AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

Faculty of Engineering

LAB REPORT

Course Title:	SOFTWARE ENGINEERING		
Course Code:	CSC3112	**Section:**	C
Semester:	Spring 23-24	**Degree Program:**	BSc in CSE
Course Teacher:	DR. S.M. HASAN MAHMUD		

Group # 02

1. **MD. EKRAMUL HASAN NIBIR** **20-42740-1**
2. **MD. ABDUR RAHMAN FOYSAL** **20-42742-1**
3. **MRINMOY DAS** **20-43856-2**
4. **TANJIL MOULA** **20-41856-1**

Faculty use only		
FACULTY COMMENTS	**Marks Obtained**	
	Total Marks	

RENT OR SHARE

Background information:

The field of software and technology has grown up rapidly in recent years. However, there is no such software application in Bangladesh to find a suitable house or roommate, especially for those who are new to a city or do not have relatives for accommodation. Besides, there has been a growing trend of people moving to larger cities in search of better opportunities. However, the cost of living in these cities can be high, making it difficult for people to afford to rent an apartment on their own. This has led to an increase in the number of people who are looking to share apartments with others to reduce the cost of rent and other expenses.

While sharing an apartment can be a great way to save money, finding the right apartment and housemates can be a challenge. There are many online platforms available for finding apartments and housemates, but these platforms often lack comprehensive information, and the process of finding a suitable apartment or housemate can be time-consuming and frustrating.

Furthermore, the current platforms available for finding apartments and housemates do not provide a user-friendly experience. This is a major issue for people who are already busy with work or school and want a simplified process for finding an apartment or housemate.

The House Rent or Share application aims to solve these problems by providing a user-friendly platform that makes it easy for users to find an apartment to rent or share. The app will provide detailed information about the apartments and the people looking to share the apartments. It will also allow users to create a profile and specify their preferences, such as preferred location, type of apartment, and rental budget.

By simplifying the process of finding a suitable apartment and housemate, the House Rent or Share application will make it easier for people to save money and find a place to live in a new city. This application will provide a comprehensive and user-friendly platform that makes it easy for users to find apartments and housemates that match their preferences and lifestyle.

Problem Findings:

- There are no house-sharing platforms available in our country. Therefore, it with very time consuming to find a house who live in a very tight schedule.
- Users struggle to find a suitable roommate or housing option due to the lack of information and transparency different platform.

- Many platforms have a significant cost associated with using their services, limiting the number of users who can access them.
- There is a gap in the market for an affordable and user-friendly house-sharing application that addresses these limitations.

Project Objective:

- Develop a user-friendly, affordable, and feature-rich house-sharing application that addresses the limitations.
- Provide a comprehensive solution for people looking for a place to live or seeking a roommate.
- Create a platform that is easy to use, intuitive, and accessible to a wide range of users.

Solution:

- Develop a house-sharing application with search and filtering options to simplify the search process for both house owner and tanents.
- Provide transparency by ensuring that all information about housing options and roommates is accurate and up-to-date.
- Develop an affordable pricing structure to make the platform accessible to a wider range of users.
- Include a messaging feature to enable users to communicate with potential roommates or landlords directly, simplifying the process of scheduling viewings and conducting interviews.
- Include a payment gateway to make it easier for users to pay rent and utilities directly through the platform.

Target Users:

i) Commoner (Those looking for a place to live / who are looking for a roommate)
ii) Bachelors (University/College students)
iii) House Owner.

Functionalities:

User registration: The app will allow users to create a profile that will contain their personal information, preferred location, rental budget, and other preferences.

Apartment Search: The app will allow users to search for apartments based on their preferred location, rental budget, and other amenities.

Housemate Search: The app will allow users to search for potential housemates based on their preferences, such as age, gender, occupation, and lifestyle.

Chat and Messaging: The app will have a chat and messaging feature that will allow users to communicate with potential housemates or landlords.

Reviews and Ratings: The app will allow users to review and rate apartments and housemates, providing feedback for other users.

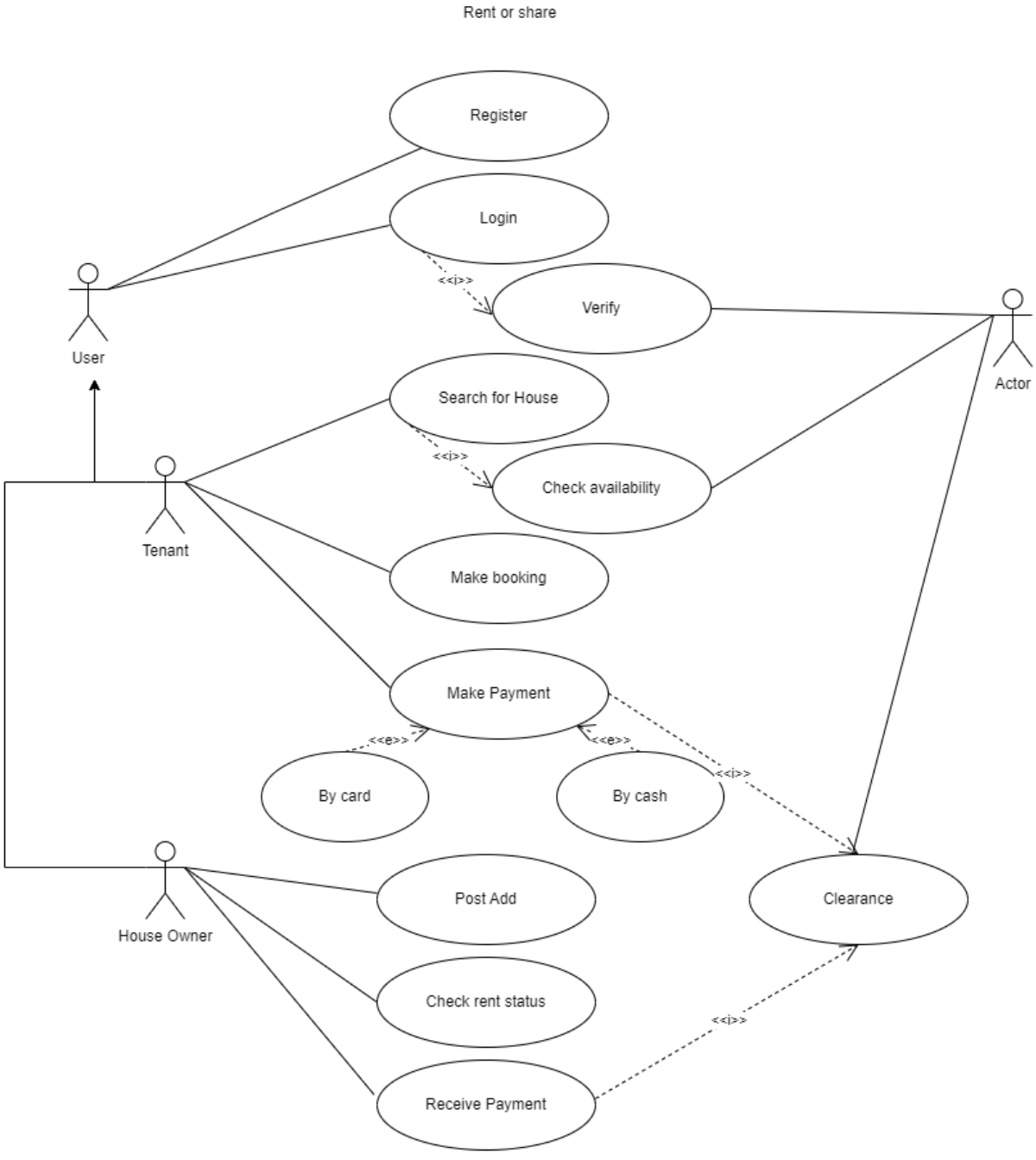
Photo gallery: The application will provide a photo gallery of each apartment, including interior and exterior photos, to give users a better idea of the apartment before scheduling a visit.

