

SIT725
APPLIED SOFTWARE ENGINEERING

Use Case: Finding the Nearest Charging Station

- **Actor:** EV Driver
- **Precondition:** The user needs to be logged in and must enable their device location functions to continue.
- **Main Flow:**
 1. The user picks the option from the menu to locate nearby charging stations.
 2. The system carries out queries to locate accessible stations through the user's present location within an established distance range.
 3. The system presents a list of charging stations which are ordered according to their proximity to the user.
 4. The user can choose a charging station to either access additional information or start navigation directions.
- **Postcondition:** A supported charging station will receive the selected user after they get directions to their destination.

User Stories

As an EV driver, I want to find the nearest charging station quickly so that my vehicle's downtime can be minimized.

User Requirements:

- The system needs to connect to GPS locational data of the user.
- The system needs to deliver current availability reports for all registered charging stations in real-time fashion.
- The chosen application shows both the estimated arrival time along with distance information for the specified charging station.

Use Case: Managing the Charging Station Data

- **Actor:** Admin
- **Precondition:** The admin currently accesses the administration dashboard before the test begins.
- **Main Flow:**
 1. The administrator moves to the section that manages charging stations.

2. In the administration dashboard the administrator selects to modify or perform deletions along with new additions of charging station records.
 3. During addition the administrator provides new charging station information that includes location and number of sockets and socket types and availability and payment options.
 4. The admin uses the system to modify existing information regarding charging stations during updates.
 5. Before deletion the admin must first choose a charging station then confirm the removal.
 6. After validation the system executes an update of database records.
 7. After completing either updates or deletions the system shows a success confirmation.
- **Postcondition:** The charging station database shows updated information which reflects all modifications performed by the administrative staff.

User Story for Admin

- **As an admin,** I want to manage charging station information efficiently within the application, so that I can ensure the data is accurate and updated.

User Requirements for Admin

- The system needs to authorize access to charging station management tools exclusively for authentic administrators.
- The system needs to enable administrators to enter new charging station information which includes location and capacity alongside availability and payment processing options.
- The system requires complete input data validation for proper database update procedures.
- The system needs to maintain audit logs for tracking every modification made to charging station information.

Design Specification

System Overview

- The system needs to maintain audit logs for tracking every modification made to charging station information.
- The solution maintains every required dataset which features user information alongside charging station positioning data with socket count information together with types, availability statistics and payment features and transaction logs along with historical analytics data at its disposal.
- The system includes an online interface which enables system administrators to sustain operation of all charging stations alongside user accounts management as well as view auditing transaction logs for compliance purposes.

UI Specifications

- Users can perform station searches through either location-based or other specified criteria.
- The application lists charging stations which include fundamental information about distances along with availability and basic cost information.
- The website provides safe payment options for users to select PayPal or credit cards or Stripe and finalize transaction information.
- Through this interface people can modify their account data and edit their vehicle details together with payment protocols and application configuration settings.

Reference:

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