
Software Requirements and Design Document

for

Uptown Beverly Management System

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Uptown builders

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1. Introduction

1.1 Purpose

The purpose of the project is to ease the mechanism of property buying and selling. Its scope is only the residents of our housing society. It describes a single subsystem.

1.2 Product Scope

Our software is for the residents of our housing society. Anyone who purchases a property in our housing society may have access to the software.

1.3 Title

Our project is titled “Beverly Paradise Members Management System”. This will provide a management software where members residing or owning properties in our housing society i.e. Beverly Paradise can perform all necessary operations relating our housing society such as checking updates, paying installments, giving feedback etc.

1.4 Objectives

The objective of our project is to digitalize all the operations that in past took place in our physical offices which will now be able to take place from homes. It not only makes it easier but also faster.

1.5 Problem Statement

Our members visit our office at least once every month to obtain challan and pay the dues for monthly development charges. The visits often increase as the needs do. With the help of our management system, members won't have to visit our offices. They can simply submit charges from their homes. Moreover, if they need anything such as needing a plumber or a paint service, they can order the services from our system. This will make the living easier.

This system will also allow us to receive feedback from users. Physical feedback isn't very feasible but if the members fill the feedback forms on our system, it will be feasible for them as well as us. It will also allow us to take better steps in improving our services.

All in all, our system will make the lives of our members easier as all their needs will be solved from the comfort of their homes. This will also attract more customers who wish to have a simpler lifestyle.

2. Overall Description

2.1 Product Perspective

It's a new, self-contained product. No one has ever done anything in this area. We'll be the first one's doing effort in this field.

2.2 Product Functions

Main functions:

- 1. Property Details*
- 2. Book a Contractor*
- 3. Property bought by Installments*
- 4. Pay Property Rent*
- 5. Pay Commercial Rent*
- 6. Give Feedback*
- 7. Report a problem*

2.3 List of Use Cases

1. Create an account (20i-0562)
2. Log in to the portal (20i-1884)
3. View Property Details (20i-0562)
4. Pay installments (20i-1884)
5. Book a contractor (20i-0562)
6. Pay Property Rent (20i-1884)
7. Pay Commercial Rent (20i-0562)
8. Remove User (20i-0562)
9. Give feedback (20i-1884)
10. Report a problem (20i-1884)

2.4 Extended Use Cases

1. Create an account (20i-0562)

Name	Create an account
Scope	Beverly Paradise Members Management System
Level	User-goal
Primary Actor	Member

Stakeholders and Interests	1. Admin 2. System										
Preconditions	1. User doesn't have an account. 2. User opens the management system.										
Postconditions	System records the user data for future log in purposes.										
Main Success Scenario	<table> <tr> <th>Actor Action</th><th>System Response</th></tr> <tr> <td>1. User clicks on the create account button.</td><td></td></tr> <tr> <td></td><td>2. System navigates to the register account portal.</td></tr> <tr> <td>3. User enters all the data and presses enter.</td><td></td></tr> <tr> <td></td><td>4. System shows a success message and inputs the entered details in the database.</td></tr> </table>	Actor Action	System Response	1. User clicks on the create account button.			2. System navigates to the register account portal.	3. User enters all the data and presses enter.			4. System shows a success message and inputs the entered details in the database.
Actor Action	System Response										
1. User clicks on the create account button.											
	2. System navigates to the register account portal.										
3. User enters all the data and presses enter.											
	4. System shows a success message and inputs the entered details in the database.										
Extensions	4a. System shows an error message because the user has entered incomplete information.										

2. Log in to the portal (20i-1884)

Name	Log in to the portal
Scope	Beverly Paradise Members Management System
Level	User-goal

Primary Actor	Member	
Stakeholders and Interests	<ol style="list-style-type: none"> 1. System Admin 	
Preconditions	<ol style="list-style-type: none"> 1. User hasn't logged in yet. 2. User can't perform multiple functions. 	
Postconditions	<ol style="list-style-type: none"> 1. User has successfully logged in. 2. User can perform multiple functions 	
Main Success Scenario	Actor Action	System Response
	1. User enter his username and password	
		2. System asks for authentication of the user.
	3. User logged in successfully	
		4. System redirects to the home page with added functionalities.
Extensions	4a. System shows an error message because the user has entered incomplete information.	

3. View Property Details (20i-0562)

Name	View Property Details
Scope	Beverly Paradise Members Management System
Level	User-goal

Primary Actor	Member	
Stakeholders and Interests	System	
Preconditions	Property details aren't displayed, users may not be aware of the latest development.	
Postconditions	Latest property details are shown.	
Main Success Scenario	Actor Action	System Response
	1. Member may be on the homepage. User clicks on View Property Details.	
		2. System checks if the account is logged in. 3. System redirects to the details page.
	4. Member can view the details.	
Extensions	3a. System redirects to login page since the user isn't already logged in.	

4. Pay installments (20i-1884)

Name	Pay installments
Scope	Beverly Paradise Members Management System
Level	User-goal
Primary Actor	Member
Stakeholders and Interests	Accountant

Preconditions	Monthly Installments hasn't been paid yet	
Postconditions	Monthly Installments has been paid yet	
Main Success Scenario	Actor Action	System Response
	1. Member clicks on the pay button after clicking installment	
		2. System navigates member to payment options to pay: 3. System shows two options -Pay with Credit Card -Pay with PayPal
	4a. Members choose to pay with credit card. 4b. Members choose to pay with PayPal.	
		5a. System shows an option to fill in card details for member. 5b. System shows an option to fill in PayPal details for member.
		6a. System verifies the card and performs transactions. 6b. System verifies Paypal and performs transactions.
Extensions	1a. Installment already paid. 1. System signals the member that the installment is already paid. 6a Credit Card processing fails: 1. Member is notified that their card payment was unsuccessful. 2. System navigates member back to card details page. 6b PayPal processing fails: 3. Member is notified that their PayPal payment was unsuccessful. 4. System navigates member back to PayPal details page.	

Name	Book a contractor	
Scope	Beverly Paradise Members Management System	
Level	User-goal	
Primary Actor	Member	
Stakeholders and Interests	<ul style="list-style-type: none"> • Admin • System 	
Preconditions	<ol style="list-style-type: none"> 1. Member wants to hire a contractor for work purposes. 2. Member doesn't already have a contractor. 	
Postconditions	1. Member finds a contractor and his contact information.	
Main Success Scenario	Actor Action	System Response
	1. Member clicks on the "Book a contractor" option.	
		2. System redirects to the "Book a contractor" web page.
	<ol style="list-style-type: none"> 3. Member scrolls through the web page where multiple contractors are listed. 4. Member clicks on a particular contractor. 	
		5. System redirects to the contractor page.
	6. User sees the relevant information and copies information needed such a phone number.	
Extensions	4a. User doesn't find relevant contractor for himself so he closes the program.	

6. Pay Property Rent (20i-1884)

Name	Pay Property Rent	
Scope	Beverly Paradise Members Management System	
Level	User-goal	
Primary Actor	Housing User	
Stakeholders and Interests	1. Accountant 2. System	
Preconditions	Rent is not paid	
Postconditions	Rent is paid successfully	
Main Success Scenario		
	Actor Action	System Response
	1. Member clicks on the pay rent button after clicking Pay Rent	
		2. System navigates member to payment options to pay: 3. System shows two options -Pay with Credit Card -Pay with PayPal
	4a. Members choose to pay with credit card. 4b. Members choose to pay with PayPal.	
		5a. System shows an option to fill in card details for member. 5b. System shows an option to fill in PayPal details for member.
		6a. System verifies the card and performs transactions. 6b. System verifies Paypal and performs transactions.

