

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	26-06-2025
Team ID	LTVIP2025TMID59380
Project Name	House Hunt
Maximum Marks	4 Marks

Technical Architecture:

House Hunt is designed using a scalable **3-tier architecture**, ensuring a robust, maintainable, and scalable system:

- Presentation Layer (Frontend):**
A responsive and user-friendly interface for tenants and landlords to browse listings, book visits, and manage profiles.
- Business Logic Layer (Backend):**
Handles core functionalities such as user authentication, property listings, booking management, payments, and messaging.
- Data Storage Layer:**
Stores all essential data including user profiles, property details, bookings, chat records, and payment transactions.

✂ Integration with third-party APIs is included for real-time notifications (SMS/email), map-based search, and digital payments.

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web/mobile-friendly interface for tenants & landlords	HTML, CSS, JavaScript / React Js etc.
2.	Application Logic-1	Booking, calendar, chat, and visit scheduling.	Node.js, Express.js

S.No	Component	Description	Technology
1.	User Interface	Web/mobile-friendly interface for tenants & landlords	HTML, CSS, JavaScript / React Js etc.
3.	Application Logic-2	Admin panel, user management, reporting	React js, Node js
4.	Database	User data, listings, visits, messages, payments	MongoDB

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
5.	Open-Source Frameworks	Frontend frameworks	React.js, Node.js, BootStrap, Tailwind CSS
6.	Scalable Architecture	3-tier architecture with RESTful APIs	Microservices

References:

[React.js Documentation](#)

[Node js Best Practice](#)

[JSON Web Server Reference](#)

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>

Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	26-06-2025
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Functional Requirements:

Following are the functional requirements of the proposed solution.

Functional Requirements – Music Streaming App

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Authentication	Sign up, Login, Password Reset
		OAuth login using Google / GitHub
FR-2	Property Discovery & Visit Booking	Search and filter listings by location, price, type, amenities
		Book, reschedule, and cancel property visits
FR-3	Listing & Profile Management	Add/edit property details, availability, and images
		Update user (tenant/landlord) profiles
FR-4	Notifications & Reminders	Automated SMS/email reminders for upcoming appointments

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The platform should provide a simple, clean UI for all users, including patients and healthcare providers.
NFR-2	Security	Encrypt all data; use role-based access; implement secure login/authentication.

NFR-3	Reliability	Core features (booking, payments, messaging) must function consistently.
NFR-4	Performance	Pages and booking actions should load within 2 seconds; reminders and notifications should be timely.
NFR-5	Availability	The system should ensure 99.9% uptime with minimal downtime.
NFR-6	Scalability	Support a growing number of users, providers, and concurrent bookings without degradation.

