

GUJARAT TECHNOLOGICAL UNIVERSITY



Shree Swami Atmanand Saraswati Institute of Technology

affiliated with GTU



A

Project Report

on

Advanced Reliable Real Estate Portal

Prepared as a part of the requirements for the subject of

DESIGN ENGINEERING – 2B

B. E. III, Semester - VI

Computer Engineering Department

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Academic year
(2022-23)

Shree Swami Atmanand Saraswati Institute of Technology

Department of Computer Engineering

Academic Year 2022-23



CERTIFICATE

This is to certify that the Project entitled “**Advanced Reliable Real Estate Portal**” has been prepared by **Siddhapura Hirav Hareshbhai (200760107088), Baladha Mitul Mukeshbhai (200760107090), Variya Deep Rajnishkumar (200760107116), Dayani Jeet Sanjaybhai (200760107117), Goti Jenil Jagdishbhai (200760107125), Vaghasiya Hinal Ashvinkumar (200760107130)** in the subject of **DESIGN ENGINEERING – 2B** under my guidance in partial fulfillment of the degree of **Bachelor of Engineering in Computer Department (6th Semester)** of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Date:

Place: SSASIT, Surat

Prof. Viral K. Patel

Project Guide

Prof. Chirag R. Patel

Head of the Department

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ABSTRACT

“This project helps the users to make good decisions regarding buying or selling of valuable property. Prior to this online system this process involved a lot of travelling costs and searching time. Due to this system the user now does not have to travel much and can look for the property it is searching for, online according to its requirements. This system includes property details like Address, space measurement (sq ft.), number of BHKs, Floor, Property Seller name and its contact number plus email-id. The user can search property depending on the area that it wants in, number of wash rooms, bedrooms, halls and kitchen. The system contains an algorithm that calculates loan that the user can take plus 20%-30% cash that the user has to pay. This system allows the admin to enter details about any property that it is wishing for. The admin can even delete the property details. Thus this system eliminates cost to a great extent and also reduces searching time. With the help of this system the user can get the property details depending on its preferences. Thus this system also helps to maintain good relationship between the buyers and the sellers of the property.”

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CHAPTER 1: INTRODUCTION

1.1 Introduction to Concept/Idea:

This website is a online real estate portal website through which user can access its information and manage all the adding, updating, deleting the assets and some of its tasks.

The admin user can change the update the information regarding property selling and buying and cancelling. The system is very useful for the company who develop apartment, hostel, villa, residential properties. Companies or individuals agents cam also advertise their property.

1.2 Scope and purpose:

The real of world wide web have spread across millions of households, so naturally. Internet has become by far the best platform for real estate marketing today.

Now days when everything is online, how is it possible that real estate left web application behind. There are lot of real estate companies who advertise their property online so idea behind developing this application is that their property can also sell, or buy rental property using this. These applications are not widely popular but in future, they have large scope of growth.

This website is a online real estate management through which individual, agents or buyer can maintain their property document keeping and managing property registration and also access its information and manage all the adding, updating, deleting the as d some of its tasks. The admin user can inform their agents for regarding to property and update the information regarding property and cancellation of property or changing buyer choice.

The system is very useful for the companies or builders that can post and edit their properties and their personal info and admin can monitor records of all of them. The system is also useful which also keeps track of Account details of buyers and Investors and also RES Industry.

CHAPTER 2: EVOLUTION OF IDEA

2.1 Observation Record Sheet (AEIOU Framework)

Understanding the problem of society, it is one of the biggest challenges for engineer as till now we were making projects on imaginary ideas. So, the first sessions were based on understanding the domain of the problem in broader sense with emphasized on interacting with the people of our domain area which include more casual talks than technical sections. We were mostly observing what are major of the basic problems in our domain.

AEIOU Summary:		Group ID: 390906	Date:	Version:
		Domain Name: Advanced Reliable Real Estate Portal		
Environment: Claim · Happy Sad · Explaining Discussion · Confusing Marketing	Interactions: Seller → Buyer Seller → System Builder → Businessman Buyer ↔ System	Objects: Website · flats Web server · land Houses · laptop		
Activities: Add property · Searching · price showing Delete property · login · Add filters Selling · logout · Advertising Buying · View Seller information		Users: Seller · Buyers · Businessman Admin · Other people · Bank Broker · Manager · Employee Manual		

[Fig 2.1 AEIOU Summary]

2.1.1 Activity Framework

Activities are goal-directed sets of actions paths towards things people want to accomplish. Interactions are between a person and someone or something else. They are the building blocks of activities. Observation of activities in bus are below.....

- Add Property's
- Searching
- Price Showing
- Delete property
- login
- Add Filter
- Selling
- Logout
- Advertising
- Buying
- View Seller Information

2.1.2 Environment Framework

Environments include the entire arena where activities take place. Some example of environment are given below....

- Claim
- Happy
- Sad
- Discussion
- Marketing
- Explaining
- Confusing

2.1.3 Interaction Framework

Interactions are between a person and someone or something else they are the building blocks of activities. Some examples of interaction are given below...

- Seller → Buyer
- Seller → System
- Builder → Businessman
- Buyer → System

2.1.4 Object Framework

Objects are building blocks of the environment, key elements which are sometimes put to complex or unintended uses. Some examples of object are given below...

- Website
- Flats
- Web Server
- Land
- Houses
- Laptops

2.1.5 Users Framework

Users are the people whose behaviors, preferences, and needs are being observed. Some examples of user are given below...

- Seller
- Buyers
- Businessman
- Admin
- Other People
- Bank
- Brokers
- Manager
- Employee

2.2 Empathy Mapping / Framework

An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment.

Design For: Advanced Reliable Real Estate Portal Design By

Date Version

USER		STAKEHOLDERS	
Broker	Businessman	Bank	Businessman
Buyers	Builder	Builder	people
Seller	People		

ACTIVITIES

login	Reading	Searching	Writing
Registration	Authentication	listening	Selling
Payment	Buying	logout	Adverlizing

STORY BOARDING

HAPPY One of my friend wanted to purchase new home because his merriage came soon. For that he was searching new house or flate from long time. But he couldn't collect any effective and satisfied information from any people. Once he met a person who suggested him the website. He just go through it and noticed that structure and information is well placed in the website. Using that information he purchased his new house in his budget.

HAPPY One of my friend wants to purchase new flat, because he feels that his house is smaller for his entire family. For a long time, he searched for new flat but can't get any satisfied choice. If he finds flat in his budget, then the flat is smaller. Once he said about his house seaching to me, I suggest the website to him. He visited the website and searched for his requirements and found the best deal. So he got the best deal and it fulfilled all his requirements.

SAD Some seller upload good images of a property but the property is not good in the condition as shewed in the image. So many customers can be dissatisfied with the purchase.

SAD Once my grandfather wanted to buy land for the farming. He searched for the land on the website and founded the land which was fertilized and water facility was also there. But the cost was quite high. He purchased the land. But after the purchase he got information about another land of same quality but at low cost. The seller uploaded the land information lately after my grandfather's purchase. So my grandfather did not get the best deal due to lack of information

[Fig 2.2 Empathy mapping]

User:

User is person who uses system and doing some kind of activity.

- Broker
- Businessman
- Buyers
- Builder
- Seller
- People

Stakeholder:

An independent party with whom each of those who make a wager deposits the money or counters wagered. In short stakeholder is a person with an interest or concern in something, especially a business.

- Bank
- Businessman
- Builder
- People

Activities:

Activities is some kind of task performed by user in system.

