UX/UI Case Study
Enhancing Usability & Bookings for Let's driEV

Let's driEV(Community)

Electric vehicle rental company

Overview

Role:
Product Design (UX/UI)

Time Line:
11 weeks · 80+ days

Tools Used:
Figma (Lucid Chart | Illustrator | Photoshop)

Description

Let's driEV is an electric scooter rental platform began as an initiative to help people acquaint themselves with micro-mobility and the benefits of EV. Being Gabungan first electric scooter rental provider startup, driEV has been providing pocket-friendly, light-weight, comfortable, noise-free and second rides to its customers through its easy book and quick delivery mechanism. It aim to revolutionize micro-mobility and address the needs of the public through sustainable, green and future-proof modes that are accessible, affordable and shareable for all. It also hope to combat climate change and global warming and preserve our resources for tomorrow.

Problem

Let's driEV operates through two primary platforms: a public-facing website and a community app exclusive to college students where our EV stations are located. In these stations, our on-ground executives assist customers by providing electric vehicles for rent based on per-minute and per-kilometer usage. However, the absence of a direct booking feature within the community app poses a significant challenge.
Before the presence of the application, Bookings are managed manually by station executives through a backend portal. This process leads to delays, limited accessibility for students, and a lack of transparency in vehicle availability. It is crucial to streamline the booking experience to ensure convenience and operational efficiency.
This gap highlighted the need for an integrated, user-friendly in-app booking system tailored to the specific context and constraints of college campus usage.

Solutions

To address the lack of a direct booking feature within the community app, I designed the end-to-end user flow and built the first phase of the in-app booking experience. The goal was to make the vehicle rental process seamless, intuitive, and accessible directly to college students using the app.
The solution enhances the app's usability by eliminating the number of steps needed to complete a booking and clearly communicating vehicle availability (pricing (based on minutes and kilometers), and state-specific messaging). The new booking module was integrated with the existing backend system to ensure real-time updates and smooth coordination with on-ground station executives.
As a result of this solution, that app saw a 25% increase in bookings compared to the previous manual backend booking process—demonstrating clear user adoption and operational improvement.

Project Goals

- Enable direct EV booking through the community app for college students
- Reduce dependency on manual backend bookings by station executives
- Improve booking speed and overall user convenience
- Ensure real-time vehicle availability and transparent pricing
- Integrate the booking system with the existing backend portal
- Design a user-friendly and intuitive interface tailored to student needs
- Increase overall bookings and user engagement through the app
- Maintain operational consistency the same station returns within the design.

The Process

Empathize · Define · Ideate · Prototype · Test

01 / Empathize - Exploring the user needs and marketing requirement.

Overview

- Research Approach
- Customer Interviews

Research Approach

To ensure the solution was grounded in real user needs and business goals, I followed a mixed-method research approach:

- Stakeholder Interviews
  - Conducted discussions with on-ground station executives and internal operations teams to understand the existing manual booking workflow, challenges, and limitations.
- Competitor Analysis
  - Studied top college students who frequently rent EVs to gather insights on their pain points, expectations, and booking behaviors.
- Contextual Inquiry
  - Observed the booking process at the station to identify real-world friction points and uncover unmet needs in the current system.
- Competitive Analysis
  - Analyzed competitor apps to benchmark features, booking flows, and user experiences relevant to short-distance vehicle rentals.
- Survey Data
  - Conducted a survey within the student community app to validate assumptions around preferred booking times, app usage habits, and feature expectations.
- Journey Mapping
  - Mapped out the current and ideal booking journeys to visualize user touchpoints, emotions, and opportunities for improvement.

This research foundation ensured that the solution was aligned with both user expectations and operational realities.

Interview Highlights

- Booking Process
  - Most students expressed frustration over the need to contact station executives or wait in person to check vehicle availability and make bookings.
- Uncertainty in Availability
  - Students mentioned they often walked to the station only to find no vehicles available, which wasted their time and affected their plans.
- Desire for Transparency
  - Users expressed that real-time visibility into how many vehicles were available and what the estimated cost would be based on usage.
- Limited Booking Flexibility
  - Users wished they could plan ahead and pre-book a vehicle for a specific time especially during peak hours.
- Trust in Digital Experience
  - Most interviewees felt comfortable using an app for bookings and were confident it would save them time and offer more control.

