Module Code & Module Title

CS6P05NI Final Year Project

Assessment Weightage & Type

25% FYP Interim Report

Semester

2021 Autumn

Project Title: Rent Management Webapp, Tarif

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Assignment Due Date:

Assignment Submission Date:

Word Count (Where Required):

Abstract

This report demonstrates the early phases of the development of the Rent Management Webapp based on React and Django. Even as the world has entered the stage of electronic data storage, people in the rental domain still either keep a record of rent data on paper or do not store it at all. Keeping in mind the importance of data analysis to make educated decisions, this project aims to digitally store rental data of the users and also make it easier to find houses to rent.

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1. Introduction

The pandemic made people more aware and enthusiastic for cashless payment options. While managing rents looks trivial, it can get out of hand very quickly if you own multiple properties to rent. Besides, traditionally, people either do not keep a record of the rents they push or pay; or record it on paper. Keeping a record of rents is extremely useful as it can provide statistical benefit. Comparing the rents paid for different houses can give one an idea on what the market is offering them which can be used in decision making while searching for rents. On the flip side, keeping tabs of bills pushed or rent collected can be valuable to householders to gauge what people are willing to pay and what their property’s worth should be to tenants. By keeping record of rents paid/collected, the users can make educated decisions about what properties are worth and what amount they should be paying.

This is where the Rent Management WebApp (Tarif) comes to play. The webapp makes it easier to find rentable houses and tenants by displaying all the rents available in the user’s vicinity in a map. It provides multiple options to both tenants and householders along with reviews and ratings to help in screening from among the options. The webapp helps the householders to push bills to tenants by allowing the them to make a bill template by selecting from available billing criteria such as monthly rental, water fees, electricity fees, waste disposal service fees, etc. which can then be used to push bills to the tenants. The webapp helps not only the householders, but also helps the tenants to pay it via cashless methods if they so desire. The webapp also visualizes the rental data of householder or tenant to them through graph so that they can make educated decisions on their rental journey.

1.1. Problem Scenario

The problems that the webapp intends to solve are as follows:

i. Finding a rent or finding a tenant is very difficult given the limited means of reaching out to one another in Nepal.

ii. People are opting to spend money via cashless means due to the pandemic. However, house rents are paid mostly via cash when the householder visits the tenant door to door.

iii. Pushing consistent bills to tenants takes quite a bit of time as householders mostly need to do all the calculations themselves, write it all down on a piece of paper, sign it, and manually send it to tenants.

iv. While pushing a bill or paying a bill, most of the parties involved in house rents, do not keep track of the transactions being made. That is ignorance of data which could serve as a valuable asset in decision making.

v. Often there is no reliable way for screening available options of householders and tenants. Thus, after a contract is signed, either party could end up stuck with a bad or unwanted company.

1.2. Project as solution:

The project solves the aforementioned issues by the following means:

i. The app displays a map-based view which helps users locate houses ready to be rented. Similarly, since the houses are now viewable in map, the householders can find tenants more frequently.

ii. The app provides a cashless means to pay rent if the user desires to do so.

iii. The app supports development of a bill template which the householders can then use to push consistent bills to all tenants.

iv. The app keeps track of all rent related transactions and visualizes the data in form of graph so that the user can make educated decisions.

The app supports ratings and reviews which help in screening both tenants and householders.

1.3. Aim and Objectives:

1.3.1. Aim

The major aim of the project is to make finding and managing rents easier. The project helps tenants find reliable rent and help householders find reliable tenants. To help tenants and householders make educated guesses based on their previous data. To provide tenants and householders a reliable way to pay and push bills respectively via e-payment.

1.3.2. Objectives

The objectives of this webapp are:

- To learn about web development and its required paradigms
- To learn about database designing in a real-world scenario
- To learn how restful APIs work
- To better understand third party APIs in development such as map APIs.
- To better understand frontend technologies like react, and JS in general.
- To better understand backend technologies such as Django and Django REST framework.

1.4. Report Structure

1.4.1. Background

The background section of the report clarifies the project requirements, project description and the end users. The section also covers comparison of the project with other similar projects in order to establish how the project is different from some of the existing solutions.

1.4.2. Development

The development section of the report elaborates how the project is to be developed. The section also covers the considered and selected methodologies while also describing the several phases of the selected methodology. The development process is also visually represented with the help of Work Breakdown Structure and Gantt Chart.

1.4.3. Progress Breakdown

The progress breakdown section of the report specified the progress made till date for the project.

1.4.4. Future work

The last section of the report, future work, describes the work that needs to be done for the project to be completed.

2. Background

2.1. Client description and requirements

Client name : Saral Karki

2.1.1. Description:

The client is Saral Karki, an individual, who resides in rental house, and wants a webapp to enhance their rent experience. Having experienced rental issues first-hand, the client knows the common issues faced in the house rental domain.

Upon presenting this project to Saral, he found the project helpful to him in resolving the issues he has seen in the house rental domain. He agreed to be the client for this project as he sees practicability in the project and is thus willing to provide his insight on the rental domain.

2.1.2. Requirements:

1. Householder and Tenant registration with citizenship

   The user registers as a householder or a tenant. While registration, the user must upload a scanned copy of their citizenship which is also stored for security purposes. While it is not a common practice in Nepal for householders to take a copy of tenant's citizenship, it is a good practice to have it available. Having a citizenship attached to an account also significantly reduces chances of fraud or run-away cases.

2. Houses must be visible on a map

   The webapp must contain a map displaying the houses available for rent which is visible to users after they sign in. This makes it easier for tenants to find houses for rent in their desired location.

3. Push bills as householder

   The webapp must enable householders to make house bills and push the bills via email. This makes it easier to calculate the rent amount as well as removes the hassle of physically visiting the tenant or handing out bills.

4. Pay bills as Tenant

The pushed bills must have an e-payment option so that tenants can pay the bills virtually. This removes the hassle of physically meeting the householder just for paying the rent amount.

5. Leave review and rating for tenant and householder

Both householders and tenants must be able to leave a rating on one another after their term has ended. This ensures that there is a way for screening the tenants/householders even before the interview takes place.

6. Register houses as householder

A householder must be able to have multiple houses registered since a user may have multiple houses.

7. Keep track of payment amounts and dates and visualize these data

The webapp must also ensure that it store bill details and bill date paid of each user. The webapp must visualize the given user data in form of graph to enable educated decision making.

8. Visualize user data for educated decision making.

The webapp must visualize the given user data in form of graph to enable educated decision making.

2.2. Understanding the project

2.2.1. Webapp as a medium

Webapps have revolutionized the way we use the internet. While initially web browsers could only render simple HTML contents, nowadays browsers are powerful enough to run heavy webapps and even heavy 3D RPG games, thanks to the JavaScript engines built into browsers. People use the internet very frequently, making it the perfect platform for reaching a huge mass of people. The beauty of webapp is that it runs on any platform so long as you have an internet connection and a browser, be it IOS, Windows, Android, Linux, or any other OS.

2.2.2. Project elaboration

The project is a webapp built using React and Django frameworks. React is the frontend framework used for making the project viewable in browser and to collect input from the users. Django is the backend framework for storing user information. The project uses restful APIs transfer data between the backend and the frontend. The webapp registers users as a householder or a tenant. Upon sign in, they are given access to further features such as finding available houses, registering available houses, e-payment for bills, and communication portal. Once both the householder and the tenant have selected one another, the house is marked rented, and this term can be ended by the householder. After the term has ended, the house is marked again as available.

2.2.3. Project deliverables

The expected outcomes and deliverables of the webapp are:

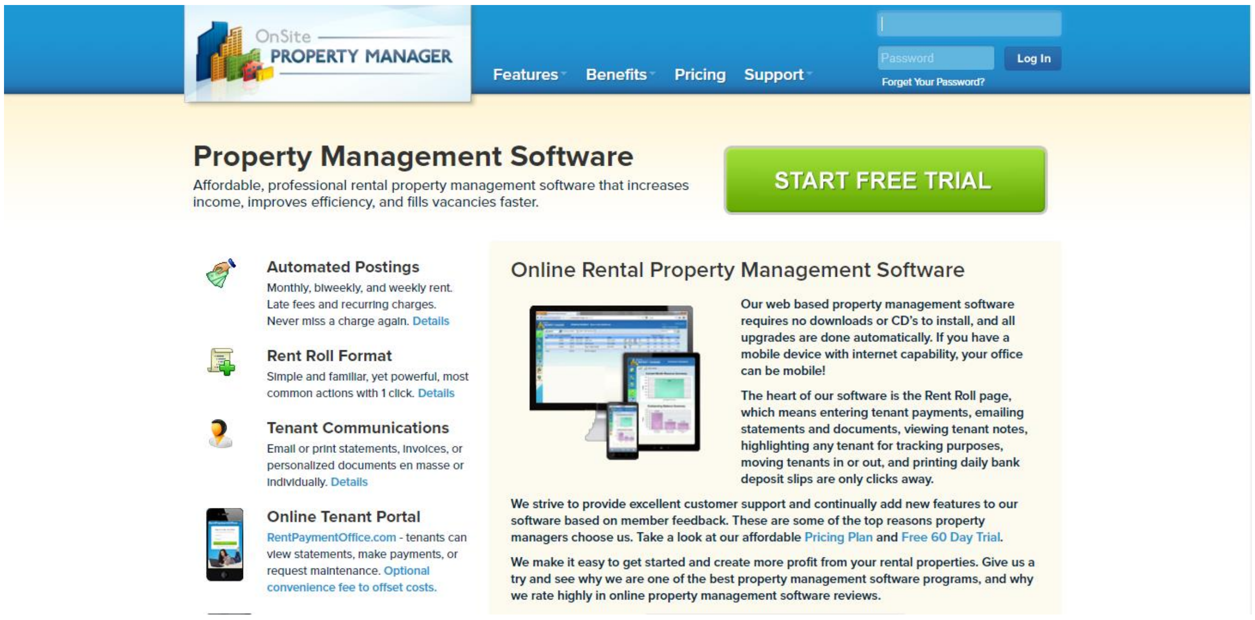
- Maps for navigation
    - Points out house available for rent
- Make and push bills as landlord
- Receive bills and Make payments as tenant
- Leave ratings on either party
- Keep track of payment amounts and dates
- Communication portal for connecting landlords to tenants
- Data visualization in graph for both landlords and tenants

2.3. Similar systems

2.3.1. System 1: Onsitepropertymanager

URL: http://www.onsitepropertymanager.com/

This system manages property rental. However, it does not help tenants find landlords or rent.