- Login
- Reading
- Searching
- Writing
- Registration
- Authentication
- Listening
- Selling
- Payment
- Buying
- Logout
- Advertising

Story Boarding:

Happy:

- One of my friends wanted to purchase a new home because his marriage came soon. For that he was searching new house or flat from longtime. But he couldn't collect any effective and satisfied information from structure and information is well placed in the website. Using that information, he purchased his new house in his budget

Sad:

- Some seller uploads good image of a property but the property is not good on the condition as showed in the image. So many customers can be dissatisfied with the purchase.

Happy:

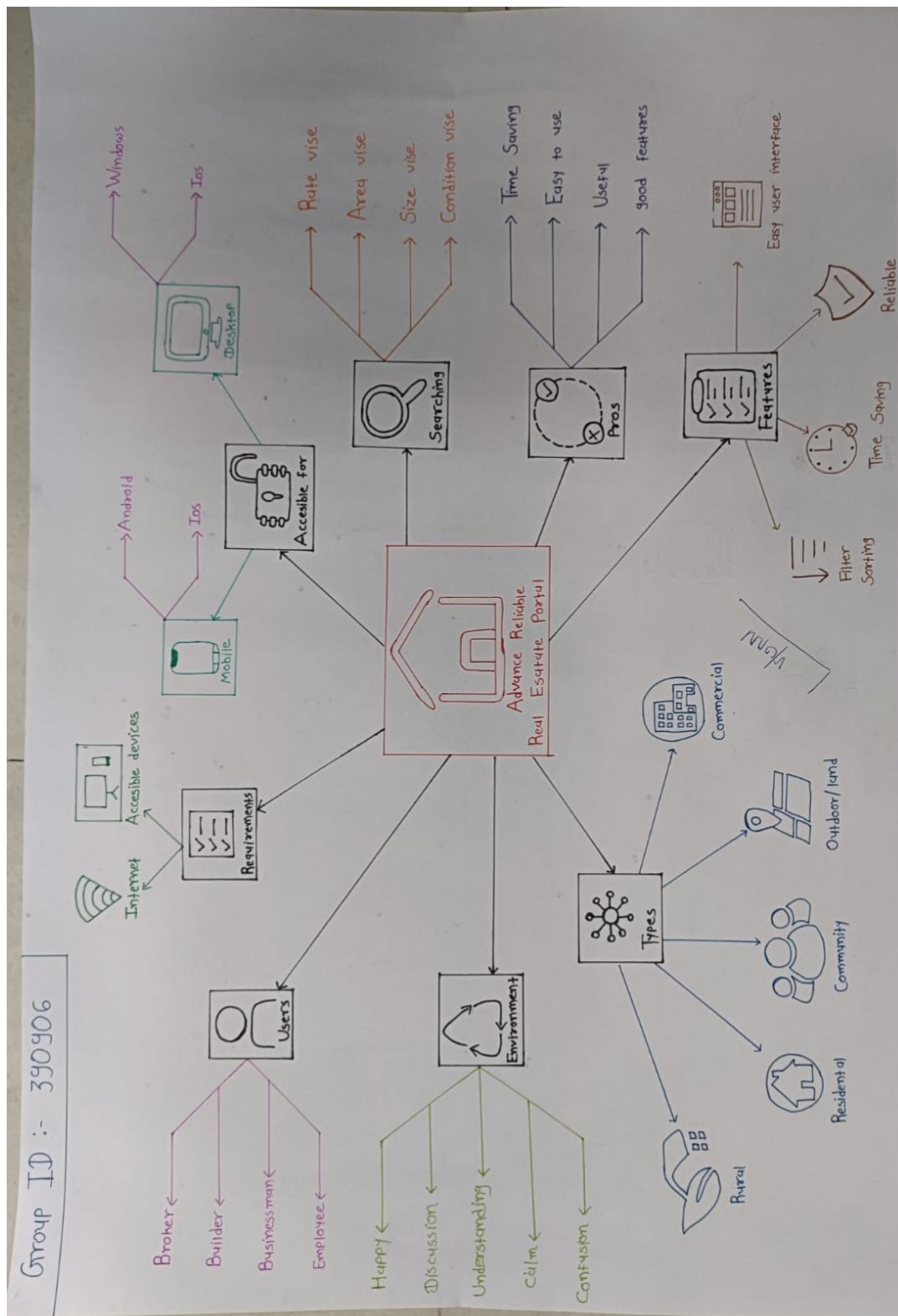
- One of my friends wants to purchase a new flat, because he feels that his house is smaller for his entire family. For long time, he searched for a new flat but can't get any satisfied choice. If he finds flat in his budget, then the flat is smaller. Once he said about his house searching to me, I suggest the website to him. He visited the website and searched for his requirements and found the best deal. So, he got the best deal and it fulfilled all his requirements.

Sad:

- Once my grandfather wanted to buy land for the farming. He searched for the land on the website and founded land which was fertilized and water facility was also there. But the cost was quite high. He purchased the land but after the purchase he got information about another land of same quality but at low cost. The seller uploaded the information lately after my grandfather's purchase. So my grandfather did not get the best deal due to lack of information.

2.3 Mind Mapping / Framework

“Mind mapping is a simply representation of all information about domain.”