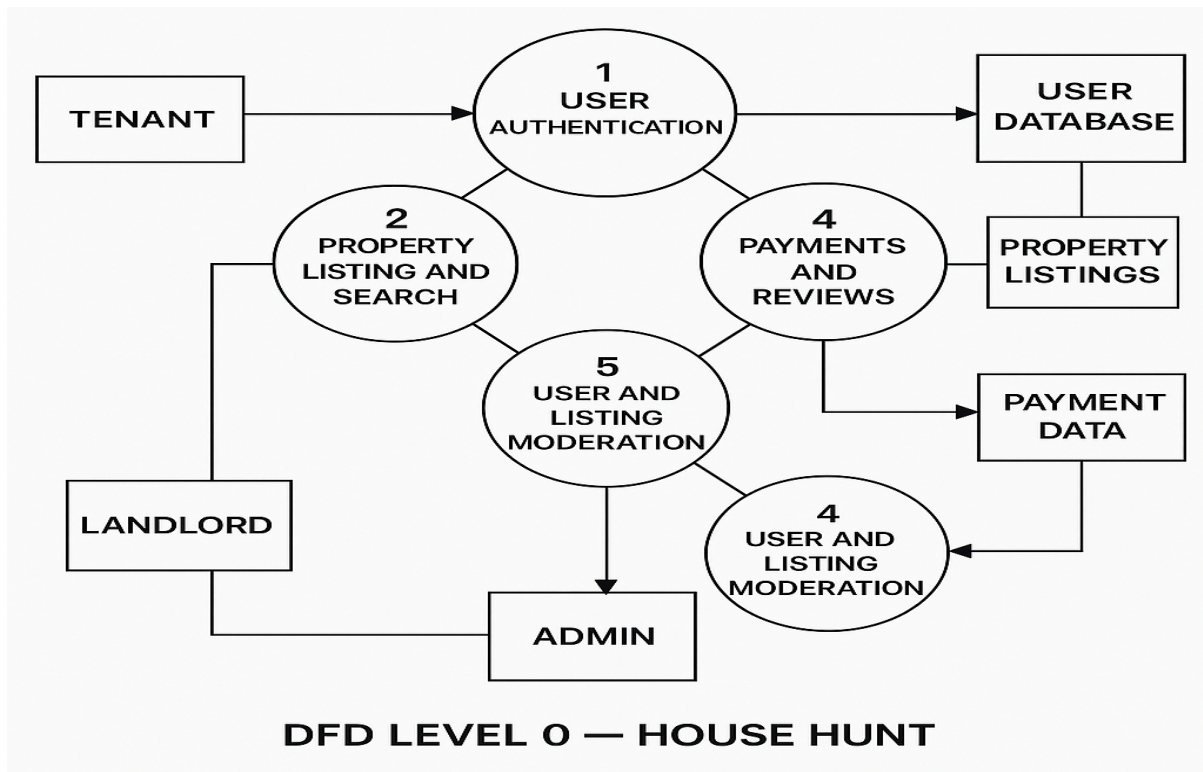
Project Design Phase-II

Data Flow Diagram & User Stories

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Data Flow Diagrams:

The DFD for **House Hunt** represents the flow of information between key actors (tenant, landlord, admin) and system components. It outlines how data like property listings, user profiles, bookings, payments, and messages are processed and stored.



User Stories

User Story Table – DocSpot

User Type	Functional Requirement (Epic)	User Story / Task	Acceptance Criteria	Priority	Release
Tenant	Property Discovery & Booking	As a tenant, I can search for rental properties by location, budget, and features.	Listings returned based on filters and relevance..	High	Sprint-1
	Booking Visits	As a tenant, I can book, reschedule, or cancel property visits.		Medium	Sprint-2

			Visit status updates in dashboard		
Landlord	Listing Management	As a landlord, I can create and update property listings with images and availability.	Changes reflect immediately in patient booking system.	High	Sprint-1
User	Messaging	As a user, I can chat with the other party in real-time	Messages appear instantly.	Medium	Sprint-2
Admin	Profile Management	As a Admin, I can update my profile.	Changes are saved successfully.	High	Sprint-2
Client	Payment Processing	As a client, I can make secure payments after job completion.	Payment recorded and shown in transaction history.	High	Sprint-2
user	Review System	As a user, I can leave a review after project closure.	Review appears on profile.	Medium	Sprint-2
Admin	User Moderation	As an admin, I can review reported users and take action.	Reports and actions logged.	High	Sprint-1

----- Project Planning Phase -----

Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	26-06-2025
Team ID	LTVIP2025TMID59380
Project Name	House Hunt
Maximum Marks	5 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Product Backlog & Sprint Schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint -1	User Authentication	USN-1	As a user, I can sign up and log in securely.	3	High	Pandi Venkateswarlu
		USN-2	As a user, I can reset my password.	2	Medium	
Sprint -2	Property Discovery & Visit Booking	USN-3	As a tenant, I can search and filter properties by location, price, and amenities.	2	High	Nandam Rakesh Naga Durga Prasad
Sprint -3	Profile & Communicatiot	USN-4	As a landlord, I can set up and update my property listings.	3	High	Mutyala Hitesh
		USN-5	As a user, I can update my profile information.	2	High	

		USN-6	As a user, I can send/receive messages.	2	Medium	
Sprint -4	Payment Integration & Reviews	USN-7	As a client, I can pay freelancers securely.	3	High	
		USN-8	As a user, I can leave a review after project completion.	2	Medium	
		USN-9	As a user, I can change my password.	2	Medium	

Project Tracker, Velocity & Burndown Chart

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint -1	20	6 Days	17 June 2025	23 june 2025	20	23 june 2025
Sprint -2	20	6 Days	17 June 2025	23 june 2025	20	23 june 2025
Sprint -3	20	6 Days	17 June 2025	23 june 2025	20	23 june 2025
Sprint -4	20	6 Days	17 June 2025	23 june 2025	20	23 june 2025

-----Project Design Phase-----

Solution Architecture

Date	26 -06-2025
Team ID	LTVIP2025TMID59380
Project Name	House Hunt
Maximum Marks	4 Marks

Solution Architecture:

To provide a user-friendly, secure, and scalable **house rental platform** that bridges the gap between tenants and property owners or agents.