Extensions	<p>1a. Rent already paid.</p> <p>2. System signals the member that the rent is already paid.</p> <p>6a Credit Card processing fails: Member is notified that their card payment was unsuccessful. System navigates member back to card details page.</p> <p>6b PayPal processing fails: Member is notified that their PayPal payment was unsuccessful. System navigates member back to PayPal details page.</p>
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7. Pay Commercial Rent (20i-0562)

Name	Pay Commercial Rent
Scope	Beverly Paradise Members Management System
Level	User-goal
Primary Actor	Commercial User
Stakeholders and Interests	<ul style="list-style-type: none"> • Accountant • System
Preconditions	Monthly rent not paid.
Postconditions	User pays the monthly rent.

Main Success Scenario	Actor Action	System Response
	1. Member clicks on the pay rent button.	
		2. System navigates member to payment options to pay: 3. System shows two options -Pay with Credit Card -Pay with PayPal
	4a. Members choose to pay with credit card. 4b. Members choose to pay with PayPal.	
		5a. System shows an option to fill in card details for member. 5b. System shows an option to fill in PayPal details for member.
		6a. System verifies the card and performs transactions. 6b. System verifies Paypal and performs transactions.
Extensions	1a. Rent already paid. 3. System signals the member that the rent is already paid. 6a Credit Card processing fails: Member is notified that their card payment was unsuccessful. System navigates member back to card details page. 6b PayPal processing fails: Member is notified that their PayPal payment was unsuccessful.	
	12. System navigates member back to PayPal details page.	

Name	Remove User	
Scope	Beverly Paradise Members Management System	
Level	User-goal	
Primary Actor	Admin	
Stakeholders and Interests	Member	
Preconditions	User has an account even when he sells his property.	
Postconditions	Users account is removed and deleted.	
Main Success Scenario		
	Actor Action	System Response
	1. Admin opens Admin dashboard.	
		2. System opens dashboard where admin can view all the existing users.
	3. Admin selects the desired user and clicks on properties. 4. Admin searches the desired user with name. 5. Admin clicks on 'remove user' option.	
		6. System removes the user from the database.

Extensions	4a. Admin does not find the user because of incorrect spelling. 4b. User doesn't exist.
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9. Give feedback (20i-1884)

Name	Give feedback	
Scope	Beverly Paradise Members Management System	
Level	User-goal	
Primary Actor	Member	
Stakeholders and Interests	<ul style="list-style-type: none">• Admin• System	
Preconditions	Feedback is not given.	
Postconditions	Feedback is given.	
Main Success Scenario		
	Actor Action	System Response
	1. Member clicks on the feedback button.	
		2. System shows a note in which user has to write feedback
	3. Member writes a feedback on the note. 4. Member clicks on submit.	
		5. System receives the feedback.

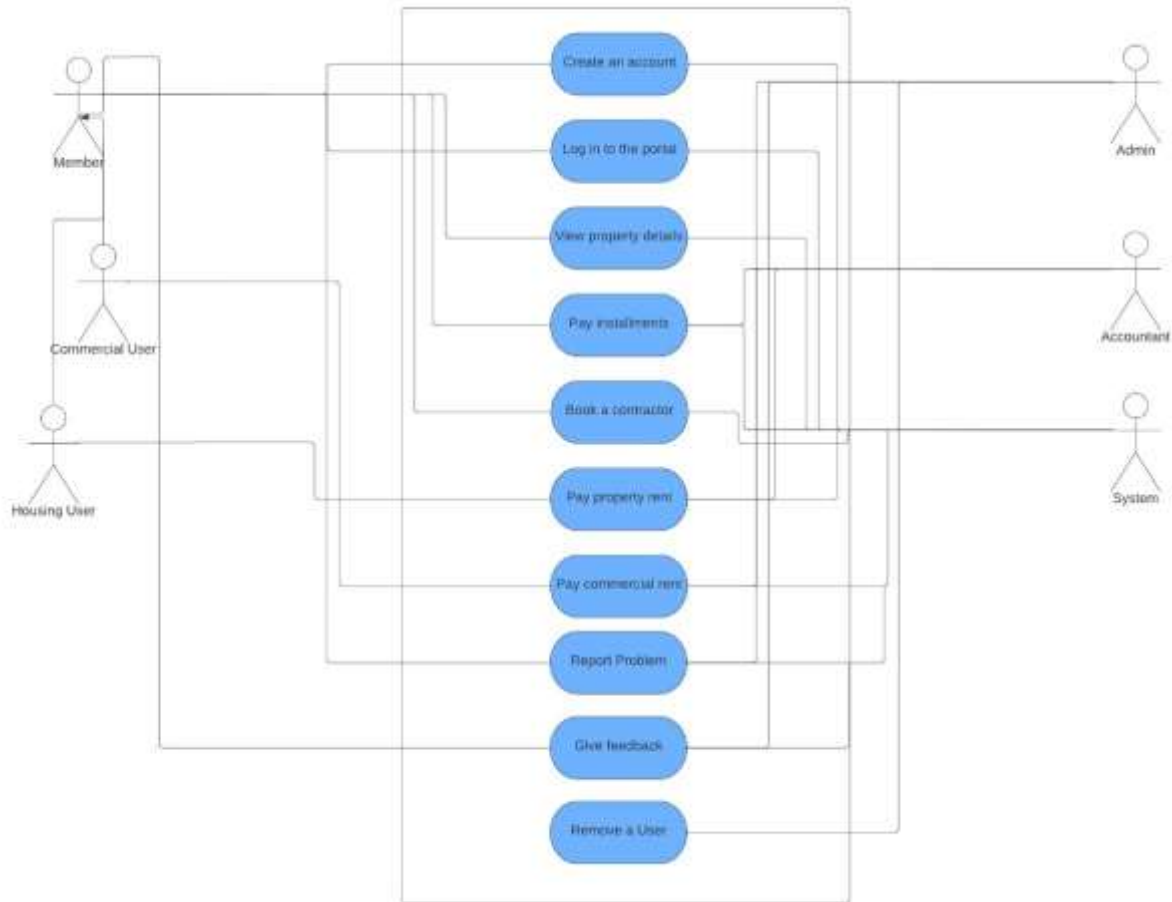
Extensions	5a. Member did not write a feedback so error occurs.
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10. Report a problem (20i-1884)

Name	Report a problem	
Scope	Beverly Paradise Members Management System	
Level	User-goal	
Primary Actor	Commercial User	
Stakeholders and Interests	<ul style="list-style-type: none"> • Admin • System 	
Preconditions	Problem has not been reported.	
Postconditions	Problem has been reported.	
Main Success Scenario	Actor Action	System Response
	2. Member clicks on the Report a problem button.	
		2. System shows a note in which user has to write the problem
	3. Member writes a problem on the note. 4. Member clicks on submit.	
		5. System receives the problem.

Extensions	5a. Member did not write a problem so error occurs.

2.5 Use Case Diagram



3. Other Nonfunctional Requirements

3.1 Performance Requirements

1) *Response Time*: It is measure of how quickly our system responses when someone visits the system to perform certain functions. The response time may be affected or may be decreased if there are too many users using the system simultaneously.