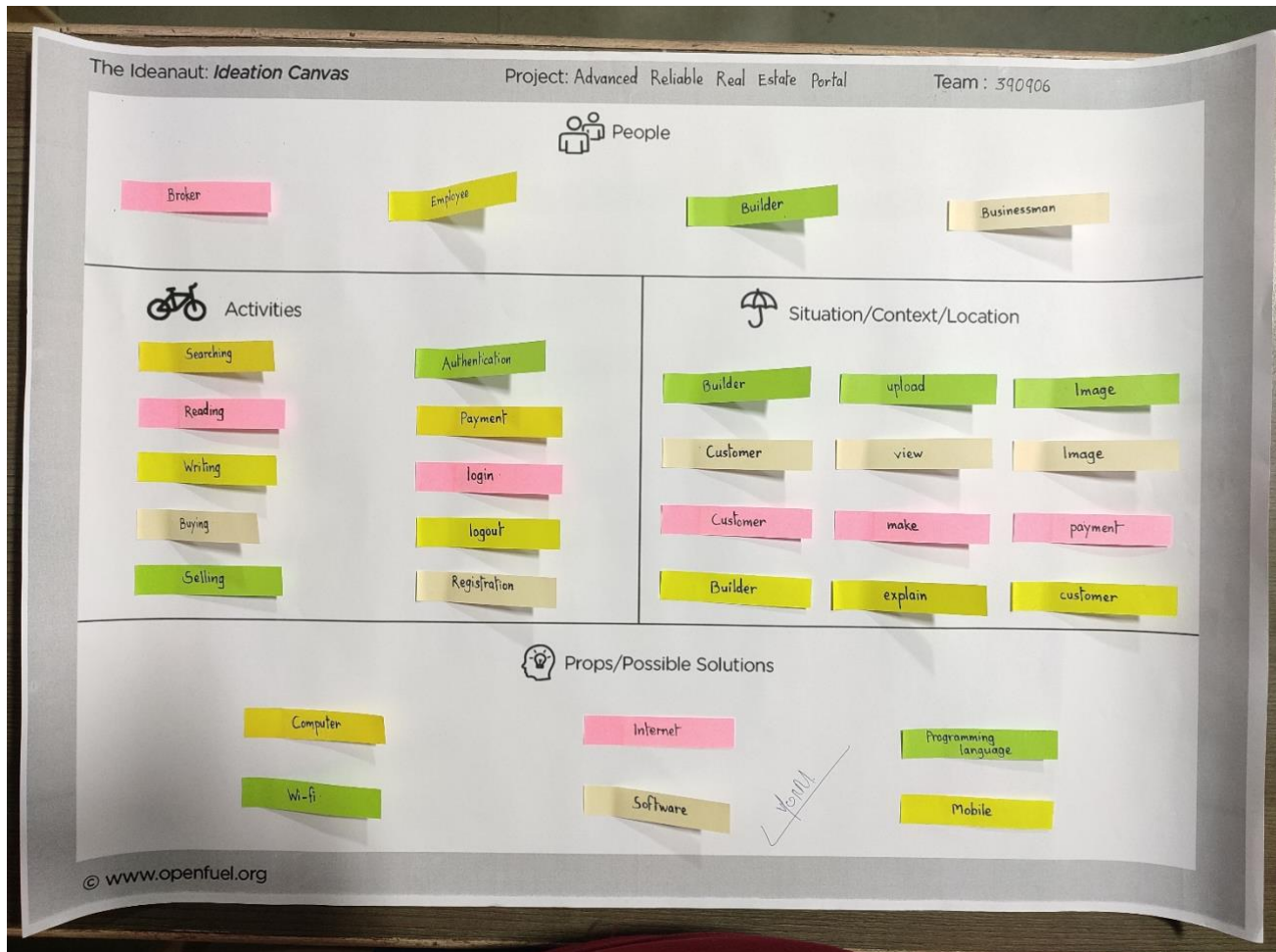


[Fig 2.3 mind mapping]

2.4 Ideation Canvas / Framework

An ideation canvas is a rough whiteboard where ideas can be stretched into any limits or dimensions.

Ideation session is not aimed at finding solutions to the defined problem. But to define the best possible problem and stretch out it's possible.



[Fig 2.4 ideation canvas]

People:

- Broker
- Employee
- Builder
- Businessman

Activities:

- Searching
- Authentication
- Reading
- Payment
- Writing
- Login
- Buying
- Logout
- Selling
- Registration

Situation / context / location:

- | | | |
|------------|-----------|------------|
| ➤ Builder | → Upload | → Image |
| ➤ Customer | → View | → Image |
| ➤ Customer | → Make | → Payment |
| ➤ Builder | → Explain | → customer |

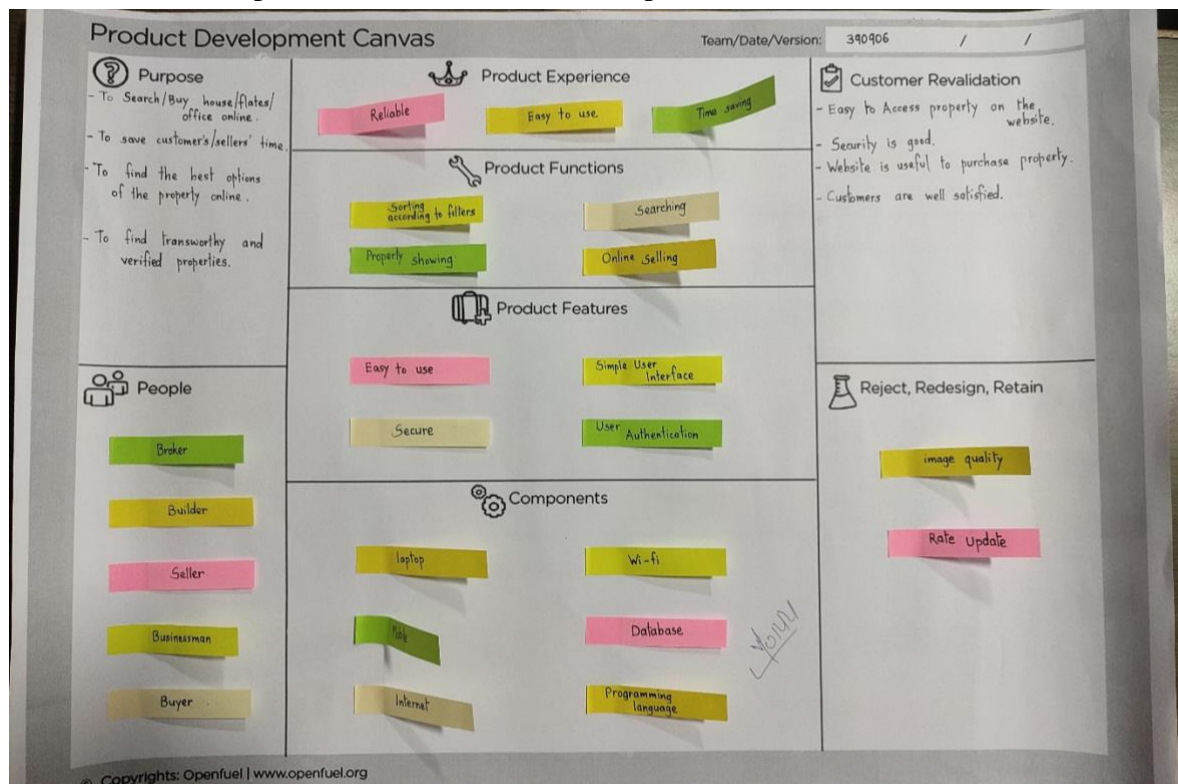
Props / possible solution:

- Computer
- Internet
- Programming language
- Wi-Fi
- Software
- Mobile

2.5 Product Development Canvas / Framework:

After all the observation and reverse engineering, we started to make product development canvas. In product development canvas, we have mentioned about our purpose for making a product, listed out the users, product function, product features, and component needed for making the product. Then we went to different users and explained our project and based on that we got customer revalidation and product experience

A product development canvas is the ground where in the best possible ideas after the ideation session are pitched and nurtured to develop.



[Fig 2.5 Product development canvas]

Purpose:

Purpose is the reason for which something is created or done or for which something exists. In this canvas we discovered our purpose by considering the need of people and their comfort.

- To Search/Buy house/Flats/office online.
- To save customer's/seller's time
- To find the best options of the properties online.
- To find trans worthy and verified property

People:

People is whom who are linked to our product or we can say who are using our product.

- Banker
- Builder
- Seller
- Businessman
- Buyer

Product experience:

- Reliable
- Easy to use
- Time saving

Product functions:

- Sorting according to filter
- Searching
- Property showing
- Online selling

Product Features:

- Easy to use
- Simple User Interface
- Secure
- User Authentication

Components:

- Laptop
- Wi-fi
- Mobile
- Database
- Internet
- Programming language

Customer revalidation:

- Easy to access property on the web site
- Security is good
- Website is useful to purchase property's
- Customers are well satisfied.

