# PROJECT DESIGN PHASE

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| **Date** | 18th June 2025 |
| **Team ID** | LTVIP2025TMID29987 |
| **Project Name** | CRM Application for Jewelry Management – (Developer) |
| **Maximum Marks** | |

## PROBLEM–SOLUTION FIT

**Objective of Problem–Solution Fit**

The **Problem–Solution Fit** phase ensures that the **solution you're building truly addresses a real-world problem** experienced by your target users—in this case, **jewelry store owners and staff**. It validates that the system you're developing is not just technically sound but also **practically relevant**.

This phase helps:

- Align the system design with **actual user needs**

- Discover behavioral patterns of the users

- Improve user acceptance and adoption

- Design the right solution before scaling

## 1. Target Customer Segments

| Customer Type | Description |
|---|---|
| Jewelry Store Owners | Manage day-to-day operations including inventory, billing, and orders |
| In-Store Workers | Goldsmiths, staff involved in creating or handling jewelry and processing orders |
| Billing Clerks | Responsible for preparing bills and processing payments |
| Customers (Buyers) | End-users who purchase jewelry and receive communication via email |

## 2. Problem Statement (As-Is Situation)

Jewelry businesses, especially traditional or small-scale stores, **face major challenges in managing their operations** because most tasks are handled **manually**, including:

- Order entry in notebooks

- Manual billing with calculators

- No proper records of customer history

- Lack of automated communication (e.g., no email confirmations)

- Errors in calculating final amounts (e.g., missing stone charges or tax)

**Key Problems Identified:**

- Lack of a centralized database for customer and item records

- Delayed billing and order processing

- Frequent mistakes due to lack of validation

- No real-time communication or notifications

- No visibility into order history or payment status

## 3. Current Workaround (Before CRM Solution)

| Existing Practice | Limitation |
|---|---|
| Paper-based order entry | Prone to loss, difficult to track |
| Verbal confirmation with customers | Can lead to miscommunication |
| Manual billing with calculators | Mistakes in totals, taxes, KDM charges |
| WhatsApp or phone calls for updates | No formal record, unprofessional |
| No insights into sales | No dashboards or reports to assess store performance |

## 4. Proposed Solution (To-Be State)

**"CRM for Jewel Management"** is a custom Salesforce-based solution designed to **digitize and automate** the core operations of a jewelry store.

**Core Solution Features**:

- **Customer Record Creation**: All customer data stored in the Jewel Customer object

- **Item Management**: Jewelry items (gold/silver/stones) tracked via Item__c object

- **Order Tracking**: Orders placed using Customer Order object

- **Billing Automation**: Pricing, tax, KDM charges handled in Billing__c object

- **Trigger to Update Paid Amount**: Auto-updates Paid_Amount__c based on Paying Amount

- **Email Flow**: Sends automated confirmation email to customer after billing

- **Validation Rules**: Ensures Paid Amount is never more than Total Amount

- **Dashboards & Reports**: For business insights and performance tracking

- **Role-based Access**: Admin, Goldsmith, Worker access managed via profiles

## 5. How the Solution Solves the Problem

| Problem | Feature/Function that Solves It |
|---------|--------------------------------|
| Manual billing and pricing errors | Automated billing with formula fields and triggers |
| No order/payment tracking | Custom objects with lookup relationships |
| No communication with customers | Flow that sends email notifications |
| Security and data leakage risks | Role-based access with Profiles and Permission Sets |
| No insights into store performance | Visual dashboards and standard/custom reports |
| Delayed operations | Automation via Salesforce Flows and Record Triggers |

## 6. Solution Adoption Channels

- **Web App** using Salesforce Lightning UI

- Access controlled by **user roles** (Admin, Worker, Goldsmith)

- **Email alerts** automatically sent to customers on billing

- **Reports and dashboards** accessible by store owner/admin for analytics

## 7. Solution Validation

The solution was tested on multiple test records in Salesforce and validated for:

- Trigger execution to update Paid Amount

- Flow working for sending emails with correct merge fields

- Billing generation with accurate KDM, stone, and tax charges

- Profiles restricting edit/view access as per roles

- Dashboard correctly reflecting the total sales, order count, etc.

