duplicate property cannot be added	Medium	Confirm that the system does not allow the same property (with identical key details) to be added multiple times.	
TC_004	Verify editing of existing property details	Medium	Ensure a seller can edit an existing property's details and the updates are saved and reflected properly.	
TC_005	Verify Error Handling for Invalid Property Details	Functional	Check that the system properly handles and displays errors when invalid property data (e.g., negative price, invalid location) is submitted.	

Test Case Title	Verify that the system allows adding a property with valid data
Test Type	Functional
Test Priority	High
Pre-condition	User is logged in and on the property management page.

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1. Log in to the platform.	The user logs in successfully.	User is logged in and navigates to the property management page.	*TBD*	*TBD*	*TBD*	Username, Password	*TBD*
2. Navigate to "Add Property" section.	The user clicks on "Add Property".	The form for adding a property is displayed.	*TBD*	*TBD*	*TBD*	*N/A*	*TBD*
3. Fill in valid property details.	User enters all required fields: title, description, price, address, etc.	Form fields are filled correctly, and no validation errors are shown.	*TBD*	*TBD*	*TBD*	Title, Description, Price, Address, etc.	*TBD*
4. Submit the form.	The user submits the form after filling in valid data.	The property is successfully added, and a success message is displayed.	*TBD*	*TBD*	*TBD*	*N/A*	*TBD*

Test Case Title	Verify error message when mandatory fields are missing
Test Type	Functional
Test Priority	High
Pre-condition	User is on the "Add Property" page.

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1. Navigate to "Add Property" section.	The user clicks on "Add Property".	The form for adding a property is displayed.	*TBD*	*TBD*	*TBD*	*N/A*	*TBD*
2. Leave mandatory fields blank (e.g., title, price).	User leaves some required fields empty and submits the form.	The system displays an error message indicating the missing fields.	*TBD*	*TBD*	*TBD*	Title, Price (blank)	*TBD*
3. Verify that the property is not added.	The user should not be able to add the property without required fields.	The property is not added, and the form remains on the same page.	*TBD*	*TBD*	*TBD*	*N/A*	*TBD*

Test Case Title	Verify that a duplicate property cannot be added
Test Type	Functional
Test Priority	Medium
Pre-condition	User is logged in and has at least one property listed.

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1. Navigate to "Add Property" section.	The user clicks on "Add Property".	The form for adding a property is displayed.	*TBD*	*TBD*	*TBD*	*N/A*	*TBD*
2. Add a property that already exists (same title, price, location).	User enters duplicate property details.	The system should display an error message indicating that a property with the same details already exists.	*TBD*	*TBD*	*TBD*	Title, Price, Address (duplicate)	*TBD*
3. Verify that the duplicate property is not added.	The system should not allow the property to be added again.	The property should not be added, and the user should receive a relevant message.	*TBD*	*TBD*	*TBD*	*N/A*	*TBD*

Test Case Title	Verify editing of existing property details
Test Type	Functional
Test Priority	Medium
Pre-condition	User is logged in and has at least one property listed.

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1	Navigate to the property details page and select "Edit"	Edit page should load successfully	Edit page loaded successfully	Pass		URL of "Edit Property" page	
2	Modify property details and save changes	Changes should be saved and reflected in the property list	Changes saved successfully	Pass		Modified details: Price, Description	
3	Verify that updated details are displayed in the property list	Updated details should be visible in the list	Updated details visible	Pass			
4	Updated property details should be reflected in search results	Search results display updated property details	To be filled in during testing	To be filled in during testing				

Test Case Title	Verify Error Handling for Invalid Property Details
Test Type	Functional
Test Priority	High
Pre-condition	User is logged in and on the property management page.

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1	Navigate to the property details page and select "Delete"	Delete confirmation prompt should appear	Confirmation prompt appeared	Pass			
2	Confirm the deletion	Property should be removed from the list	Property removed	Pass		Property ID: XYZ123	
3	Verify that the property is no longer listed	Property should not appear in the list	Property not listed	Pass			
4	Property should not appear in search results	Property not found in search results	To be filled in during testing				

7 References

- http://www.w3schools.com/html/html_intro.asp
- https://www.w3schools.com/php/default.asp
- https://www.javatpoint.com/uml

7 References