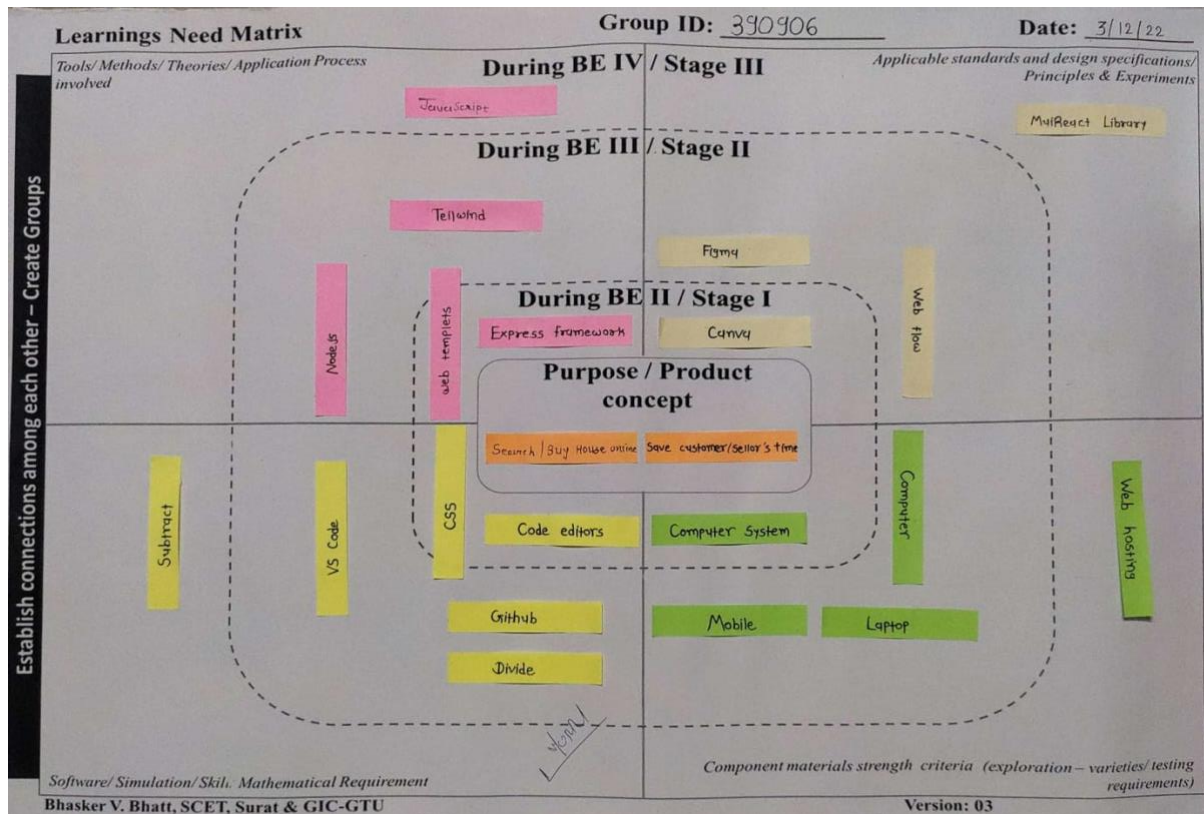
Reject, Redesign, Retain:

After rejection of our product by some customer we try to redesign it and develop some new features according to customer's feedback.

- Image Quality
- Rate update

2.6 LNM Canvas:

The full form of LNM is “Learning needs matrix”, This canvas is helpful to student to identify the learning requirement at any early stage along with time allocation for each learning priority.



[Fig 2.6 LNM canvas]

CHAPTER 3: PRIOR ART SEARCH

3.1 Introduction:

“A prior art search is simply involves checking database to find out whether someone else has already describe the ideas similar to yours.”^[1]

In this search we will search the database and find if someone else is already make a project on this topic by this we can identify the scope of this topic and check if we are first to make the project on this topic or not if we are not then we can find some guidance from past project for out project.

3.2 Literature review:

“Literature review is an overview of the previously published works on a specific topic.”^[2]

Review1:

In older days when we want purchase a property we can't directly communicate with the owners. We must contact with the help of mediators, but the mediators takes lot of amount and it is also time consuming process. In older days the property dealing procedure consist of many steps like finding agent, appoint correct meeting time, location and so on.

Review2:

Current Web site are:

1. No search gives correct information about basic services available from chosen location like displaying the distance of nearest bus stop, railway station, hospital etc.
2. No flexibility in information retrieval for e.g. listing houses that is within the 2Km radius of allocation.

CHAPTER 4: DESIGN ENGINEERING ECONOMICS and USE, REUSE and SUSTAINABILITY

4.1 Project Cost Estimation

Function	Cost per month (in INR)
Firestore	Free for 500MB
Model making cost	3000-5000
Datasets	Online free datasets
Website hosting on onrender	free
Assembling cost	free

4.2 Design for Use

- Our website is specially used for people which are connected with real estate business. Through this they will get a better mobility while doing business, as our website will guide him/her. And he/she get a best property on rent or buy. User also communicate by video calling system and private chat.

4.3 Design for Reuse / Component based engineering

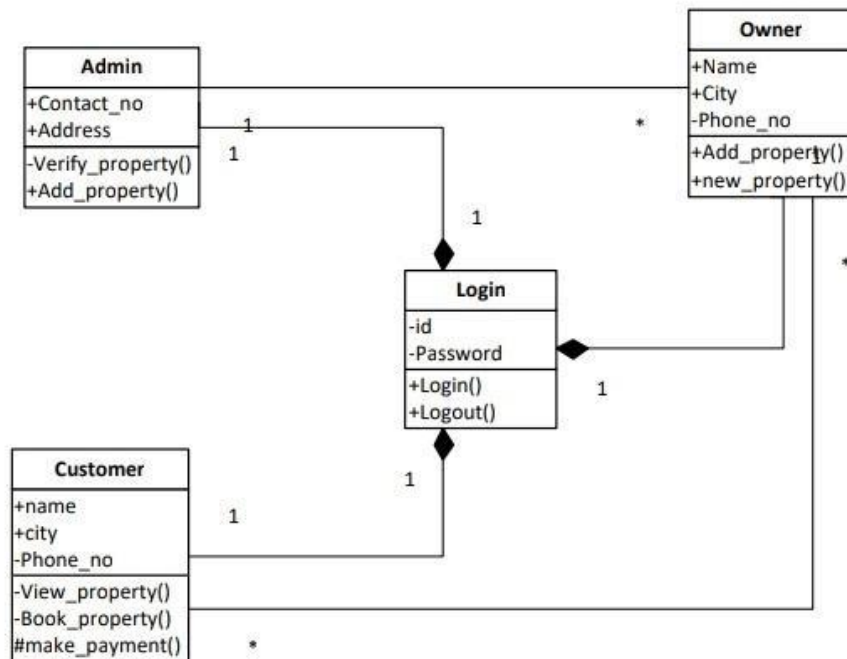
- Video calling: This feature allows to call and visit online available property.

4.4 Design for Sustainability / platform

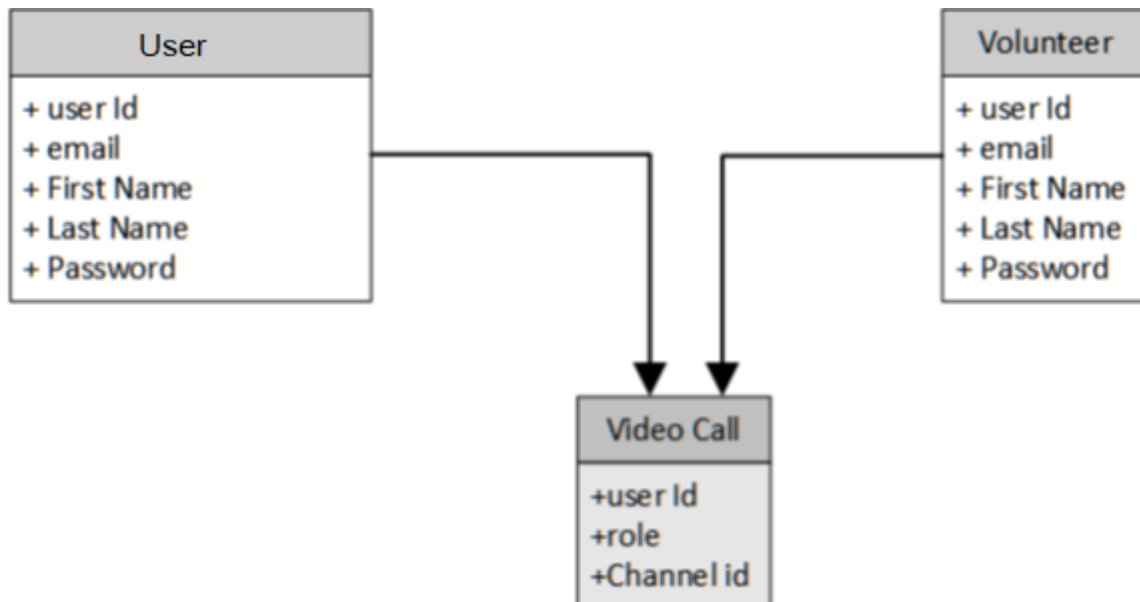
- The website that is created should change its resolution as per screen size of user's phone or laptop. Not all users have same resolution mobiles/laptop.
- This model is being used find nearby property available on rent/sell and provide all details about the property.
- With WebRTC and socket.io are created video calling System and real time chatting. FCM (Firebase Cloud Messaging) is use for notification. Firebase storage is use for store image and video on cloud.