Appointment scheduling: The application will allow users to schedule apartment visits directly with the landlord or housemate. This will make it easy for users to find a convenient time to visit the apartment and meet the landlord or housemate.

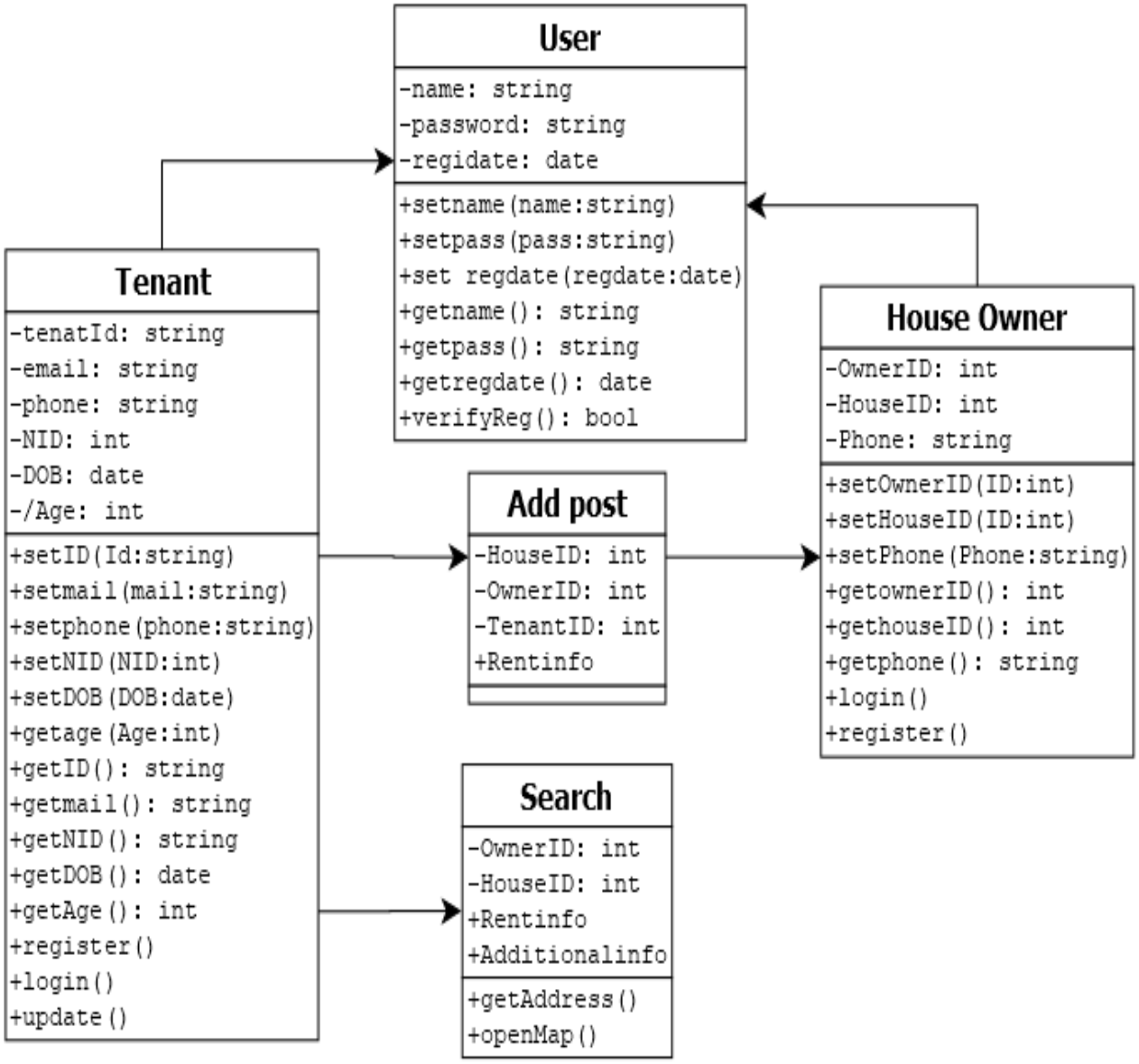
Map integration: The application will integrate with maps to provide users with the location and directions to the apartment. This will make it easier for users to find the apartment and its surroundings.

UML:

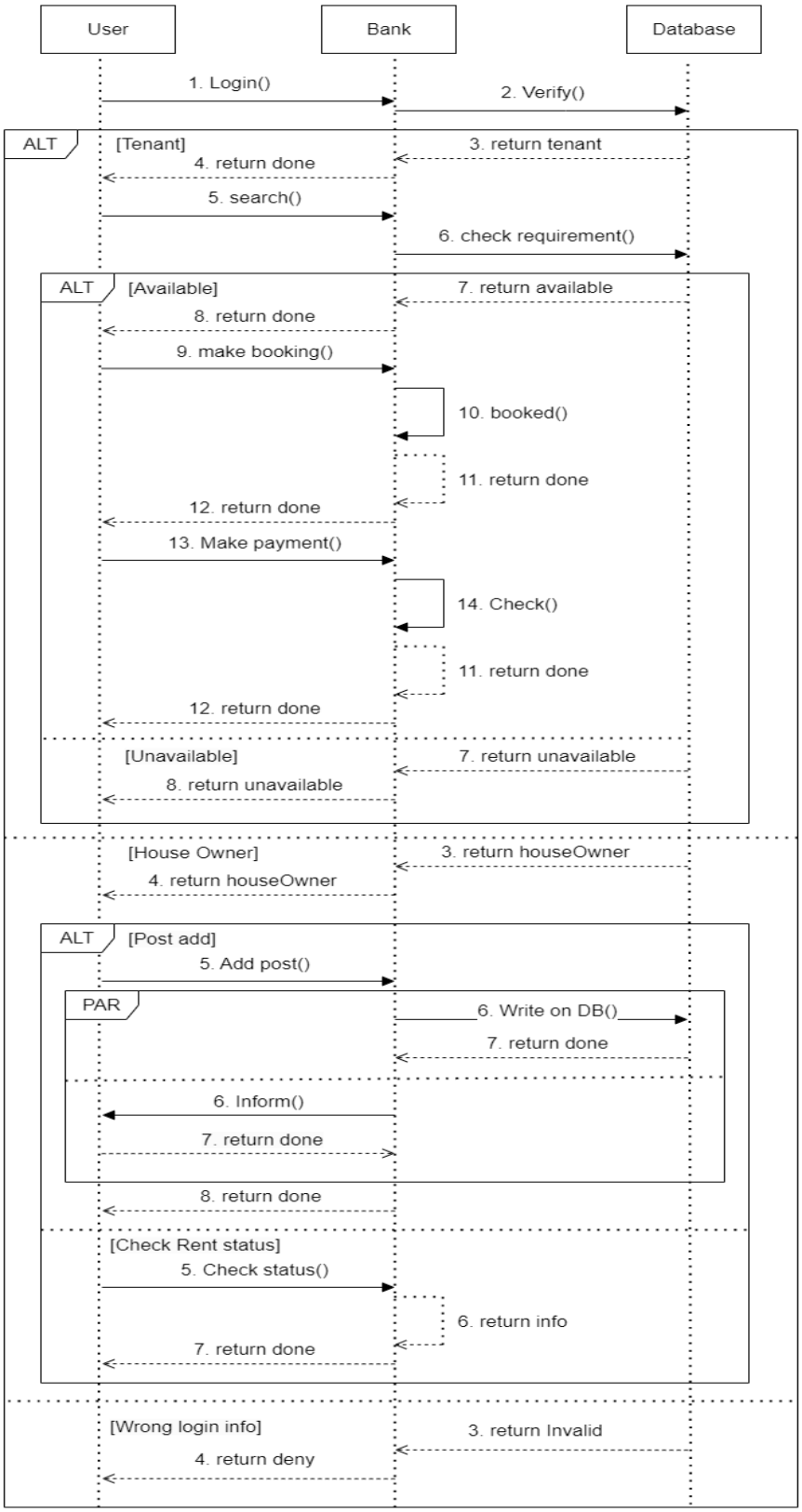
Use Case:


Rent or share
Register
Login
Verify
User
Actor
Search for House
Check availability
Tenant
Make booking
Make Payment
<<e>>
<<e>>
<<i>>
By card
By cash
House Owner
Post Add
Clearance
Check rent status
<<i>>
Receive Payment

Class diagram:



Sequence diagram:



State chart diagram:

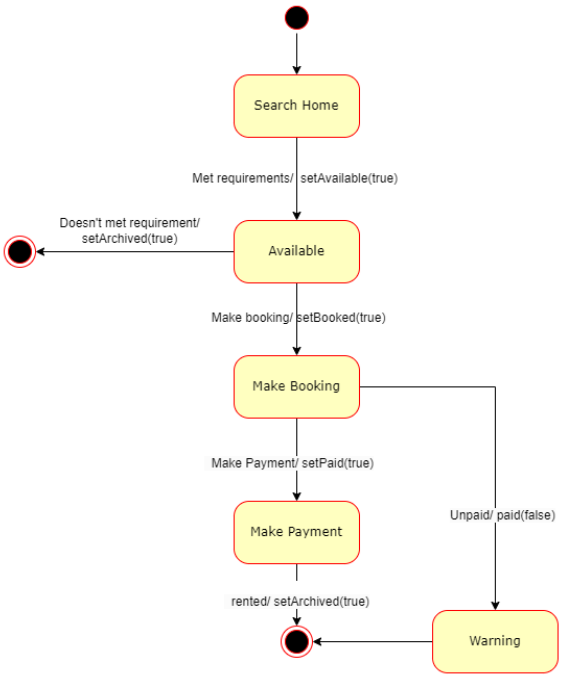


Fig: Customer state chart

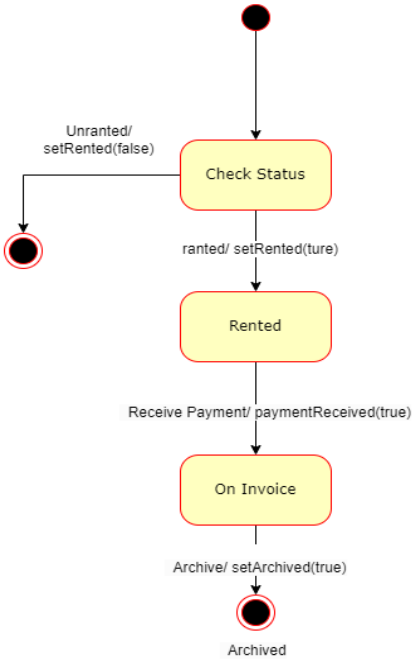


Fig: Owner Check Status state chart

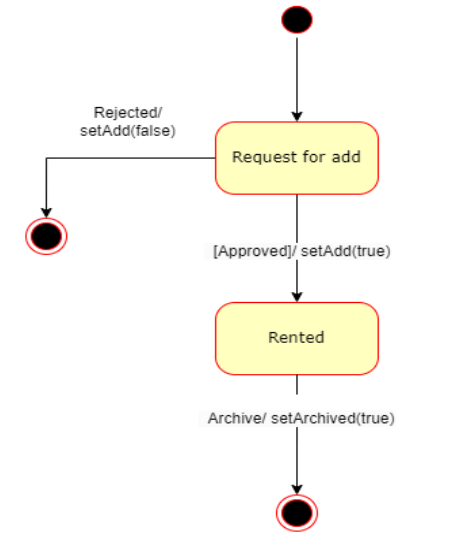
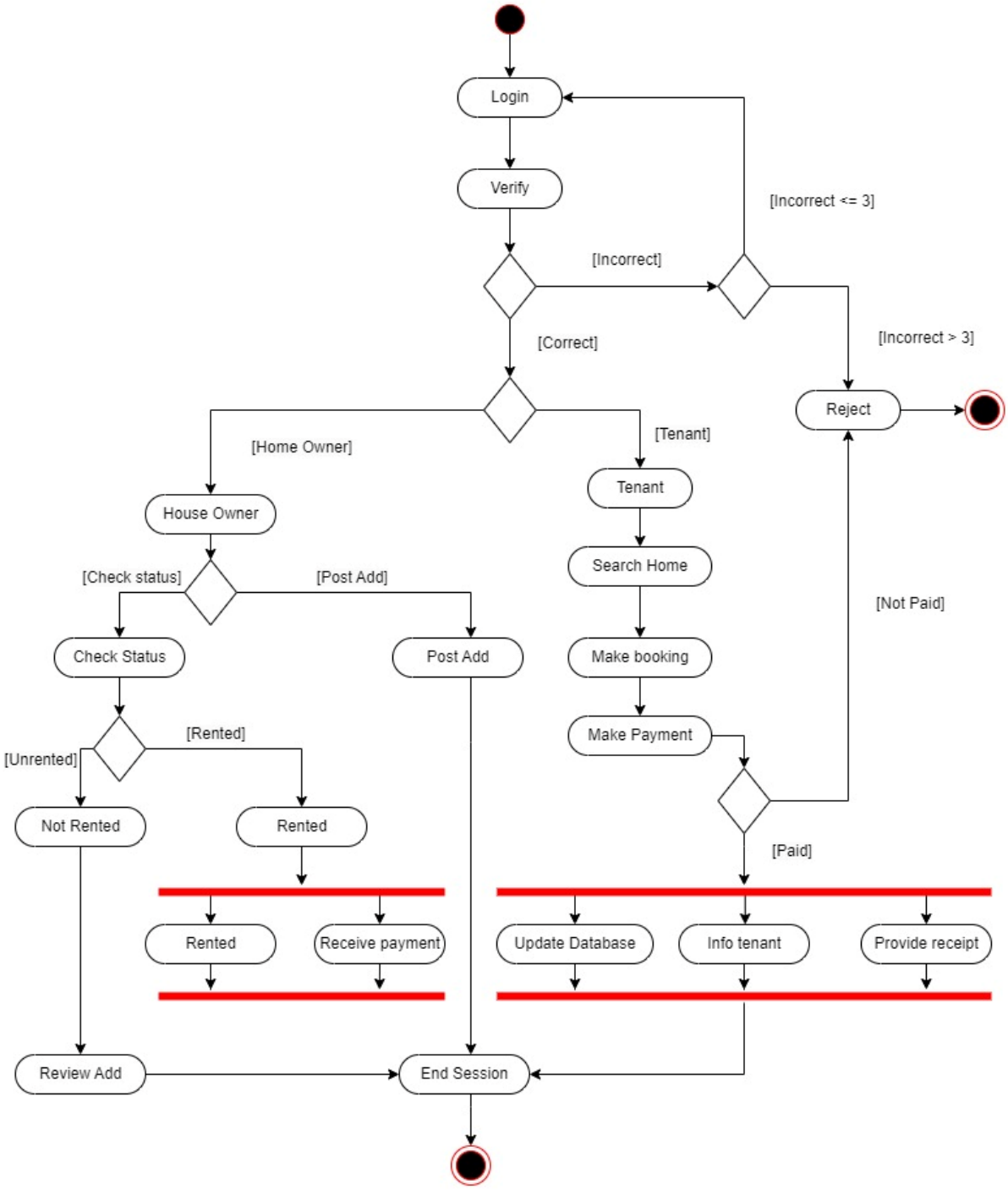