2) *Workload/scalability*: If the traffic of users may be increased from a certain limit, then there is chance that the system crashes leading to bandwidth limit exceeded message.

3.2 Safety Requirements

1) *Safety requirement* involves ReCAPTCHA service that prevents the system from any fraud and abuse.

- 2) Two step authentication is also involved that sends a random code to the user contact to verify the login.
- 3) All safety and privacy policies must be read and agreed by the user when using management system for the first time.

3.3 Security Requirements

Misuse of Data: The data created by the manage system or the data present in the data base of the system can lead to many mishaps. If someone excesses to the data base, he or she can be able to get hands on users' personal information which may include credit card numbers, passwords etc. This can cause a very big financial damage to the user or many users. For its solution we have installed data base firewalls for our system. Moreover, we are monitoring and auditing date base on regular basis.

Identity Authentication: For this we have used services like ReCAPTCHA services and two-step verification for our users.

3.4 Software Quality Attributes

- 1) *Maintainability:* The product is quite maintainable. All the changes made are cost-efficient as we just must alter the program. The program is written in a way that it can be changed in times of need.
- 2) *Correctness:* It is the ability of the system to perform tasks as defined by its specification. Our system is consistent with its specification, so it is 100% correct.
- 3) *Performance:* The system can handle a reasonable amount of data and memory and has nothing in characteristics that compromises performance.
- 4) *Interoperability:* Our system is designed in such a way that it can interact with other systems. It's easy to move our system to another platform and it can exchange and interpret data via interfaces with other systems quite easily.

3.5 Business Rules

- 1) Admin can review reports and feedbacks
- 2) Same usernames Customers cannot register and login
- 3) Admin has a separate menu

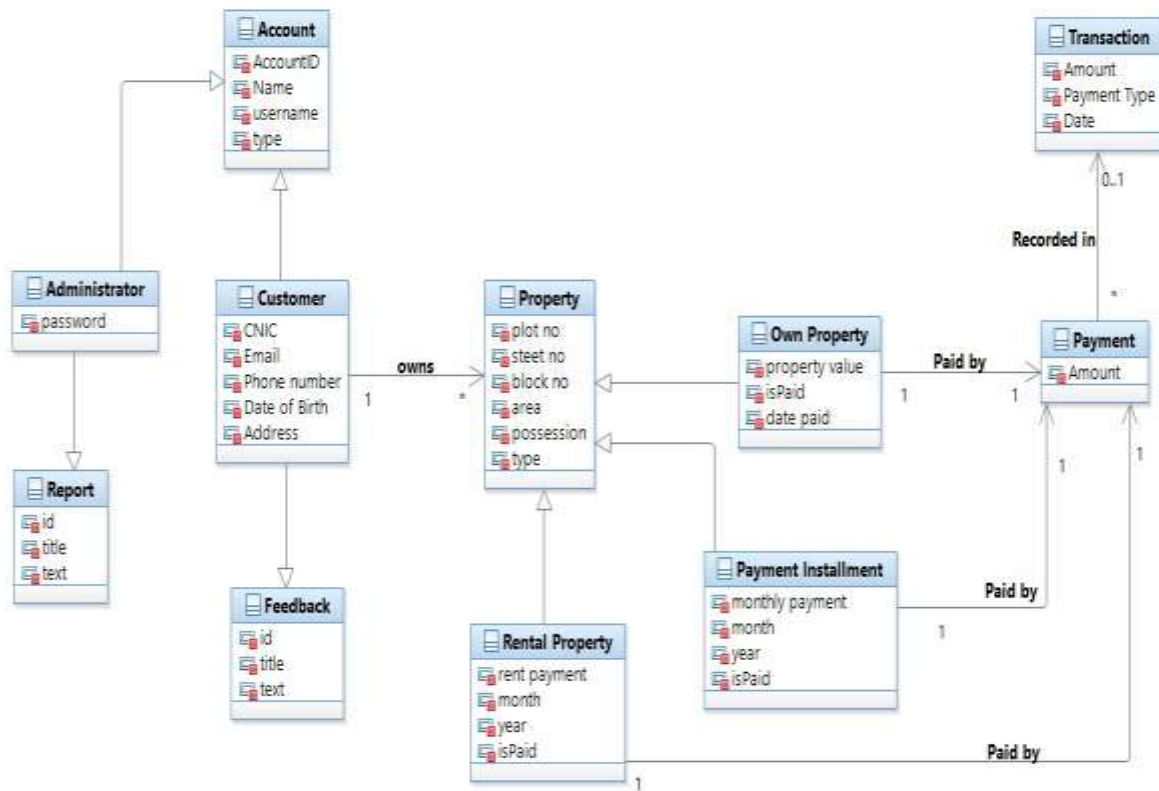
3.6 Operating Environment

Our system can be operated in following operating systems.

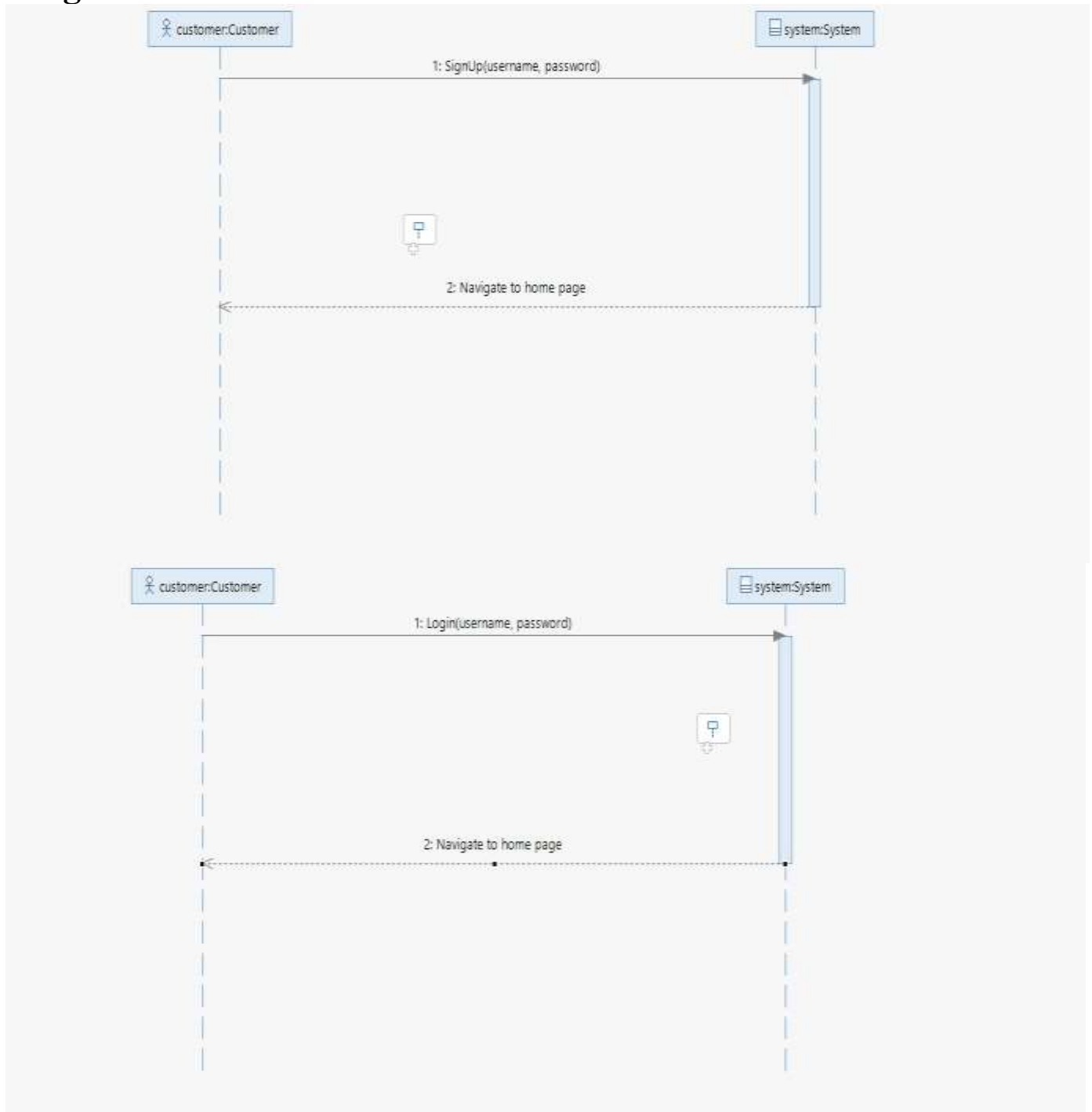
- 1) Microsoft Windows
- 2) Mac OS
- 3) Android
- 4) IOS
- 5) LINUX

