PHASE IV: PROJECT DESIGN

Date	06 November 2025
Team ID	NM2025TMID06735
Project Name	Lease Management
Maximum Marks	4 Marks

Title: Project Design Phase for "Lease Management"

1. Objective

The objective of the Design Phase is to convert the defined requirements into a complete system architecture for the Lease Management application.
This phase creates the **user interface layout, process automation logic, data security controls, and reporting dashboards** that support digital lease lifecycle management.

Key design focus areas:

- User Interface (Property, Tenant, Lease, Payment pages)

- Automation Flows & Validation Triggers

- Security & Role-Based Access

- Real-Time Reporting and Dashboards

2. Design Overview

The Lease Management app leverages Salesforce Lightning features to build a structured, automated lease management system.

- The application design is Centered around:
- Five core custom objects (Property, Tenant, Lease Agreement, Payment,
- Maintenance Request) Automated flows for lease creation and rent scheduling
- Apex trigger to auto-calculate rent due status
- Dynamic dashboard tracking occupancy, rent, and maintenance
- Role-based visibility for tenants, managers & admins

3. User Interface (UI) Design

3.1 Lightning App Design

A custom Lightning App named **"Lease Management"** was created for property managers and tenants.

Steps followed:

1. Setup → App Manager → New Lightning App

2. Added branding logo, app name, and description

3. Navigation tabs included:

   o   Home

   o   Properties

   o   Tenants

   o   Lease Agreements

   o   Payments

   o   Maintenance Requests

   o   Reports & Dashboards

Design Principles Applied:
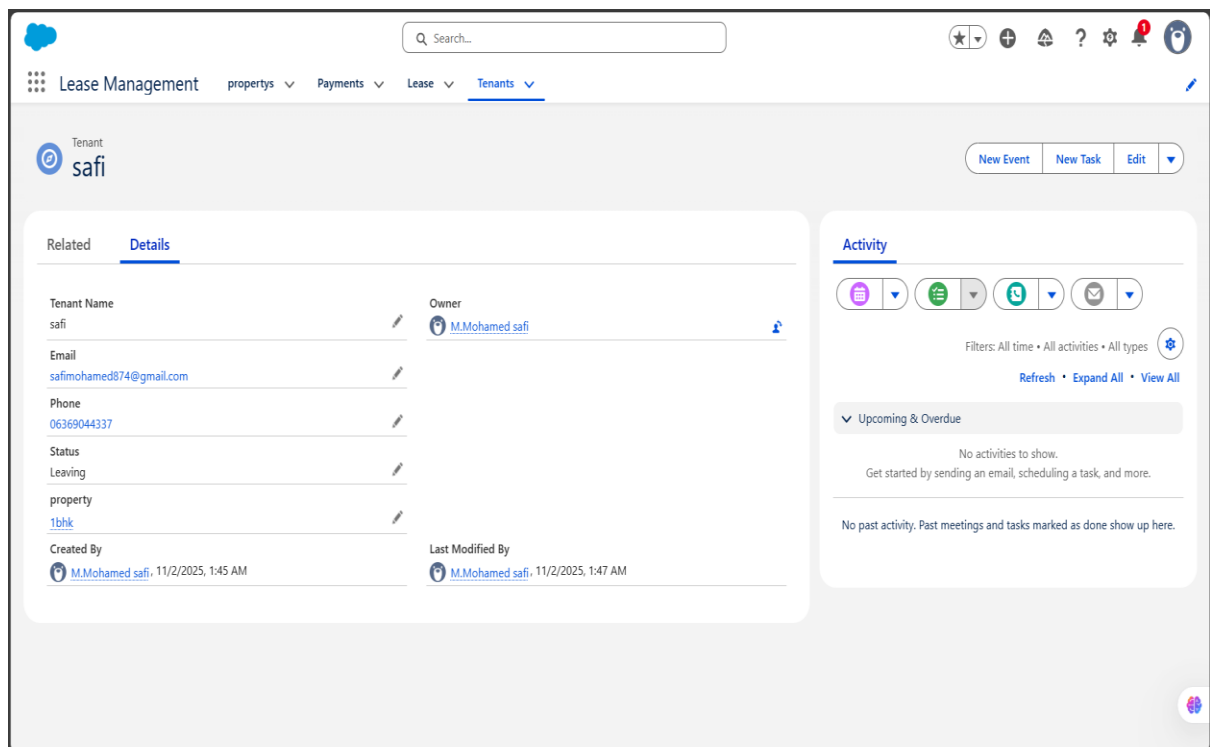
Principle	Purpose
Role-Based UI	Tenants see only leased properties & payments
Clean Layout	Wider spacing, reduced form clutter
Guided Navigation	Buttons and flows for quick lease registration

