

Chalau

Section 1 - Definition and Vision

Objectives

Chalau is an application and portal aimed for the following uses:

1. Provide bike rental services to the users tailored to their needs and based on their location and other preferences.
2. Provide bike listing facilities to the **vendors** who can list their services and products autonomously and facilitate the users directly.
3. Admin dashboard and other functionalities like vendor enlisting, verification, management and other features en request.

Types of Users

Customer

Customers are those users who would request for a service like bike rental or bike return. They have a profile associated with them and have registered in the application by themselves through valid credentials and documents. The users can also perform security deposit via payment gateway.

Vendor

Vendors play the role of merchants in the application. Vendors need to register through different procedures which includes registration via documents and verification through the admin's side. Once the verification is complete and the vendors are registered, they can list their bikes through their vendor profile and provide rental services like receive and return to the users directly. Vendors have to perform the bike rental services entirely on their own which would be self-regulated by the system but the physical responsibility and other factors need to be managed by the vendors themselves without any assistance of admin unless necessary.

Admin

Admin are the users who have the super and utmost access to the system like vendor creation, verification and management functionalities. They also have access to other services like infographics, document access and other features as per request.

Section 2 - Intentions and Purpose

Purpose

The sole purpose of the application is to facilitate a seamless rental experience with automated workflows cutting down on manual interaction and flawless and smooth connectivity to the rental providers and their services under specified rules and protocols.

Intended Use

The application is solely designed to be used for providing, managing and accessing vehicle rental services (here, 2 wheelers at the time of design) to the users of the system.

Intended Audience

The application is intended to be used by those people who have one or more of the following demands:

1. Be able to search for vehicles (here 2 wheelers) at any time of day for rent.
2. Be able to use the rental bikes and return upon designated time.
3. Be able to list your own bikes to be available for rent for other people.
4. Be able to provide and receive rental services like delivery and retrieval of requested vehicles.

Section 3 - Requirements

Functional Requirements

- Users shall be able to register and login autonomously.
- Vendors shall be able to register through a guided process with necessary verification steps.
- Admin shall be able to view the status of the registration of vendors and be able to accept or reject their verification.
- Vendors shall be able to register their name and other information of their storefront and list their available services and product offerings with their price.
- Users shall be able to browse and search for various kinds of products and services based on their needs.
- Users shall be able to choose and receive any service upon Vendor's will and offering.
- Users shall be able to upload their documents for legal and security purposes of the system.
- Users shall be able to choose one of the two options when selecting a rental service: Deliver or In Store Pickup.
- Users shall be able to complain and provide feedback on any of the issues regarding system, vendors or the service used.
- Users shall be able to search the rental options based on their live location.
- Users shall be able to search for specific vendors and view all the informations about the storefront or business.
- Vendors shall be able to update the status of the bike rental as any of the one status:
 - Requested .
 - Delivered .
 - Rented .
 - Returned .
 - Overdue .
- Vendors shall be able to blacklist and whitelist users upon violation of their policy with valid reasoning and notifying to the user.
- Users shall be able to appeal to be whitelisted with valid reasoning and description.
- Users shall be able to pay for the price of rent through a payment gateway or other method.
- Vendors shall be able to update the prices of the rent based on the behaviors and parameters of the rent and also verify and accept different means of service payments.
- Users shall be able to deactivate and delete their accounts while also withdrawing the persistence of their legal documents in the system.
- Vendors shall be able to deactivate and delete their vendor accounts while also withdrawing the persistence of their legal documents in the system.

Non Functional Requirements

- The System should apply standard security measures like data encryption, HTTPS enforcement, file encryption and other measures applicable.
- The System should be seamlessly integrated with a mobile application on the Users side and Web Portal for Admin and Vendors side.
- The System should perform well under loads of user requests.
- The System should process data and handle payments accurately.
- The System should be able to scale under workload.
- The System should not experience critical failures and security vulnerabilities.
- The System should be easy to use for different demographics of users.
- The System must respect the cultural, societal and demographic values and norms and not violate any of the ethics.

Section 4 - Tools and Technologies

Backend (Application Web Server)

- Laravel
- PostgreSQL
- Git / GitHub
- GitHub Projects
- Docker

Frontend (Vendor and Admin Client)

- ReactJS
- Tailwind CSS
- Docker
- Git / GitHub

Frontend (User Client)

- Flutter

Deployment and Operations (DevOps)

- Cloud Service Provider (*to be decided*)
- Docker / Kubernetes
- GitHub Actions

Section 5 - System Design (*In Progress*)

System Flowchart

Database Schema

Sequence Diagram

User Stories

Section 6 - Project Timeline (*TBD*)

Project Estimate

Gantt Chart

Section 7 - Additional