Sri Lanka Institute of Information Technology

ONLINE MARKETPLACE FOR HOMESTAYS

Information Technology Project (IT2080)

Assignment 01 – Project Proposal

Batch ID – Y2S2 – Group 4.2

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Contents

Client Background

Our client N.T.D.T. Nallaperuma is an innovative young person that comes up with new ideas. Currently, he is an IT teacher. As a second income he is providing SAAS services. By prioritizing user experience, trust, and convenience, he is trying to provide quality platforms for users to make their day-to-day life easier and try to solve problems in current situation in the market.

He saw an opportunity in property rental market and try to give a solution for people who are looking for rental properties and property owners. He come up with an idea to provide a platform that users to find properties Additionally, He is trying to provide services like transporting, legal services, and find nearby furniture's showrooms if users need it.

Problem and Motivation

Problem

1) Physical payment:
   Physical payments are not secure and fast. Most people are now moving with new technologies and moving to online payment methods. Due to the pandemic situation and travel restrictions happening from time to time, people have faced a lot of difficulties when doing payments.

2) Time-Consuming:
   It's very difficult to find a good property rental these days and very time-consuming to find the proper one. when customers are at a long distance from the property place going there physically is very time-consuming. when customers need more services like legal support and find transport they must go to different people in different places.

3) Competition in the property renting market:
   Competition in the property renting market is another problem for developing the system, In some time periods mainly January, December months people are relaxing their minds and they are organizing journeys then they forced to find homestays or transportation then they have to face competition to find homestays, but actually, some people fail that competition then they wasting their time, so then the seasoning period is mainly involved for that.

4) Lack of trust:
   In most of the sites, we are giving the information to fulfill our requirements which means if we want to find homestays, we find the platform by using browsers we give our valid information, but that site is fake, we must waste our time and money to involving that find that sites. we cannot find trustworthy platforms that are helping illegal things also.

5) Fast Tech Growth:
   when developing a system, we cannot guarantee to all the people who are using this system are technological people, when they are using the new technology, they feel they do not anything about that and they feel they are isolated to that, and they reduce social interaction and social skills.

Motivations

1) Secure

   The frequency of security breaches in company systems has significantly increased over the last couple of years, mostly due to a lack of awareness of the sensitive information that users have submitted. Protection of data and privacy is more important than anything else, so it is right in front of the eyes of those in control. Data security is not only necessary for delivering a better user experience, but it may also be very important financially.

2) Usability

   Using an enterprise solution like this can have a big impact for anyone interested in improving their user experience. According to the survey, because of automation, users are looking for a consistent experience and even making sure that back-end operations are as efficient as feasible. Anyone can easily browse via this program with just a little understanding of technology. Despite a shortage of staff, the system is accessible every day of the week and has an unlimited usage limit.

3) Fast and reliable

   An enterprise system can lessen not only information technology and training costs but also the time and effort needed by employees to complete daily duties and obligations. Due to its effectiveness, the Enterprise system can eliminate labor-intensive, repetitive tasks, freeing up team members' time and attention for other, more crucial tasks. Technically speaking, this system is faultless, has no glitches, and has great dependability

4) Competitors online

   If don't have a website, it's very probable that their rival has. If this is the case, you are missing out on opportunities to attract new clients and stay at the top of their minds. It is essential that no chances are lost and taken advantage of by the opposition.

5) Creditability

   Having an online presence is essential for providing clients with important information and responding to their questions, as well as providing a high-quality, user-friendly website.

6) Growth opportunity

   Websites are generally useful for creating a location where possible investors may be directed. It displays the goals of our business, its accomplishments to date, and its potential for the future.

Aims and Objectives

Aims

- ❖ Owner who are willing to rent-out their homes or properties for period.

- ❖ A major concern for owners and users is safety and security. This can include features such as verified user profiles, secure payment systems and we provide the legal support.

- ❖ The platform should ensure that all listings meet certain quality standards to provide a good experience for users.

- ❖ To differentiate itself from competitors, the platform may offer additional services such as transportation, the user's experience.

- ❖ Generate revenue through commissions and other fees charged to property owners, vehicle owner, showroom owner, lawyers for listing and booking their properties on the site.