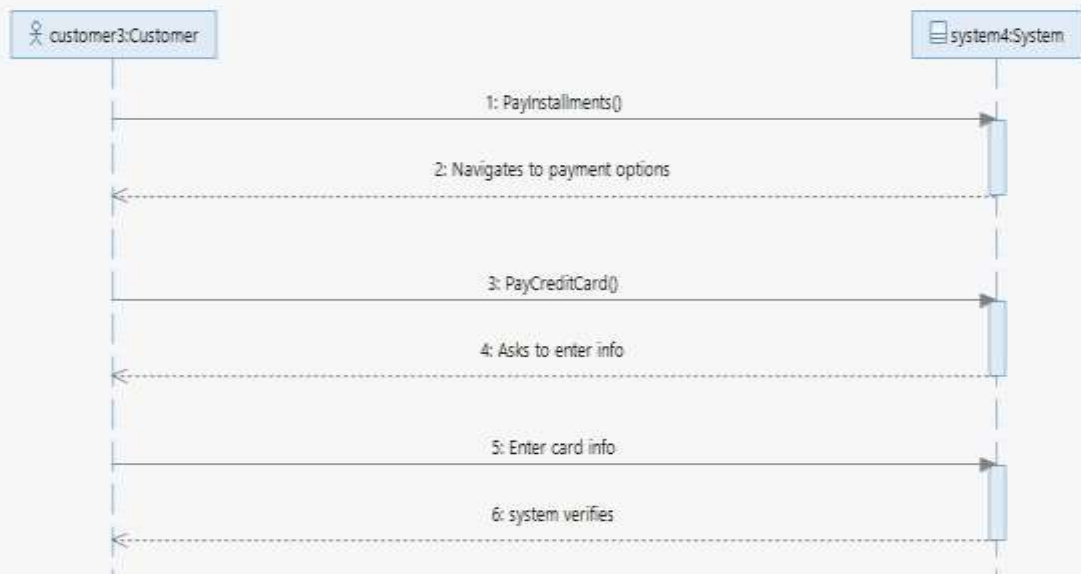
3.7 User Interfaces

4. Domain Model

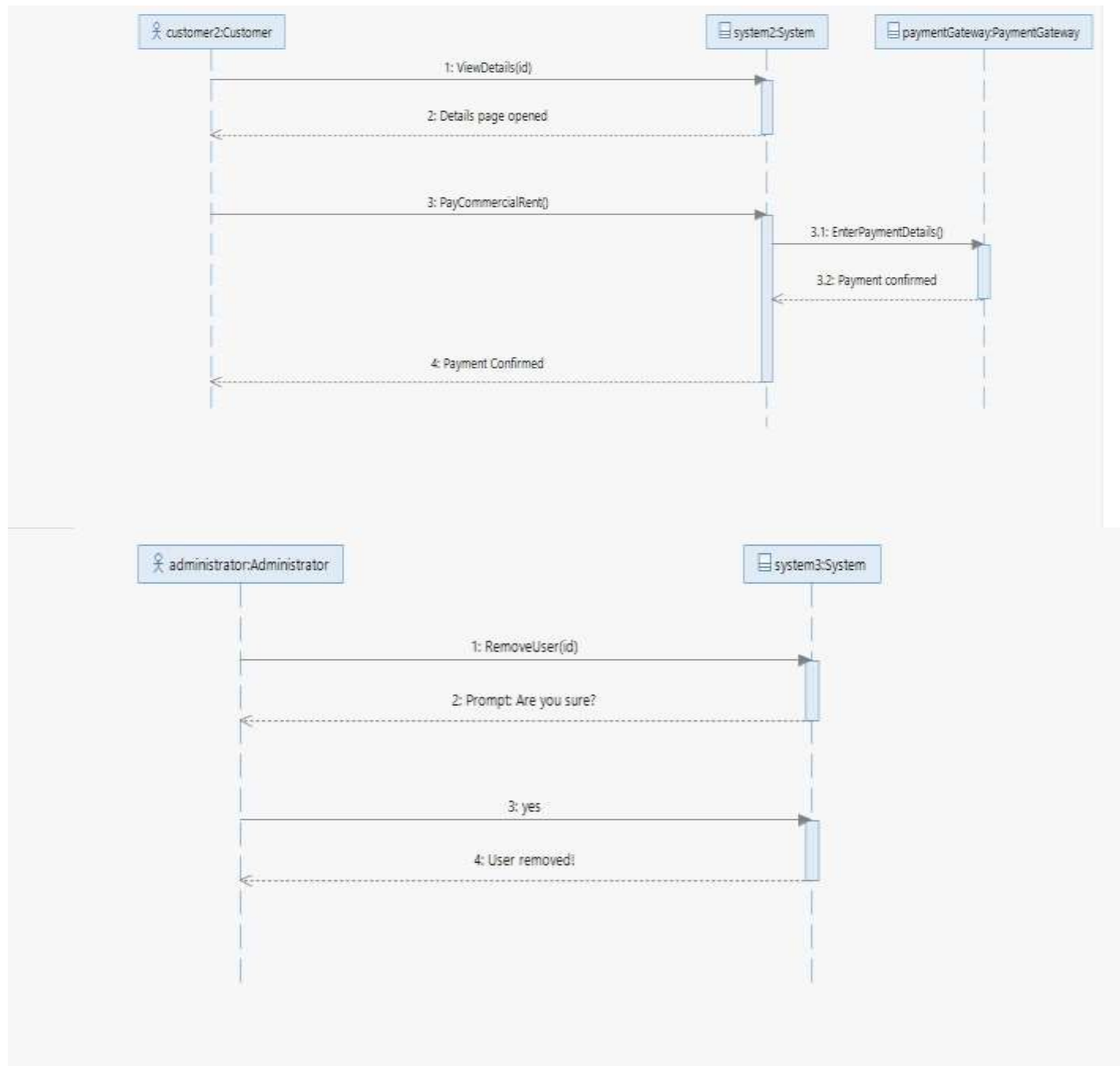