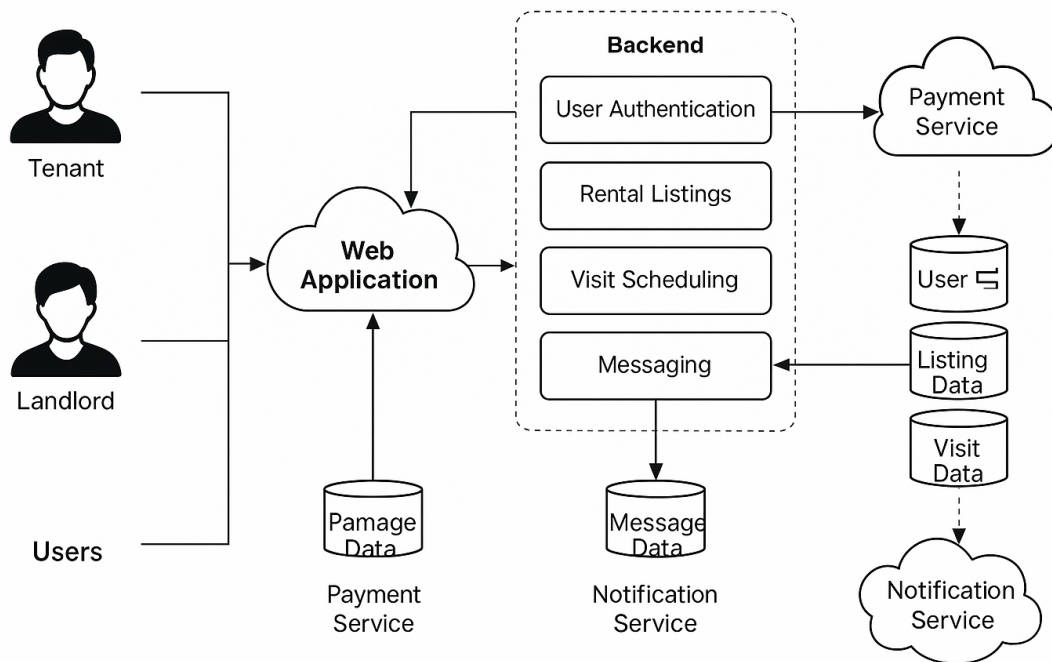
- Effortless Property Search and Booking
- End-to-End Rental Management
- Scalable User Authentication and Authorization
- Secure and Trackable Rent Payment Transactions
- Reliable Real-Time Chat and Notifications

Example - Solution Architecture Diagram:

26-05-2025

Solution Architecture

HOUSE HUNT



Project Design Phase

Proposed Solution Template

Date	26-06-2025
Team ID	LTVIP2025TMID59380
Project Name	House Hunt
Maximum Marks	2 Marks

Proposed Solution for DocSpot App

S. No.	Parameter	Description
1	Problem Statement (Problem to be solved)	Renters struggle with scattered listings, fake posts, and lack of communication tools. Landlords face difficulty in managing listings and tenant screening.

2	Idea / Solution Description	House Hunt is a digital platform connecting renters with landlords. It offers verified listings, smart filters, real-time availability, secure messaging, and rent management
3	Novelty / Uniqueness	<ul style="list-style-type: none"> - Verified property listings - Map-based property search - Built-in chat and document exchange - Online rent payment system - Admin verification module
4	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> - Increases trust in property listings - Reduces time and cost of finding housing - Promotes transparency between tenants and landlords - Helps reduce housing fraud
5	Business Model (Revenue Model)	<ul style="list-style-type: none"> - Freemium for basic users - Premium plans for landlords (featured listings, analytics) - Commission on rent payments - B2B white-label solutions for realtors
6	Scalability of the Solution	<ul style="list-style-type: none"> - Designed for individuals, agents, and property managers - Modular architecture for easy expansion - Future mobile app support - Ready for global expansion with multi-language and currency support

----- **Project Design Phase** -----

Problem – Solution Fit Template

Date	26-06-2025
Team ID	LTVIP2025TMID59380
Project Name	House Hunt
Maximum Marks	2 Marks

Problem – Solution Fit Overview:

The Problem–Solution Fit ensures that **House Hunt** effectively addresses the challenges users face when searching for rental homes. This validation phase is crucial before scaling the platform further.