Objectives

- ❖ To provide convenient payment gateway for customers.

- ❖ The web application should have an intuitive and easy-to-use interface that allows property owners and renters to quickly search, find and book properties based on their preferences.

- ❖ The web application should be scalable to accommodate growth and the addition of new features and services.

- ❖ Using the search and filtering options gives customers a more efficient way to find the exact property that they are looking.

System Overview
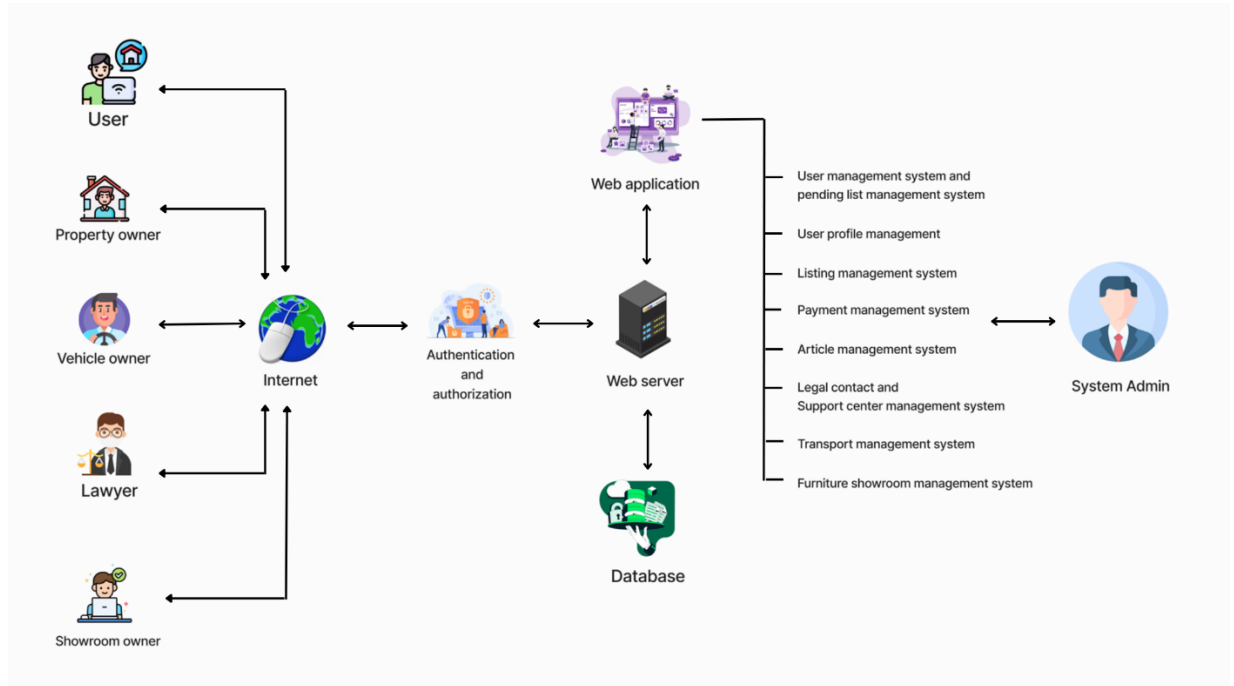
The above diagram shows the basic architecture of our system. The MERN stack will be used to implement the solution for our client requirements. The system can be accessed by different users such as user, property owner, vehicle owner, lawyer, and showroom owner. Each user will have different levels of access granted based on their service.

The frontend will be done using React JS and Prime React UI library. An API request will be delivered from the frontend to the backends' Express JS component in the Node JS environment. The API request will be received by the API validators in the backend, and after being approved there, it will be routed to the authorization middleware and then to the endpoint's service. The function for that endpoint is provided by the service. Lastly, the node libraries will send a database API call to the Database to access it.

1. Listing Management System

The main purpose of the Listing management system is property information management. This system allows property owners to provide details about their property, including name of the property, category, location, and images, as well as key details. Property owners can update their listings as needed, ensuring that the information is always accurate and up to date. If needed they can delete the property as well through their dashboard.

