Overview

- Problem Statement: International students face significant challenges when searching for accommodations in the US, including a lack of understanding of the local housing market, difficulty in finding trusted accommodations, uncertainty about fair pricing, and challenges in ensuring room availability that aligns with their preferences.
- User Workflow: Users start by entering their accommodation preferences and location on the app. They are then presented with a list of verified accommodations. Users can view multiple images and details of each listing, compare prices, negotiate, or book directly by paying a holding fee. Upon booking, both parties receive a confirmation.
- Core Features: The app includes educational content on the US housing market, verified listings to ensure trust, a price comparison tool to check fair pricing, and a preference matching system to align accommodations with user preferences.
- Software Platform: The app will be developed using React for the frontend and Supabase for backend services, supporting a responsive web application suitable for both desktop and mobile devices.

Cost Breakdown

Costs are calculated based on the estimated hours of a single full-stack developer at a rate of $25 / hour

Description	Hours	Total ($)
Compare Listing Prices	20	$500
User Login	8	$200
View Educational Content	12	$300
Browse Verified Listings	15	$375
Match Preferences with Listings	18	$450
Book and Confirm Accommodation	25	$625
Total	98	$2450

User Stories / Tasks

- Compare Listing Prices: As an international student, I want to compare prices of different listings so that I can find accommodations that fit my budget and ensure I am getting a fair price.
- User Login: As an international student, I want to be able to securely log in to the app so that I can access personalized accommodation services.
- View Educational Content: As an international student, I want to access educational content about the US housing market so that I can make informed decisions about accommodations.
- Browse Verified Listings: As an international student, I want to browse through verified accommodation listings so that I can trust the authenticity and safety of the options available.
- Match Preferences with Listings: As an international student, I want to filter and match listings based on my preferences such as location, budget, and amenities so that I can find the most suitable accommodations quickly.
- Book and Confirm Accommodation: As an international student, I want to book accommodations directly through the app and receive instant confirmation so that I can secure my housing efficiently.

Core Features

- Educational Content on US Housing Market: Provides international students with essential insights into the US housing market, helping them understand local regulations, typical lease terms, and common practices. This feature is crucial for empowering users with knowledge to make informed decisions.
- Verified Listings: Ensures all accommodation listings are verified for authenticity and safety, addressing the challenge of trust and reliability in housing options. This feature is vital to build user confidence in the listings provided on the platform.
- Price Comparison Tool: Allows users to compare prices of different listings to assess fair pricing. This tool is essential for helping users make cost-effective accommodation choices, directly addressing concerns about pricing transparency.
- Preference Matching System: Matches user preferences with available accommodations, ensuring that the listings presented align with the user's specific needs such as location, budget, and amenities. This feature is critical for personalizing the search experience and improving user satisfaction.
- Booking and Confirmation System: Enables users to book accommodations directly through the app and receive instant booking confirmation, thereby simplifying the reservation process. This feature is fundamental to ensure a seamless transaction from selection to booking.

Architecture Design

- Frontend-Backend Communication: The communication between the frontend and backend will be facilitated through RESTful APIs generated by Supabase. These APIs allow for efficient data retrieval and manipulation from the PostgreSQL database, ensuring smooth data flow and interaction within the application. The use of RESTful APIs also supports future scalability and integration with other services if necessary.
- Authentication: Authentication will be handled by Supabase's built-in authentication module, which supports email and password login out-of-the-box. This module simplifies the process of implementing secure login functionalities without the need for additional security infrastructure at the MVP stage. It also provides basic security features like JWT (JSON Web Tokens) for maintaining user sessions, which is sufficient for the initial launch.
- Web Application: The MVP will be developed as a responsive web application using React. React is chosen for its efficiency in building dynamic user interfaces and its vast ecosystem, which includes ready-to-use components that can speed up development. The application will be designed to be responsive, ensuring compatibility across both desktop and mobile devices. This approach eliminates the need for separate native apps during the initial phase, focusing on a single codebase that is easier to maintain and update.
- Backend Services: Supabase will be used as the backend platform. It provides a suite of integrated tools including a PostgreSQL database, authentication, instant APIs, and real-time subscriptions. Supabase simplifies backend development as it offers both database management and API creation capabilities, which accelerates the MVP development. It supports quick setup and scaling, which is ideal for the evolving needs of an MVP.
- Data Storage: Data storage will be managed using Supabase's PostgreSQL database. This relational database is suitable for handling structured data such as user profiles, accommodation listings, and booking details. PostgreSQL offers robust data integrity and support for complex queries, which are beneficial for the preference matching system and price comparison features of the app.
- Image Storage: Images of the accommodations will be stored using Supabase Storage, which integrates seamlessly with the backend and provides a straightforward solution for managing file uploads and access. This service supports direct uploads from the client-side, which reduces the complexity of handling file storage in the MVP.

Users

- International Students: This primary user group consists of international students looking for accommodations in the US. They use the app to enter their accommodation preferences and desired location, browse through verified listings, view detailed images and information about each property, compare prices, and book accommodations by paying a holding fee. The app helps them overcome challenges related to understanding the local housing market, finding trusted accommodations, ensuring fair pricing, and aligning room availability with their preferences.
- Accommodation Providers: This user group includes landlords, property managers, and housing companies offering accommodations suitable for international students in the US. They list their properties on the app, ensuring that the listings are accurate, detailed, and verified to build trust. Providers can manage their listings, respond to booking requests, and receive confirmations once a booking is made. This group benefits from the app by gaining access to a targeted market of international students and streamlining the booking and confirmation process.

