Project Title-: APPLICATION TO HELP ENGINEERING WORKS

1. Project Overview

The goal of this project is to use Salesforce to create a comprehensive Customer Relationship Management (CRM) solution that will make managing client data for engineering projects easier. Automating and effectively managing the data related to engineering projects like fabrication, shed construction, and pipe lining—including material needs, measurements, and cost estimation—is the main goal.
By utilizing Salesforce's powerful tools and capabilities, including Object Manager, Process Builder, and Apex Triggers, the objective is to increase operational efficiency, improve data accuracy, and provide a smooth user experience. By offering an organized way to monitor client projects, employee information, and procedures related to different engineering projects, this application seeks to assist engineering firms.

2. Introduction

This project focuses on developing a Salesforce application to efficiently manage client information and streamline workflows for engineering projects. The application is designed to capture comprehensive details, including company information, owner and contact details, worker assignments, and material requirements, along with their specific measurements. A key feature of the application is its ability to automatically calculate pricing based on the provided material specifications and measurements, ensuring accuracy and reducing manual effort.

The application supports various engineering works, including **Fabrication**, **Shed Construction**, and **Pipe Lining**. Each of these areas encompasses specific processes:

- **Fabrication** involves activities such as Drilling, Welding, Cutting, and Folding.
- **Shed Construction** focuses on building sheds.
- **Pipe Lining** includes pipe repairing and replacement.

By integrating these processes into a unified platform, the application enables precise tracking and management of all engineering workflows. This project leverages Salesforce’s robust features to deliver an efficient, scalable solution tailored to the unique needs of engineering firms.

3. Objectives

Business Goals:

1. Create an organized system for tracking client and project information.
2. Automate pricing calculations for materials based on measurements and specified requirements.
3. Improve workflow visibility for processes like Drilling, Welding, and Pipe Repairing.
4. Ensure scalability and adaptability for future engineering needs.

Specific Outcomes:

- Develop a centralized database for client and worker information.
- Implement price calculation logic within Salesforce based on input materials and measurements.
- Enable tracking of Fabrication processes, Shed Construction stages, and Pipe Lining details.
- Enhance decision-making with accurate, real-time data insights.

4. Salesforce Key Features and Concepts Utilized

1. **Object Manager:**
    - Custom objects for **Clients**, **Workers**, **Materials**, **Projects**, and **Processes**.
    - Relationships between objects to maintain data consistency.
2. **Lightning App Builder:**
    - Create custom user interfaces for easier data entry and visualization.
3. **Flow Builder (Instead of Apex):**
    - Automate material price calculations and workflows for task tracking.
    - Set up notifications or record updates based on user actions.
4. **Validation Rules:**
    - Ensure data entry is correct and matches expected formats (e.g., valid measurements).
5. **Reports and Dashboards:**
    - Enable real-time insights for project progress, cost tracking, and worker productivity.
6. **Process Builder:**
    - Automate key business processes, such as triggering notifications when project stages are completed or tracking deadlines.

5. Detailed Steps to Solution Design

Data Models:

- **Custom Objects:**
  - **Clients:** Stores company details, owner, and contact information.
  - **Workers:** Tracks worker details and assigned processes.
  - **Projects:** Links to clients and tracks fabrication, shed construction, and pipe lining tasks.
  - **Materials:** Includes material type, quantity, measurements, and cost.
  - **Processes:** Details specific tasks such as Drilling, Welding, Cutting, Folding, etc.

User Interface Design:

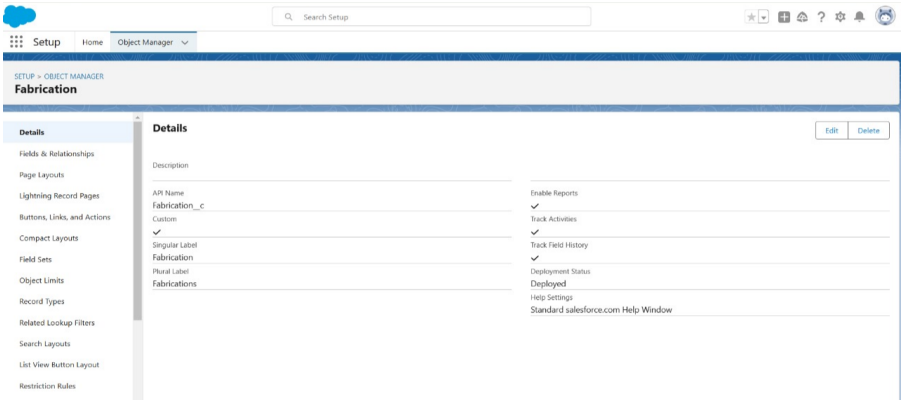
- Create **Record Pages** for Clients, Workers, and Projects using Lightning App Builder.
- Design forms for material entry with dynamic fields for measurements and price calculations.
- Implement dashboards showing project status and costs.