As well as property owners can search their added listings through their dashboard. Another important aspect of a listing management system is the ability to view reservations made through the website. This feature helps property owners know when a booking is made, so they can get ready to make sure the renter has a good experience. Through their dashboard they can view the revenue that they have made.

Additionally, through the listing management system it can generate personalized income reports. These reports provide property owners with a clear and summary overview of their rental income, it helps property owners to keep track of their money and make smart business choices.

overall, the listing management system is very important for our website. It makes managing listings easier, helps track rental income, and ensures a good experience for renters and property owners.

Non - Functional Requirements

User Friendly: The system should be user-friendly with a clear interface, informative error messages, and helpful documentation. This will attract and retain customers for the startup.

Compatibility: Be compatible with a range of web browsers and devices to ensure that all users can access it.

East to Access: Easy to access and use from anywhere, whether on a desktop or mobile device. This includes ensuring the website is responsive and optimized for mobile devices.

Availability: The system should be always maintained with minimum periods of downtime or maintenance. Have to take backup for recovery purpose if there any data lost.

2. Payment Management System

In this function manage all reservation payments, service provider charges and advertising charges also site Owner's commission of our web application. who are the looking a rental house or rental vehicle if they interest any services in our web application, they can reserve that through our web application. Customer can reserve that by adding valid payment details and Booking details. In this scenario they want payment gateway. Customer can pay their reservation payments via the credit/Debit card or Pay here Option. They add their card, update card details, and remove their existing credit or debit card from our system. After the payment process when done customer can view their payment report. After a customer makes a reservation, it is update on their profile page. When the customer cancels the booking, the payment made by him will be refunded. It is done through a third-party payment method. Once a refund is issued the system admin will update their profile page.

After the customer pays and completes their booking, the amount due to the service provider and the amount due to the site owner will be updated on his page. Apart from that, in our web application, advertisements about places where Lawyer service and Furniture Service can be obtained as additional services have been included. There a subscription fee is charged from the service providers. The service provider of lawyer service and furniture service will have to pay the annual charge at the time of placing their advertisement. All these payments are updates on site owner dashboard.

As a payment admin, he or she can search the transaction they want also they can filter the transaction report and get the specific transaction details. Property owner, Vehicle Owner, Payment admin can generate the previous transaction Details Report.

Non – Functional Requirements

Security: In managing payments we take appropriate measures to protect user data and prevent unauthorized access using encryption and authentication protocols.

Usability: The payment system should be user-friendly and intuitive, with easy-to-use navigation and clear instructions. The system should also provide users with feedback on the status of their payments, such as confirmation messages.

Performance: We do payment system should be fast and responsive, with quick processing times and minimal lag.

Reliability: Establish clear payment terms. As an example, clearly define payment terms, including payment methods, cancellation policy, and refunds.

Responsible: We make sure our pricing is transparent and clearly stated.

3. User Profile Management System

The user profile comprises two main sections, namely User Accounts, and Bookings, to facilitate user navigation and streamline the management of their information. The User Accounts section is divided into three subsections, including Personal Information, Login & Security, and Privacy. The Personal Information subsection is responsible for handling users' personal information, such as their name, email, profile picture, contact number, and address. Users can modify, add, or delete any of this information as needed. The Login & Security subsection provides users with the ability to update their passwords and disconnect any linked social logins for enhanced security. The Privacy subsection allows users to permanently delete their accounts as desired.

The Bookings section comprises two subsections, namely Property and Transport. The Property subsection enables users to view detailed information about their booked properties, including their booking history and relevant details. Users can also modify their booking information, such as their contact details or name, and generate fully detailed booking documents. If users cancel their property booking, they will receive a notification regarding the acceptance of their cancelation request. The Transport subsection enables users to view information about their requested transportation services, including the destination, date, and contact number. Users can modify any of this information and generate fully detailed transport booking documents. If users modify their transport destination or vehicle type, they will receive a notification through their user account once the transport partner accepts the changes. Overall, the user profile sections are designed to enhance user experience, streamline their interactions with the platform, and ensure the efficient management of their personal and booking details.