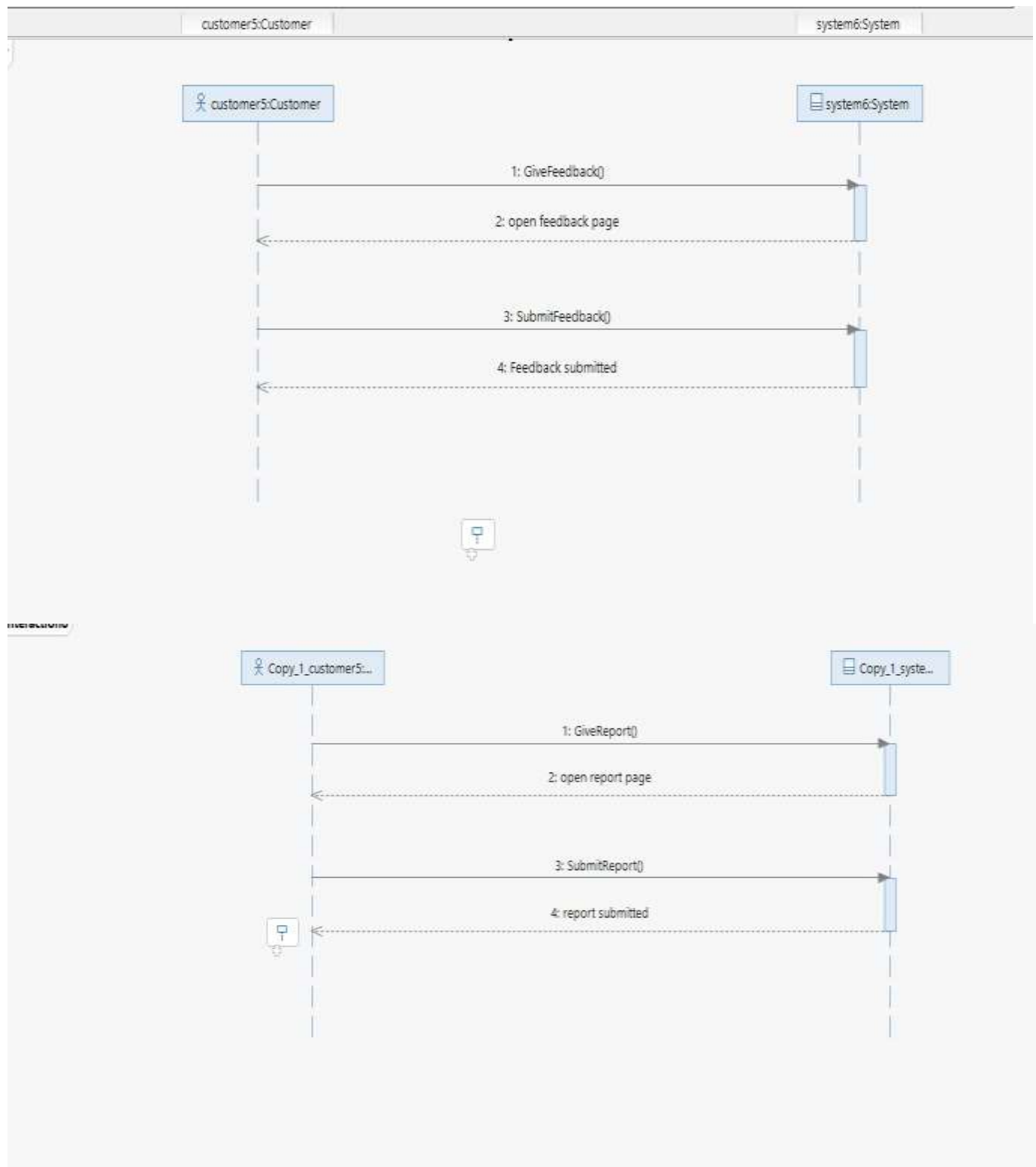
5. System Sequence Diagram



