

Project Design Phase

Solution Architecture

Date	2-11-2025
Team ID	NM2025TMID06722
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