Fig: Owner Add Post state chart

Activity Diagram:



Chosen model:

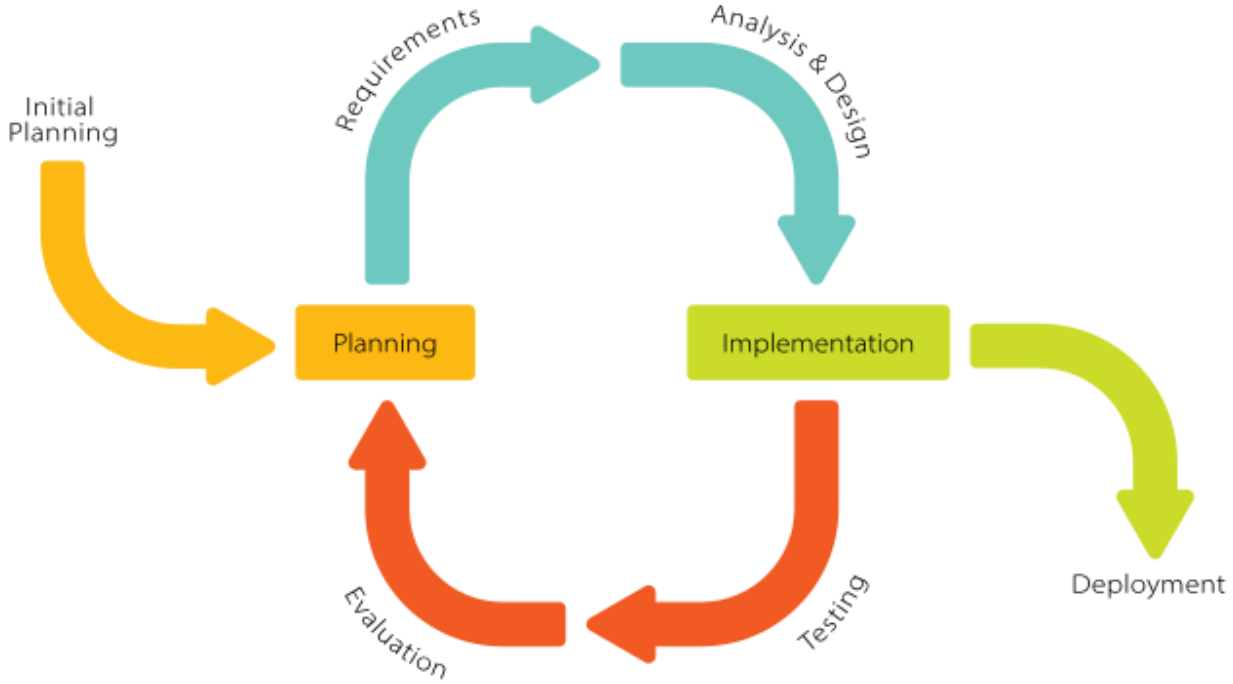


Figure: Iterative model

The Iterative model could be a good fit for the "House rent or share" software project. The Iterative model is a cyclical approach to software development that involves developing the software in incremental stages, with each stage adding new functionality and features to the product. Each iteration typically includes requirements gathering, design, implementation, testing, and deployment.

Like the Agile model, the Iterative model allows for flexibility and frequent feedback, which can be important for a project like "House rent or share" where user requirements and market conditions may change frequently. It also allows for continuous testing and evaluation, which can help to identify issues early in the development process and minimize the need for major revisions later on.

Frequent feedback and adaptation: The "House rent or share" project may require frequent updates and changes based on user feedback and evolving market conditions. The Iterative model allows for frequent feedback and adaptation, enabling the development team to make changes and improvements as needed.

Faster delivery of value: Each iteration of the project can deliver some functional software, enabling the project to begin delivering value early in the development process. This can be particularly

important for a project like "House rent or share", where users may need access to the software as soon as possible.

Reduced risk: The Iterative model allows for continuous testing and evaluation, which can help to identify issues early in the development process and reduce the risk of major issues or failures later on.

Increased stakeholder involvement: The "House rent or share" project is likely to have multiple stakeholders, including property owners, tenants, and property managers. The Iterative model allows for increased stakeholder involvement, which can help to ensure that the final product meets the needs and expectations of all stakeholders.

Better control over costs: Since each iteration is relatively small and self-contained, it's easier to estimate the cost of each iteration and to manage overall project costs.

Overall, the Iterative model can help to ensure that the "House rent or share" software project meets the needs of users and stakeholders, while minimizing risk, controlling costs, and delivering value quickly.

Functional Requirements:

1: User login and authentication:

1.1 The software should allow users to register and login with their username and password.

1.2 The login info will be verified with the database records.

1.3 If the user is a Tenant, tenant interface will be displayed. If the user is a House Owner, the interface for the House owner will be displayed.

1.4 If the verification process failed and the user provide wrong info 3 times in a row, the system will block his account for one day

Priority Level: High.

Precondition: User have valid user id and password.

2. House searching:

2.1 The software should provide the user a search bar for users to enter keywords, location or other filters.

2.2 Display the search results in an organized and user-friendly manner, such as a list or a map.

2.3 If there is no house available within the requirements a message will be shown to its user.

Priority Level: Medium.