Property Management Software

Affordable, professional rental property management software that increases income, improves efficiency, and fills vacancies faster.

Automated Postings

Monthly, biweekly, and weekly rent. Late fees and recurring charges. Never miss a charge again. Details

Rent Roll Format

Simple and familiar, yet powerful, most common actions with 1 click. Details

Tenant Communications

Email or print statements, invoices, or personalized documents en masse or individually. Details

Online Tenant Portal

RentPaymentOffice.com - tenants can view statements, make payments, or request maintenance. Optional convenience fee to offset costs.

Online Rental Property Management Software

Our web based property management software requires no downloads or CD's to install, and all upgrades are done automatically. If you have a mobile device with internet capability, your office can be mobile!

The heart of our software is the Rent Roll page, which means entering tenant payments, emailing statements and documents, viewing tenant notes, highlighting any tenant for tracking purposes, moving tenants in or out, and printing daily bank deposit slips are only clicks away.

We strive to provide excellent customer support and continually add new features to our software based on member feedback. These are some of the top reasons property managers choose us. Take a look at our affordable Pricing Plan and Free 60 Day Trial.

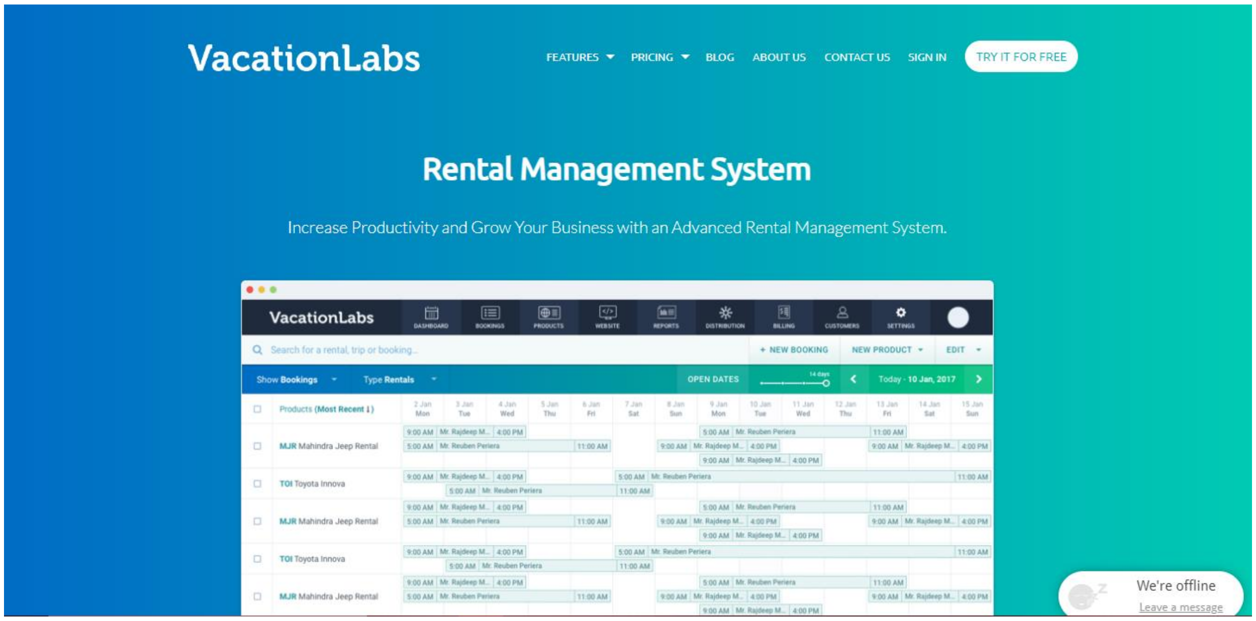
We make it easy to get started and create more profit from your rental properties. Give us a try and see why we are one of the best property management software programs, and why we rate highly in online property management software reviews.

Figure 1: System 1

2.3.2. System 2: Vacationlabs

URL: https://www.vacationlabs.com/rental-management-system/

This system handles vacation related rentals such as hotels, tours, etc. It does not solve the issue of tenant and landlords.



Rental Management System

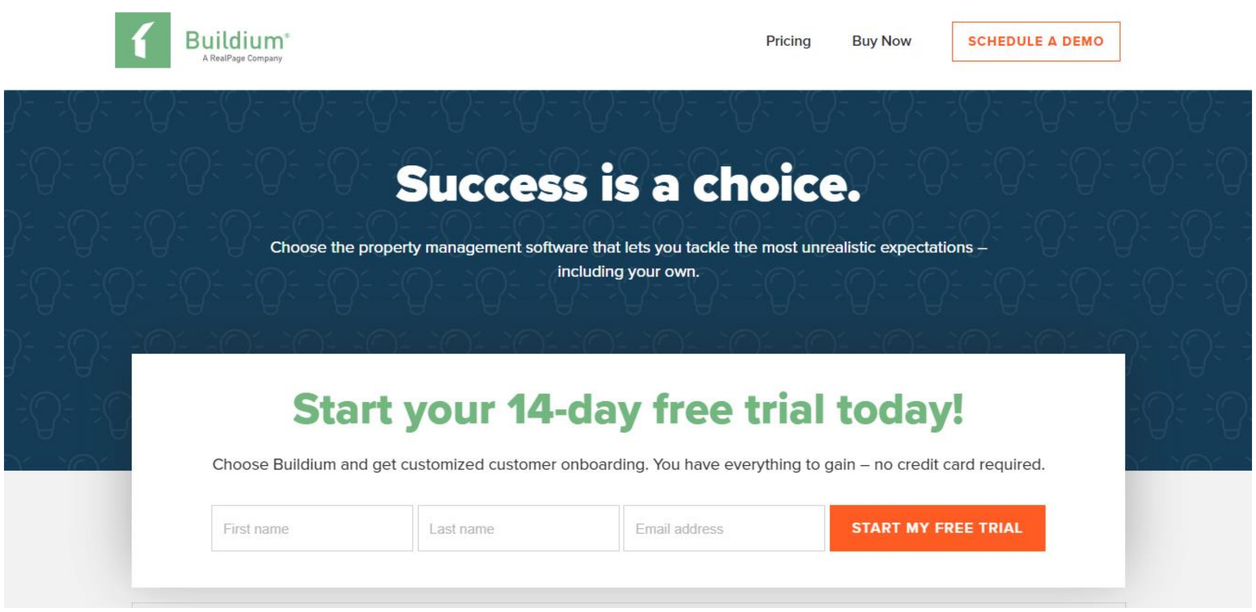
Increase Productivity and Grow Your Business with an Advanced Rental Management System.

Figure 2: System 2

2.3.3. System 3: Buildium

URL: https://learn.buildium.com/

This system is a pay-to-use system which helps in ePay, Tenant Screening, Renters Insurance, and data visualization reports. While the system is great, it is not used in case of Nepal since it is a pay-to-use system.


Buildium
A RealPage Company
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Buy Now
SCHEDULE A DEMO
Success is a choice.
Choose the property management software that lets you tackle the most unrealistic expectations – including your own.
Start your 14-day free trial today!
Choose Buildium and get customized customer onboarding. You have everything to gain – no credit card required.
First name
Last name
Email address
START MY FREE TRIAL

Figure 3: System 3

2.3.4. System 4: Neopropertynepal

URL: https://www.neopropertynepal.com/

This system is based on Nepal and helps users with property sales and rental. It includes houses, offices, land, hotel, apartments, etc. While the app is great, it cannot be used for tenant or landlord filtering since it is shows advertisement-based property and has no system for rating.