Purpose:

- Simplify the home rental search and application process.
- Provide a reliable and verified listing platform.
- Offer tools for communication between landlords and tenants.
- Ensure secure transactions and protect user data.

Problem Statement:

Renters and landlords face the following challenges:

- Time-consuming and untrustworthy property search experience.
- Inaccurate or outdated rental listings.
- Lack of transparency in rental terms and tenant screening.
- Poor communication tools between tenants and landlords.
- Scattered listings across multiple platforms with inconsistent info.

Solution:

House Hunt provides an all-in-one rental solution featuring:

- Verified listings with real-time availability and detailed filters (location, budget, amenities).
- Map-based property discovery and photo/video tours.
- Secure tenant and landlord profiles with rental history.
- Built-in chat for direct communication between users.
- Online rent payment and document management system.
- Admin panel for handling disputes, verifying listings, and tracking usage trends.

-----User Acceptance Testing (UAT) Template -----

Date	26-06-2025
Team ID	LTVIP2025TMID59380
Project Name	HouseHunt: Finding Your Perfect Rental Home
Maximum Marks	

Project Overview:

House Hunt is an intuitive and reliable house rental platform that helps tenants easily find and rent homes while enabling landlords to list and manage properties. Key features include:

- Verified property listings
- Advanced search filters (location, budget, amenities, etc.)
- Property visit booking

- In-app chat between tenants and landlords
- Secure digital agreements
- Online rent payments
- Reviews and ratings
- Admin panel for user and listing moderation

Testing Period: 2025-0-23 to 2025-06-26

Testing Scope:

- Tenant sign-up and login
- Landlord registration and listing creation
- Search and filter functionality
- Visit scheduling module
- Messaging system between users
- Rent payment processing
- Digital agreement upload/signing
- Admin controls (user management, content moderation)

Requirements to be Tested:

- As a tenant, I want to search and schedule property visits easily.
- As a landlord, I want to list and manage rental properties.
- As a user, I want a secure platform with chat, digital agreements, and payments.
- As an admin, I want control over listings, users, and feedback.

Testing Environment:

Testing Environment

URL: <https://househunt.example.com>

Credentials:

- **Tenant:** test.tenant@example.com / tenant123

- **Landlord:** test.landlord@example.com / landlord123
- **Admin:** admin@househunt.com / adminpass

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	User Registration	1. Visit site 2. Click "Sign Up" 3. Fill & submit form	Profile saved	Account created, redirected to dashboard	[Pass/Fail]
TC-002	Landlord Listing Creation	1. Login as landlord 2. Add property details 3. Submit	Listing visible in search results	Account created, redirected to dashboard	[Pass/Fail]
TC-003	Property Search & Filters	1. Login as tenant 2. Use search & filters	Only matching listings displayed	Appointment will be booked	[Pass/Fail]

Bug Tracking:

Bug ID	Bug Description	Steps to reproduce	Severity	Status	Additional feedback
BG-001	Filter not working properly	1. Search with filters 2. Click apply	Medium	Open	Only partial results shown
...

Sign-off:

Tester Name: Pandi Venkateswarlu,Nandam Rakesh Naga Durga Prasad,Mutyala Hitesh

Date: 26-06-2025

Signature:Pandi Venkateswarlu,Nandam Rakesh Naga Durga Prasad,Mutyala Hitesh

Notes:

- Test across **multiple devices and browsers**.
- Cover **positive and negative** cases (e.g., invalid input, empty search, etc.).
- Track all bugs with reproduction steps and severity.
- Sign-off is required from the **project manager** and **product owner** before release.