Business Logic:

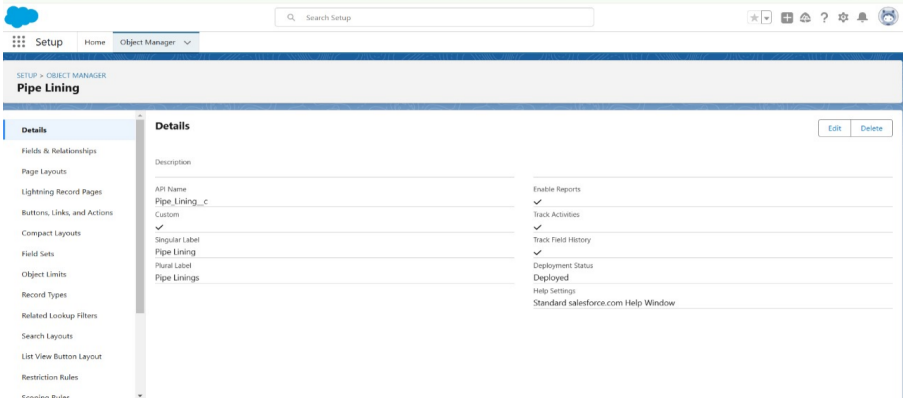
- Use **Flow Builder** to replace Apex Triggers for material cost calculations.
- Automate updates and workflows with **Process Builder** for project management.

6. Creation of fields for:

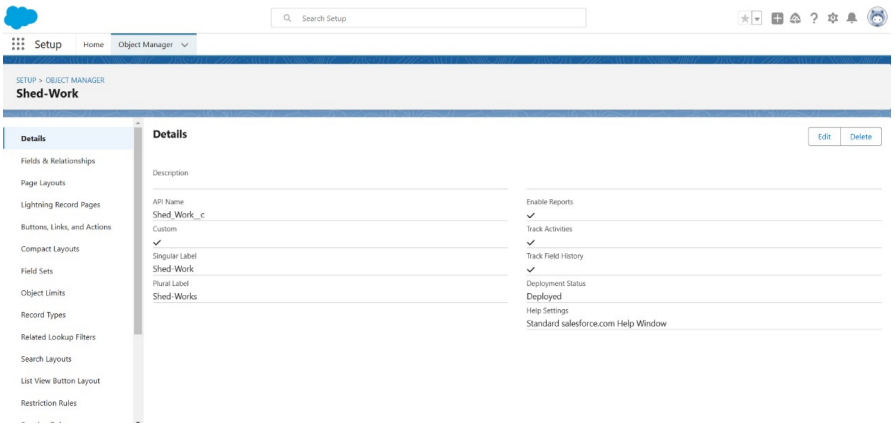
Fabrication:



Pipe lining:

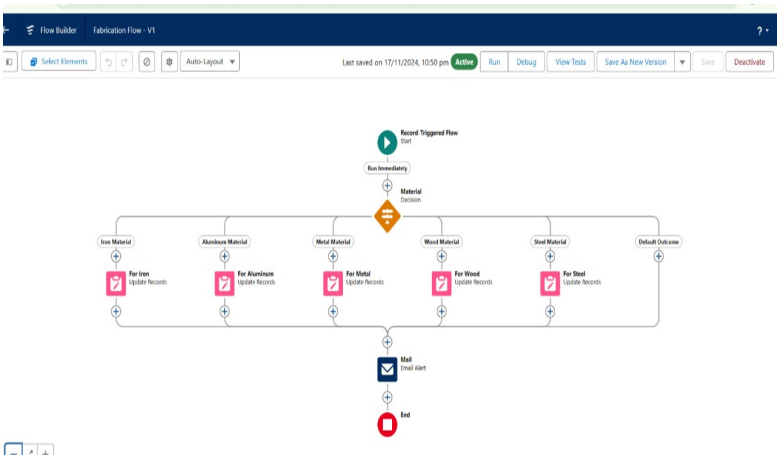


Shed-Work:

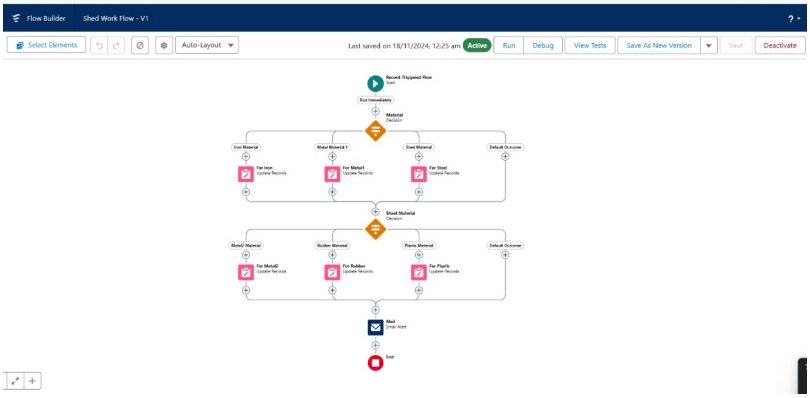


7. Create Flow to calculate Final Price On:

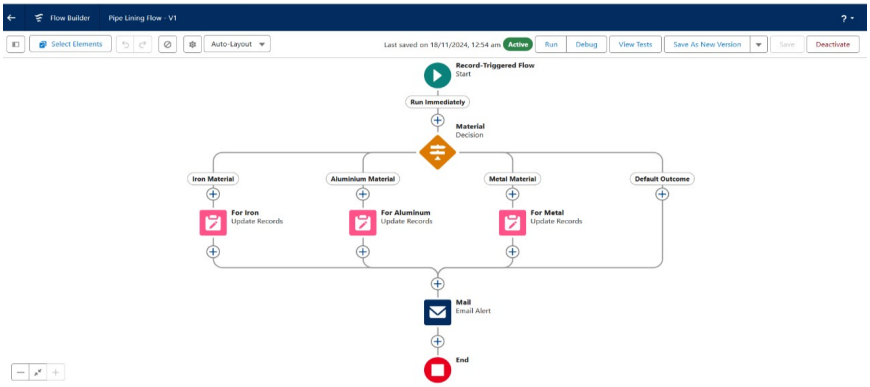
Flow 1(Fabrication)



Flow 2(Shed-Work)



Flow 3 PipeLining



8. Testing and Validation

Flow and Process Builder Testing:

- Verify the functionality of **Flows**:
  - Ensure the material cost calculations are correct for all possible input combinations.
  - Test the automated notifications and record updates triggered by project stage changes.
- Test **Process Builder** workflows:
  - Validate that updates and notifications are executed accurately when specific conditions are met.

User Interface Testing:

- Test all **forms and pages** for ease of use and correctness of displayed data.

Validate that data entered by users is saved properly in custom objects .

9. Key Scenarios Addressed by Salesforce in the Implementation Project

1. **Price Calculation Automation:**
   Automatically calculate material costs based on input measurements and specifications.
2. **Client Data Management:**
   Maintain detailed records of clients, including contact and project-related information.
3. **Process Tracking:**
   Track fabrication tasks such as Drilling, Welding, Cutting, and Folding, ensuring accurate progress updates.
4. **Worker Assignments:**
   Efficiently assign workers to specific tasks and track their productivity.
5. **Real-Time Insights:**
   Generate actionable insights using reports and dashboards for informed decision-making.

10. Conclusion

In conclusion, this Salesforce CRM solution provides a robust and scalable platform tailored to the unique requirements of engineering work. By streamlining pricing calculations, enhancing client and project management, and improving workflow monitoring for tasks such as pipe lining, fabrication, and shed construction, the application addresses the specific challenges faced by engineering firms. Leveraging Salesforce's powerful resources, this solution empowers engineering businesses to operate more efficiently, effectively, and with greater precision in their workflows.