**EV Charging Station CRM**

**Industry**Energy & Sustainability / Electric Vehicle (EV) Infrastructure

**Project Type**B2C & B2B Salesforce CRM Implementation

**Target Users**EV Users, Charging Station Operators, Managers, Salesforce Administrators

* **Problem Statement :-**

The rapid adoption of electric vehicles (EVs) has highlighted the urgent need for efficient charging infrastructure, as users often face challenges such as difficulty in finding available charging slots, inconsistent payment options, and unexpected station breakdowns, while operators struggle with managing performance, tracking payments, and ensuring customer satisfaction. The lack of a centralized system leads to reduced user trust, operational inefficiency, and slower EV adoption. To address these issues, this project proposes an EV Charging Station CRM that streamlines booking, payments, maintenance, and customer engagement, thereby empowering both users and operators while contributing to global sustainability goals.

* **Use Cases :-**

1. **Charging Slot Management** - Use a custom Charging\_Slot\_\_c object to centrally manage all slot bookings with details like station, user, status, and charging times.
2. **Payment & Billing Management** - Create linked Payment\_\_c records for each session, enabling secure digital payments, refunds, and revenue tracking.
3. **Station Monitoring & Maintenance** - Track station health in Station\_\_c, auto-generate Maintenance\_Ticket\_\_c on breakdowns, and notify users with alternate options.
4. **User Interface & External Access** - Provide operators an LWC for monitoring, and build a customer portal for slot booking, history, payments, and API-based hardware integration.
5. **Loyalty & Engagement** - Introduce a GreenPoints\_\_c reward system for users, with discounts and offers for loyalty.
6. **Reporting & Analytics** - Enable reports and dashboards for usage insights, revenue trends, peak hours, and maintenance KPIs.
7. **Security -** Configure Profiles & Permission Sets to restrict access based on operator, manager, or customer roles.

* **Tech Stack :-**
  + **CRM Platform :** Salesforce CRM (Service Cloud), Experience Cloud
  + **Custom Objects :** Charging\_Slot\_\_c, Station\_\_c, Payment\_\_c, Maintenance\_Ticket\_\_c, GreenPoints\_\_c
  + **Automation :** Apex Triggers, Flow Builder, Apex Classes
  + **User Interface :** Lightning Web Components (LWC)
  + **Integration :** REST/SOAP APIs with POS & Charging Hardware
  + **Analytics :** Salesforce Reports & Dashboards
  + **Deployment :** Change Sets, Apex Unit Tests, Scratch Orgs
* **System Architecture :-**

**[ EV User ] [ Operator / Manager ]**

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**| Customer Portal (Experience Cloud) | Operator Dashboard (LWC)**

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**---------------- Salesforce CRM ----------------**

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**| Custom Objects: |**

**| - Charging\_Slot\_\_c |**

**| - Station\_\_c |**

**| - Payment\_\_c |**

**| - Maintenance\_Ticket\_\_c |**

**| - GreenPoints\_\_c (optional) |**

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**| Automation: |**

**| - Apex Triggers / Flow Builder |**

**| - Apex Classes |**

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**| Analytics: |**

**| - Reports & Dashboards |**

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**[ Integration Layer: REST / SOAP APIs ]**

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**[ EV Charging Hardware / POS System ]**

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**Charging Stations (Slot availability,**

**usage logs, payments, maintenance data)**