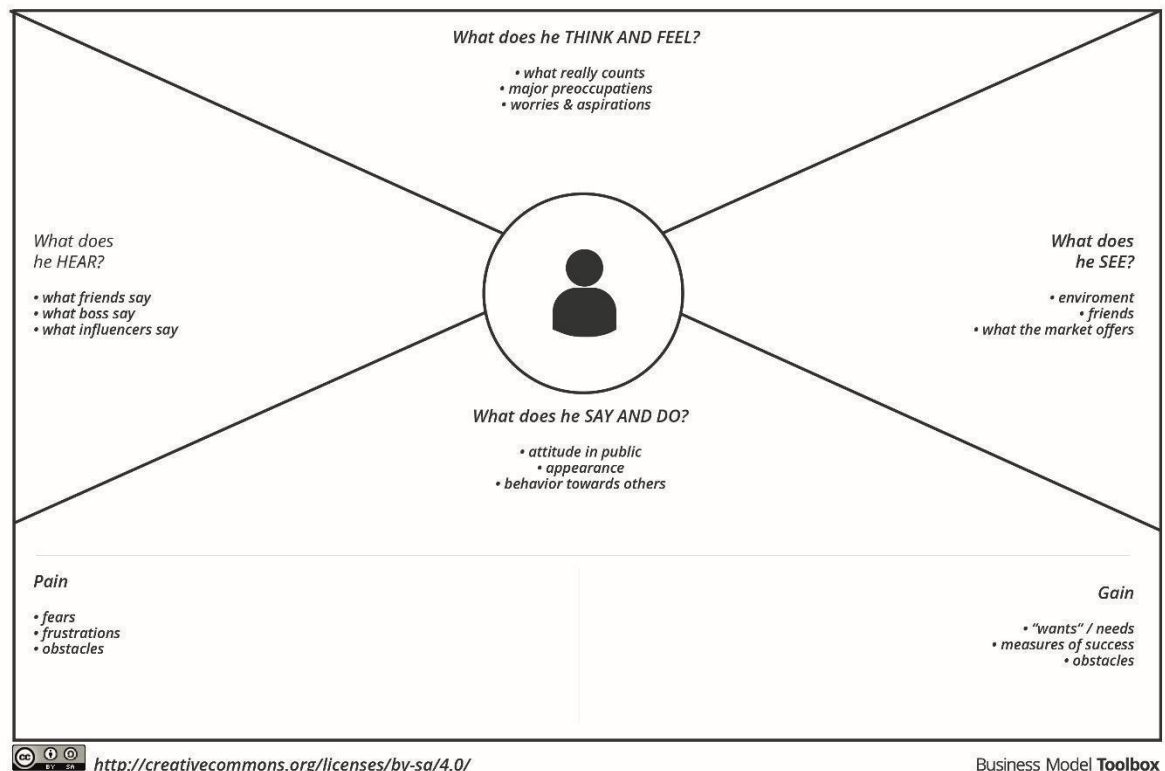
-----Ideation Phase-----

- **Empathize & Discover**

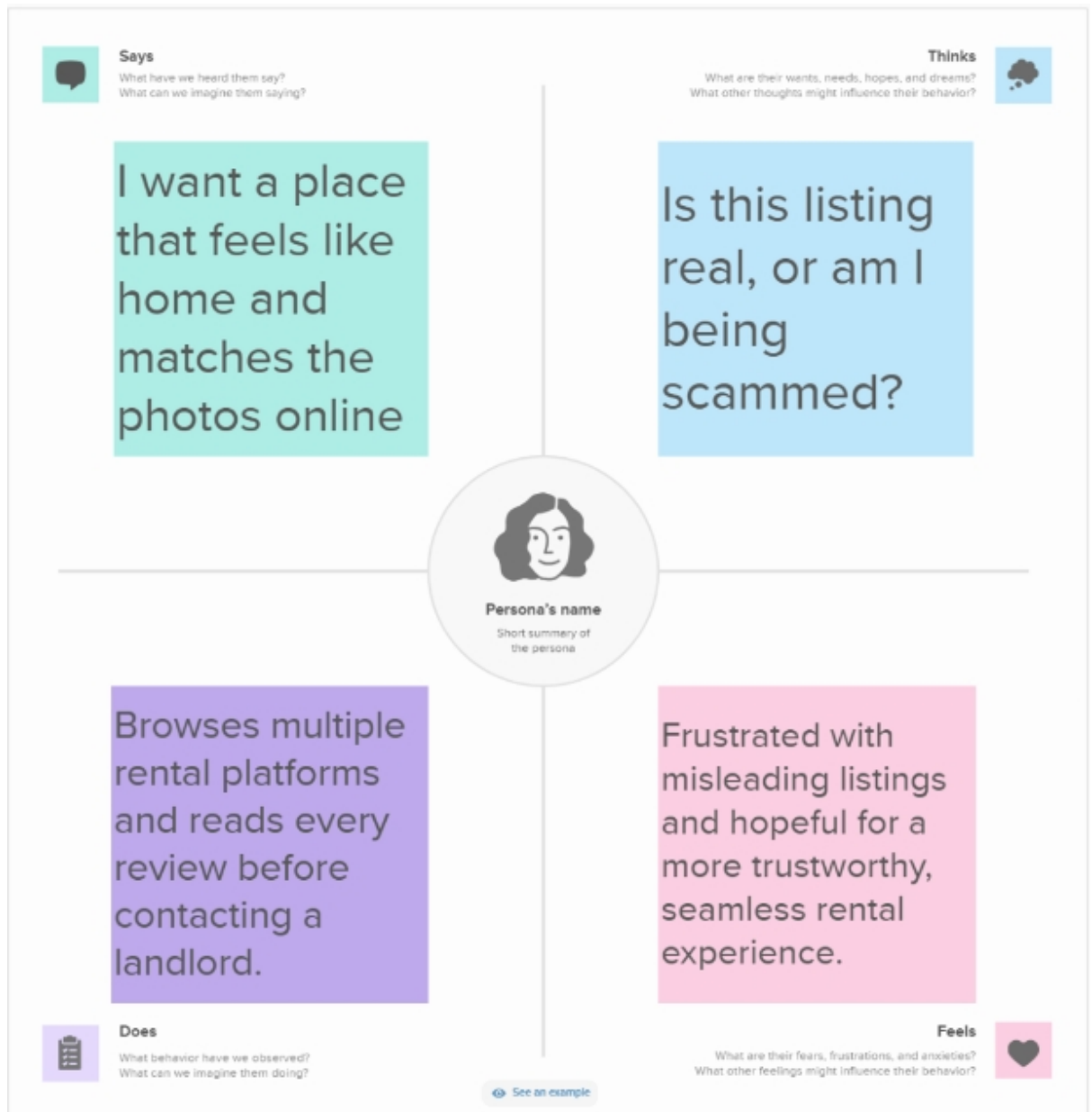
Date	22nd June 2025
Team ID	LTVIP2025TMID59380
Project Name	HouseHunt: Finding Your Perfect Rental Home
Maximum Marks	4 Marks

- **Empathy Map Canvas:**
 - An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.
 - It is a useful tool to helps teams better understand their users.
 - Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.
- **Example:**

Empathy Map



-
-
