

## Project Design Phase

### Solution Architecture

Date	2-11-2025
Team ID	NM2025TMID04228
Project Name	Lease Management System using Salesforce

### Goals of the Architecture

- **Provide system safeguards** using validations, triggers, and approval processes to automate lease management and enforce data integrity.
- **Maintain data consistency and integrity** across tenant, property, lease, and payment relationships.
- **Reduce manual monitoring and errors** by automating routine processes (reminders, approvals, assignments).

### Key Components

- **Salesforce Custom Objects**
  - Property\_\_c
  - Tenant\_\_c
  - Lease\_\_c
  - Payment\_for\_Tenant\_\_c
- **Relationships**
  - Master-detail and lookup relationships (e.g., Tenant to Property, Payment to Tenant)
  - Validation rules to enforce business logic

- **Automation & Business Logic**

- Salesforce Flows for scheduled actions and notifications (monthly payments, approvals)
- Apex Triggers for record integrity (one tenant per property)
- Approval Process for tenant leave/status changes
- Email templates for tenant and manager notifications

## **Development Phases**

1. **Create custom objects** (Property, Tenant, Lease, Payment for Tenant) and necessary fields.
2. **Establish relationships** (e.g., master-detail Tenant–Property, lookups for Payment).
3. **Build automation**
  - Validation rules for logical constraints
  - Apex triggers to ensure data integrity
  - Flows for payment processing and automated emails
  - Approval process for lease actions
4. **User Interface**
  - Configure Lightning App and Tabs for streamlined user experience
5. **Notification & Communication**
  - Email templates for reminders, approvals, successes, and rejections

## **Solution Architecture Description**

The proposed solution leverages Salesforce’s object-oriented structure and automation tools to ensure robust, error-proof management of leases and payments. Custom objects and relationships form the data model, while validation rules and Apex triggers enforce business constraints such as unique tenant-property assignments and valid lease

date ranges. Record-triggered Flows and scheduled Apex classes automate payment reminders and confirmations. Approval processes handle tenant leave requests, enabling efficient multi-stage review and notifications.

**Operational benefits** include consistent, reliable data; automatic notifications and reminders; a reduction in manual tracking and errors; and a transparent workflow for both tenants and property managers.

### Example - Solution Architecture Diagram

