LEASE MANAGEMENT

College Name: IDEAL INSTITUTE OF TECHNOLOGY

TEAM ID: LTVIP2025TMID30830

TEAM MEMBERS:

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Email:228X1A4559@khitguntur.ac.in

1.INTRODUCTION

1.1 Project Overview

The Lease Management System is a Salesforce-based application designed to streamline the processes associated with leasing real estate properties. It handles tenant management, lease contracts, payments, and communication with automation features such as flows, approval processes, and email alerts.

1.2 Purpose

The main objective of the project is to enable organizations to efficiently manage properties, tenants, and lease-related activities. It reduces manual intervention, improves accuracy, and ensures better compliance and communication.

2. IDEATION PHASE

2.1 Problem Statement

Managing lease information manually can lead to errors, missed payments, and communication delays. There is a need for a centralized, automated system to maintain lease records, track payments, and manage tenants efficiently.

2.2 Empathy Map Canvas

- **Think & Feel**: Needs confidence in lease management.
- **Hear**: Concerns from tenants about payment reminders.
- **See**: Missed lease renewals and tracking issues.
- **Say & Do**: Wants a smooth system to manage leases and communications.
- **Pain**: Manual tracking, miscommunication.
- **Gain**: Streamlined processes, reduced errors.

2.3 Brainstorming

Ideas included automated alerts, integrated payment tracking, custom objects for modular data, and use of approval processes to manage tenant transitions.

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3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

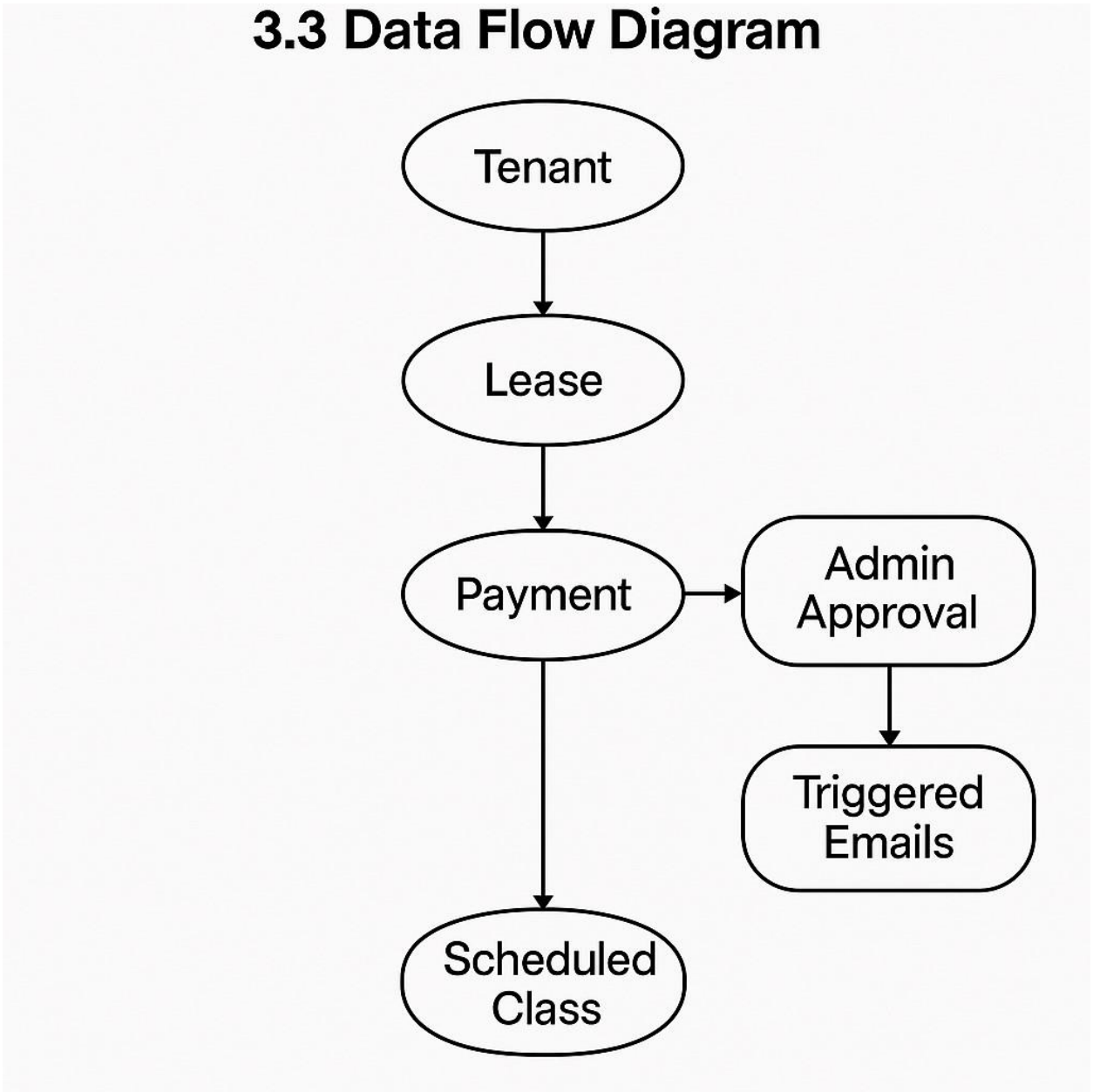
Tenants interact with the system by applying for leases, receiving emails for payment and status updates, and submitting leave requests. Admins handle object creation, approval processes, and maintain oversight through dashboards and flows.

