

EVPLUG

ABSTRACT

In today's world we can see a drastic raise in the usage of electric vehicles. Due to the high expense of fuel and inflation people are forced to use the electric vehicles even for commuting long distance. Think about a scenario where 10 people are commuting on there EV and they need to charge their vehicles on their way. Since there're only limited number of chargers available in our state, we need to make sure that the charger is free when we reach the charging place. What if all the chargers are used by some other vehicles. We need to wait till a port is free and our time is precious. This is the scenario where this EVPLUG project has an importance. Using this application, we can view what's the closest charging station, how many free ports are available and when does these used ports may free. We can even select a time slot to book and arrange our travel based on that. We can create a wallet that can store points that may add up at each charge thus save a few bucks. This will ensure people to use only our application in the future to save more and thus makes profit for the website too.

USERS

There are mainly 3 types of users for the system,

- Admin

The main user of the system is an admin user who has full power on system. He/She can manage the list of charging stations, their managers and customers.

- Manager

Each charging station is a separate unit aligned with the EV Plug website. There is a person to manage there respective charging stations. This can include addition/removal of charging ports, listing new amendments, daily or monthly report generation etc.

- Customer

Customer is the prime user who select and book stations in their day to day life.

FUNCTIONALITIES

- ✓ User Authentication.
- ✓ Selecting and Booking Charging points based on time slot.
- ✓ Locate nearby charging ports based on current location using by google map.
- ✓ Displaying status of the charging ports either empty or used.
- ✓ Integrate different models of vehicle.

- ✓ A wallet for each user which adds point on every charge.
- ✓ Used EV sales and service and its details like mileage, rate, location etc.
- ✓ EV maintenance and service.
- ✓ Trip Advisor
- ✓ Driver Card With Qr Code Identification
- ✓ Wash, AC charger sale and battery sale

Features:

Authentication: This website is protected from unauthorized access. User's will have an option to register an account and login to the website to their respective account. An unauthorized user also can view information on the website like nearby charging station, free ports etc. Once they try to book the port, they'll be navigated to the login page.

Search charging station: This will be a simple search functionality. Users can search the nearby charging station or a list of charging station in a particular area. The list of data can be displayed on a clickable bootstrap card and navigate to booking page.

Charging port booking: This will be the main feature of this website. Any user who rides an EV can view how many charging ports are free and book a port by selecting a time slot. After a successful booking user will be navigated to a payment gateway.

Wallet: Every registered user has an auto generated built-in wallet that may save some additional bucks on each charge. Users can recharge the wallet by transferring an amount directly from the bank (Dummy wallet + Bank account).

Roadside Assistance: This functionality helps the user to contact in case of an emergency. In normal case there's a chance to breakdown our vehicle or our fuel tank may empty. Since EV uses electricity to charge up, a quick refill is not possible and vehicle needs to be transported to a nearby charging station. In this situation, customer can take advantage of this facility in the website and make necessary arrangement to transport EV to the nearby changing station registered on the EVPLUG website.

Battery Sales: Different electric vehicles use different types of battery that may range from Lithium Ion to rechargeable alkaline battery and that too comes in different kWh. This website offers the users to purchase different types of battery based on their vehicle types. The UI may have options to select different battery and there'll be a predefined battery type based on the user's profile.

Trip Advisor: This feature on the website monitors the amount of left-over charge in the EV and predict the nearby locations which the EV can move. This may include sight seeing locations, major cities etc.

EV sales & Service: This allows the customer to search for an EV which can be either rented out or purchase compared to a lower market price. Users can also post their EV details on the website an act as a portal to sell their EV

FUTURE SCOPE

- ✓ Predicting distance to cover based on the model of vehicle and amount of charge.
- ✓ Generate a QR code and leaves to payment.
- ✓ Google Map.
- ✓ Sending notification to users mobile phone after completing specified amount of charging.
- ✓ Charging station probability to get fire using the previous datas of weather, heat and amount of current etc.

NATURAL SYSTEM STUDY

People arrives at a charging station and check whether the port is empty or not. If the port is free they can directly plug in their vehicles. If not, they have to wait till the port is free.

TECHNOLOGIES USED

- ✓ FE - HTML,Bootstrap,JS
- ✓ BE - Php
- ✓ DB - MySQL