CHAPTER 5: DESIGN FOR ERGONOMICS

5.1 Physical Ergonomics (Class, ER)

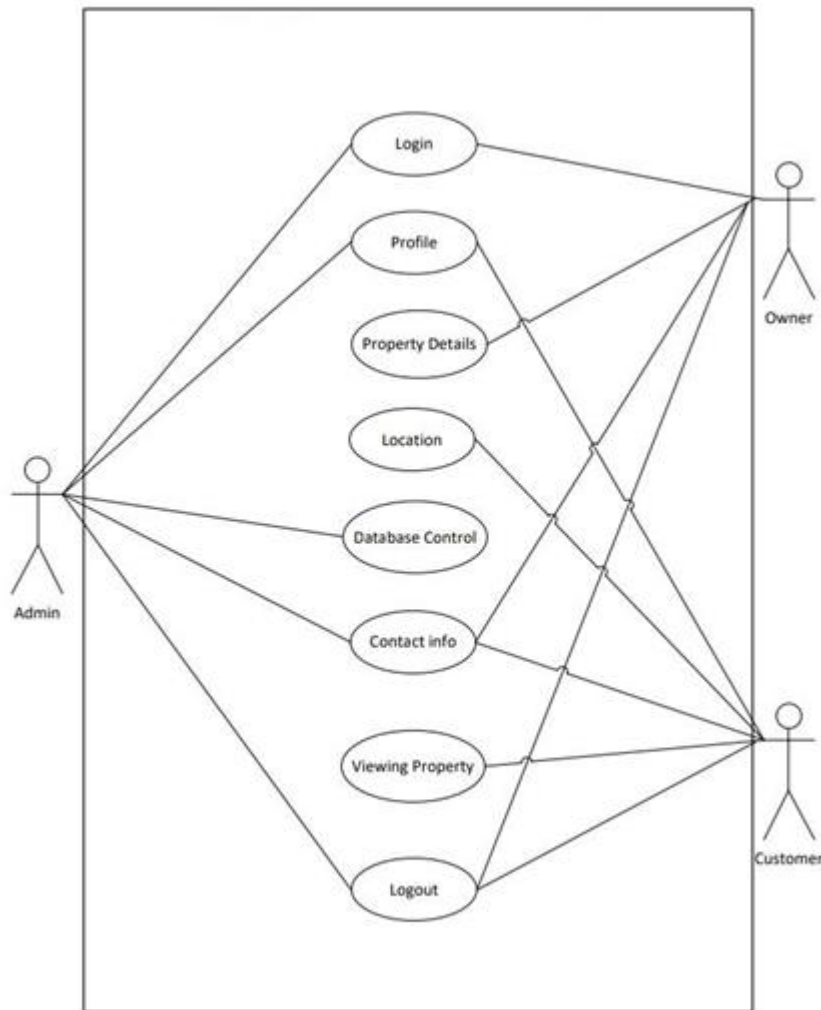


[Fig 5.1 Class Diagram]



[Fig 5.2 ER Diagram]

5.1 Cognitive Ergonomics (Use case)



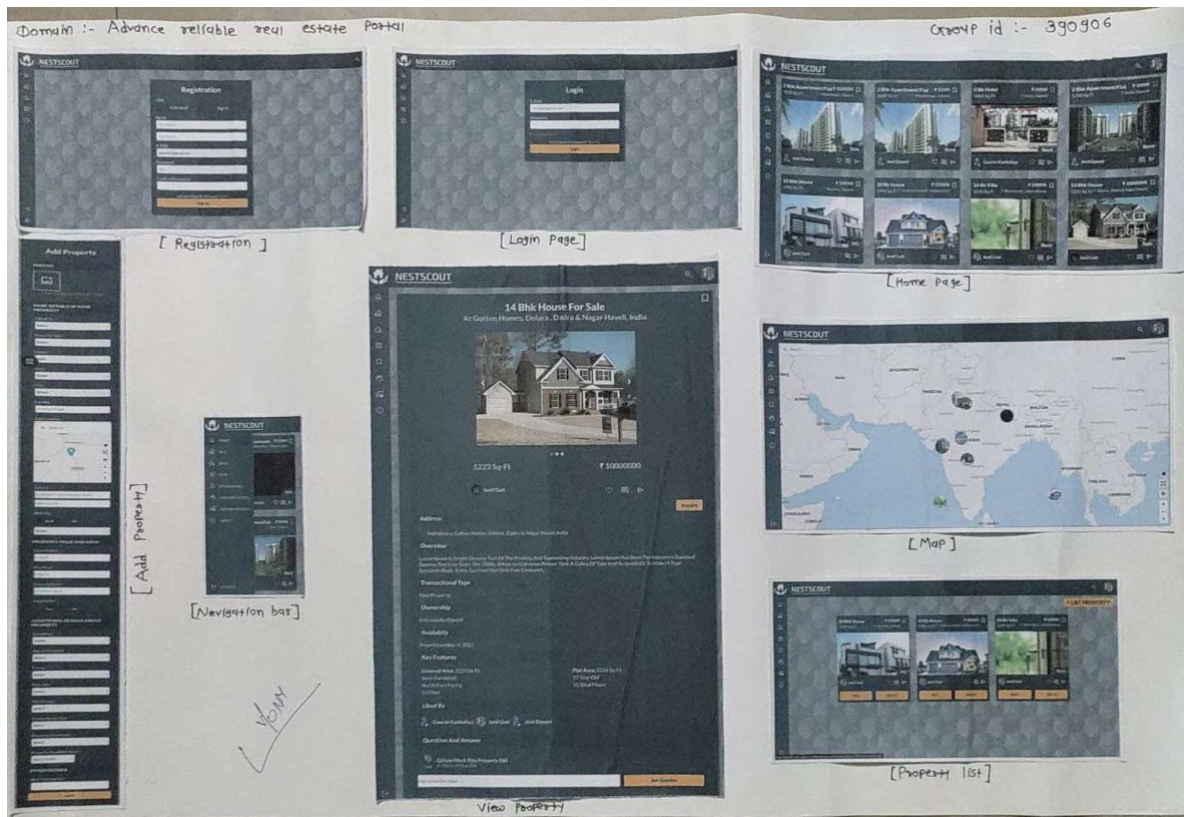
[Fig 5.3 Use case Diagram]