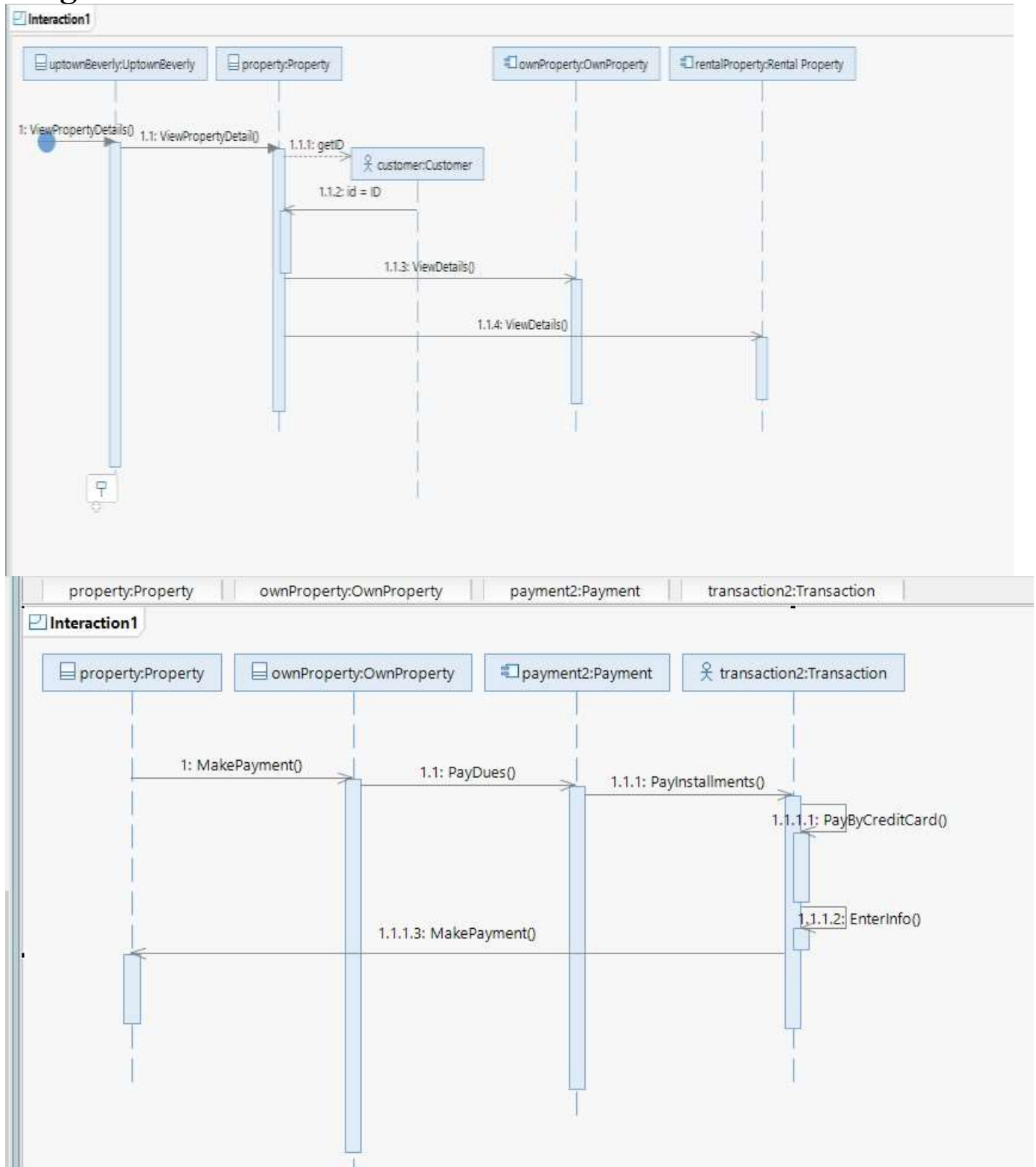


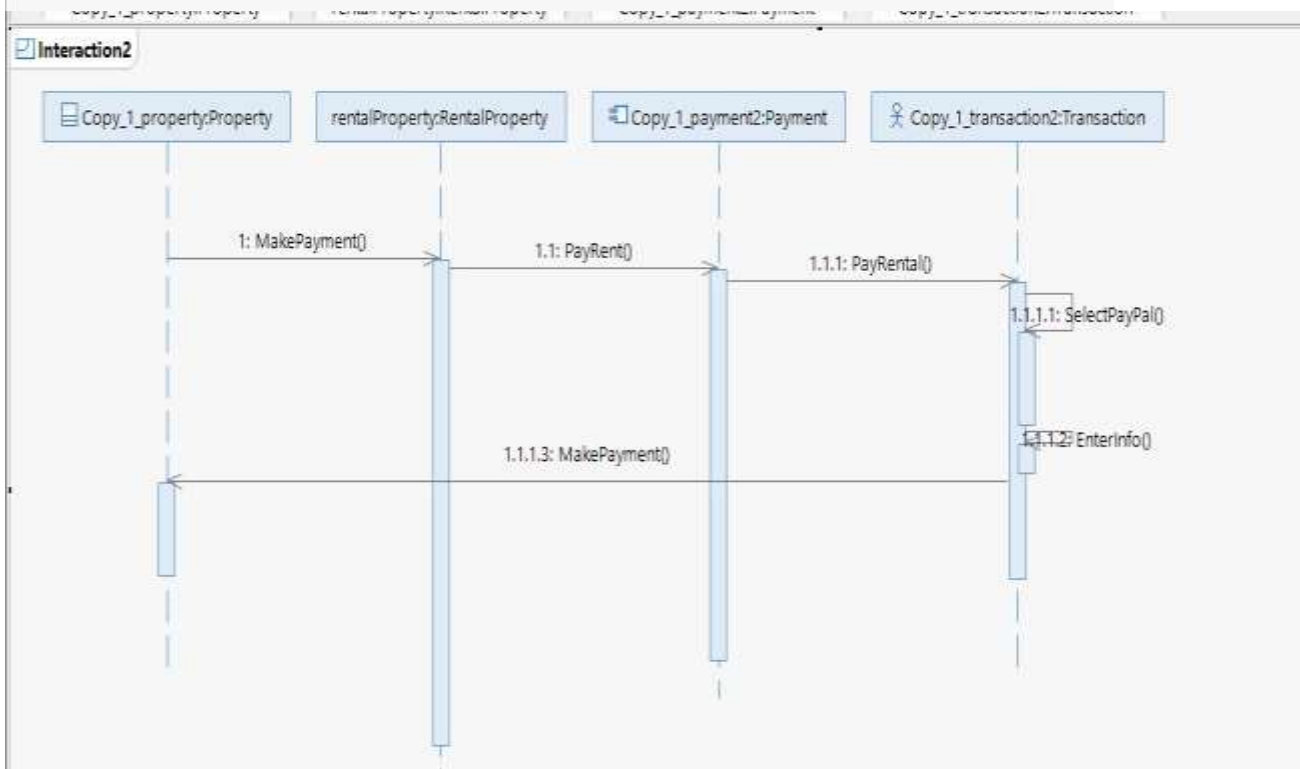
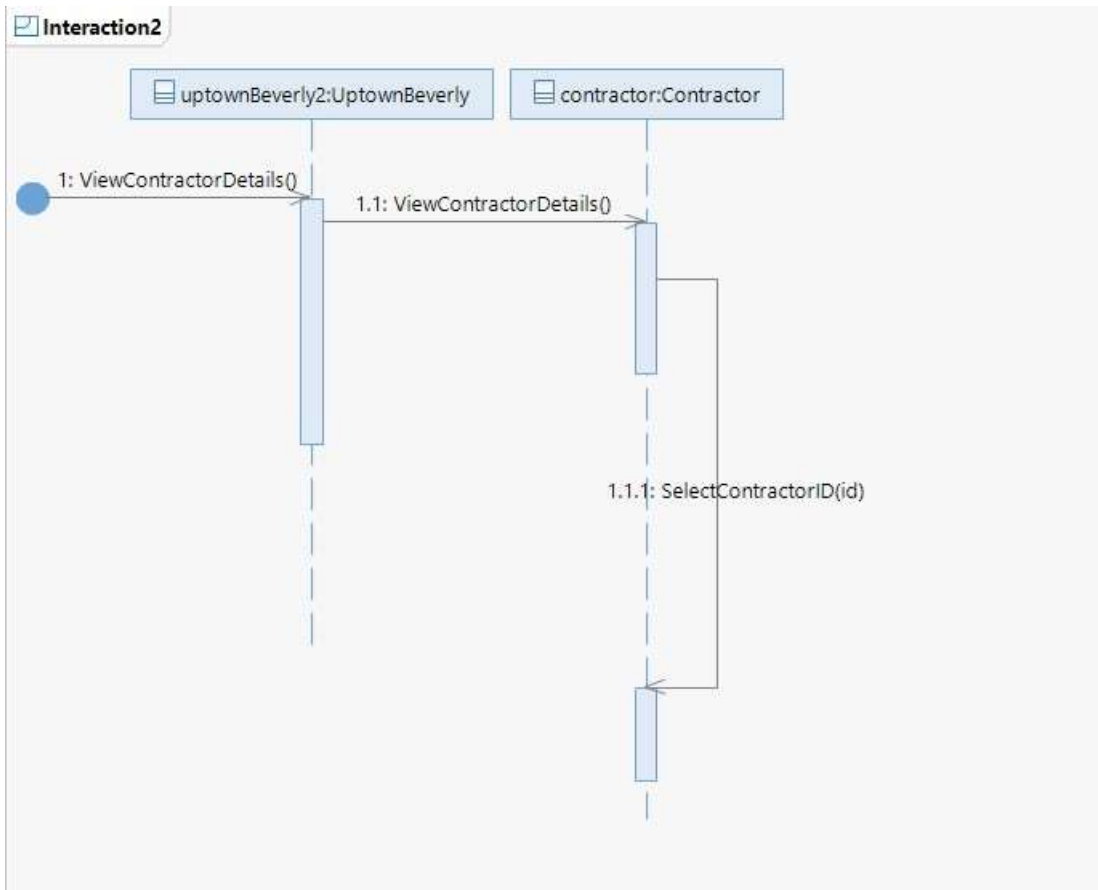