02 / Define - Establishing the User's Needs and Problems

Overview

- Persona Development

Persona Development

Based on insights gathered from user interviews and continuous research, I created a primary persona to guide design decisions and ensure the solution met real user needs.

Beharis Prasantha
Age: 24
Occupation: Businessman
Education: Graduate

Personality

Introvert	●——○	Extravert
Sensory	●——○	Intuitive
Thinker	●——○	Feeler
Judger	●——○	Perceiver

Goals
- Commute quickly between classes, hostel, and nearby locations
- Avoid waiting in queues or relying on station staff
- Know availability and cost before deciding to rent

Tech Comfort
- Highly tech-savvy, uses mobile apps regularly for payments, food, and transport
- Prefers self-service tools over human interaction when possible

Frustration
- Uncertainty about vehicle availability
- No way to book in advance or reserve a vehicle
- Manual booking process feels outdated and time-consuming

Behavioral Traits
- Time-sensitive and prefers quick solutions
- Likely to rent during peak hours (morning and late afternoon)
- Expects modern digital services as part of campus life

03 / Ideate - Creating the framework

Overview

- Wireframe
- User Flow

Ideation

With clear insights from research and a defined user persona, I moved into the ideation phase to explore possible solutions that could streamline the booking process within the community app. The goal was to reimagine the user experience while respecting technical and operational constraints (like same-station returns).

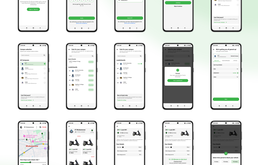
Key Focus Areas
Direct Booking Flow:
Design a fast, intuitive flow for booking EVs directly from the app, reducing reliance on station staff.
Real-Time Availability:
Display live vehicle availability to prevent unnecessary visits to the station.
Transparent Pricing:
Clearly show cost estimates based on duration and distance before confirming a booking.
Smart Booking Defaults:
Auto-suggest booking durations based on average usage patterns (e.g., 30 mins, 5 km).
Single-Station Constraint Handling:
Reinforce the same-station return policy subtly within the flow to manage user expectations.

Design Principles
While designing for in-app EV booking experiences I followed a set of core design principles to ensure the solution was user-friendly efficient, and aligned with both student behavior and business constraints.
1. Mobile-First
Prioritized a clean, minimal interface to reduce cognitive load and ensure quick decision-making—especially important for time-sensitive student users.
2. Clarity & Transparency
Ensured all key information—vehicle availability, pricing, and return policies—was visible upfront, reducing guesswork and increasing trust.
3. Speed & Efficiency
Streamlined the booking flow to minimize taps and reduce friction, ensuring users could complete their rental in under 30 seconds.
4. Consistency Across Platform
Maintained visual and interaction consistency with the rest of the community app to create a seamless and familiar user experience.
5. Mobile-First Approach
Designed with mobile-first principles, considering that students primarily access the service through smartphones.
6. Error Prevention & Guidance
Built in feedback mechanisms, edge-case alerts, and confirmations to prevent errors—especially regarding the same-station return requirement.
7. User Empowerment
Put control in the hands of the students—allowing them to check availability, see costs, and make bookings independently.

Brainstorming & Idea Generation
Crazy 8s:
Sketched 8 different screen layout ideas in 8 minutes to explore variations in flow, hierarchy, and interaction design.
How might We (HMW) Questions:
Framed design challenges as open-ended, opportunity-focused questions to guide ideation:
- How might we make EV booking as fast as ordering food online?
- How might we prevent students from arriving at the station with no vehicles available?
- How might we keep students informed of pricing in a way that builds trust?

Mind Mapping:
Explored the range of core booking needs—availability, timing, pricing, confirmation, and station constraints—and expanded ideas around each node.
User Journey Friction Mapping:
Identified all friction points in the current manual process and generated solution ideas to eliminate or reduce them.

User Flow


Start Flow
Start
Check Availability
Pick Station
Pick Time
Pick Vehicle
Confirm
Booking
Booking Confirmed
Success
Error
Cancel
Booking Cancelled
Cancel
Cancel
Cancel