5.3 Organizational Ergonomics (Policy)

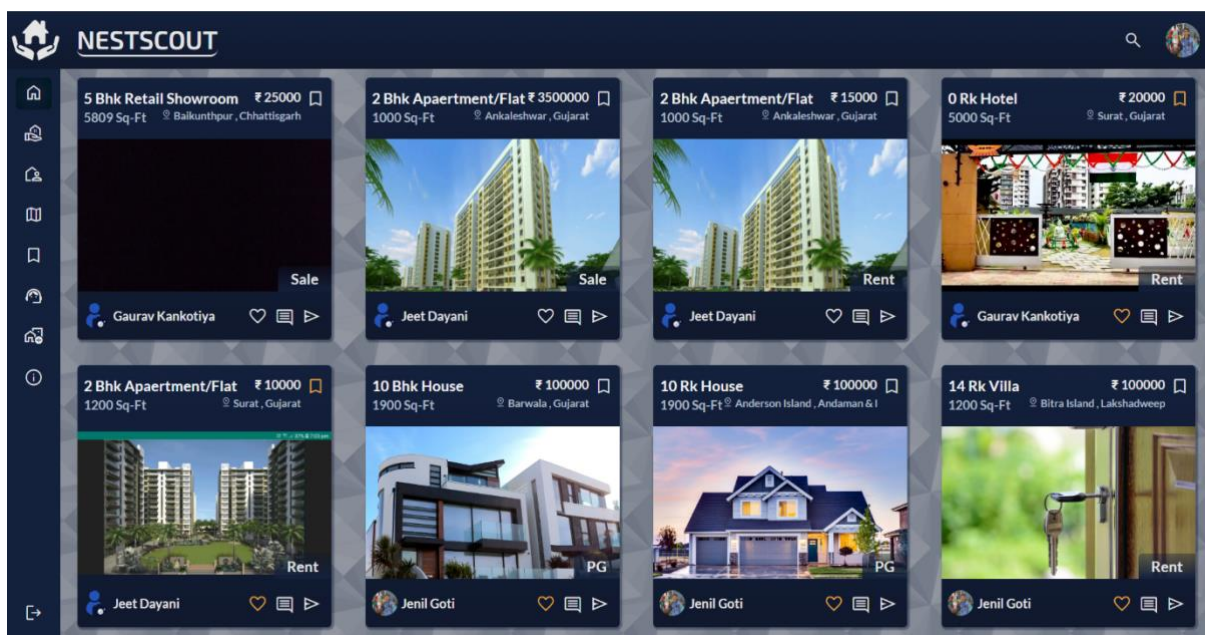
- The purpose of this policy is to inform you of the terms and conditions of using this website.
- This policy applies to all users, whether they are visually impaired or volunteers; we serve no one, so you may trust us without fear of information leakage.
- The database is built using firebase (a Google website for developing and managing mobile applications), which provides a secure data storage platform. In addition, we aim to collect as little information as possible from the user so that he or she is not hesitant to provide information.
- You can contact us via e-mail if you have any complaints about how the app is being used, and we will attempt to react as soon as possible. Because this app is cloud-based, there is less of a storage issue on the user's phone. We were able to give the website user the least amount of difficulty by doing so.
- This policy applies to all of its users, whether they are visually impaired or volunteers.

- We serve no one, so you may trust us without worry of your information being leaked.
- The database is built using firebase (a Google website for developing and managing mobile applications), which provides a secure data storage platform. In addition, we aim to collect as little information as possible from the user so that he or she is not hesitant to provide information.
- You can contact us via e-mail if you have any complaints about how the app is being used, and we will attempt to react as soon as possible.
- Because this website is cloud-based, there is less of a storage issue on the user's phone. We were able to give the app user the least amount of difficulty by doing so.

CHAPTER 6: PROTOTYPING



[Fig 6.1 Prototype Canvas]



[Fig 6.2 Home Page]

NESTSCOUT

Registration

I Am ☐ Individual ☐ Agent

Name
First Name
Last Name

E-Mail

Password

Confirm Password

[Already Have An Account? Log In](#)

[Fig 6.3 Sing-up Page]

NESTSCOUT

Login

E-Mail

Password

[Forgot Password?](#)

[Don't Have An Account? Sign Up](#)

[Fig 6.4 Login Page]

NESTSCOUT

HOME
BUY
RENT
MAP
BOOKMARKS
CONVERSATIONS
ADD PROPERTIES
ABOUT
LOGOUT

Lowroom ₹ 25000
Chhattisgarh
Sale

2 Bhk Apartment/Flat ₹ 3500000
1000 Sq-Ft
Ankleshwar, Gujarat
Jeet Dayani

2 Bhk Apartment/Flat ₹ 15000
1000 Sq-Ft
Ankleshwar, Gujarat
Jeet Dayani

0 Rk Hotel ₹ 20000
5000 Sq-Ft
Surat, Gujarat
Gaurav Kankotiya

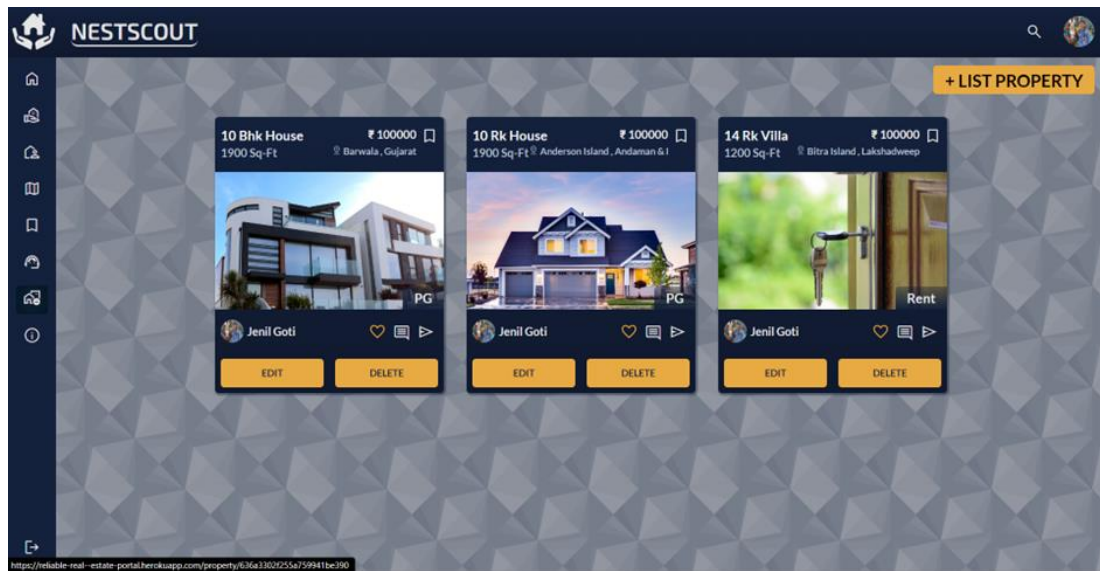
rent/Flat ₹ 10000
Surat, Gujarat
Rent

10 Bhk House ₹ 100000
1900 Sq-Ft
Barwala, Gujarat
Jenil Goti

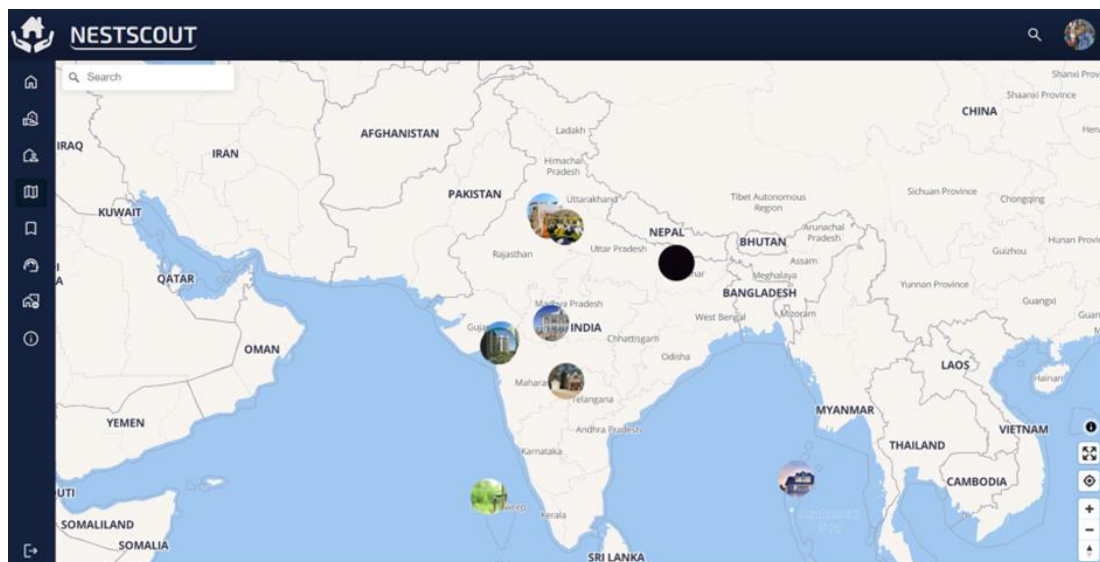
10 Rk House ₹ 100000
1900 Sq-Ft
Anderson Island, Andaman & N
Jenil Goti