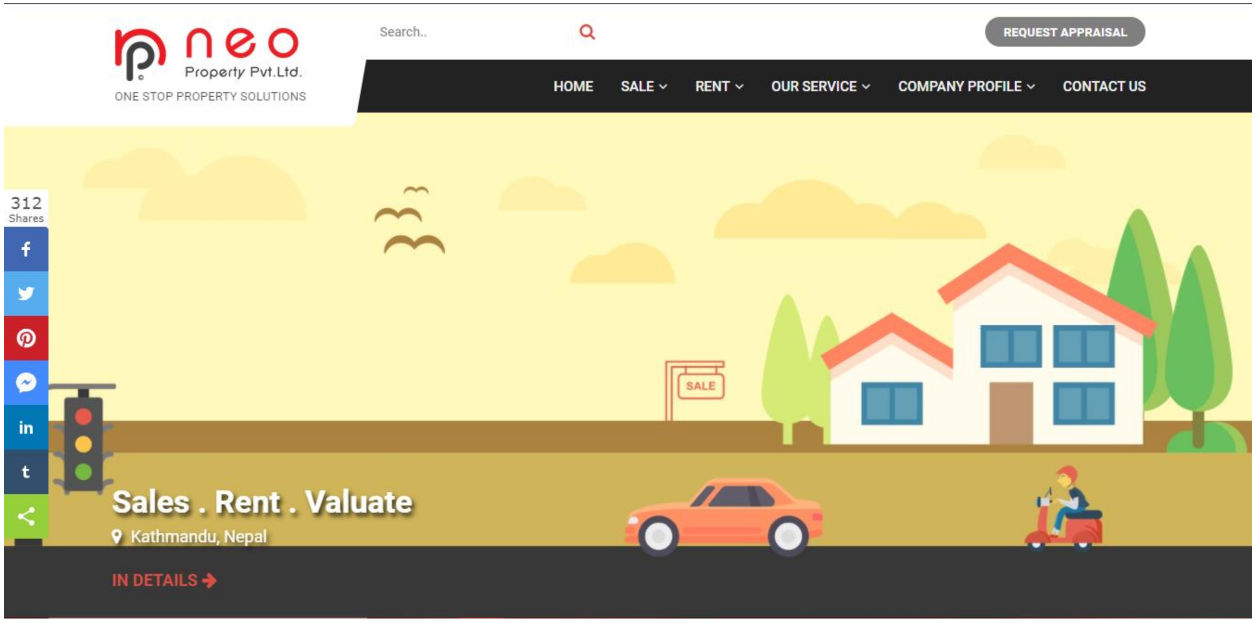
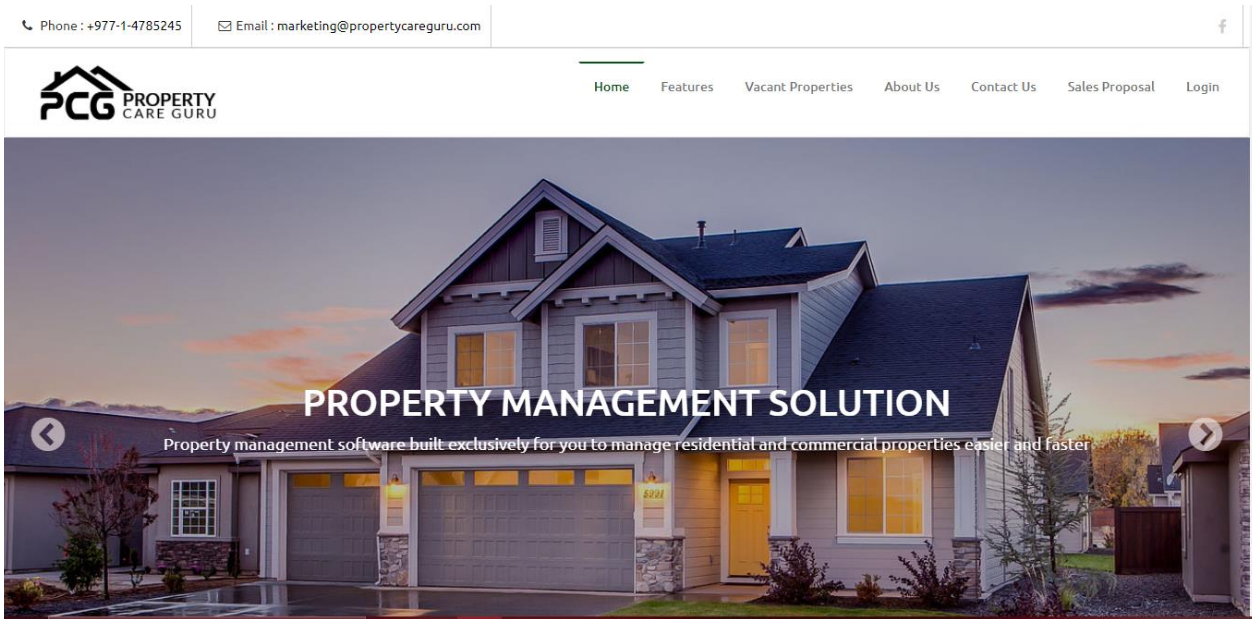


Figure 4: System 4

2.3.5. System 5: Propertycareguru

URL: http://propertycareguru.com/

This system is also based on Nepal and helps users find vacant properties. The app has a lot of property filtering options but similar to the previous system, has no system for rating and reviewing.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Vacant Properties
About Us
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PROPERTY MANAGEMENT SOLUTION
Property management software built exclusively for you to manage residential and commercial properties easier and faster

Figure 5: System 5

2.4. Similar Systems Comparison

Features	System 1	System 2	System 3	System 4	System 5	My Project
Availability in Nepal	✗	✗	✗	✓	✓	✓
Free to use	✗	✗	✗	✓	✓	✓
Rating and Review	✗	✓	✓	✗	✗	✓
Map	✗	✗	✗	✗	✗	✓
Push bills	✓	✗	✓	✗	✓	✓
E-payment	✓	✗	✓	✗	✓	✓
Communication Portal	✓	✗	✓	✗	✗	✓
Data Analysis	✗	✓	✗	✗	✗	✓

Table 1: System Comparison Table

The comparison done above shows that while there are multiple systems in the rent management domain, none have all the set of features present in my system. The system adheres to the requirements provided by the client.

3. Development

3.1. Methodologies

3.1.1. Iterative Waterfall

The waterfall methodology is a linear project management approach, where stakeholder and customer requirements are gathered at the beginning of the project, and then a sequential project plan is created to accommodate those requirements (Project Manager, 2021). The methodology phases do not overlap one another and each phase is carried out sequentially. While being cheap, the project failure chances for long term projects are maximized in this methodology since it cannot handle client requirement variation very well. Any changes in pre-existing project architecture can result in changes being made to every unit that has already been completed. (Prepinsta, 2020)

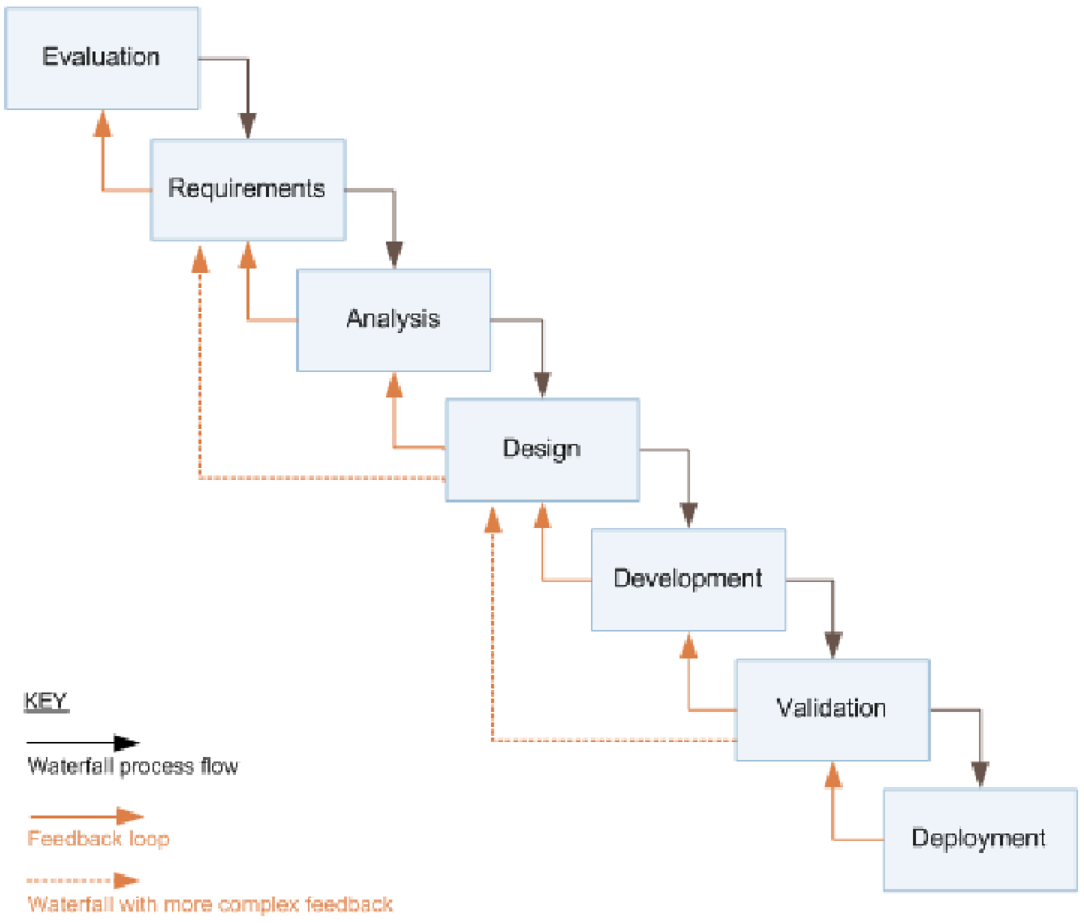


Figure 6: Iterative waterfall model (Ruparelia, 2010)

3.1.2. Prototyping

A prototype is an early sample, model, or release of a product built to test a concept or process or to act as a thing to be replicated or learned from (Lumitex, 2017). This implies that a prototype is an instrument to evaluate an idea. In prototype methodology, a prototype of the project is made and it is then refined over and over till the app meets client satisfaction. The methodology makes addressing client requirement variation simpler. It is well suited for long term projects where client requirement is not clear or is prone to frequent changes. (Lewis, 2019)

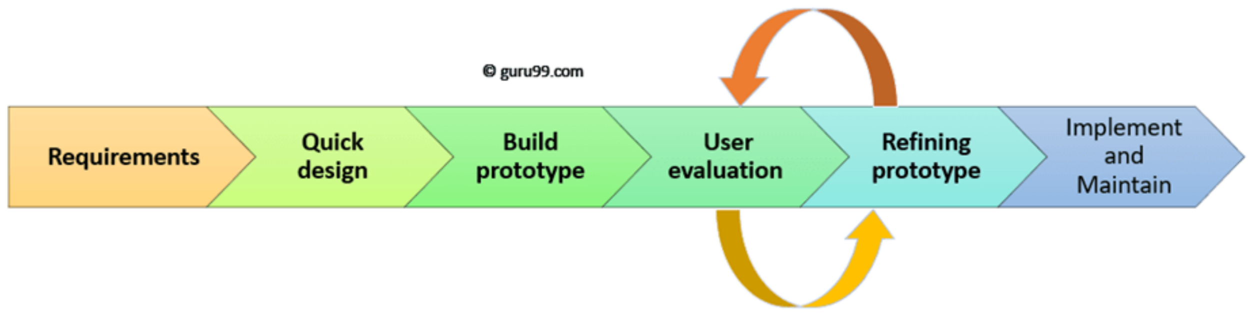


Figure 7: Prototyping Model (Martin, 2021)

3.1.3. Feature Driven Development

An Agile methodology for developing software, Feature-Driven Development (FDD) is customer-centric, iterative, and incremental, with the goal of delivering tangible software results often and efficiently (PlanView, 2021). As the name suggests, this methodology focuses more on features. In FDD, a feature is expected to be delivered every 2-10 days. The methodology is followed using the below steps:

- Develop overall model
- Build feature list
- Plan by feature
- Design by feature
- Build by feature

Instead of project milestones, FDD uses features to organize their activities. The first three steps are completed initially and the rest of the steps are repeated for every feature. If the client decides to add any more features or changes the requirements, the entirety of the five steps is carried out again in an incremental fashion. (PlanView, 2021)