Non-Functional Requirements

User Friendly: The system should have a user-friendly and clear interface to notifying users about their current progress.

Easy to access: The system should easier access for any kind of technological user. It should not be more complex to find anything that relevant to user's account.

Availability: The booking information should be available when ever user required without any interruption.

4. Blog Management System

Information about all the services available to customers through our website is published in the blog site. The information required by the customer in an online marketplace includes information about the home stays facilities, show rooms, transportation facilities as well as the information required in the legal framework. A blog post is written by the system admin and a unique blog id is obtained for the relevant blog post. To give customers a very good forecast, the most essential information about home stays facilities, show rooms, transportation facilities and lawyer details are included and thus the blog post can maintain a very good relationship with the audience. The articles for all these aspects are also updated by admin according to the changes on the respective days. When admin create the blog and all the blogs are display with in my dashboard then if admin want to delete any blog post admin can click the delete icon and doing the own task.

Using the topic given during the creation of the blog post, the admin can get report of the dates that published the posts and comments written by customers related to the published blogs. Admin can search relevant categories as want by using the topics of blogs then admin can view relevant blog post.

Non-Functional Requirements

Usability: Web site should maintain user-friendly designs and be accessible by the users.

Availability: Ability of the users to access the web site and use that as they expect.

Accurate: Contents that are publish through the web site should be reliability, truthfulness and correctness.it makes a better attraction with the users.

Performance: Better performance web site allows users to interact with it quickly. Important is minimizing the loading and response time.

Efficiency: If web site does what should it do utility and effectiveness goals are fulfilled.
User-friendly: A web site should make it easy for users to interact by any device and get information as effortlessly as possible.

5. Furniture Showroom Management System

Furniture showroom management system designed with the interests of both customers and showroom owners in mind Consumers can use technology to rapidly discover the nearest furniture store in a rental house to them, allowing them to make well-informed decisions about where to buy furniture.

The system works by charging showroom owners a subscription fee for the ability to advertise their showrooms on the network. After paying the fee, the owner gains access to a service listing form where they may add information about their showroom, such as the type of furniture they sell, where they are located, when they are open, how to contact them, and other relevant details.

owners can add a showroom to their profile by clicking on an "Add showroom" button. A pop-up form appears where owners can enter the details of their showroom, such as the name, location, images, contact numbers, and the category of furniture that customers can buy. Once the owner submits the form, it goes through an approval process by the administrator before it can be published in the system.

After the showroom is approved and published, the owner can enable an "add furniture" button in their profile. Clicking on this button allows the owner to add furniture to their showroom. The furniture should be categorized and displayed in the place reserved for the showroom so that customers can easily browse the furniture.

Within the function, the owner can perform a variety of operations, such as deleting or amending showroom details, as well as deleting or modifying specific furniture items. The owner can also add new furnishings to the system as needed and includes a search option where the owner can enter furniture ID and obtain information about that particular item. Finally, the owner can generate a report that shows what types of furniture were installed within a specific time period.

Non-Functional Requirements

Maintainability: The system should be easy to maintain and update, to ensure that it remains up-to-date and relevant.

Usability: The system should be user-friendly and easy to use.

Availability: The system should be available at all times or have minimal downtime to ensure that showroom operations are not interrupted.

Performance: The system should be responsive and perform well

Compatibility: The system should be compatible with the showroom's other systems and tools.

6. Transport Management System

Transport Management System is a software solution that is designed to manage and optimize the transportation of goals or people from one location to another also it is providing real-time visibility, and optimization capabilities and improve customer service and gain a competitive advantage in the marketplace. In this function all the owners can add their vehicle through the system, owner must enter their credentials and logging to their own profile. then they are clicking the add vehicle button and give the vehicle information and add that vehicle through the web site. if they want to delete or update any information from the vehicle, they can do this task within 24 hours. when we click the add vehicle button it is not directly add in the system because someone can give wrong information about the vehicles then within that issue admin filter all the given information of the vehicle and he detect if it valid details he given access for adding vehicle to the system, then it displaying our profile as active, if the admin not giving access yet it display as pending. Then the customer can view details as pending. Then the customer can view details through the web site and view the number of reservations and search vehicle if they giving the vehicle ID, Then we finally generate revenue report as well.