3.2 Solution Requirement

- Salesforce platform
- Custom Objects: Property, Tenant, Lease, Payment
- Email Templates
- Apex Triggers & Classes
- Flow automation
- Approval Processes

3.3 Data Flow Diagram

Tenant → Lease → Payment
  Admin approval → Triggered Emails
↳ Scheduled class → Monthly Reminders



3.4 Technology Stack

- **Platform**: Salesforce Lightning
- **Language**: Apex
- **Automation**: Salesforce Flow
- **Database**: Salesforce Custom Objects
- **Communication**: Classic Email Templates

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4. PROJECT DESIGN

4.1 Problem-Solution Fit

The system solves lease tracking, tenant management, and payment notification problems using Salesforce's automation and customization features.

4.2 Proposed Solution

Create custom Salesforce objects and implement workflows, email templates, and Apex triggers to automate all critical lease management functions.

4.3 Solution Architecture

- **Frontend**: Salesforce UI via Lightning Apps
- **Backend**: Custom Objects and Apex
- **Automation**: Flows, Validation Rules, Scheduled Jobs
- **Integration**: Email alerts via templates

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5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

- Week 1: Object and Field Creation
- Week 2: Tab and App Setup
- Week 3: Flows and Email Templates

- Week 4: Apex Triggers & Approval Process
- Week 5: Testing & Validation

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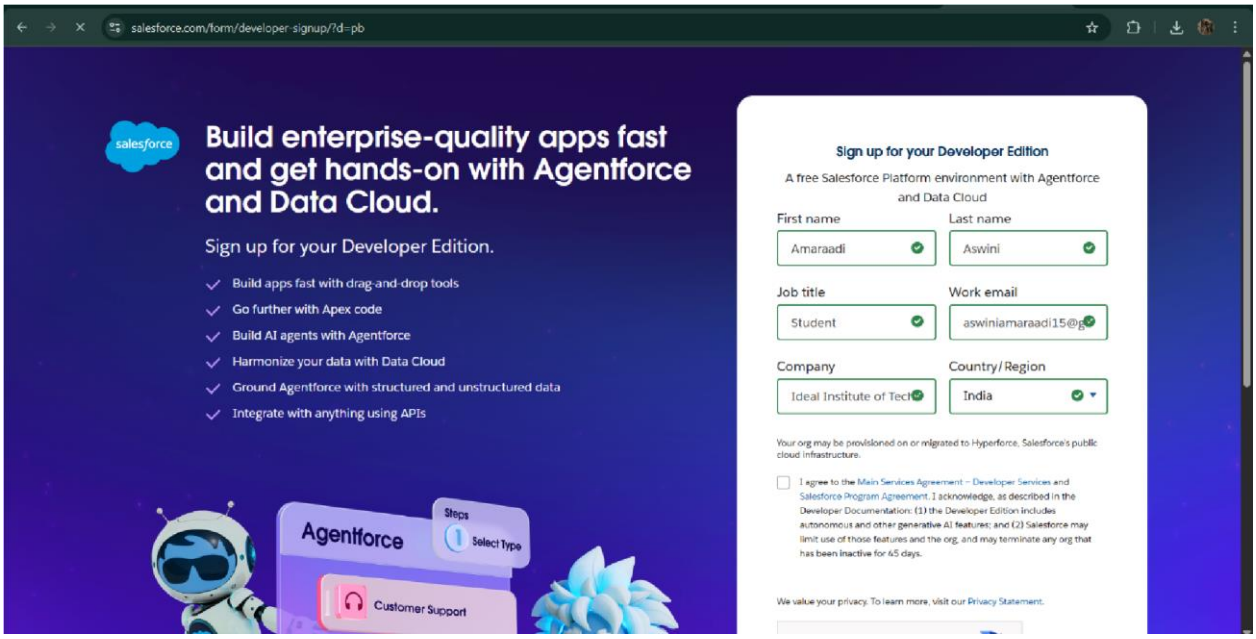
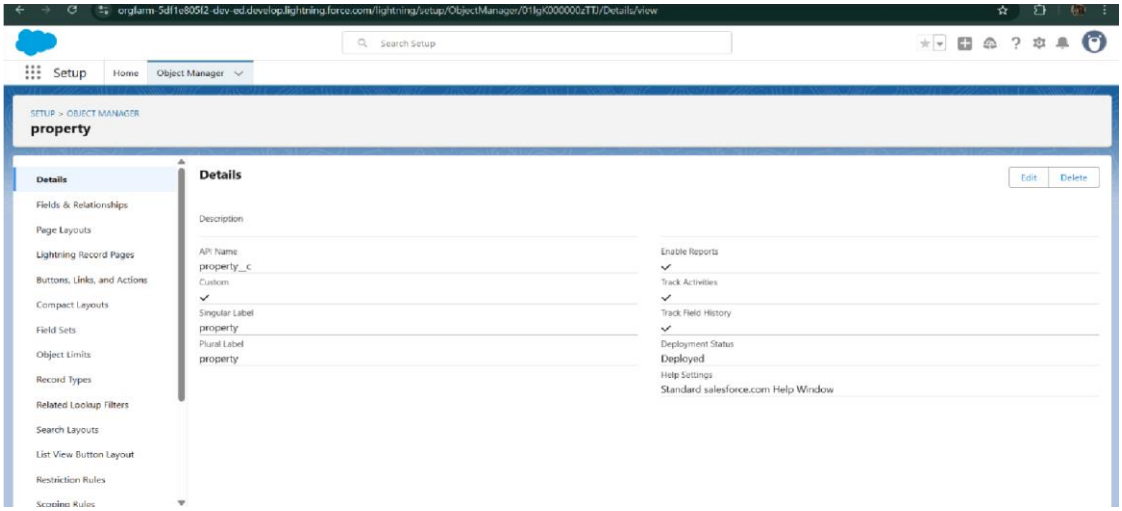
6. DEVELOPMENT PHASE

Creating Developer Account:

By using this URL - **https://www.salesforce.com/form/developer-signup/?d=pb**



- Created objects: Property, Tenant, Lease, Payment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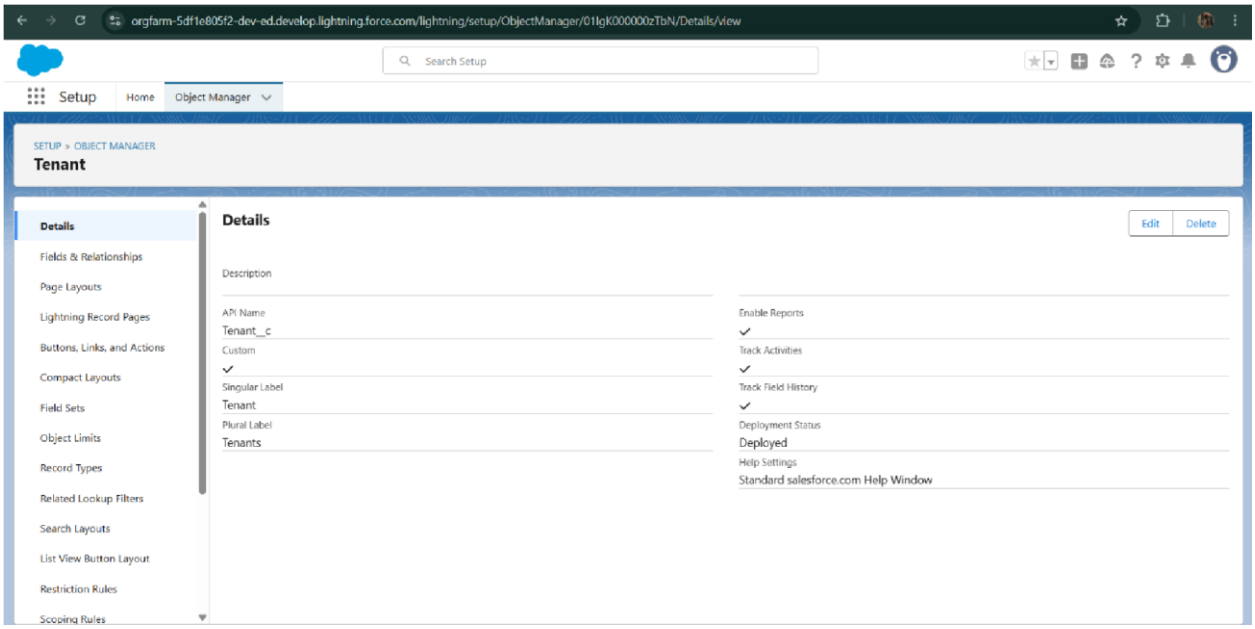
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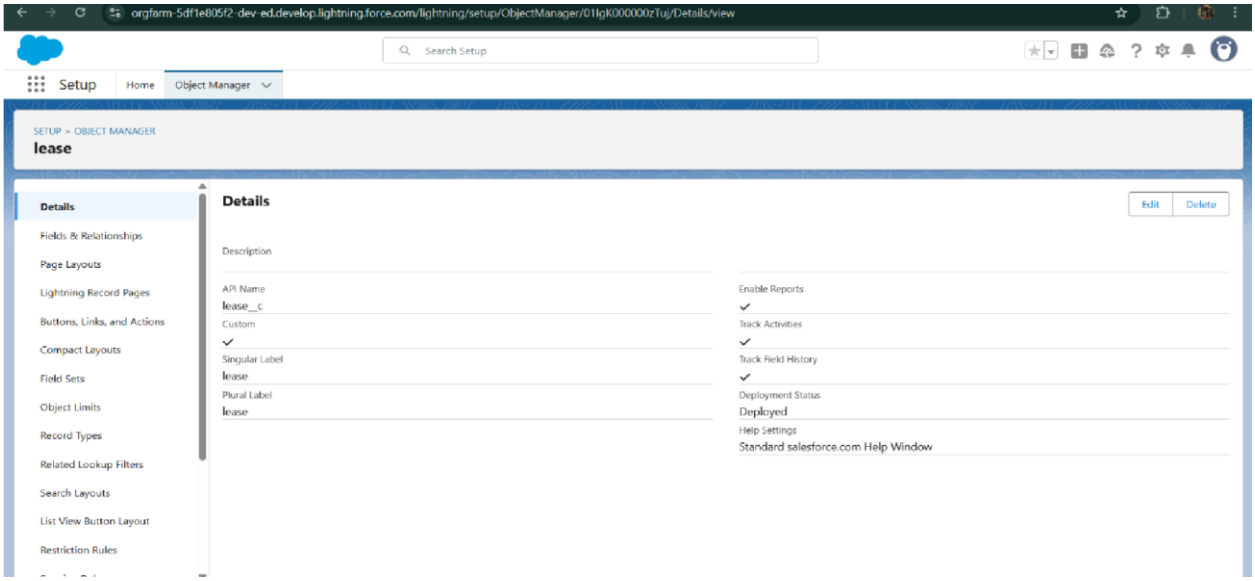