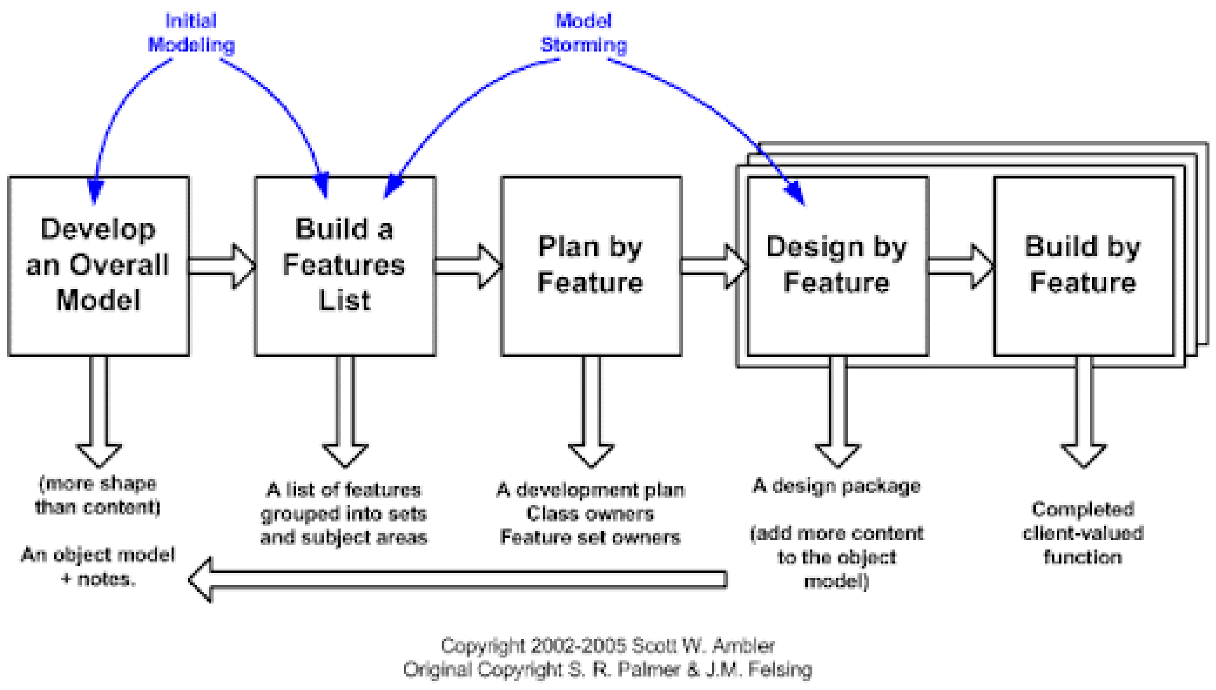

Initial Modeling
Model Storming
Develop an Overall Model
Build a Features List
Plan by Feature
Design by Feature
Build by Feature
(more shape than content)
An object model + notes.
A list of features grouped into sets and subject areas
A development plan Class owners Feature set owners
A design package
(add more content to the object model)
Completed client-valued function
Copyright 2002-2005 Scott W. Ambler
Original Copyright S. R. Palmer & J.M. Felsing

Figure 8: FDD project Lifecycle (Abler, 2021)

3.2. Adopted Methodology (FDD)

Despite being a methodology for large projects, I adopted Feature Driven Development due to the following reasons:

- The methodology requires fewer meetings and is documentation oriented.
- It uses a user-centric approach with the client in mind.
- It is very scalable and can address growth of the project.
- It breaks feature sets into smaller chunks and regular iterative releases, which makes it easier to track and fix coding errors, reduces risk, and allows you to make a quick turnaround to meet your client's needs (Lucid Content Team, 2021).

3.3. Work Breakdown Structure

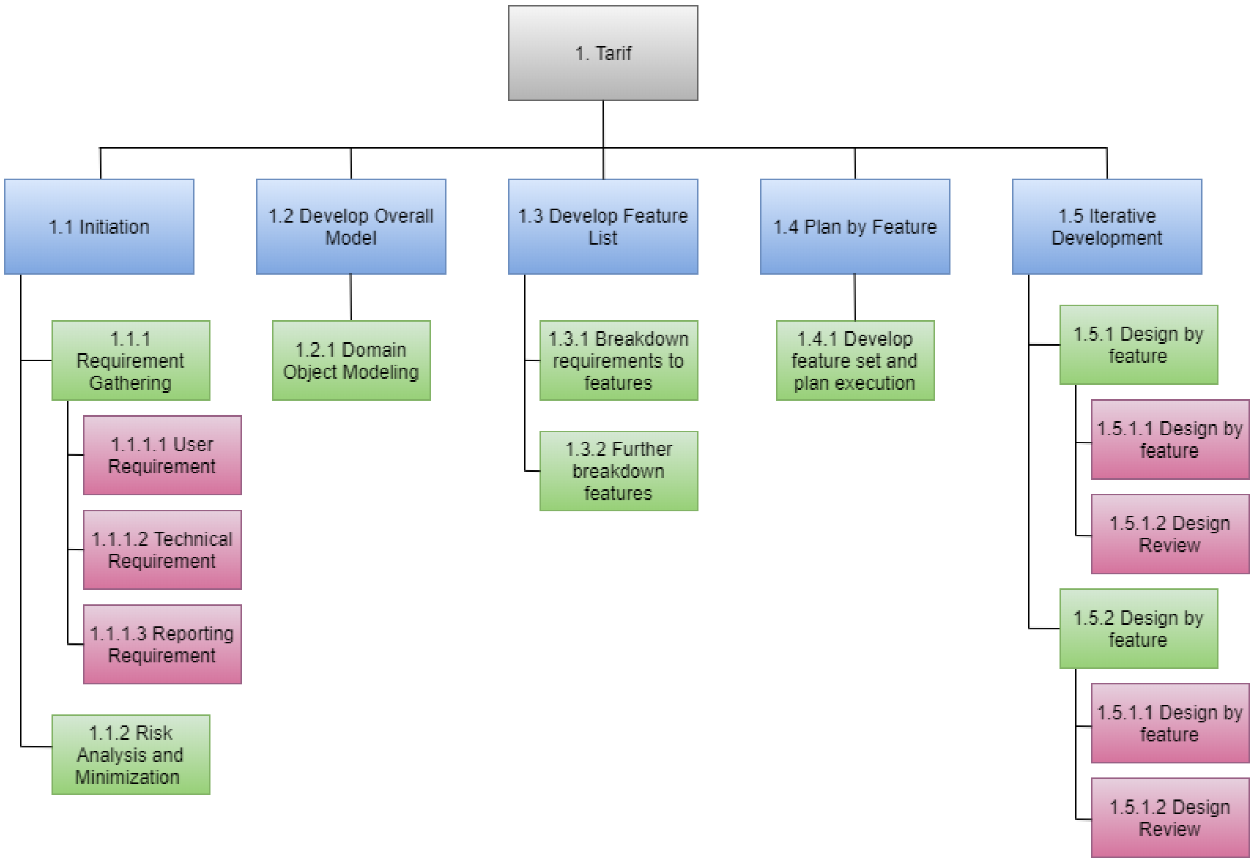
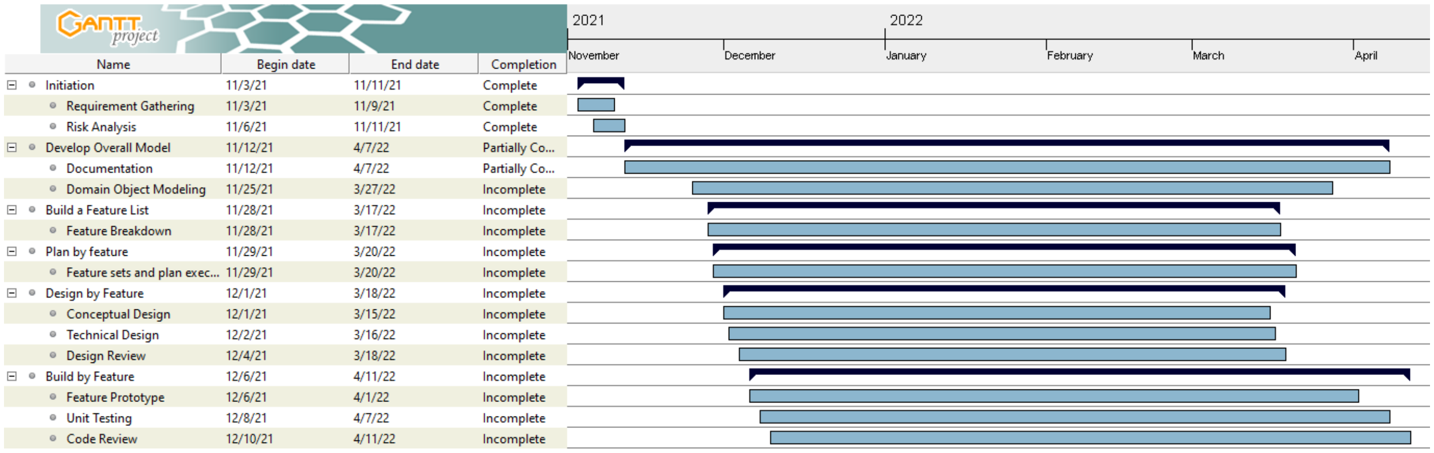

1. Tarif
1.1 Initiation
1.1.1 Requirement Gathering
1.1.1.1 User Requirement
1.1.1.2 Technical Requirement
1.1.1.3 Reporting Requirement
1.1.2 Risk Analysis and Minimization
1.2 Develop Overall Model
1.2.1 Domain Object Modeling
1.3 Develop Feature List
1.3.1 Breakdown requirements to features
1.3.2 Further breakdown features
1.4 Plan by Feature
1.4.1 Develop feature set and plan execution
1.5 Iterative Development
1.5.1 Design by feature
1.5.1.1 Design by feature
1.5.1.2 Design Review
1.5.2 Design by feature
1.5.1.1 Design by feature
1.5.1.2 Design Review