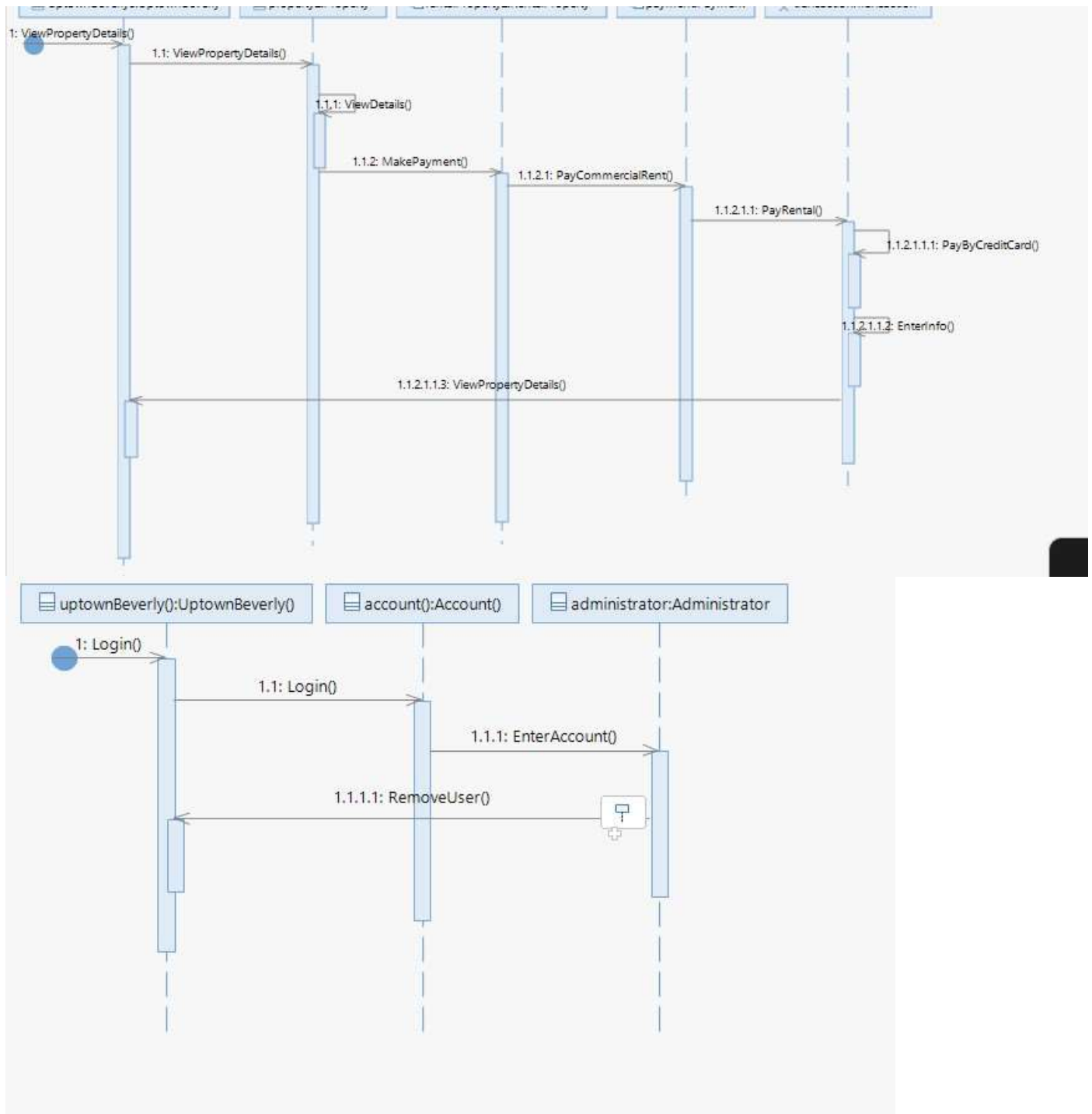


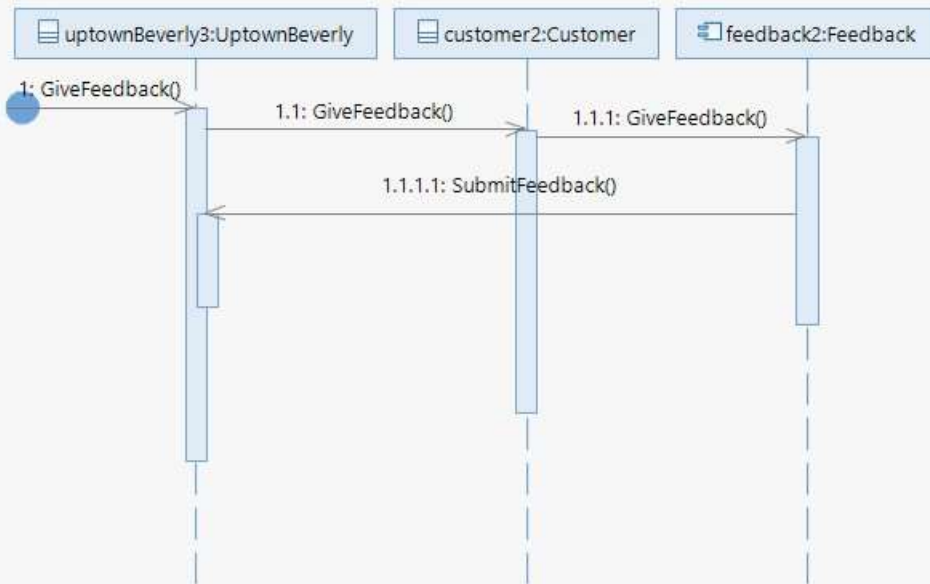
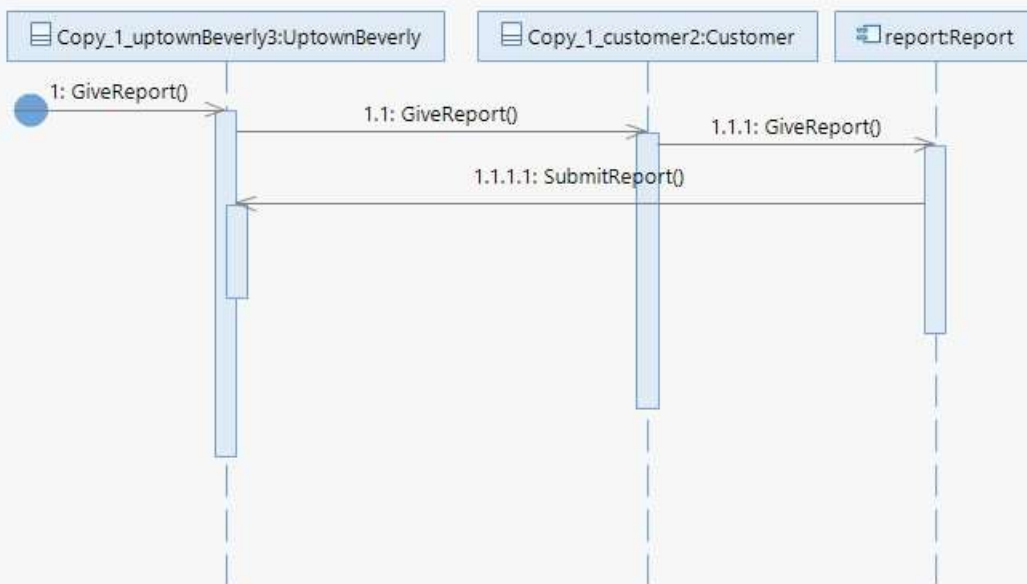


6. Sequence Diagram







Interaction3**Interaction4**

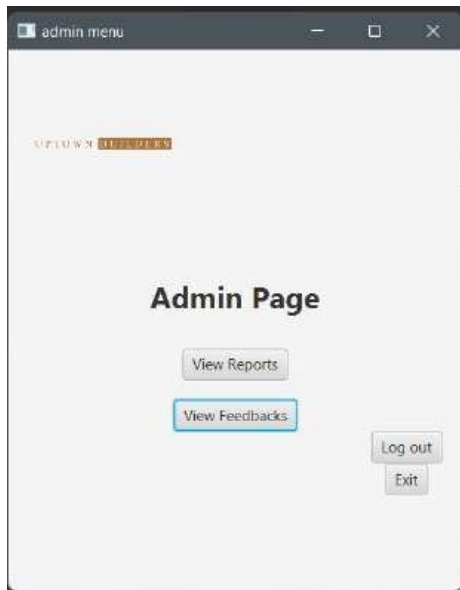
Start Menu:**Log in menu:**

Sign up page:

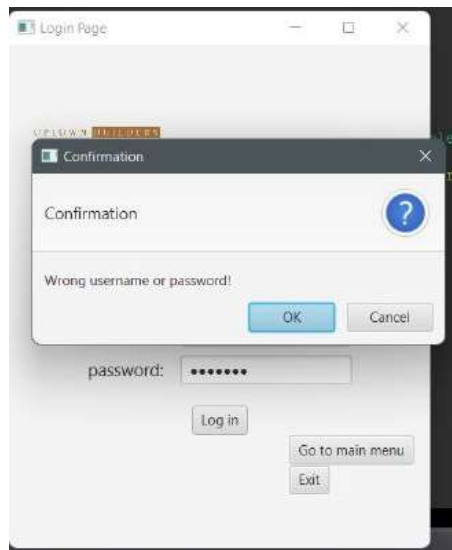
The screenshot shows a window titled "Sign up Page". At the top, there is a logo for "UPTOWN BUILDERS". Below the logo, there is a "Go To Main" button and a "SIGN UP" button. The form contains several input fields: "username:" with the value "usman", "password:" with masked characters "*****", "name:" with the value "Usman", "address:" with the value "F-11", "CNIC:" with the value "3233423141241", "Email:" with the value "usman@me.com", and "Phone no.:" with the value "32141231". At the bottom of the form, there are two buttons: "Sign Up" and "exit".

If the username already exists while sign up,



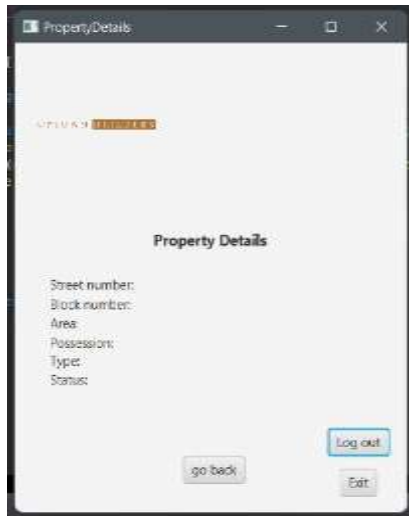
Admin log in**After Log in, admin page:**

In case log in credentials are wrong:

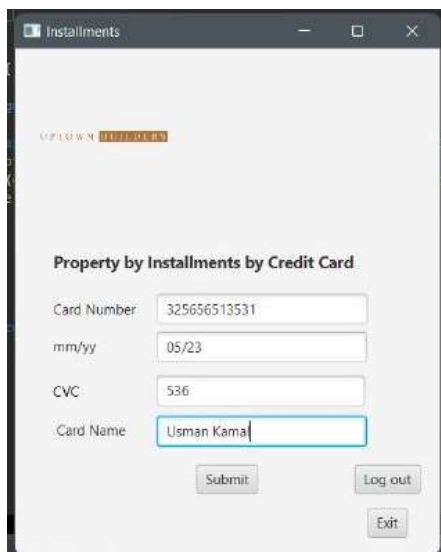


After log in,



Checking property details of the customer logged in:

The screenshot shows a window titled "PropertyDetails". At the top, there is a header "Customer: USMAN KAMA". Below this, the title "Property Details" is centered. A list of property details is displayed on the left side, including "Street number:", "Block number:", "Area:", "Possession:", "Type:", and "Status:". At the bottom of the window, there are three buttons: "go back", "Log out", and "Exit".

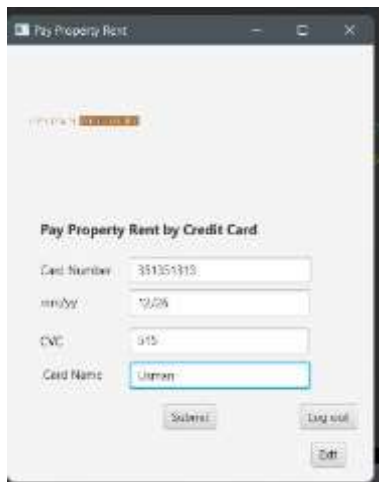
Paying by installments:

The screenshot shows a window titled "Installments". At the top, there is a header "Customer: USMAN KAMA". Below this, the title "Property by Installments by Credit Card" is centered. A form for paying by credit card is displayed, with fields for "Card Number" (325656513531), "mm/yy" (05/23), "CVC" (536), and "Card Name" (Usman Kama). At the bottom of the window, there are three buttons: "Submit", "Log out", and "Exit".

Viewing Contractors:

The screenshot shows a window titled "Contractor Page". At the top, there is a label "PROPERTY" followed by a dropdown menu showing "SELECT PROPERTY". Below this is a section titled "Contractor Details" containing a table with four columns: Name, Est., Budget(pkz), and Experience. The table lists five contractors: Z Builders, German Builders, Malik Estate, Bahina Contractors, and Adtear Cooperations. At the bottom right, there is a "Log out" button. At the bottom center, there are two buttons: "Go Back" and "Exit".

Name	Est.	Budget(pkz)	Experience
Z Builders	\$19	100k-1m	10 years
German Builders	\$90	150k-1m	15 years
Malik Estate	\$91	50k-1m	4 years
Bahina Contractors	169	100k-1m	20 years
Adtear Cooperations	m	1m-2b	40 years

Pay property rent:

The screenshot shows a window titled "Pay Property Rent". At the top, there is a label "PROPERTY" followed by a dropdown menu showing "SELECT PROPERTY". Below this is a section titled "Pay Property Rent by Credit Card" containing four input fields: Card Number (351351313), expiry (12/28), CVC (915), and Card Name (Uman). At the bottom, there are three buttons: "Submit", "Log out", and "Exit".

Report a problem for customer:

The screenshot shows a window titled "Report a Problem". At the top, there is a navigation bar with a "Home" button. Below the navigation bar, the text "Please give report:" is displayed. A large text input field contains the text "I have not been satisfied with customer experience". At the bottom of the window, there are three buttons: "Submit", "Log out", and "Exit".

Give Feedback for customer:

The screenshot shows a window titled "Give Feedback". At the top, there is a navigation bar with a "Home" button. Below the navigation bar, the text "Please give feedback:" is displayed. A large text input field contains the text "can you add queries to Block D". At the bottom of the window, there are three buttons: "Submit", "Log out", and "Exit".

Pay rent for Commercial Property:

The screenshot shows a web application window titled "Commercial Rent". Inside the window, there is a header area with a logo and the text "COMMERCIAL RENT". Below this, the main heading is "Pay Commercial Rent by Credit Card". The form contains four input fields: "Card Number" with the value "123456", "mm/yy" with the value "04/20", "CVC" with the value "567", and "Card Name" with the value "Alfred". At the bottom of the form, there are three buttons: "Submit", "Log out", and "Exit".

Field	Value
Card Number	123456
mm/yy	04/20
CVC	567
Card Name	Alfred

Buttons: Submit, Log out, Exit