Screenshots and test results are included in the Performance Testing section.

**Purpose Alignment Recap**

| Benefit | How CRM for Jewel Management Achieves It |
|---|---|
| Solve real-world problems | By eliminating manual errors and digitizing jewelry operations |
| Increase trust and customer satisfaction | Via automated email communication |
| Improve decision-making | With real-time dashboards and reporting |
| Ensure security and scalability | Using Salesforce role-based permissions and platform reliability |
| Speed up store processes | Through flows, triggers, and custom logic built on Salesforce |

**Problem–Solution Fit Canvas for CRM for Jewel Management**

| Section | Description |
|---|---|
| **1. Customer Segment(s)** *(CS)* | - Jewelry Store Owners (Small & Medium scale)- In-store Workers (Goldsmiths, Clerks)- Billing Staff |
| **2. Jobs-to-be-Done / Problems** *(J&P)* | - Manage inventory (gold/silver/stones)- Track orders and customer payments- Automate billing with KDM/making charges- Send professional customer communication |
| **3. Triggers** *(TR)* | - Mistakes in manual billing- Delays in payment collection- Poor tracking of customer order history- Lack of business insights |
| **4. Emotions Before / After** *(EM)* | **Before**: Frustrated, stressed, overwhelmed, insecure about billing accuracy**After**: Confident, in control, satisfied with professional system |
| **5. Available Solutions** *(AS)* | - Pen and paper recordkeeping- Excel sheets- WhatsApp for updates**Cons**: Prone to error, no automation, hard to track |
| **6. Customer Constraints** *(CC)* | - Lack of technical expertise- Budget limitations- Fear of digital tools- Poor internet access in rural stores |
| **7. Behaviour** *(BE)* | - Use notebooks to track orders- Call customers for payment reminders- Rely on memory or verbal confirmation- Manually total amounts with calculator |
| **8. Channels of Behaviour** *(CH)* | **Online:** Basic Gmail for communication, few use Google Sheets**Offline:** Notebook records, manual receipts, calls/SMS for customer updates |
| **9. Problem Root Cause** *(RC)* | - No centralized digital system- Hesitation in adopting modern CRM platforms- Lack of awareness or access to scalable tech |

| | |
|---|---|
| **10. Your Solution** *(SL)* | CRM built on Salesforce with:- Custom Objects (Customer, Order, Billing, Item)- Email Flows for notifications- Validation rules to reduce billing errors- Dashboards and reports for insights- Profiles and Permission Sets for access control<br>    • Matches behavior (simple UI)<br>    • Solves major pains (billing, communication, errors)<br>    • Adapts to customer context (low technical skill) |

# PROPOSED SOLUTION

| S. No. | Parameter | Description |
|---|---|---|
| 1 | **Problem Statement** *(Problem to be solved)* | Traditional jewelry businesses lack an efficient, centralized system to manage customer orders, billing, inventory tracking, and automated communication. Manual record<br><br>-keeping leads to human errors, inefficiencies, and poor customer experience. |
| 2 | **Idea / Solution Description** | A cloud-based CRM solution built on the Salesforce platform tailored for jewelry store management. It uses custom objects like Jewel Customer, Item, Customer Order, and Billing to maintain structured data. Key features include:- Automated billing and paid amount update via triggers<br><br>- Email notifications through Flows<br><br>- Validation rules to avoid input errors<br><br>- Reports and dashboards for sales and customer insights<br><br>- Role-based access using Profiles and Permission Sets |
| 3 | **Novelty / Uniqueness** | - Combines inventory, order, billing, and communication into one integrated platform<br><br>- Customized specifically for jewelry industry needs (e.g., gold/silver item tracking, KDM charges, stone prices)<br><br>- Uses declarative tools (Flows, validation rules) over complex coding, enabling faster deployment and customization |
| 4 | **Social Impact / Customer Satisfaction** | - Improves customer trust through professional and timely billing communications<br><br>- Reduces billing disputes due to accurate data and auto-calculations-Empowers traditional jewelers to embrace digital tools, enhancing digital literacy<br><br>- Promotes transparency and customer delight |
| 5 | **Business Model** *(Revenue Model)* | - Could be offered as a SaaS (Software as a Service) subscription to jewelry stores<br><br>- Revenue generated through tiered pricing based on number of users or features used |