Precondition: User have to login to the system.

3. Contact and Communication:

3.1 The system will provide a messaging system for users to contact each other.

3.2 The system will allow users to set up a viewing appointment and communicate through the platform.

3.3 The system will have the functionalities to send email notifications for any new messages received.

Priority Level: High

Precondition: User have to make booking.

4. Rent Payment:

4.1 The system will allow tenants to make online payments through the platform.

4.2 The software will also provide landlords with a dashboard to track rent payments and issue receipts.

4.3 The tenant and house owner has to have a valid banking account to complete the transaction process.

4.3 The system will be integrated with a payment gateway to ensure secure and efficient transactions.

Priority Level: High

Precondition: The tenants and user should have valid


Rent
&
Share
Your Dream Space
Sign Up
or
Sign In

Register

First Name

Last Name

Enter your Email

Phone No

Age

Blood Group

Enter Password

Confirm Password

Sign Up

Rent
&
Share

Email

Enter Password

Log In

Rent & Share

We have sent an OTP to the provided email address,to continue please enter the OTP and Verify.If you don't receive any OTP,please click Resend OTP

Enter OTP

Verify

Resend OTP

Rent & Share

Search Home

View Details

View Details

View Details

View Details

Rent & Share

Search Home

View More Photos

Location:Bashundhara,Block G,Road No:27,House No:14
Number of Seat:03
Status:Full Room Available
$:15,000/- Contact:XXXXXXXXX

Make Booking

Rent & Share

Search Home

ADD POST

Location

Full Flat/Room??

No of Seats

Set status

Rent Amount

Contact No

Upload Photos

Set Post

Rent & Share

Search Home

Make Payment

By Card

Bkash

Nagad

Rocket

By Cash

Log Out

Rent & Share

Search Home

My Profile

Name:XXXXX

Email:XXXXXX

Phone No:XXXX

Date of birth:XXXXXX

Blood Group:XXXXXX

Description: XXXXXX

Work Profile:XXXX

Change Password

Edit Profile

Log Out

Project Test Planning:

Project Name: Rent Or Share			Test Designed By: Ekramul Nibir	
Test Case ID: RS_1			Test Designed Date: 11.03.2023	
Test Priority (Low, Medium, High): High			Test Executed By: Ekramul Nibir	
Modula Name: Login Session			Test Executed Date: 11.03.2023	
Test Title: Verify login with valid username and password				
Description: Test software login page				
Precondition (if any): User must have username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to software 2. Enter username 3. Enter password 4. Click login	Username: 20-42740-1 Password: 31@2	User should login into the software	Wrong password	Fail
Post Condition: User is invalidated with database and failed login to account. The account session details are logged in database.				

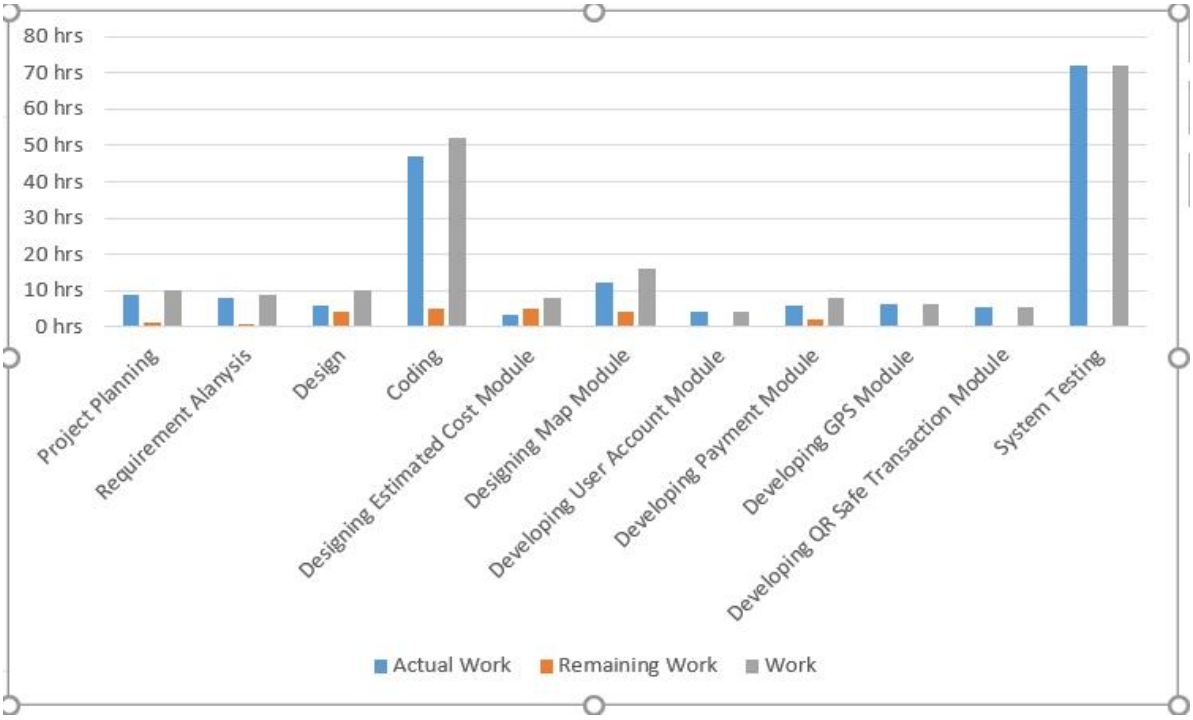
Project Name: Rent Or Share			Test Designed By: AR FOYSAL	
Test Case ID: RS_2			Test Designed Date: 2.04.2023	
Test Priority (Low, Medium, High): High			Test Executed By: AR FOYSAL	
Modula Name: Payment Session			Test Executed Date: 2.04.2023	
Test Title: Verify the payment information				
Description: Test payment page				
Precondition (if any): User must submit payment information				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to software 2. Enter username 3. Enter password 4. Click Login 5. Click Quick pick 6. Confirm booking complete 7. Click make payment 8. Enter bank acc name 9.Enter bank acc no 10. Enter amount 11.Enter acc password 12.Click payment	Username: 101 Password: 321 Bank Acc Name: MD. ABDUR RAHMAN FOYSAL Bank Acc No: 20380929388 Amount: 1500 Password: 1232	User should login into the software and complete successfully	Invalid bank acc no	Fail
Post Condition: User is validated with database and successfully login to account. Payment information is not validated with database and failed to make payment.				

Project Name: Rent Or Share			Test Designed By: Foysal , Nibir	
Test Case ID: RS_3			Test Designed Date: 12.02.2023	
Test Priority (Low, Medium, High): Medium			Test Executed By: Foysal , Nibir	
Modula Name: Posting Rents			Test Executed Date: 12.02.2023	
Test Title: Posting a rant with valid inputs				
Description: verify that a user can post a rant with valid inputs				
Precondition (if any): The user is logged in and has access to the application				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Click on the “New Rant” button 2.Enter the rant title in the “Tittle” field 3.Enter the rant content in the “Content” field 4.Click on the post button	Username: test12 Password: p@sw Location: Uttara	The rant was posted successfully. The rant was visible to the user on the homepage	The rant was posted successfully. The rant was visible to the user on the homepage	Pass
Post Condition: The user is logged in and can access the application’s features.				