In this function all the owners can add their vehicles through the system, that using this system owners can rent their vehicles and get the profit for using this system. If the owner want to add new vehicle to the system they cannot directly do that because they want to get a access from the admin, then the admin give the access to the owner to add the vehicle to the system, with in their profile it display as the activate but the admin not giving the access the profile display as pending. within the function the owner can delete vehicle details and update vehicle details as they want. The owner can search the vehicle details giving the vehicleID and get the vehicle details. finally, they can generate revenue report.

Non – Functional Requirements

Efficiency: Can help ensure that the transport management system is reliable, scalable, secure, usable, and maintainable. This, in turn, can help improve the overall performance of the system, reduce costs, and enhance the user experience.

Availability: The TMS should be always available for use, with minimal downtime for maintenance or upgrades.

Accuracy: The TMS should be able to handle a large volume of data and transactions without slowing down or crashing

Maintainability: A TMS should be designed with a modular and scalable architecture that allows for easy maintenance and upgrades.

7. User Management System

Access any of the system's features, users must login to the system via sign in page. If login, Users must first sign up and require having a user account. All users have options to register as a normal user, property owners, showroom owners, vehicle owners and lawyers. In this function, Admin creates social logging also that allow to customers to access the system without creating another password or username. Here, logging authentication is the way of confirming the identity of a user while they access their profile on a particular platform. The system checks whether the data provided by the users is correct and the validity of the data is also checked.

After singing users, all user details will be updated in user management system. Admin can view all categories of registered users and the details about them and can check all user's data separately. If there are any requirements for adding new users or admins, users can be added with giving users' first name, last name, NIC, phone number, address and can be made changes if have some updates about user details. Furthermore, can be deleted user account If user violated system rules and policies or if they need to remove their account. Searching date can be got registered users' names of relevant date. Provide a monthly report containing data on all users who have registered within giving month to the system.

Overall, this system ensures that user registration and management is done efficiently and securely, and all users' information is updated and monitored by the administrator to maintain the integrity of the system.

Non – Functional Requirements

User-friendly: The user management system should be user-friendly and intuitive, with easy-to-use interface and clear instructions.

Accuracy: The system should be able to validate separate category of the user details when they sign up to the system.

Maintainability: Admin can access user account. If violated system rules or polices, admin can delete those user's account.

8. Pending List Management System

Pending listing management has a responsibility to give a trustworthy service to users. Using manual checking about content in the requests submitted by property owners, vehicle owners, lawyers, and furniture showroom owners. When checking content, if found that contain irrelevant or not satisfying there is an option to decline that goes to rejection listing on the website. If it accepts its status change 'pending' to 'Active' in listing page and published to customers. This process ensures that only relevant and trustworthy listings are displayed to users, promoting a positive user experience and maintain the integrity of the website's content.

Non – Functional Requirements

User-friendly: The pending list management system should be user-friendly and intuitive. This can be achieved by having an easily accessible interface and clear instructions to check separate lists.

Accuracy: Pending listing management ensure all information provide to user accurately and up-to date.

Security: The system can use key derivation to password encryption and encourage users to create strong passwords that avoid reusing passwords across multiple accounts. The system can enforce password complexity requirements, such as a minimum length, a mix of uppercase and lowercase letters, numbers, and special characters.

Reliability: Searching content of the post can provide users with better and more relevant information.

Availability: Information should be available when it requires to check. As an example, if reject some post in pending list when it requires to access it should be available.

Maintainability: When checking content, if found that contain irrelevant or not satisfying there is an option to decline that goes to rejection listing on the website.

9. Legal Contact and Support Center Management System

Legal Contact Management

Legal contact can be reached through our system, as legal documents are necessary when renting a home. According to the Legal Contact Management provides to users for contact lawyers physically because not satisfaction security purpose for legal documents. A lawyer is the primary user of this function. After lawyer registered to the system who want to publish their personal qualifications and contact details before publishing, they must pay a subscription fee. After paying, the service listing form will be enabled for lawyers. The lawyer fills and submits the form then lawyer must wait to be getting verification status from administrator. After the administrator accepts, the service will be published in the system. Then represent all details and user can contact lawyers by that information. The lawyer can delete and update their personal qualifications and contact details.