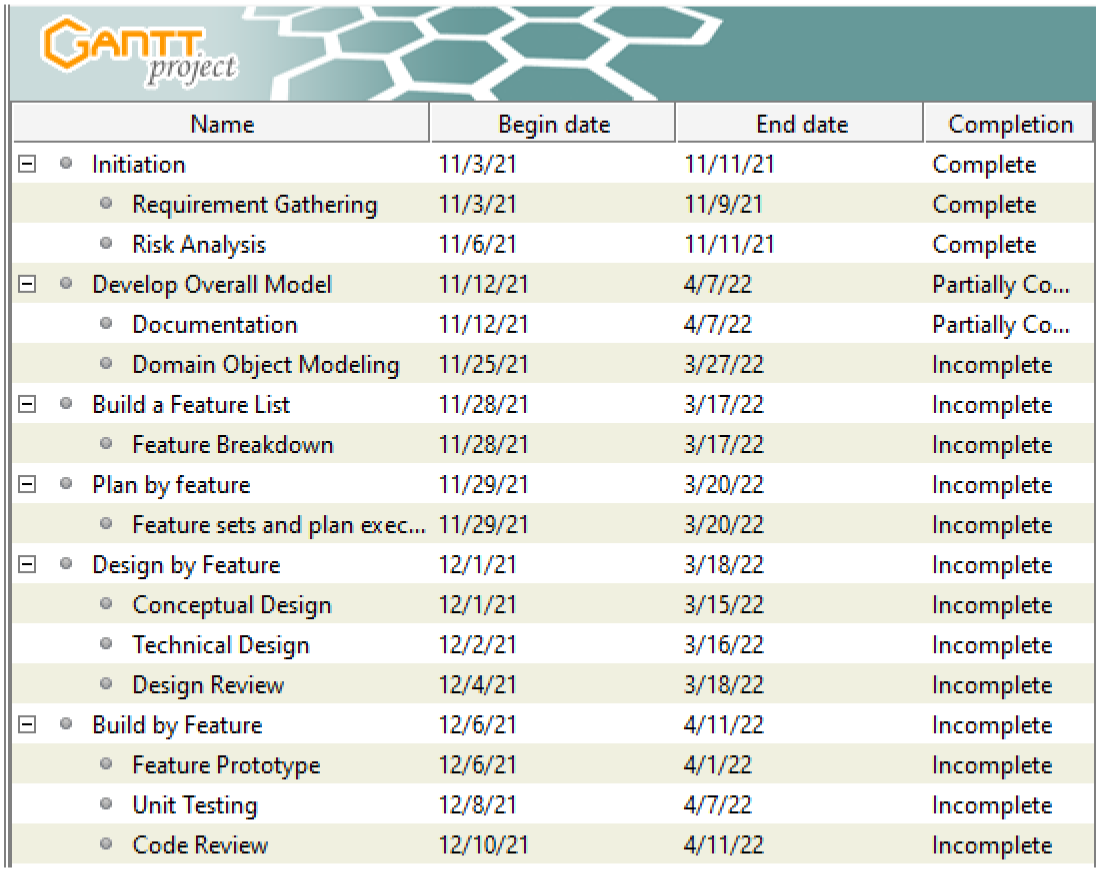
Figure 9: Work Breakdown Structure

3.4. Updated Gant Chart



Name	Begin date	End date	Completion
Initiation	11/3/21	11/11/21	Complete
Requirement Gathering	11/3/21	11/9/21	Complete
Risk Analysis	11/6/21	11/11/21	Complete
Develop Overall Model	11/12/21	4/7/22	Partially Co...
Documentation	11/12/21	4/7/22	Partially Co...
Domain Object Modeling	11/25/21	3/27/22	Incomplete
Build a Feature List	11/28/21	3/17/22	Incomplete
Feature Breakdown	11/28/21	3/17/22	Incomplete
Plan by feature	11/29/21	3/20/22	Incomplete
Feature sets and plan exec...	11/29/21	3/20/22	Incomplete
Design by Feature	12/1/21	3/18/22	Incomplete
Conceptual Design	12/1/21	3/15/22	Incomplete
Technical Design	12/2/21	3/16/22	Incomplete
Design Review	12/4/21	3/18/22	Incomplete
Build by Feature	12/6/21	4/11/22	Incomplete
Feature Prototype	12/6/21	4/1/22	Incomplete
Unit Testing	12/8/21	4/7/22	Incomplete
Code Review	12/10/21	4/11/22	Incomplete

Figure 10: Updated Gantt Chart



Name	Begin date	End date	Completion
Initiation	11/3/21	11/11/21	Complete
Requirement Gathering	11/3/21	11/9/21	Complete
Risk Analysis	11/6/21	11/11/21	Complete
Develop Overall Model	11/12/21	4/7/22	Partially Co...
Documentation	11/12/21	4/7/22	Partially Co...
Domain Object Modeling	11/25/21	3/27/22	Incomplete
Build a Feature List	11/28/21	3/17/22	Incomplete
Feature Breakdown	11/28/21	3/17/22	Incomplete
Plan by feature	11/29/21	3/20/22	Incomplete
Feature sets and plan exec...	11/29/21	3/20/22	Incomplete
Design by Feature	12/1/21	3/18/22	Incomplete
Conceptual Design	12/1/21	3/15/22	Incomplete
Technical Design	12/2/21	3/16/22	Incomplete
Design Review	12/4/21	3/18/22	Incomplete
Build by Feature	12/6/21	4/11/22	Incomplete
Feature Prototype	12/6/21	4/1/22	Incomplete
Unit Testing	12/8/21	4/7/22	Incomplete
Code Review	12/10/21	4/11/22	Incomplete

Figure 11: Gantt chart Tasks for Clarity

3.5. Work Till Date

3.5.1. Use Case Diagram

3.5.1.1. Diagram

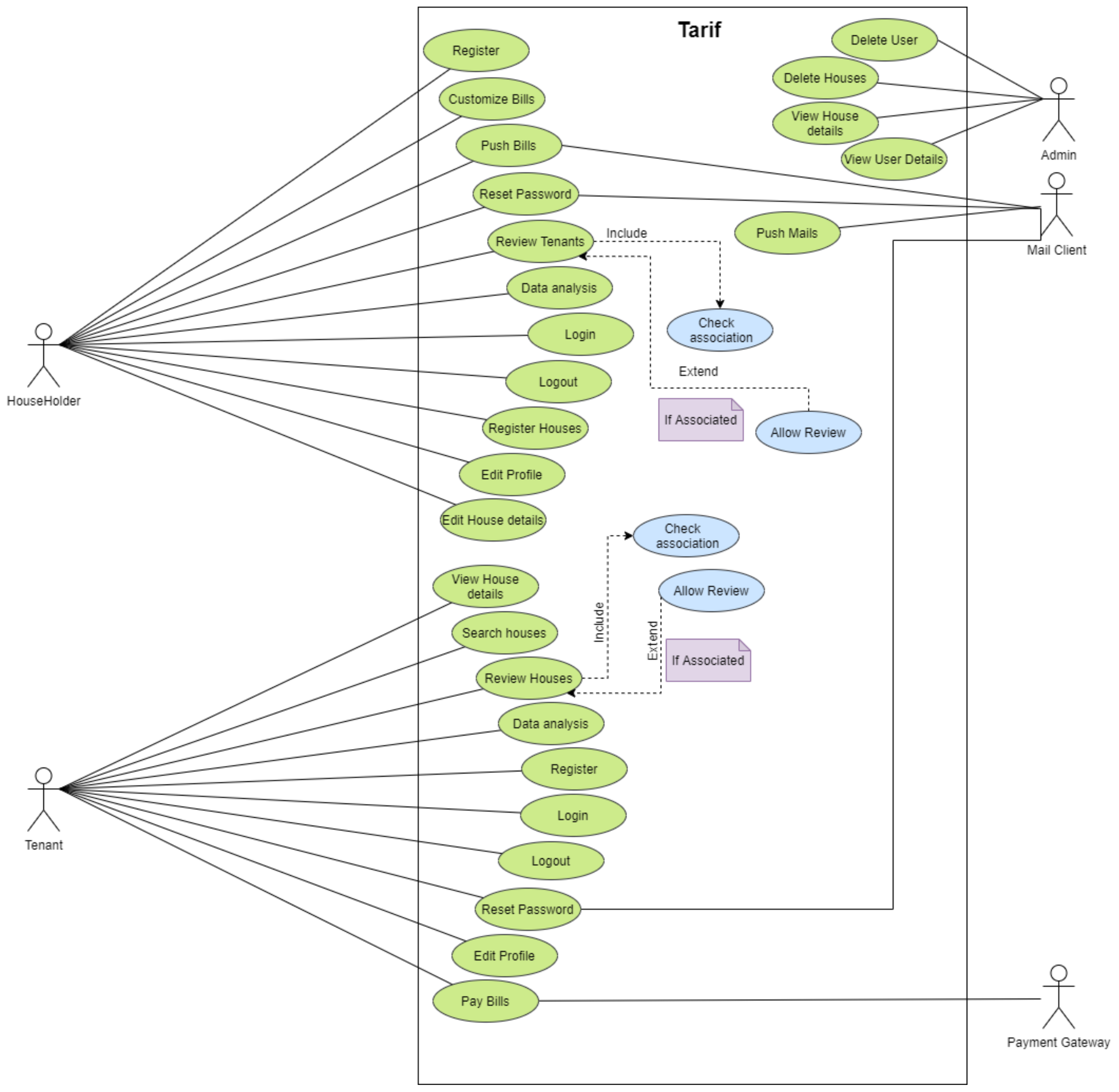


Figure 12: Use Case Diagram

3.5.1.2. High Level Description

Use Case 1

Use Case : Householder Register

Actor : Householder

Description : The householder enters their details in the system. The system checks if the user is already registered. If not, the registration executes successfully, otherwise the system gives an appropriate error message to the user.

Use Case 2

Use Case : Customize Bills

Actor : Householder

Description : The householder selects the fields, along with price details, that they want on the bills. The system then generated bills for the house according to this customization made by the householder.

Use Case 3

Use Case : Push Bills

Actor : Householder, Mail Client

Description : The householder enters the bill details and press the push bill button. The system then calculates the bill, asks the user for confirmation and sends the details to the mail client. The mail client then pushes the bill to the tenants through their email.

Use Case 4

Use Case : Register Houses

Actor : Householder

Description : The householder fills in the details of their house and registers it in the system. Registered houses can then be displayed as available for rent by the system.

