Phase II: User requirements and application specifications.

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The purpose of this document is to give a detailed description of the project “Property-Express”, including a list of user requirements and application specifications.

Development model

The chosen development model for this project is the waterfall model.

The Waterfall model is a linear approach to software development that emphasizes planning, documentation, and the delivery of a fully functioning product. It is a good choice when the requirements are well understood, stable, and fixed, and there is little likelihood of changes during the development process. The model is also suitable when there is a clear and fixed timeline.

Due to our time constraints, we will define all the requirements and planning process before starting the development phase, which will take the most time and resources.

Product Perspective

The product being developed here is done so in the scope of a university course, thus it is mainly intended for learning purposes. Its main idea is based on the popular home searching website, AirBnB, with a lot of complex functionalities extracted. Our list of final functionalities is expanded below, and they are enough to have a minimal working product.

User Requirements

*User profile: Users should be able to create a profile with their personal information, payment preferences, and booking history, all stored privately. Homeowners should be able to create a profile and provide their business contacts publicly so that users can reach out for communication.*

*Search functionality: Users should be able to search for listings by location and date.*

*Wishlist: Users should be able to save different listings to their wishlist to review and compare later.*

*Reservation: Users should be able to easily reserve a listing they are interested in.*

*Host listing: Homeowners should be able to add their home to the web app, including a listing title and description, pictures, available dates, and any other relevant information.*

*Listing information: Each listing should include details such as location, price, availability, number of bedrooms/bathrooms, and other descriptions.*

User Classes and Characteristics

We identify the following main users:

Renter: A registered user whose main purpose and usage of the application is to find a short-term rental house. This user can access all main functionalities, but it is mostly interested in searching and making reservations.

Homeowner: A registered user whose main purpose and usage of the application is to list and manage his property, and rent it out to renters. This user can access all main functionalities, but it is mostly interested in listing houses and managing reservations.

Viewer: An unregistered user who searches browses the list of available houses, but has no access to reservations.

Application Specification

User profile

Priority: High

Description: Users should be able to create a profile with their personal information, payment preferences, and booking history, all stored privately. Homeowners should be able to create a profile and provide their business contacts publicly so that users can reach out for communication.

REQ-1: Allow users to register for an account by providing a valid email address and password.

REQ-2: Verify the email address by sending a confirmation email with a link to activate the account.

REQ-3: Ensure that users cannot register with an email address that is already in use.

REQ-4: Allow users to enter and store additional information, such as their name, address, and phone number, during the registration process.

REQ-5: Allow registered users to log in using their email addresses and password.

REQ-6: Store user session information securely and invalidate the session after a set period of inactivity or when the user logs out.

REQ-7: Allow users to stay logged in on a device for a set period of time using a "Remember Me" feature.

Search functionality

Priority: High

Description: Users should be able to search for listings by location and date.

REQ-1: The search feature should allow users to search for properties by entering the location name or by selecting it from a dropdown list.

REQ-2: The user should be able to search for properties by specifying their check-in and check-out dates.

REQ-3: The search results should be displayed instantly, as soon as the user enters their search criteria, without requiring them to click a search button.

REQ-4: The search results should be displayed on a map so that users can see the location of each property and how it relates to other properties in the area.

REQ-5: The search feature should allow users to search for properties by entering the location name or by selecting it from a dropdown list.

Wishlist

Priority: Low

Description: Users should be able to save different listings to their wishlist to review and compare later.

REQ-1: Allow users to add a listing to their wishlist by clicking a button or link on the listing page

REQ-2: Store the listing information in the user's profile and allow them to access their wishlist from any device.

REQ-3: Ensure that the user's wishlist is private and not visible to others.

REQ-4: Ensure that users can add multiple listings to their wishlist and remove them if necessary.

Reservation

Priority: High

Description: Users should be able to easily reserve a listing they are interested in.

REQ-1: Allow users to select a listing and make a reservation without requiring payment.

REQ-2: Allow users to specify the dates of their stay and the number of guests.

REQ-3: Provide a confirmation message that the reservation has been successfully made and send an email confirmation to the user.

REQ-4: Allow users to view their reservations and cancel them if necessary.

REQ-5: Send an email to the user when a reservation is approaching or when it has been canceled.

Host listing

Priority: High

Description: Homeowners should be able to add their home to the web app, including a listing title and description, pictures, available dates, and any other relevant information.

REQ-1: The user should be able to provide detailed information about their property, such as the location, type of property, number of bedrooms and bathrooms, and any additional information.

REQ-2: The user should be able to upload photos and videos of their property so that potential renters can get a clear idea of what the property looks like.

REQ-3: The user should be able to set up an availability calendar, which shows the dates when their property is available for rent and the dates when it is already booked.

REQ-4: The user should be able to set up pricing for their property, based on the time of year, the length of the stay, and any other relevant factors.

REQ-5: The user should be able to set up rules and regulations for their property, such as the maximum number of guests allowed, whether pets are allowed, and any other relevant policies.

REQ-6: The user should be able to accept bookings directly through the web app, with the ability to accept or reject booking requests as needed

Listing information

Priority: High

Description: Each listing should include details such as location, price, availability, number of bedrooms/bathrooms, and other description*s.*

REQ-1: Allow users to search for listings based on location and date range.

REQ-2: Display a list of available listings that match the user's search criteria.

REQ-3: Allow users to view detailed information about each listing, including photos, descriptions, and pricing information.

Other Nonfunctional Requirements

Performance Requirements

The web application should be fast to load and accessible for all users.

Safety Requirements

All user passwords will be hashed and stored.

Security Requirements

The web application will be available only for registered and verified accounts.

Software Quality Attributes

The web application should be built following certain testing and development rules for ensuring that it is as bug-free as possible, and also not cause any major system malfunction.

Business Rules

In addition to renting and listing houses, a user will be eligible for a set of various benefits, such as discounts, which are awarded based on loyalty. All user interactions, such as reservation and house listings, will be stored and counted towards increasing the ‘loyalty’ of the user. There will be various sets of discounts offered to the user based on their total number of loyalty points.

An example is: if a user reserves three times using the app, they are awarded a discount for their fourth reservation.

A complete list of these rules will be compiled after the first block of app development.