- Reference: <https://www.mural.co/templates/empathy-map-canvas>
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- **Example: LearnHub**

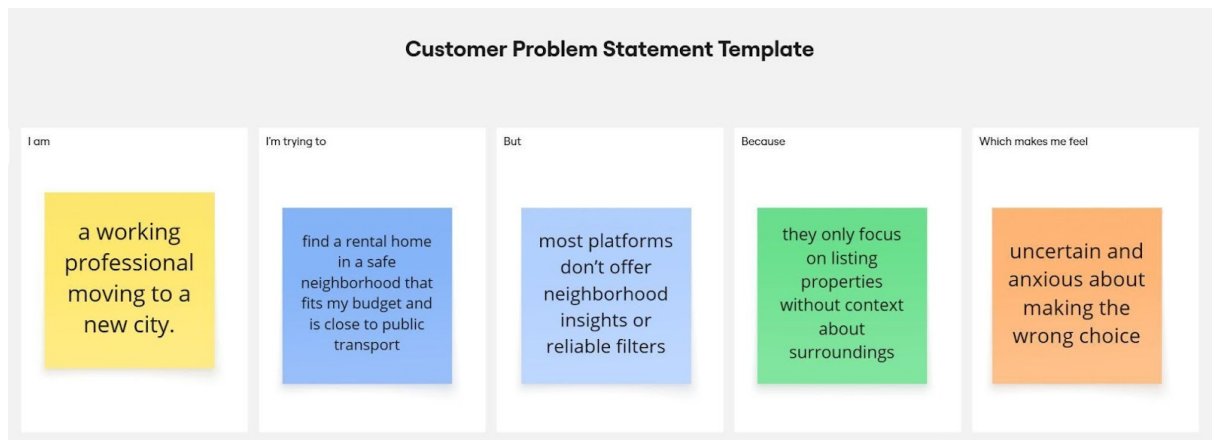


• -----Ideation Phase-----

Define the Problem Statements

Date	26 June 2025
Team ID	LTVIP2025TMID59380
Project Name	HouseHunt: Finding Your Perfect Rental Home
Maximum Marks	2 Marks

- **Customer Problem Statement Template:**
- To define the core problems freelancers face while searching for jobs online, and use those insights to guide the development of Freelance Finder.