Non-Functional Requirements

User friendly: provide a user-friendly environment interface for lawyers to access their details easily and users can contact lawyers quickly.

Easy to access: lawyer can easily change and add their details through the system.

Availability: There are numerous lawyers available for users to contact and provide their services.

Usability: The system should be easy to use and intuitive, allowing users to quickly and easily access the information and support they need.

Support Center Management

The Support Center manages and assists in the resolution of all user problems with the system. It is essential for provide a quality customer support experience. Effective support center management involves addressing customer inquiries and support requests promptly and professionally. This can help to ensure that your customers feel heard, valued, and respected. The Support Center managed by an administrator. User is submitting the form; the administrator can respond to the problem that has been reported. The user is submitting form information such as name, email, phone number, address, date, priority level, and problem. Moreover, the Q&A section is created with problem details and solution statuses such as "Pending" and "Solved" in the user profile. The administrator can view user details and problem details with the "Reply" and "Delete" buttons. Administrator selects the Reply button then administrator should be able to send a reply. Once the problem is resolved, the solution status is updated to "Solved" in the user's Q&A section. The administrator is also able to view reply to details and delete previous users. If necessary, user details can be retrieved by searching through the submitted date. Additionally, the system can generate a report within a given time period, providing a summary of the submitted problems and user details.

Non-functional requirement

Maintainability: The system should be easy to maintain and update, to ensure that it remains up-to-date and relevant.

Usability: The system should be user-friendly and easy to use.

Availability: The system should be always available or have minimal downtime to ensure that showroom operations are not interrupted.

Performance: The system should be responsive and perform well.

Compatibility: The system should be compatible with the showroom's other systems and tools.

Methodology

Implementation Method

- ❖ Agile Manifesto
- ❖ Insomnia

Tools and Technologies

1. Tools
   - ❖ VS Code
   - ❖ Figma
   - ❖ Adobe XD
   - ❖ Postman
   - ❖ Insomnia
   - ❖ MERN

2. Technologies

   - ❖ Front-end development – ReactJS, Prime React UI Library

     o ReactJS – React is a free and open-source front end JavaScript library for building user interfaces based on components. Design simple views for each state in your application and react will efficiently update and render just the right components when your data changes.

     o Prime react – Prime React is a collection of pre-built UI components for React, designed to help developers build responsive web applications quickly and efficiently. It offers a range of pre-styled components that can be easily customized, making it a popular choice for building complex web applications.

   - ❖ Back-end development – NodeJS, Express

     o NodeJS - Node JS is a cross-platforms is an open-source server environment that can run on windows, Linux, Unix, macOS and more. It is a back-end JavaScript runtime environment, runs on the V8 JavaScript Engine and executes JavaScript code outside a web browser.

     o Express - is a back-end web application framework for building RESTful APIs with Node.js, released as free and open-source software. It is designed for building web applications and APIs. It has been called the de facto standard server framework for Node.js.

o MongoDB - MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas.

o API – Google Map, Social Logins

3. Version Control System
   ❖ GitHub

4. Project Management
   ❖ Click UP

Literature Review

Existing system has different type of feature but looking that features customer cannot satisfying to using for those things. Most of the system are developing for including common features, but according to the user requirements they have not to proper way to rent their property and get a profit through that. But using this platform customers have to face lots of difficulties, such as they have not trustworthy platform for renting their properties because some people give the invalid information and customers get the wrong idea, and they have not any platform to get the profit to renting them, and nowadays platform are developing for view the properties physically and it is time consuming .Then we developing the system to solve that issues , so developing that system we can give the customer to trustworthy system when the adding homestays or vehicles then approving it to from the admin we can get the trustworthy system and customer and work with through the system efficiently.

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Appendix

Listing Managemen
Legal Support
Blog Managemen
Support Center
User Managemen
Transport Managemen
User Profile
Showroom Managemen
Payment managemen
API
Backend
Databas