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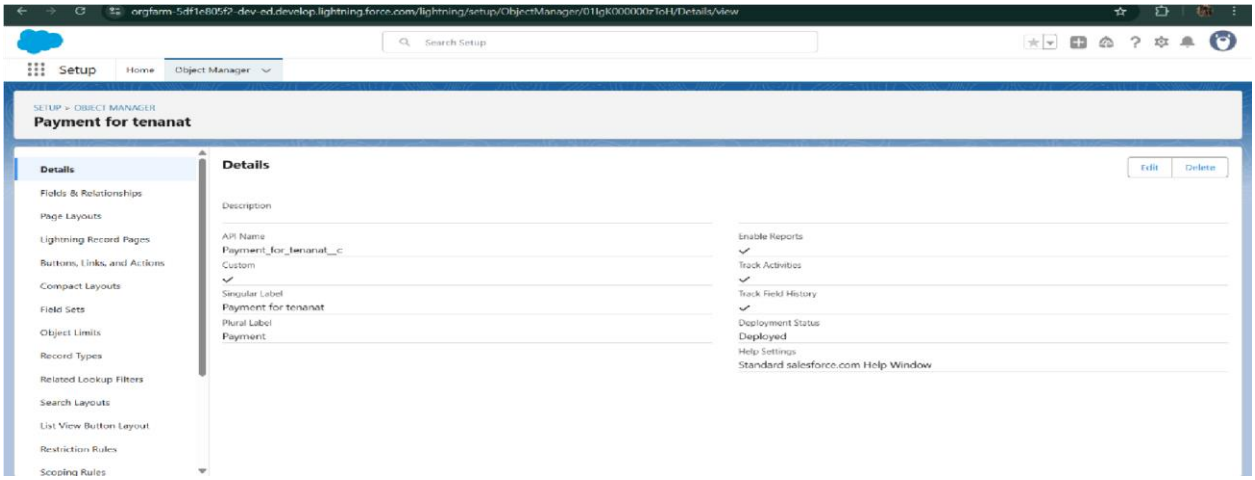
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