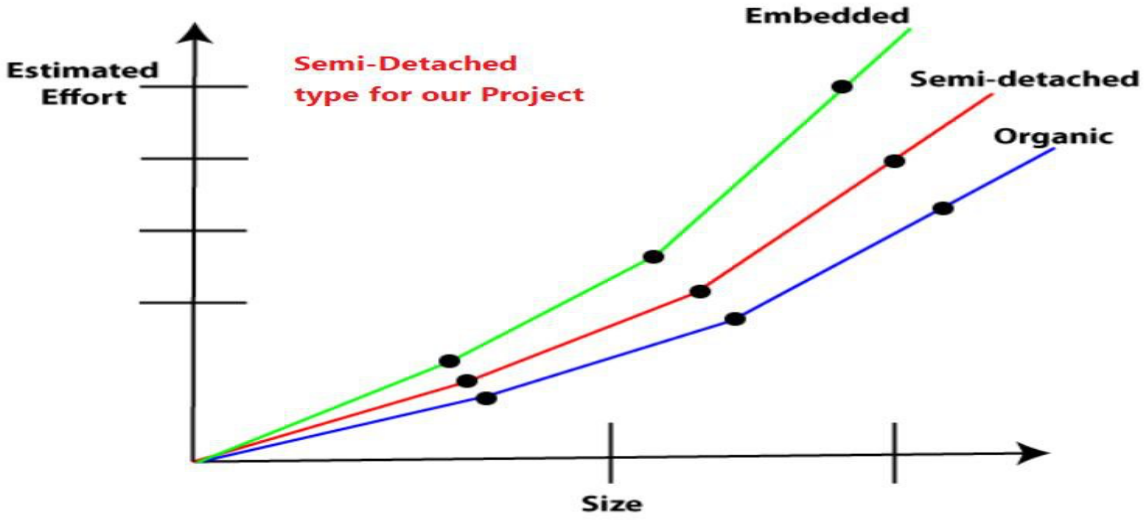
Work Breakdown Structure (WBS) :

Task Name	Duration	Predecessors	Start	Finish	% Complete	Work	Resource Names	Provability (Text1)	Impact	Risk Score	Risk Level
Project Planning	2 days		Mon 11/21/22	Tue 11/22/22	56%	10 hrs	MD. EKRAMUL HASAN	1	1	1	
Requirement Alanysis	2 days		Wed 11/23/22	Thu 11/24/22	51%	9 hrs	MD. EKRAMUL HASAN	2	2	4	
Design	3 days		Fri 11/25/22	Tue 11/29/22	60%	10 hrs	TANJIL MOULA[42%],S	2	4	8	
Coding	**51.5 days**		**Mon 1/2/23**	**Tue 3/14/23**	**89%**	**52 hrs**		**3**	**4**		
Design Login page	1 day		Mon 1/2/23	Mon 1/2/23	60%	8 hrs	TANJIL MOULA	4	3	12	
Design Sign in page	**50.5 days**		**Mon 1/2/23**	**Tue 3/14/23**	**96%**	**44 hrs**		**3**	**4**		
Designing House Information Module	**0.5 days**	5	**Mon 1/2/23**	**Tue 1/3/23**	**100%**	**13.6 hrs**	**MD. ABDUR RAHMAN FOYSAL**	**5**	**3**		
House No	0.5 days		Mon 1/2/23	Tue 1/3/23	100%	4 hrs	MD. ABDUR RAHMAN	4	3	12	
Address	0.4 days		Tue 1/3/23	Tue 1/3/23	100%	3.2 hrs	MD. ABDUR RAHMAN	4	3	12	
House Model	0.3 days	5	Tue 1/3/23	Tue 1/3/23	100%	2.4 hrs	MD. ABDUR RAHMAN	4	3	12	
Designing House Owner Information Module	**1.5 days**		**Tue 2/14/23**	**Wed 2/15/23**	**90%**	**16.8 hrs**		**5**	**4**		
Owner name	0.3 days		Tue 2/14/23	Tue 2/14/23	100%	2.4 hrs	MD. EKRAMUL HASAN	4	3	12	
Phone no	0.5 days		Tue 2/14/23	Tue 2/14/23	100%	4 hrs	MD. EKRAMUL HASAN	4	3	12	
Email	0.5 days		Tue 2/14/23	Tue 2/14/23	100%	4 hrs	MD. EKRAMUL HASAN	4	3	12	
NID Card	0.8 days		Tue 2/14/23	Wed 2/15/23	75%	6.4 hrs	SOFTWARE TOOL[1],M	4	3	12	
Designing Tenant Information Module	**0.5 days**	5	**Tue 3/14/23**	**Tue 3/14/23**	**100%**	**13.6 hrs**	**SOFTWARE TOOL[0.5]**	**5**	**4**		
Tenant Name	0.2 days		Tue 3/14/23	Tue 3/14/23	100%	1.6 hrs	SOFTWARE TOOL[0.5]	4	3	12	
Phone No	0.5 days		Tue 3/14/23	Tue 3/14/23	100%	4 hrs	SOFTWARE TOOL[0.5]	4	3	12	
Email	0.5 days		Tue 3/14/23	Tue 3/14/23	100%	4 hrs	SOFTWARE TOOL[0.5]	4	3	12	
Designing Estimated Cost Module	1 day	7	Mon 3/6/23	Mon 3/6/23	40%	8 hrs	TANJIL MOULA, SOFTWARE,SOFTWAI	3	2	6	
Designing Map Module	2 days	11	Fri 3/17/23	Wed 3/22/23	75%	16 hrs	SOFTWARE TOOL[1],M	4	5	20	
Developing User Account Module	0.5 days	21	Fri 3/17/23	Wed 3/22/23	100%	4 hrs	SOFTWARE, SOFTWARE TOOL[0.5]	2	3	6	
Developing Payment Module	1 day	22	Wed 3/22/23	Mon 3/27/23	75%	8 hrs	TANJIL MOULA,SOFTW	4	5	20	
Developing GPS Module	0.8 days	22	Sun 3/19/23	Mon 3/20/23	100%	6.4 hrs	TANJIL MOULA,SOFTW	5	5	25	
Developing QR Safe Transaction Module	0.7 days	23	Tue 3/28/23	Tue 3/28/23	100%	5.6 hrs	TANJIL MOULA, SOFTWARE,SOFTWAI	3	3	9	
System Testing	**10 days**		**Mon 4/3/23**	**Thu 4/13/23**	**100%**	**72 hrs**	**TESTING TOOL[2.8],M**				
Module & Subsystem testing	1 day		Mon 4/3/23	Mon 4/3/23	100%	8 hrs	MRINMOY DAS, TESTING TOOL[0]	3	4	12	
System integration testing	1 day		Tue 4/4/23	Tue 4/4/23	100%	8 hrs	MRINMOY DAS, TESTING TOOL[1]	4	5	20	
Unit Testing	5 days		Wed 4/5/23	Mon 4/10/23	100%	40 hrs	TESTING TOOL[1],MD.	5	5	25	
Acceptance Testing	2 days		Mon 4/10/23	Wed 4/12/23	100%	16 hrs	MRINMOY DAS,TESTI	5	5	25	