Use Case 5

Use Case : Review Tenants

Actor : Householder

Description : Once a contract with a tenant has been terminated, the householder can then review the tenant. The review consists of a rating out of five and a review text.

Use Case 6

Use Case : Data Analysis

Actor : Householder

Description : The householder views their past data collected in the system in the form of a chart for gaining information.

Use Case 7

Use Case : Householder Login

Actor : Householder

Description : The householder enters their credentials and submits it to the system. The system verifies the credentials and if verified, gives the householder access to the additional features in the system.

Use Case 8

Use Case : Householder Logout

Actor : Householder

Description : The householder logs out of the webapp by pressing the logout button.

Use Case 9

Use Case : Householder Reset Password

Actor : Householder, Mailing Client

Description : The householder requests a password reset. Once requested, the mailing system sends a confirmation mail to the householder. After confirmations are done, the householder enters a new password to override their previous password.

Use Case 10

Use Case : Householder Edit Profile

Actor : Householder

Description : The householder presses the edit button. The fields in the profile page then become editable and the householder updates new data in the fields.

Use Case 11

Use Case : Householder Edit House Details

Actor : Householder

Description : The householder presses the edit button. The fields in the house page then become editable and the householder updates new data in the fields.

Use Case 12

Use Case : Pay Bills

Actor : Tenant, Payment Gateway

Description : The tenant presses the pay button. A confirmation message pops up and provides the tenant with payment option. If the payment method involves e-payment, the payment gateway is activated.

Use Case 13

Use Case : Search Houses

Actor : Tenant

Description : The tenant is provided with a map and a price slider. The available houses matching the given criteria are displayed on the map.

Use Case 14

Use Case : Review Houses

Actor : Tenant

Description : Once a contract with a householder has been terminated, the tenant can then review the house. The review consists of a rating out of five and a review text.

Use Case 15

Use Case : Data Analysis

Actor : Tenant

Description : The tenant views their past data collected in the system in the form of a chart for gaining information.

Use Case 16

Use Case : Tenant Register

Actor : Tenant

Description : The tenant enters their details in the system. The system checks if the user is already registered. If not, the registration executes successfully, otherwise the system gives an appropriate error message to the user.

Use Case 17

Use Case : Tenant Login

Actor : Tenant

Description : The tenant enters their credentials and submits it to the system. The system verifies the credentials and if verified, gives the tenant access to the additional features in the system.

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Use Case : Tenant Logout

Actor : Tenant

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Use Case 19

Use Case : Tenant Reset Password

Actor : Tenant, Mailing Client

Description : The tenant requests a password reset. Once requested, the mailing system sends a confirmation mail to the tenant. After confirmations are done, the tenant enters a new password to override their previous password.

Use Case 20

Use Case : Tenant Edit Profile

Actor : Tenant

Description : The tenant presses the edit button. The fields in the profile page then become editable and the tenant updates new data in the fields.

Use Case 21

Use Case : View House Details

Actor : Tenant

Description : The tenant selects the house in the map. The system then presents the tenant with the details of that particular house.

Use Case 22

Use Case : Delete User

Actor : Admin

Description : The admin deletes a user from the system.

Use Case 23

Use Case : Delete House

Actor : Admin

Description : The admin deletes a house from the system.

Use Case 24

Use Case : View House Details

Actor : Admin

Description : The admin views house information uploaded into the system by the user.

Use Case 25

Use Case : View User Details

Actor : Admin

Description : The admin views user information uploaded into the system by the user.

Use Case 26

Use Case : Push mails

Actor : Mail Client

Description : The mail client pushes mail to the users when the system calls it to.

3.5.2. Entity Relation Diagram

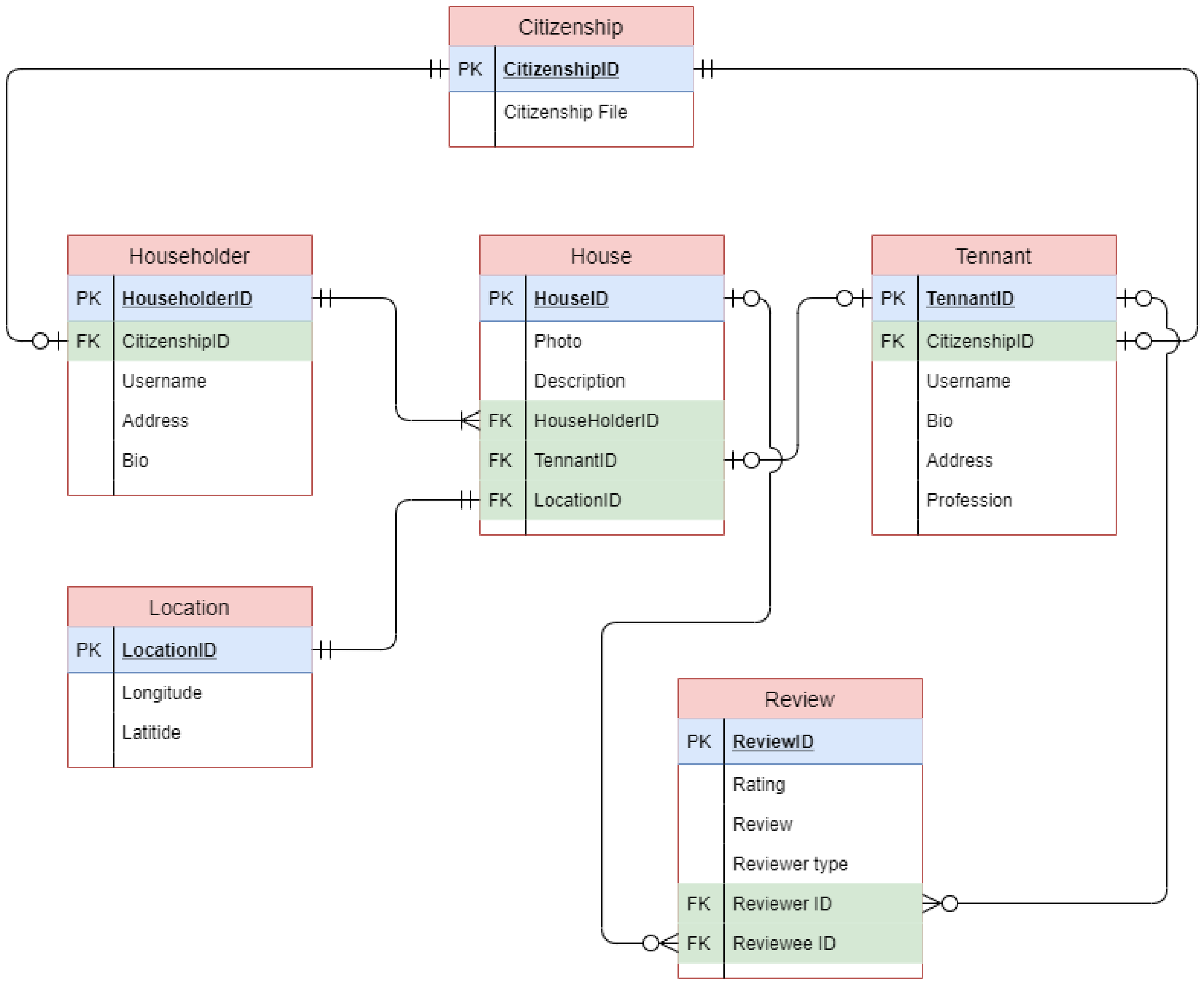
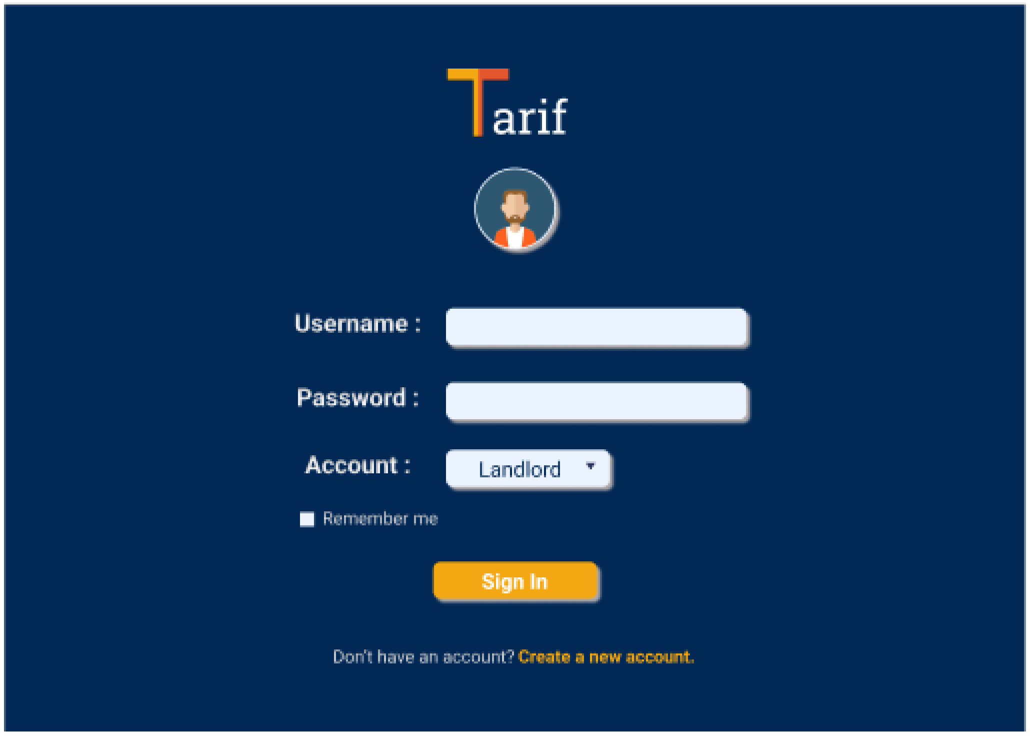


Figure 13: Entity Relation Diagram

3.5.3. UI Designs


Tarif

Username :

Password :

