Charging Station Management App

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Abstract

The transition towards sustainable transportation solutions has led to a surge in the adoption of electric vehicles (EVs). As EVs become more prevalent, the need for efficient and accessible charging infrastructure becomes paramount. This project presents the development of a cross-platform mobile application aimed at streamlining the management of electric vehicle charging stations. The application offers an intuitive interface and powerful functionalities to enhance the efficiency of EV charging operations.

The Charging Station Manager App serves as a hub for users to conveniently access vital information about charging stations, optimizing their EV charging experience.

ADMIN:
Admins oversee the charging station database, ensuring accurate and update location details, rates. They manage terminals, making adjustments based on station capacity and user demand. Admins also monitor reservations and facilitate communication through notifications.

- Charging Station Database Management
- Terminal Management
- Terminal Oversight
- Send Notification

END USER:
End users are the individuals who use the app to locate charging stations, selecting terminals, and manage their charging sessions.

- Charging Station Search
- Terminal selecting
- Charging Session Management
- Receiving notifications

Technology

Frontend : Flutter,HTML/CSS

Backend : Django , Python

Main Project

User Authentication and Profile:

- Allow users to create accounts and log in securely.

Charging Station Listings:

- List charging stations with key details like location, availability, and charging rates.

kWh Consumption Tracking:

- Record and display the kWh consumption for each charging session.
- Provide historical data for users to analyze their energy usage.

Cost Calculation:

- Automatically calculate the cost of each charging session based on kWh usage and rates.

Viewing Available Terminal:

- Show the user the available terminal for the selected station.

Confirming terminal:

- After selecting a terminal, provide a confirmation screen where users can review their terminal details

Notifications:

- Send push notifications to users about terminal confirmations.

<u>Charging Station Map :</u>

- Display a map showing the locations of nearby charging stations.

<u>Cost Calculation and Payment :</u>

- Automatically calculate the cost of each charging session based on kWh usage and rates.
- Integrate secure payment options for users to complete transactions.

<u>Notification :</u>

- Notifications to users when they are near a charging station.

<u>Help and Support :</u>

- Offer a help section with FAQs and contact information for user support.

<u>Feedback and Ratings :</u>

- Enable users to leave feedback and ratings for charging stations and their experiences.