- Reference: <https://miro.com/templates/customer-problem-statement/>

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a working professional moving to a new city.	find a rental home in a safe neighborhood that fits my budget and is close to public transport	most platforms don't offer neighborhood insights or reliable filters	they only focus on listing properties without context about surroundings	uncertain and anxious about making the wrong choice
PS-2	a student looking for an affordable rental near campus	find a verified listing with roommates or shared housing	there's no clear way to identify legit shared housing options	many listings are outdated or unverified	confused and frustrated during my search

-----Ideation Phase-----

Brainstorm & Idea Prioritization Template

Date	26 June 2025
Team ID	LTVIP2025TMID59380
Project Name	HouseHunt: Finding Your Perfect Rental Home
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Template

Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
 1 hour to collaborate
 2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

- Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.
- Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.
- Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#)

1 Define your problem statement

How might we help users quickly and confidently find rental homes that fit their lifestyle, budget, and preferences in a specific area?

5 minutes

PROBLEM

How might we (your problem statement)?

Key rules of brainstorming

To run an open and productive session

- Stay in topic.
- Encourage wild ideas.
- Defer judgment.
- Listen to others.
- Go for volume.
- If possible, be visual.

Need some inspiration?
Get a random selection of ideas, complete on a sticky note, or a relevant prior work.

[Open example](#)

Step-2: Brainstorm, Idea Listing and Grouping:

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

TIP

You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

Person 1



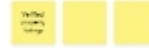
Person 2



Person 3



Person 4



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes



Step-3: Idea Prioritization

4

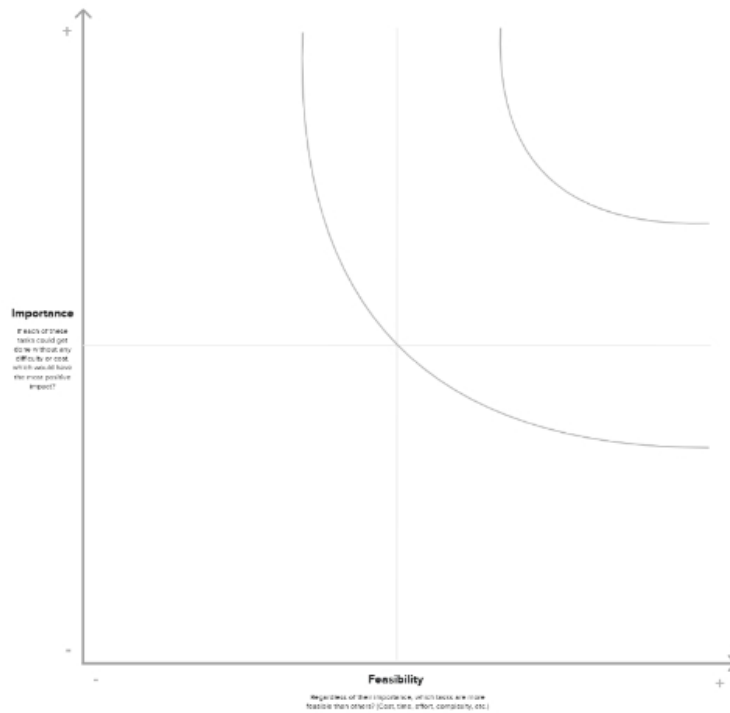
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⌚ 20 minutes

TIP

Participants can use their cursor to point to where they want to go on the grid. The facilitator can confirm the spot by using the share pointer holding the **Pin** on the keyboard.



5

After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

- 1 **Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- 2 **Export the mural**
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

- Strategy blueprint**
Define the components of a new idea or strategy.
[Open the template →](#)
- Customer experience journey map**
Understand customer needs, motivations, and obstacles for an experience.
[Open the template →](#)
- Strengths, weaknesses, opportunities & threats**
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
[Open the template →](#)