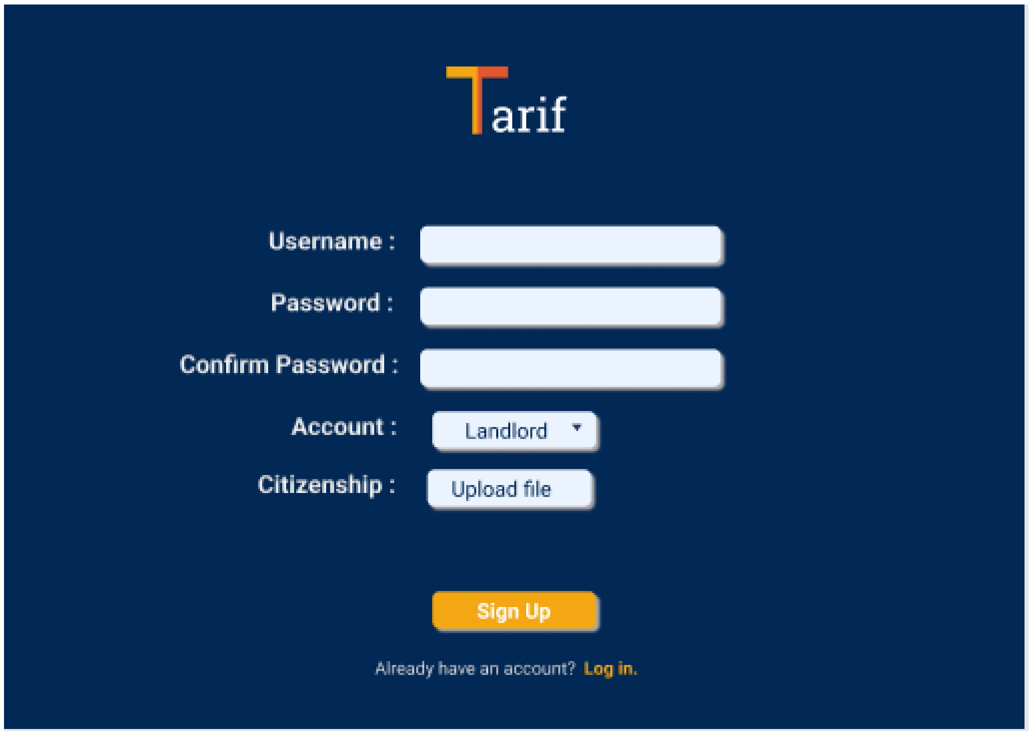
Account : Landlord

Remember me

Sign In

Don't have an account? Create a new account.

Figure 14: Sign in page UI


Tarif

Username :

Password :

Confirm Password :

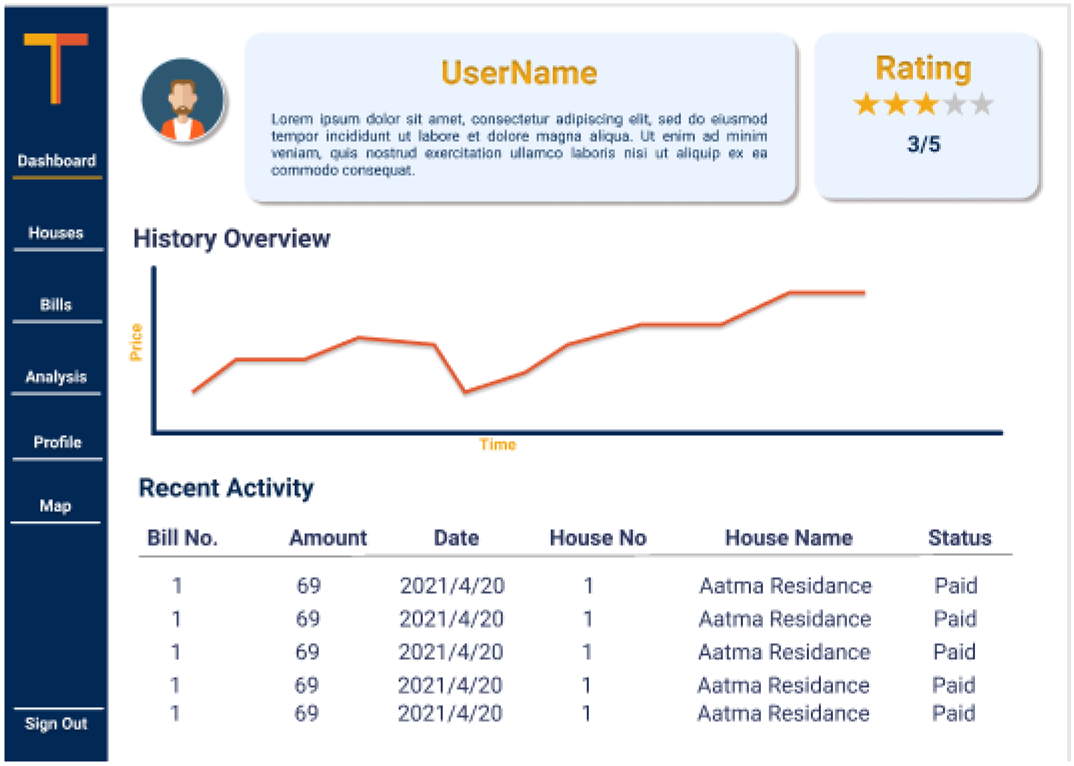
Account : Landlord

Citizenship : Upload file

Sign Up

Already have an account? Log in.

Figure 15: Sign up page UI



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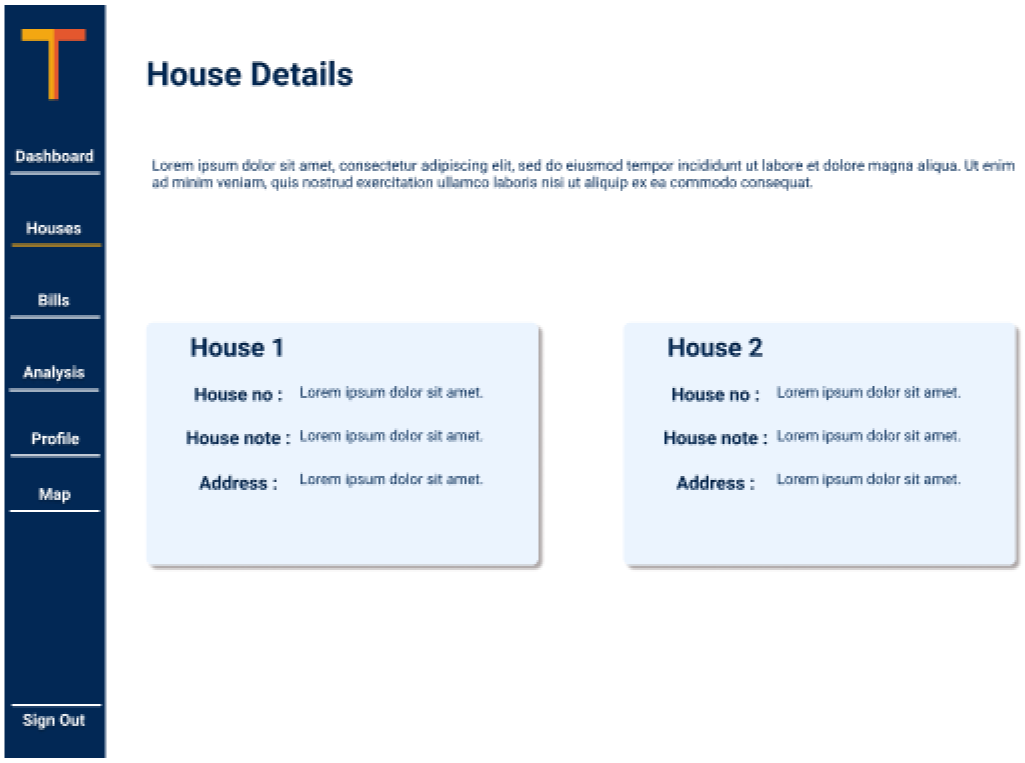
Recent Activity

Bill No.	Amount	Date	House No	House Name	Status
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid

Figure 16: Home Page UI



House Details

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

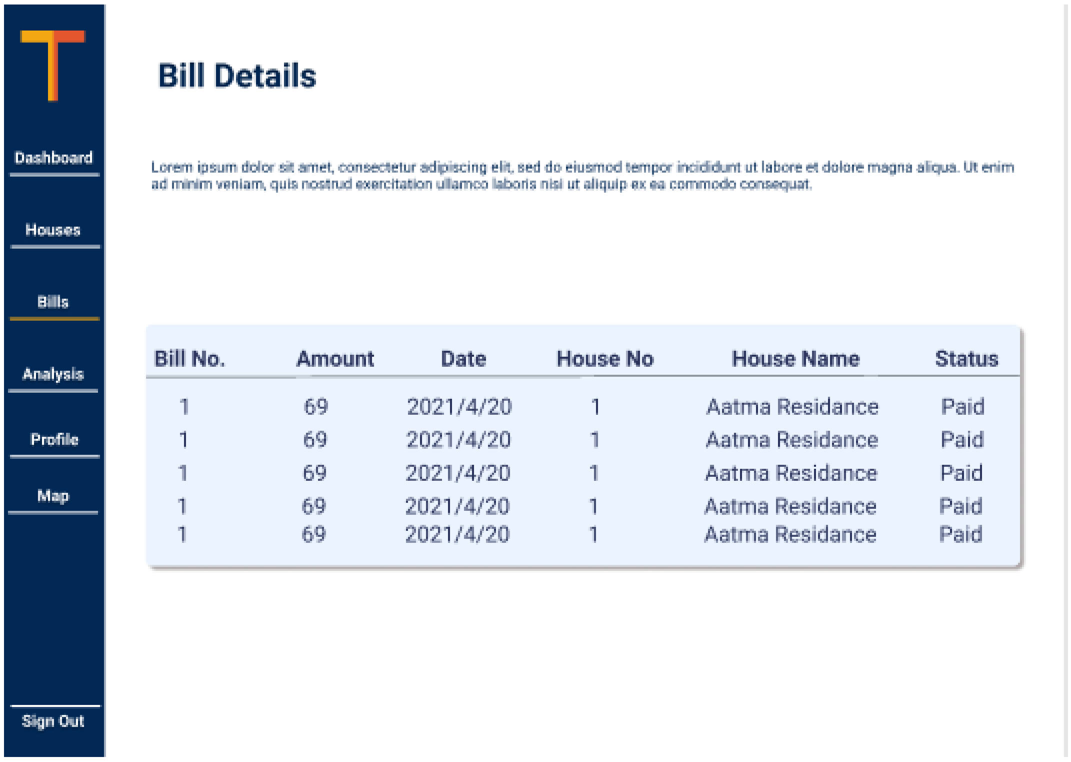
House 1

House no :	Lorem ipsum dolor sit amet.
House note :	Lorem ipsum dolor sit amet.
Address :	Lorem ipsum dolor sit amet.

