**Dr. D. Y. Patil Pratishthan’s**

**D. Y. Patil Institute of Master of Computer Applications and Management**

**(M.C.A. Programme)**

(Approved by AICTE, New Delhi & Affiliated to Savitribai Phule Pune University)

**Dr. D. Y. Patil Educational Complex, Sector 29, Pradhikaran, Akurdi, Pune – 411 044**

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Synopsis

Submitted by

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**1.Introduction of the Project**

* The increasing adoption of electric vehicles (EVs) necessitates an efficient and user-friendly EV Charging Station Booking System.
* This system aims to streamline the process of reserving and utilizing EV charging stations, ensuring a seamless experience for EV owners.
* The EV Charging Station Booking System is designed to revolutionize the way electric vehicle owners charge their vehicles.
* It offers convenience, efficiency, and contributes to a sustainable future by promoting EV adoption.

**2.Existing System**

* Currently, EV owners face challenges in locating available charging stations and booking them in advance. This often leads to inconvenience and uncertainty, hindering the widespread adoption of electric vehicles.
* Due to limited available stations and progress in usage of Electric Vehicles there is time trouble to EV users.
* Waiting in queue for charging Vehicles can turn peoples mindset to use fuel consuming cars.

**3.Proposed System**

* The proposed EV Charging Station Booking System addresses these challenges by offering a centralized platform.
* It allows users to find nearby charging stations, check availability, and reserve a charging slot in advance.
* Additionally, the system provides real-time status updates and navigation assistance to the chosen station.

**4.Need of System**

* **Enhanced Convenience**: Users can plan their charging sessions, reducing waiting times and ensuring their EVs are always ready.
* **Optimized Resource Utilization**: Charging stations can efficiently manage their resources, minimizing idle time and maximizing revenue.
* **Environmental Impact**: Promoting EV adoption contributes to reduced greenhouse gas emissions and air pollution.

**5.Module Specification**

* **User Registration and Authentication**: Users create accounts and log in securely.
* **Charging Station Locator**: Helps users find nearby charging stations with real-time availability data.
* **Booking and Reservation**: Allows users to book a charging slot at their chosen station.
* **Payment Integration**: Facilitates secure payment for reserved slots.
* **Real-time Updates**: Provides users with status updates on their reservations and charging sessions.
* **Navigation Assistance**: Integrates with GPS to guide users to the selected charging station.
* **Admin Dashboard**: Offers station owners an interface to manage their station's availability and view analytics.
* **Customer Support**: Enables users to seek assistance and report issues.

**6.Technology Used**

**Hardware specification:**

* RAM: 1GB & above
* ROM: 512MB & above
* Processor: Intel or Ryzen

**Software specification:**

* Windows(OS)
* XAMPP
* Frontend: HTML, CSS, JavaScript for the user interface.
* Backend: Java, MySQL.
* Authentication: JWT (JSON Web Tokens) for secure user authentication.
* Real-time Updates: WebSocket for instant status updates.
* Navigation: Integration with Google Maps API for location services.
* Admin Dashboard: Custom-built dashboard using React.js.
* Customer Support: In-app chat or ticketing system.