User Flow: International Students

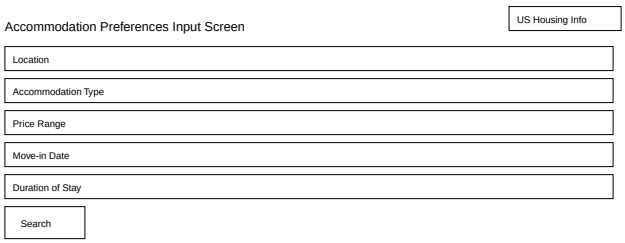
1. Enter Preferences and Location: International students start their journey by entering their accommodation preferences (such as room type, amenities, and budget) and the desired location in the US. This step is crucial for tailoring the search results to the user's specific needs.
2. Browse Verified Listings: Based on the entered preferences, users are presented with a list of verified accommodations. Each listing includes multiple images and detailed information about the property, ensuring transparency and trust in the options provided.
3. Compare Prices: Users can compare prices of different listings to find accommodations that offer fair pricing. This feature supports the user's decision-making process by providing a straightforward comparison tool.
4. Book Accommodation: Once a suitable accommodation is selected, the user can proceed to book by paying a holding fee. This action secures the accommodation and triggers a confirmation to both the user and the property owner, finalizing the booking process.

User Flow: Accommodation Providers

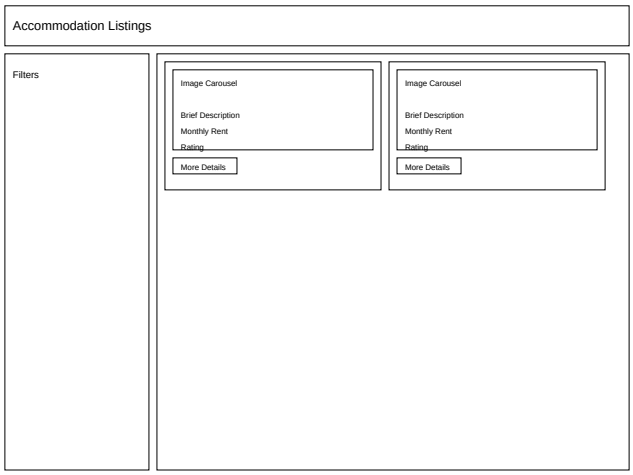
1. Registration and Profile Setup: Accommodation providers register on the app, providing necessary details such as name, contact information, and verification documents. They then set up their profile, which includes information about their business or personal background in property management.
2. Property Listing Creation: Providers add new property listings. This involves entering detailed information about the property, including location, type of accommodation, price, amenities, and uploading high-quality images. Each listing must be complete and accurate to ensure it passes the verification process.
3. Listing Verification: Once a listing is submitted, it undergoes a verification process to ensure the accuracy and trustworthiness of the information provided. This step is crucial to building trust with potential renters.
4. Managing Bookings: Providers receive and manage booking requests from students. They can view the details of each request, respond to them, and confirm bookings. The system allows for direct communication with potential renters to negotiate terms if necessary.
5. Confirmation and Payment Processing: Upon agreeing to a booking, the provider confirms the reservation in the app. The system then processes the holding fee or payment from the student, securing the booking. Both parties receive a confirmation notification.

Wireframe Screens

- Accommodation Preferences Input Screen: This screen is the initial interaction point where users specify their accommodation needs. The layout includes a form with multiple input fields: 1) Location (text input with auto-suggest for cities and neighborhoods), 2) Accommodation Type (dropdown menu options: apartment, shared room, private room, studio), 3) Price Range (slider to select minimum and maximum budget), 4) Move-in Date (date picker), and 5) Duration of Stay (dropdown for selecting number of months). A prominent 'Search' button is placed below the inputs to submit preferences. Additionally, there should be a link or button to access educational content about the US housing market, positioned at the top or as a sidebar for easy access.



- Accommodation Listings Screen: Following the input of preferences, this screen displays the search results. Each listing is presented in a card format containing: 1) Multiple images (carousel view), 2) Brief description, 3) Monthly rent, 4) Rating (out of 5 stars), and 5) A 'More Details' button leading to the full listing page. Cards are arranged in a grid layout for easy browsing. There should be filters on the side or top for refining search results based on new criteria without returning to the initial input screen. A comparison tool can be accessed from this page, allowing users to select multiple listings and compare them side-by-side.



- Accommodation Details and Booking Screen: This screen provides comprehensive details about a selected accommodation. It includes: 1) A gallery of images, 2) Detailed description, 3) Amenities list, 4) Location map, 5) User reviews and ratings, 6) Price breakdown, and 7) Availability calendar. Users can negotiate or book directly from this page. A 'Book Now' button leads to a payment gateway for paying the holding fee, and a 'Negotiate' button to start a chat with the landlord. Confirmation details are displayed post-booking, and both parties receive a confirmation via email, which is also shown on this screen.