14 Rk Villa ₹ 100000
1200 Sq-Ft
Blitra Island, Lakshadweep
Jenil Goti

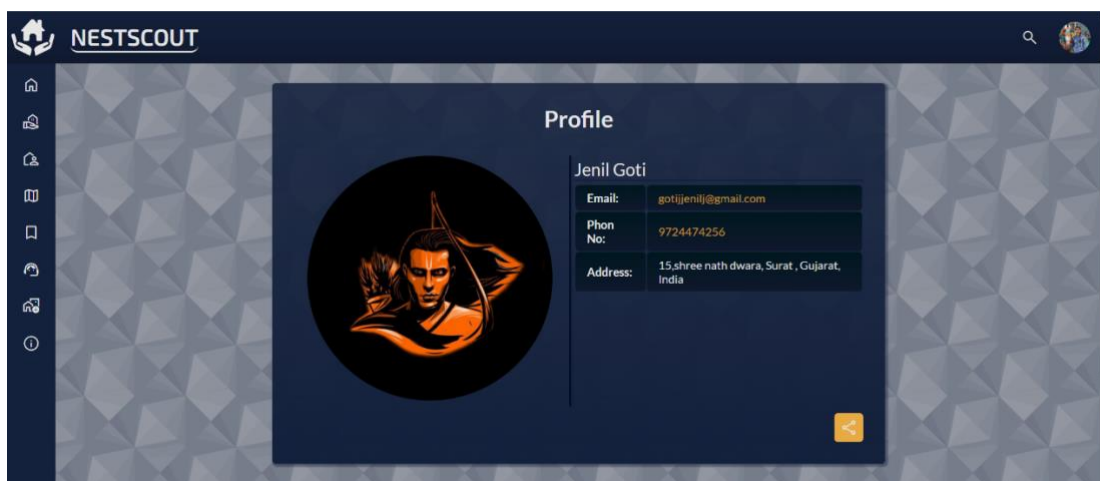
[Fig 6.5 navigation-bar Page]



[Fig 6.6 add-property Page]



[Fig 6.7 Map Page]



[Fig 6.8 User profile Page]

14 Bhk House For Sale

At Gotten Homes, Dolara , Dadra & Nagar Haveli, India

1223 Sq-Ft ₹ 10000000

Jenil Goti

[Inquiry](#)

Address

Nathdwara, Gotten Homes, Dolara , Dadra & Nagar Haveli, India

Overview

Lorem Ipsum Is Simply Dummy Text Of The Printing And Typesetting Industry. Lorem Ipsum Has Been The Industry's Standard Dummy Text Ever Since The 1500s, When An Unknown Printer Took A Galley Of Type And Scrambled It To Make A Type Specimen Book. It Has Survived Not Only Five Centuries,

Transactional Type

New Property

Ownership

Individually Owned

Availability

From November 4, 2022

Key Features

Covered Area: 1223 Sq-Ft	Plot Area: 2124 Sq-Ft
Semi-Furnished	17 Year Old
North-East Facing	15 Total Floors
15 Floor	

Liked By

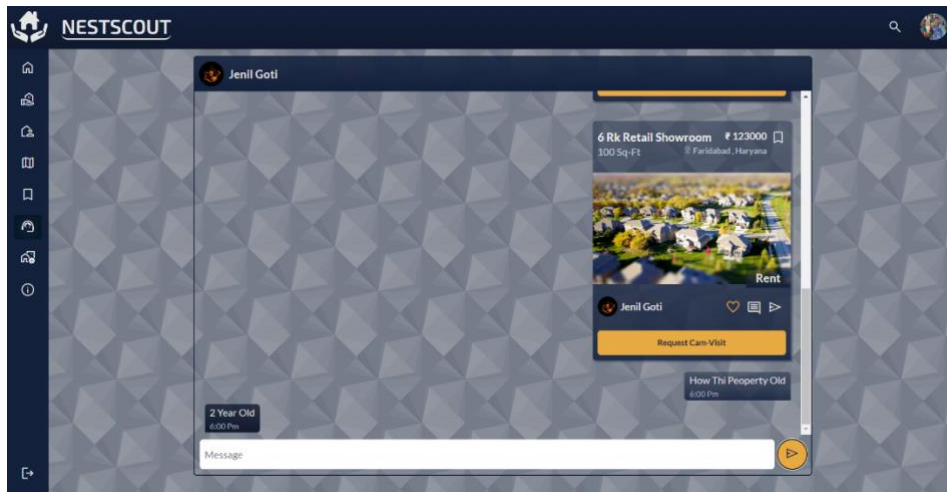
Gaurav Kankotiya Jenil Goti Jeet Dayani

Question And Answer

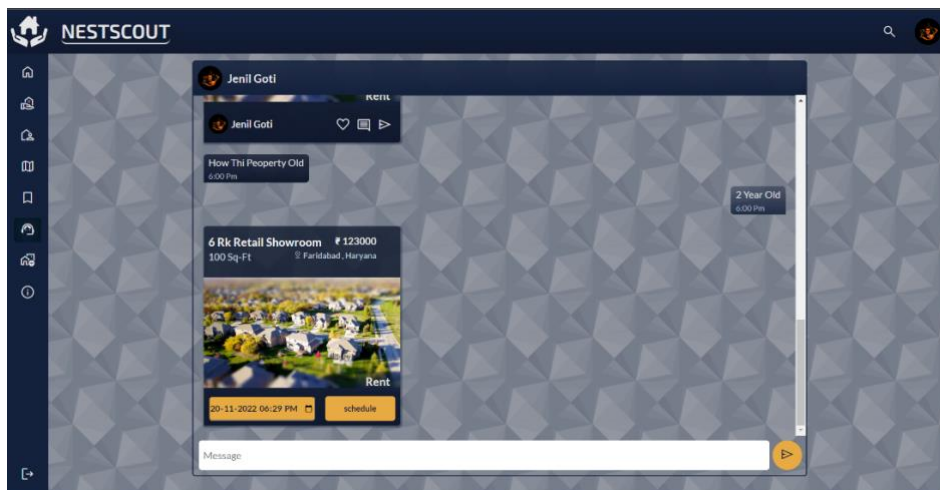
Q.How Much This Property Old
 A. This Is 10 Year Old

Ask question hear [Ask Question](#)

