

ZapNest: A Hub where EV's come to recharge- "Zap" + "Nest"

Abstract

ZapNest is an intuitive, web-based platform designed to streamline electric vehicle (EV) charging access across India. Developed using standard technologies—HTML, CSS, JavaScript, Django, and Google Maps API—it intentionally avoids artificial intelligence to remain lightweight, transparent, and accessible. The platform enables users to locate nearby charging stations, filter by plug type, plan routes, and make secure UPI-based payments through QR codes. Its clean interface and practical design make it ideal for both daily commuters and long-distance travelers.

The project is driven by the growing need for reliable EV infrastructure visibility, especially in semi-urban and rural regions where charging options are limited. By addressing challenges such as range anxiety, connector compatibility, and fragmented payment systems, ZapNest offers a real-world solution that supports sustainable mobility. It also provides station owners with tools to manage listings, contributing to a more organized and user-friendly ecosystem.

Beyond its utility for EV users, ZapNest serves as a learning platform for developers and students, offering hands-on experience in full-stack development, mapping APIs, and clean tech innovation. The methodology includes frontend and backend development, integration of public station data, UPI payment setup, and iterative user testing for refinement.

ZapNest stands apart from existing solutions by focusing on simplicity, regional relevance, and non-AI architecture. Its scalable design allows for future expansion into multilingual support, solar-powered station integration, and data analytics for infrastructure planning. Ultimately, ZapNest contributes to India's green transition by empowering users, developers, and planners to build a more connected and sustainable EV future.