3.2 Home Page Design

Component	Purpose
Quick Action Flow	"Create Lease Record" flow for faster onboarding
Dashboard View	Shows active leases, overdue payments, vacant properties
Announcement Panel	Displays renewal alerts and maintenance updates

4. Automation Design

Automation reduces manual work by handling rent schedule generation, alerts, and validations.

4.1 Screen Flow – Lease Creation Flow

Flow Steps:

1. Collect Tenant + Property selection

2. Enter Lease Start Date, End Date, Monthly Rent, Deposit

3. Auto-generate Payment Schedule records

4. Confirm with success screen "Lease Created Successfully"

- Eliminates manual creation of monthly rent entries
- Improves data accuracy

4.2 Apex Trigger Design – Auto Payment Status Update

Apex Trigger on **Payment object** updates payment status before record save:

IF (Due_Date__c < TODAY AND Paid__c = FALSE)

Status__c = "Overdue"

• Trigger Event	• Action
• Before Insert / Update	• Auto update status based on due date

- nsures real-time rent status without manual tracking

5. Security Design

5.1 Profile-Based Access

Profile	Access Level
Tenant Profile	Read Own Lease, Create Maintenance Requests
Property Manager Profile	Full CRUD on Lease, Property, Payment
System Admin	Full Access & Setup Controls

5.2 Sharing Rules

Rule	Shared With	Purpose
Lease.Status = "Active"	Assigned Tenant	View active lease
Payment.Status = "Overdue"	Property Managers	Follow-up rent collection
Maintenance.Urgency = "High"	Property Managers	Escalation workflow

- Prevents tenants from seeing other tenant data
- Managers get 360° visibility

6. Reporting and Dashboard Design

6.1 Reports Created

Report Type	Purpose
Lease Agreement with Tenant	Track occupancy rate
Payment with Lease Agreement	Rent collection analysis
Maintenance Requests	Service response monitoring

6.2 Dashboard Components

Component	Visual Type	Insight
Occupancy Overview	Donut Chart	Active vs vacant properties
Rent Collection Trend	Line Chart	Monthly rent flow
Overdue Payments	Bar Chart	Pending rent by tenant
Lease Expiry Alerts	Table	Contracts ending in next 30 days

7. System Architecture Design

Layer	Component	Purpose
Presentation Layer	Lightning Pages, App UI	User interaction
Logic Layer	Flows, Apex Trigger	Automates leasing logic

Data Layer	Custom Objects	Stores lease lifecycle data
Analytics Layer	Reports, Dashboards	Insight for managers

8. Design Constraints

Constraint	Impact	Solution
Large number of payment records	Slower report load	Use archived table after 3 years
Frequent rent reminders	May spam tenants	Schedule once per day
Mobile UI layout resizing	Scroll issues	Enable dynamic responsive layouts

9. Future Design Considerations

Enhancement	Benefit
SMS/Email rent reminder integration	Reduces missed payments
Mobile App Tenant Portal	Easier lease & payment access
AI rent prediction model	Forecast revenue & renewal trends

10. Summary

The Project Design Phase establishes the structural and visual foundation of the Lease Management system.
The combination of Lightning UI, automated Flows, smart triggers, and secure access ensures a **scalable, low-maintenance, smart leasing platform**.

- Modern, UI-focused design Fully automated payment tracking
- Role-based and secure data handling
- Real-time dashboard for leasing KPIs

This design now enables smooth transition to **Phase V – Implementation & Testing**.