

chargeEase - EV charging station App

Lolith Thomas, Irene Tresa Mathews, Arun Shaji

February 29, 2024

Abstract

In response to the pressing need for sustainable transportation solutions, this project proposes the development of a user-centric mobile application aimed at revolutionizing the electric vehicle (EV) charging experience. Leveraging the cross-platform development framework Flutter, the application offers seamless compatibility across iOS and Android devices, ensuring widespread accessibility for EV owners. Backed by Firebase, a sophisticated database management system, chargeEase efficiently handles user profiles, charging station details, and real-time updates. The app serves as a comprehensive solution for EV owners seeking efficient charging options. Key functionalities include user profile management, real-time availability updates, personalized charging recommendations, and seamless coordination between charging station hosts and EV owners. By prioritizing user experience, accessibility, and sustainability, chargeEase aims to accelerate the adoption of electric vehicles and contribute to the reduction of traffic congestion and carbon emissions. Through the integration of cutting-edge technology and user-centric design principles, this solution paves the way for a more environmentally conscientious mode of transportation in the modern urban landscape.

Problem Statement

In light of the increasing adoption of electric vehicles (EVs) and the critical need for sustainable transportation solutions, there exists a significant challenge in efficiently locating and accessing EV charging stations. Current solutions often lack comprehensive features and user-friendly interfaces, leading to frustration and inconvenience for EV owners. Additionally, the lack of real-time availability updates and personalized recommendations exacerbates the issue, hindering the widespread adoption of EVs. Therefore, there is a pressing need for a user-centric mobile application that leverages modern technologies such as Flutter and Firebase to streamline the process of finding, reserving, and navigating to nearby charging stations. This app should prioritize user experience, accessibility, and sustainability, aiming to revolutionize the EV charging experience and accelerate the transition to electric vehicles worldwide.

Problem Domain

App development (Flutter and Firebase), API integration, Real-time tracking.