| | | - Optional training/support services can be added as value-based revenue |
|---|---|---|
| 6 | **Scalability of the Solution** | - Built on Salesforce, it supports scalability across geographies and multiple branches<br><br>- Easily extendable to include mobile apps, POS integration, and loyalty programs<br><br>- Can scale from a single-store operation to a franchise model with centralized reporting |

# SOLUTION ARCHITECTURE

**What is Solution Architecture?**

Solution Architecture is the blueprint of your application that connects business requirements to technical implementation. It acts as a bridge between business challenges (e.g., inefficient billing or customer order tracking) and technological tools (e.g., Salesforce Flows, Apex triggers, validation rules) used to solve them.

It covers:

- **Structure** of the system (objects, processes, automation)

- **Behavior** of components (how data flows)

- **Technologies** used

- **Integration** and **deployment flow**

**Goals of the Solution Architecture for This Project:**

- Identify and apply the best **Salesforce-based architecture** to streamline jewelry inventory and billing workflows.

- Clearly **define custom objects** like Jewel Customer, Item, Customer Order, Billing.

- Incorporate **Apex Triggers**, **Flows**, and **Validation Rules** for automation.

- Create a reliable and secure **user-access system** using Profiles and Permission Sets.

- Deliver a scalable, role-based, and automated CRM solution.

**Core Components of the Architecture**

| Layer | Component | Description |
|---|---|---|
| **Presentation Layer** | Salesforce Lightning UI | Users (shop owners, goldsmiths, workers) interact with the CRM via Lightning App pages and Record Pages. |
| **Business Logic Layer** | Flows, Apex Triggers, Validation Rules | Logic for sending emails, updating paid amounts, and validating inputs is handled through automation and coding. |
| **Data Layer** | Custom Objects: Jewel_Customer__c, Item__c, Customer_Order__c, Billing__c | Data is stored, related using lookup fields, and referenced by automation logic. |

| Security Layer | Profiles, Permission Sets | Role-based access is managed to control visibility and editing rights for different users (Admin, Worker, Goldsmith). |
| --- | --- | --- |
| **Reporting Layer** | Dashboards and Reports | Visual reports for Orders, Payments, Billing summaries. Dashboards offer a business overview. |

**Data Flow within the System (Visual)**

**User Journey:**

1. **Customer visits shop** → Jewel_Customer__c created

2. **Customer selects item** → Item__c chosen

3. **Order placed** → Customer_Order__c created

4. **Billing generated** → Billing__c created with taxes and charges

5. **Trigger auto-calculates** → Paid_Amount__c updated

6. **Email Flow** → Confirmation sent to customer

**Sample Architecture Diagram**

Here's a conceptual architecture for the project:

[Customer]

  ↓

[Jewel_Customer__c]

  ↓ (Lookup)

[Customer_Order__c]

  ↓ (Lookup)

[Item__c] → [Billing__c]

  ↓ (Trigger)

[Paid_Amount__c auto-update]

  ↓ (Flow)

[Email sent to customer]

If you want this as a **visually designed flowchart**, I can create a diagram using Canva-style layout or generate one directly — just let me know!

**Summary:**

This Salesforce-based architecture offers:

- Seamless customer onboarding and order management

- Real-time billing automation with validations

- Enhanced communication with customers via Flows

- Scalable and secure CRM tailored to the jewelry domain

**References:**

- Salesforce Architecture Guide