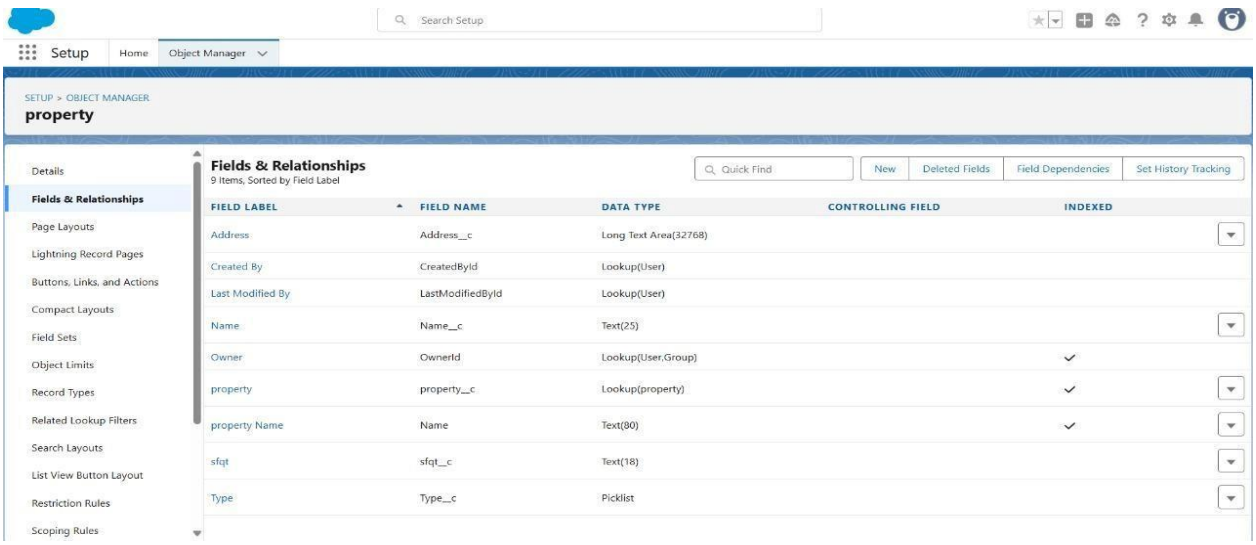
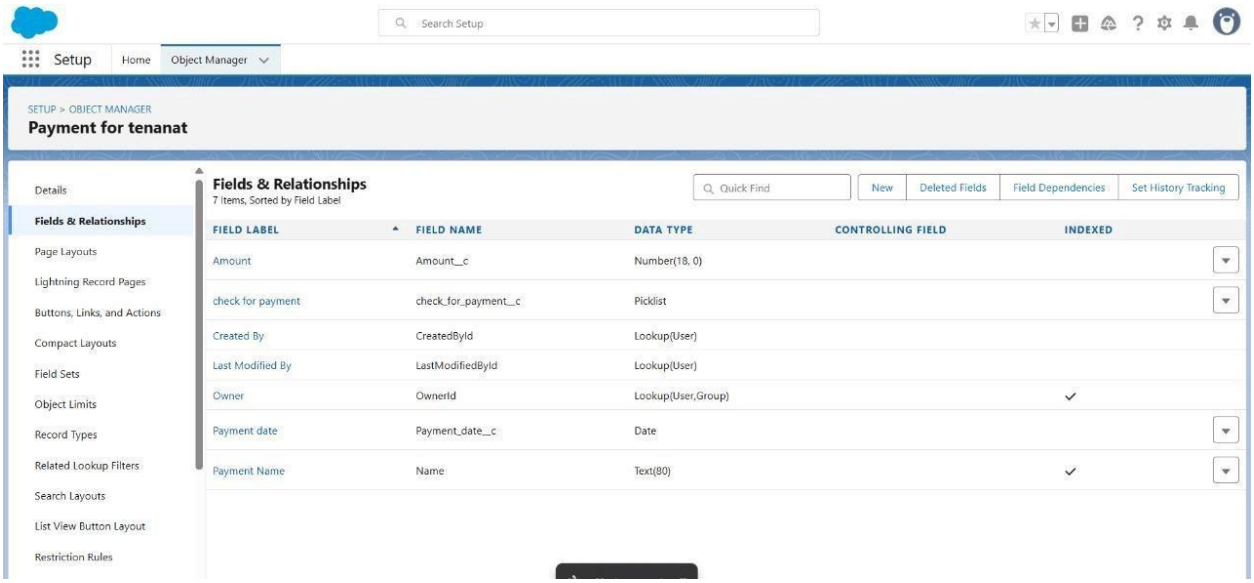
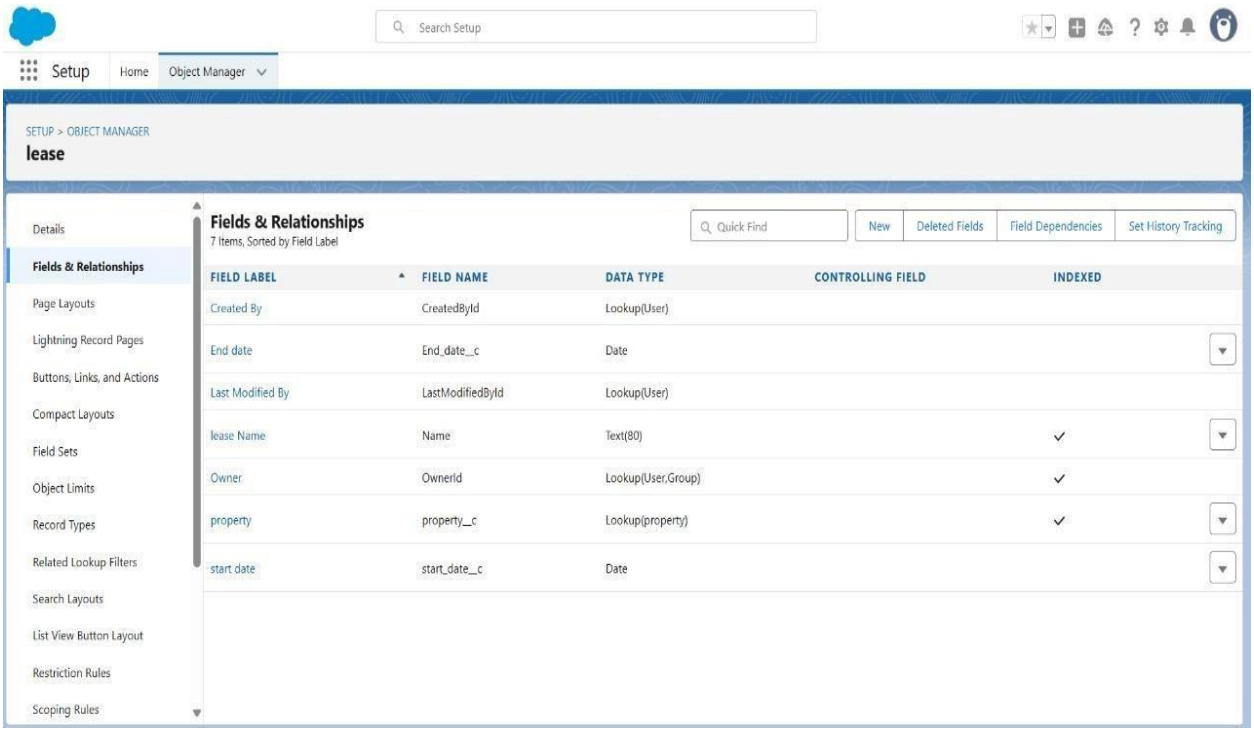
- Configured fields and relationships