Effort Estimation:

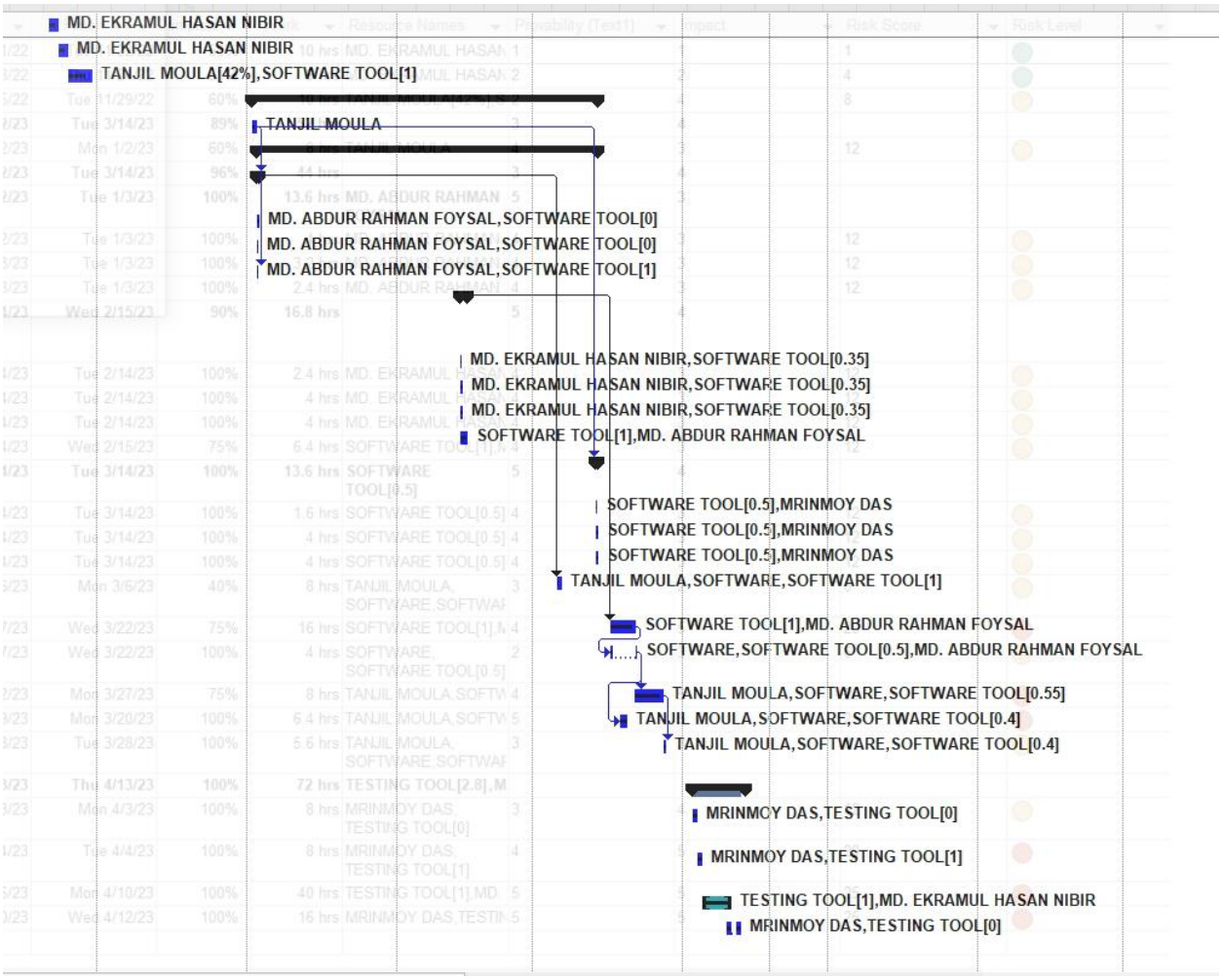


Semidetached Project:



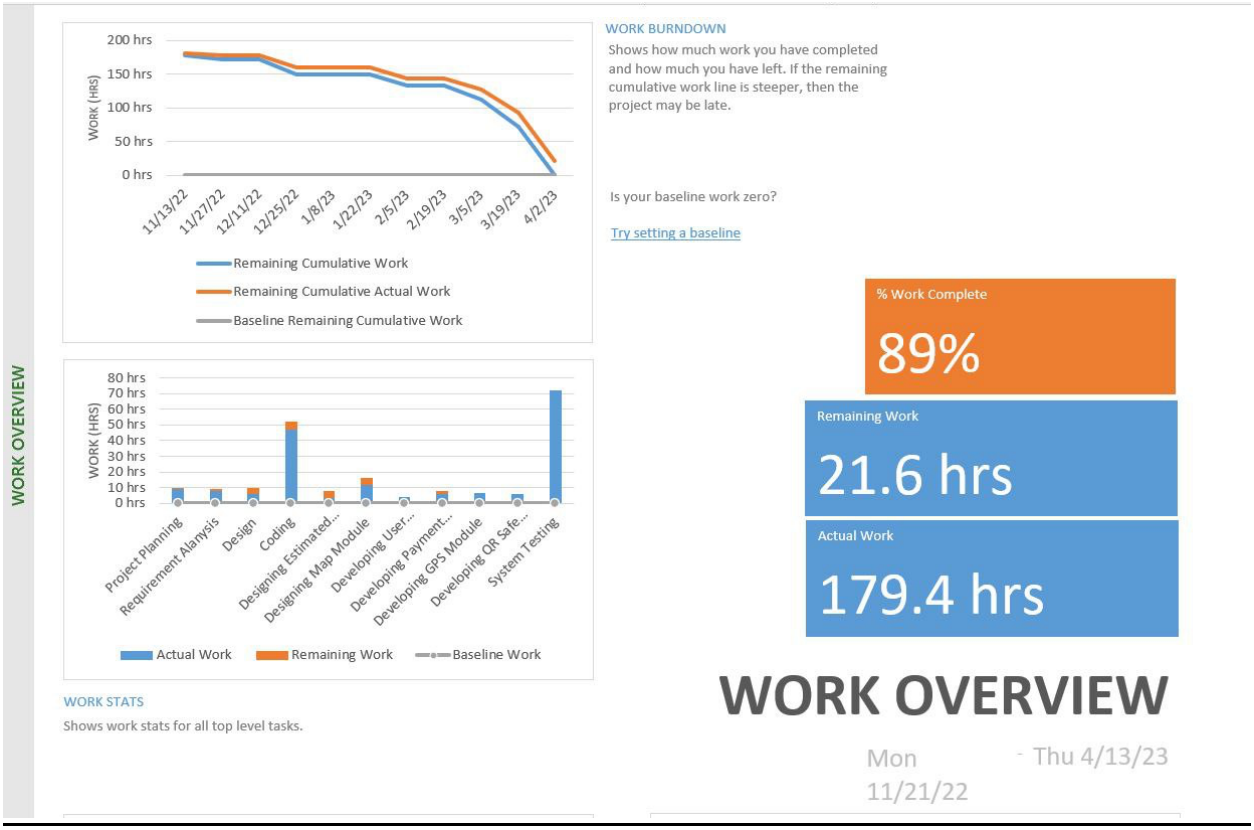
Effort versus product size

Activity Scheduling and Resource Allocation:



Cash Flow from Cost Analysis:

Work Overview:

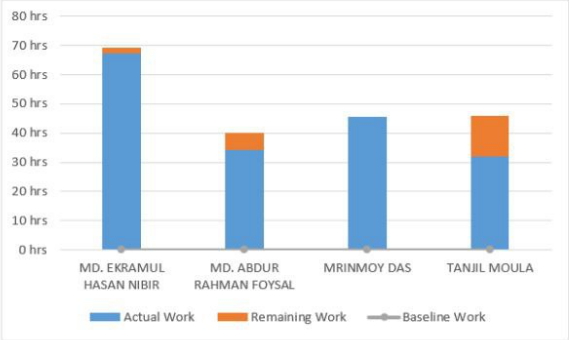


Resource Cost:

RESOURCE OVERVIEW

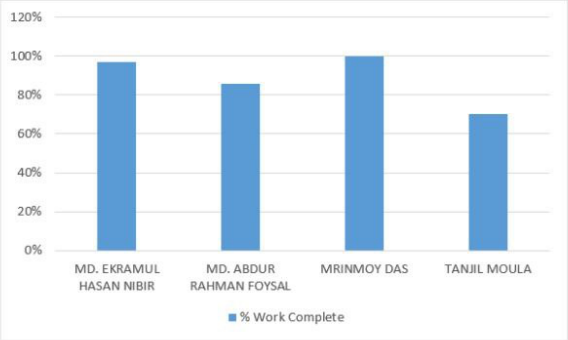
RESOURCE STATS

Work status for all work resources.



WORK STATUS

% work done by all the work resources.



RESOURCE STATUS

Remaining work for all work resources.

Name	Start	Finish	Remaining Work
MD. EKRAMUL HASAN NIBIR	Mon 11/21/22	Mon 4/10/23	2 hrs
MD. ABDUR RAHMAN FOYSAL	Tue 1/3/23	Wed 3/22/23	5.6 hrs
MRINMOY DAS	Tue 3/14/23	Wed 4/12/23	0 hrs
TANJIL MOULA	Fri 11/25/22	Tue 3/28/23	14 hrs

Risk Analysis:

Task Name	Duration	Predecessors	Start	Finish	% Complete	Work	Resource Names	Provability (Text1)	Impact	Risk Score	Risk Level
Project Planning	2 days		Mon 11/21/22	Tue 11/22/22	56%	10 hrs	MD. EKRAMUL HASAN	1	1	1	
Requirement Alanysis	2 days		Wed 11/23/22	Thu 11/24/22	51%	9 hrs	MD. EKRAMUL HASAN	2	2	4	
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Designing House Information Module	**0.5 days**	**5**	**Mon 1/2/23**	**Tue 1/3/23**	**100%**	**13.6 hrs**	**MD. ABDUR RAHMAN FOYSAL**	**5**	**3**		
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Email	0.5 days		Tue 2/14/23	Tue 2/14/23	100%	4 hrs	MD. EKRAMUL HASAN	4	3	12	
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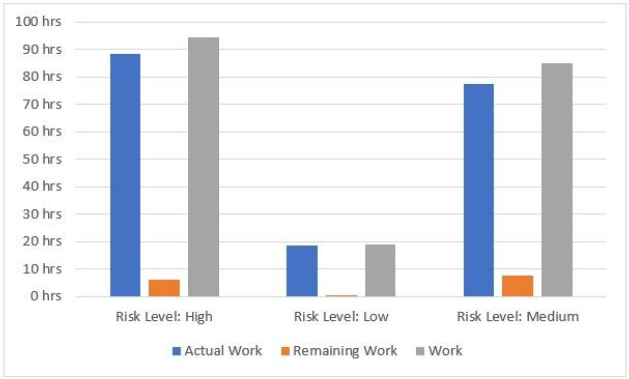
Phone No	0.5 days		Tue 3/14/23	Tue 3/14/23	100%	4 hrs	SOFTWARE TOOL[0.5]	4	3	12	
Email	0.5 days		Tue 3/14/23	Tue 3/14/23	100%	4 hrs	SOFTWARE TOOL[0.5]	4	3	12	
Designing Estimated Cost Module	1 day	7	Mon 3/6/23	Mon 3/6/23	40%	8 hrs	TANJIL MOULA, SOFTWARE,SOFTWAI	3	2	6	
Designing Map Module	2 days	11	Fri 3/17/23	Wed 3/22/23	75%	16 hrs	SOFTWARE TOOL[1],M	4	5	20	
Developing User Account Module	0.5 days	21	Fri 3/17/23	Wed 3/22/23	100%	4 hrs	SOFTWARE, SOFTWARE TOOL[0.5]	2	3	6	
Developing Payment Module	1 day	22	Wed 3/22/23	Mon 3/27/23	75%	8 hrs	TANJIL MOULA,SOFTW	4	5	20	
Developing GPS Module	0.8 days	22	Sun 3/19/23	Mon 3/20/23	100%	6.4 hrs	TANJIL MOULA,SOFTW	5	5	25	
Developing QR Safe Transaction Module	0.7 days	23	Tue 3/28/23	Tue 3/28/23	100%	5.6 hrs	TANJIL MOULA, SOFTWARE,SOFTWAI	3	3	9	
System Testing	**10 days**		**Mon 4/3/23**	**Thu 4/13/23**	**100%**	**72 hrs**	**TESTING TOOL[2.8],M**				
Module & Subsystem testing	1 day		Mon 4/3/23	Mon 4/3/23	100%	8 hrs	MRINMOY DAS, TESTING TOOL[0]	3	4	12	
System integration testing	1 day		Tue 4/4/23	Tue 4/4/23	100%	8 hrs	MRINMOY DAS, TESTING TOOL[1]	4	5	20	
Unit Testing	5 days		Wed 4/5/23	Mon 4/10/23	100%	40 hrs	TESTING TOOL[1],MD.	5	5	25	
Acceptance Testing	2 days		Mon 4/10/23	Wed 4/12/23	100%	16 hrs	MRINMOY DAS,TESTIN	5	5	25	

Risk_Analysis



Conclusion:

The "House Rent and Share" software engineering project aims to address the needs of individuals seeking rental properties and those looking to share their houses or apartments. By providing a user-friendly platform for listing, searching, and communicating about rental properties, the project offers convenience and efficiency in the house rental process. The project's functional requirements, such as user registration, house listing, searching and browsing, contact and communication features, rent payment capabilities, and review and rating functionalities, ensure a comprehensive and seamless user experience. Additionally, the non-functional requirements, including security, performance, scalability, usability, reliability, accessibility, and compatibility, contribute to the software's overall quality and effectiveness. By fulfilling these requirements, the "House Rent and Share" software project aims to simplify and enhance the house rental process, benefiting both tenants and houseowners.