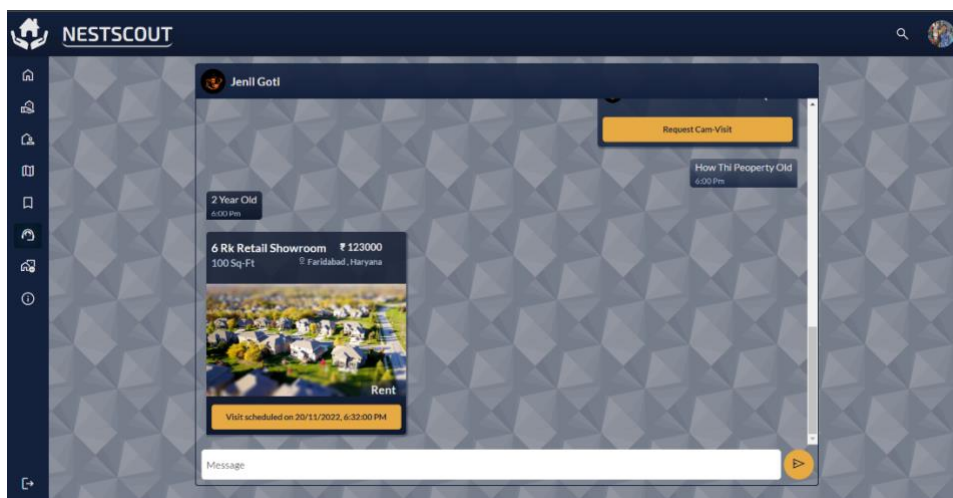
[Fig 6.9 Property Page]



[Fig 6.10 Inquiry Page]



[Fig 6.11 Request visit Page]



[Fig 6.12 scheduled visit Page]

NESTSCOUT

Add Property

PHOTOS

* you can add maximum 10 images

BASIC DETAILS OF YOUR PROPERTY

I Want To *
Select

Property Type *
Select

Contry *
India

State *
Select

City *
Select

Locality *
Locality/Village

Add Location
Search
[NH44]
[NH347A]
[NH347A]

Society *
Building/Project/Society Name

Address Line

BHK/RK *
BHK RK
Select

PROPERTY PRICE AND AREA

Coverd Area *
In Sq-Ft

Plot Area *
In Sq-Ft

Property Price *
In Indian rupee

Negotiable *
Yes No

ADDITIONAL DETAILS ABOUT PROPERTY

Furnished *
Select

Age Of Property *
Select

Facing *
Select

Floor No *
Select

Total Floors *
Select

Transactional Type *
Select

Property Ownership *
Select

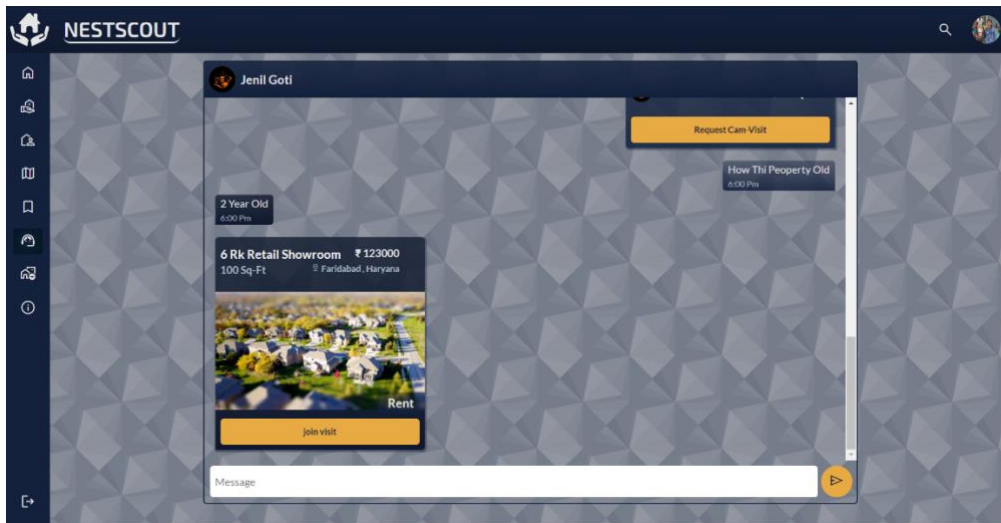
Property Availability From *
24/11/2022

OTHER DETAILS

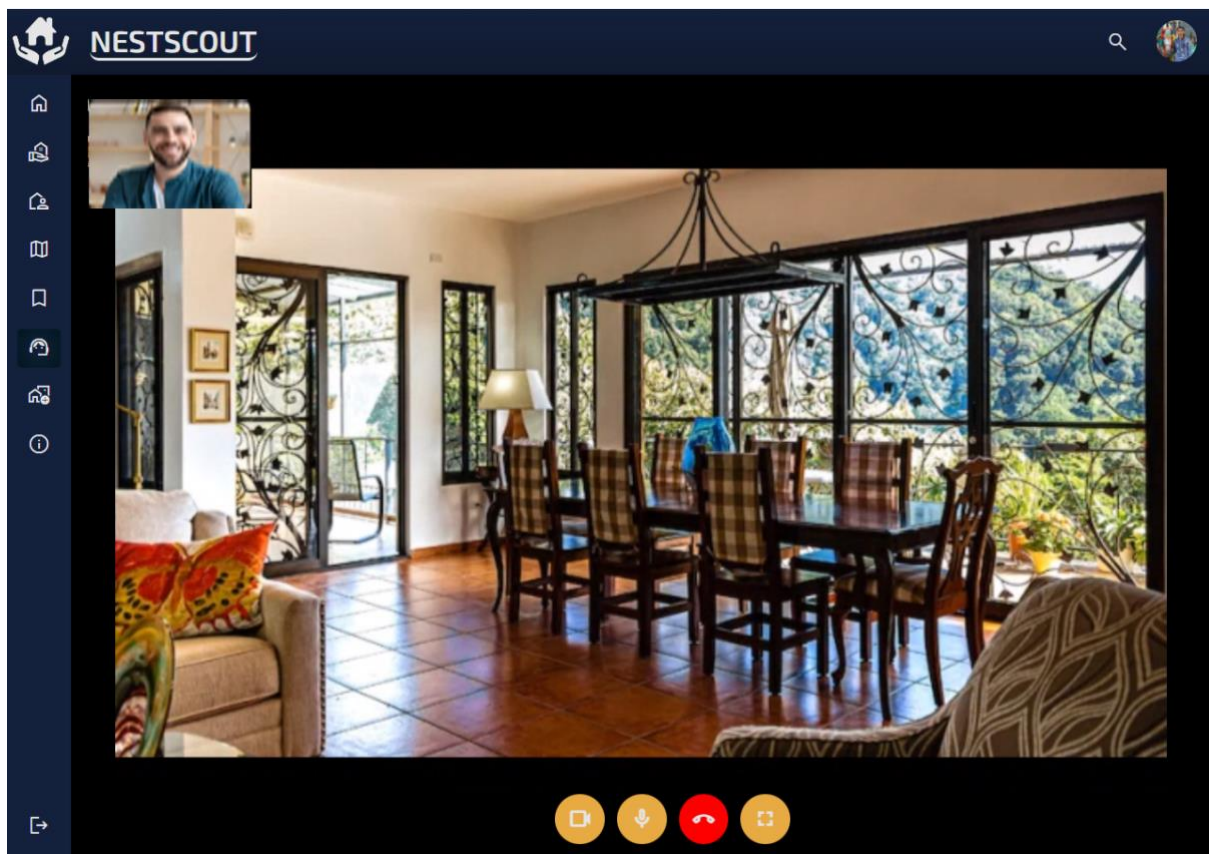
Brief Description *

Submit

[Fig 6.13 List Property Page]



[Fig 6.14 start visit Page]



[Fig 6.15 visit Page]

CONCLUSION

By design engineering, we able to identify the problem which are manifest during the use and we were also able to solve them by improving our domain and come up with new technical solutions.

We also learn to emphasize user's issues through empathy canvas and come up with effective solution through product development canvas.

The website is to bring the real estate industry online and enabling real estate industry participants to benefit from the Internet. Site acts as an interface between Individuals, brokers and realtors. Here the user can advertise his property for buying or for selling.

REFERENCES

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