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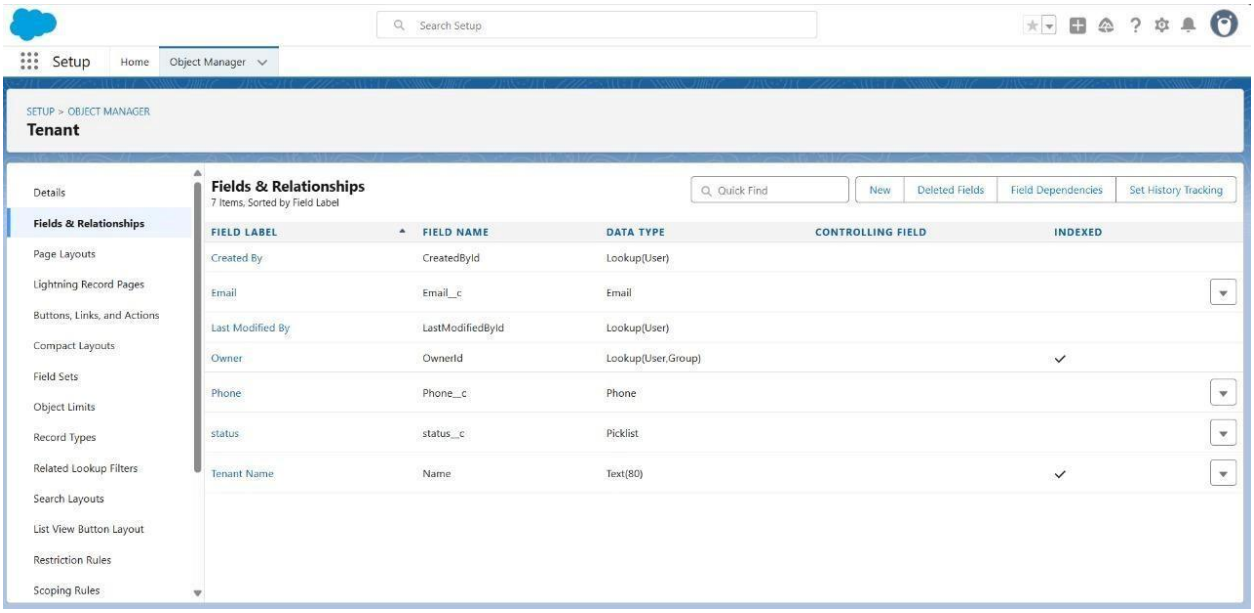