House 2

House no :	Lorem ipsum dolor sit amet.
House note :	Lorem ipsum dolor sit amet.
Address :	Lorem ipsum dolor sit amet.

Figure 17: Houses page UI

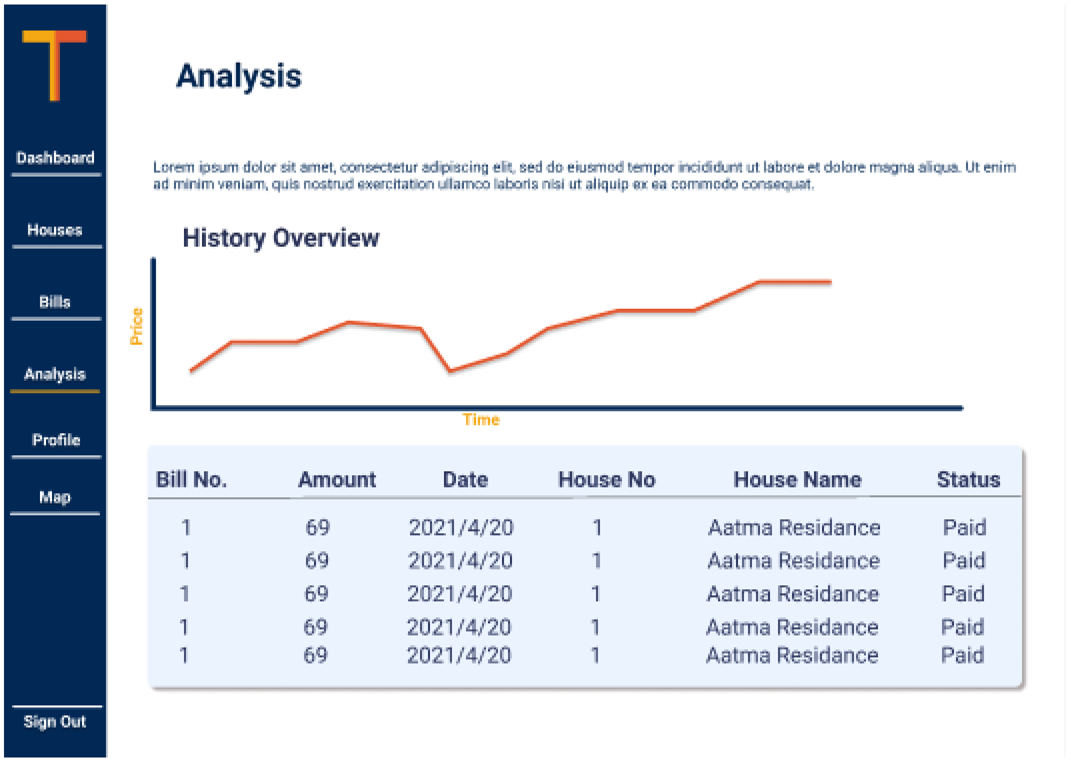


Bill Details

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Bill No.	Amount	Date	House No	House Name	Status
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid

Figure 18: Bills page UI



Analysis

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

History Overview

Bill No.	Amount	Date	House No	House Name	Status
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid
1	69	2021/4/20	1	Aatma Residance	Paid

Figure 19: Analysis page UI

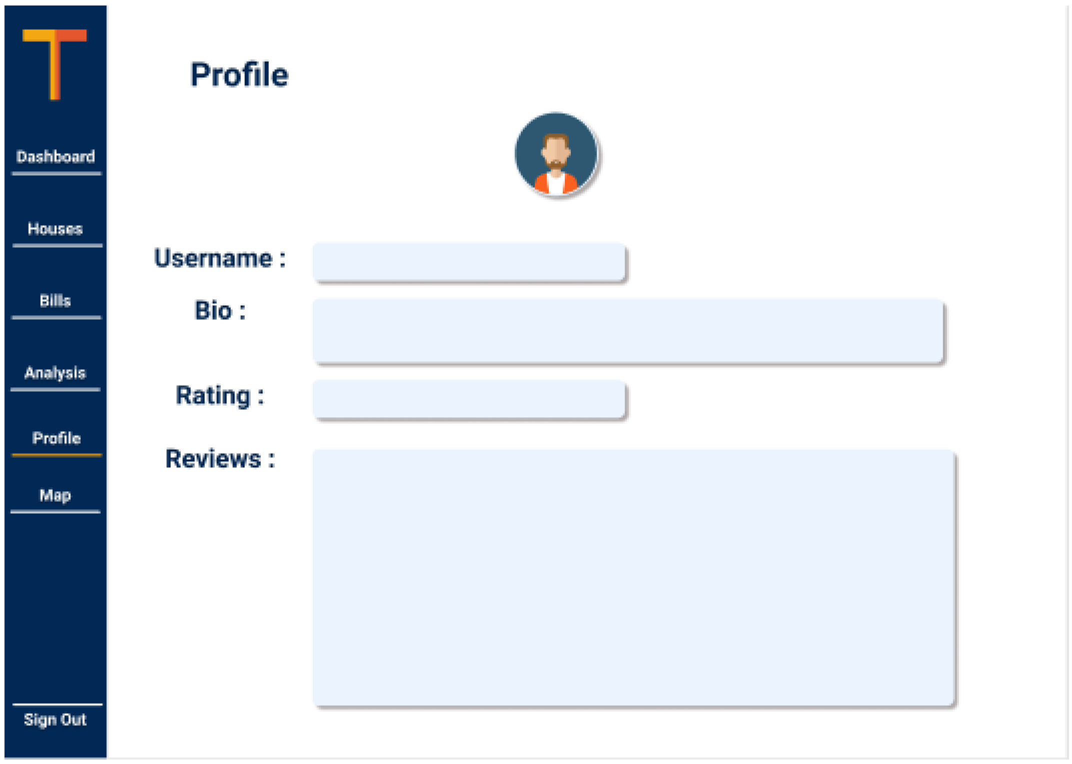


Figure 20: Profile page UI

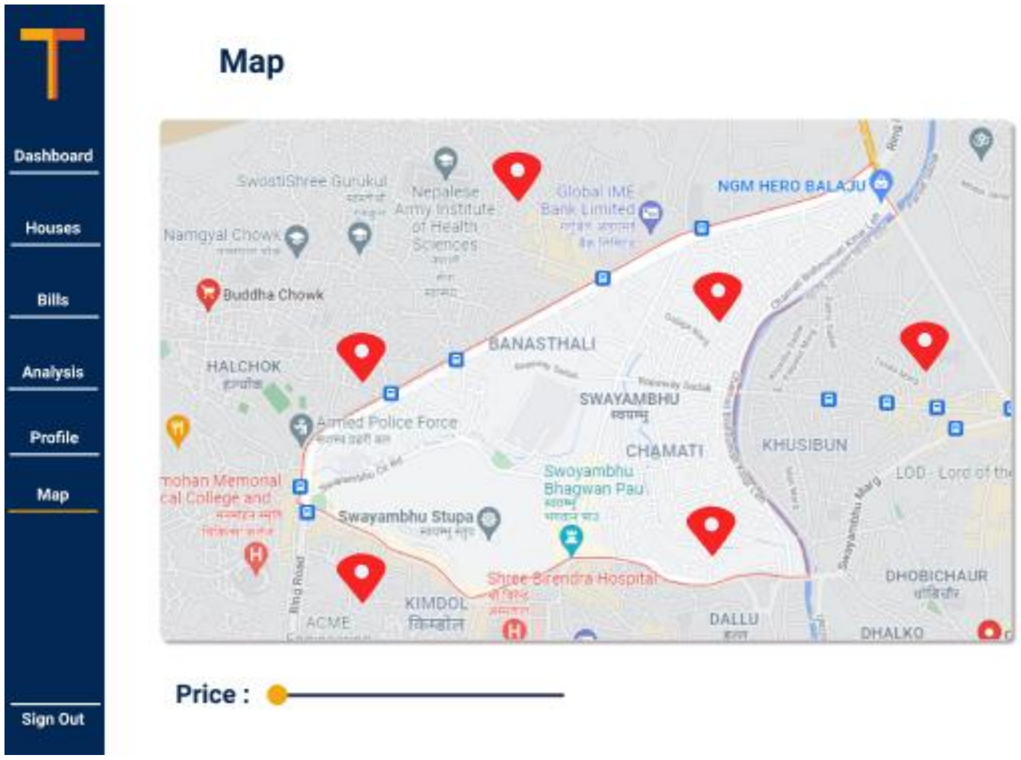


Figure 21: Map page UI

4. Progress analysis

S.N.	Task	Status	Progress
1	Topic Selection	Complete	100%
2	Client Finalization	Complete	100%
3	Requirement Gathering	Complete	100%
4	Risk Analysis	Complete	100%
5	Documentation	Partially Complete	20%
6	Technical Research	Partially Complete	40%
7	UI Mock-ups	Complete	100%
8	UI Design	Complete	100%
9	Domain Object Modeling	Incomplete	0%
10	Build Feature List	Incomplete	0%
11	Plan by Feature	Incomplete	0%
12	Design by Feature	Incomplete	0%
13	Build by Feature	Incomplete	0%

Table 2: Progress Table

5. Future work

5.1. Phases to complete

5.1.1. Build Feature List

A feature list is required to be built in order to define the scope of the project and for further planning, designing, and developing the project. A feature list will be developed in the future as shown in the Gantt chart above.

5.1.2. Plan by Feature

This phase exists to develop a plan development based on the created feature list. Plans will be made in order for the features to be developed smoothly and on time.

5.1.3. Design by feature

This phase consists of developing the technical designs. Sequence Diagrams will be developed in this phase along with carrying out design inspections.

5.1.4. Build by Feature

After successful design inspection, the code for the feature will be written. Once completed, the feature will go through unit testing and be integrated to the main system.

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