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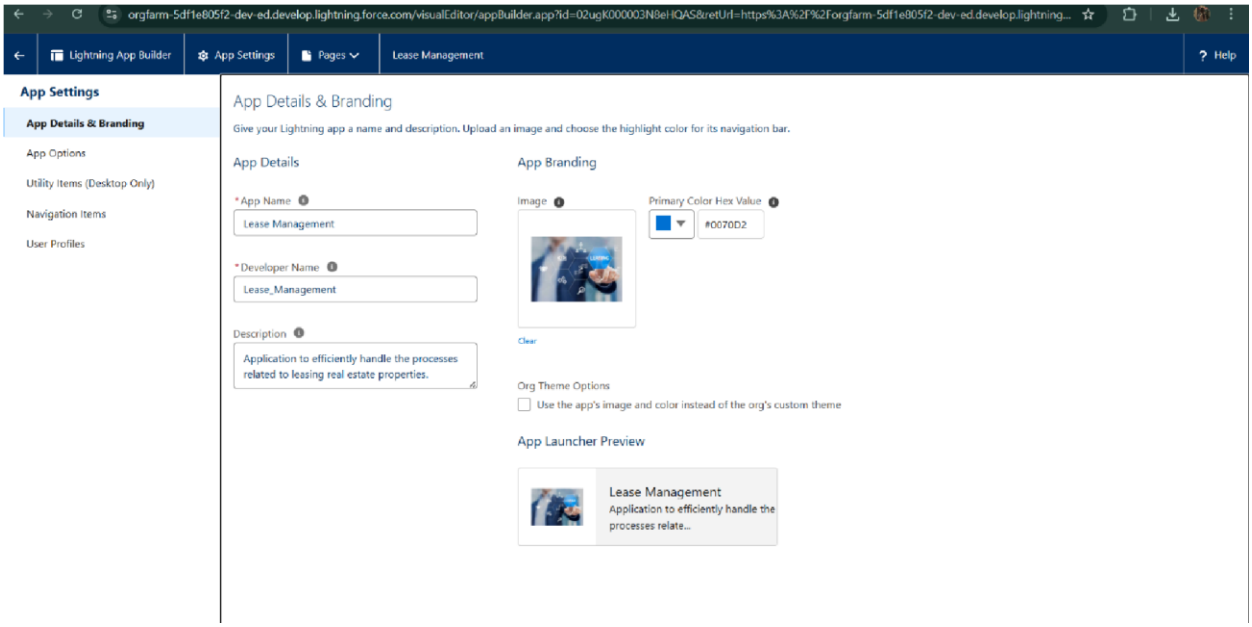
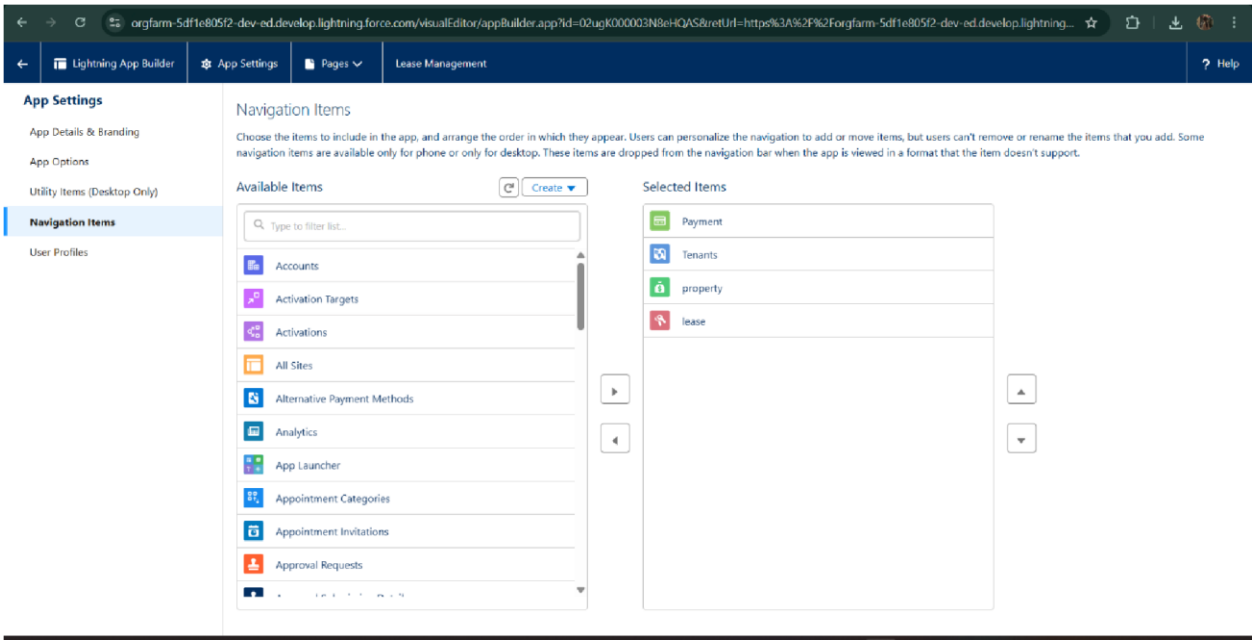
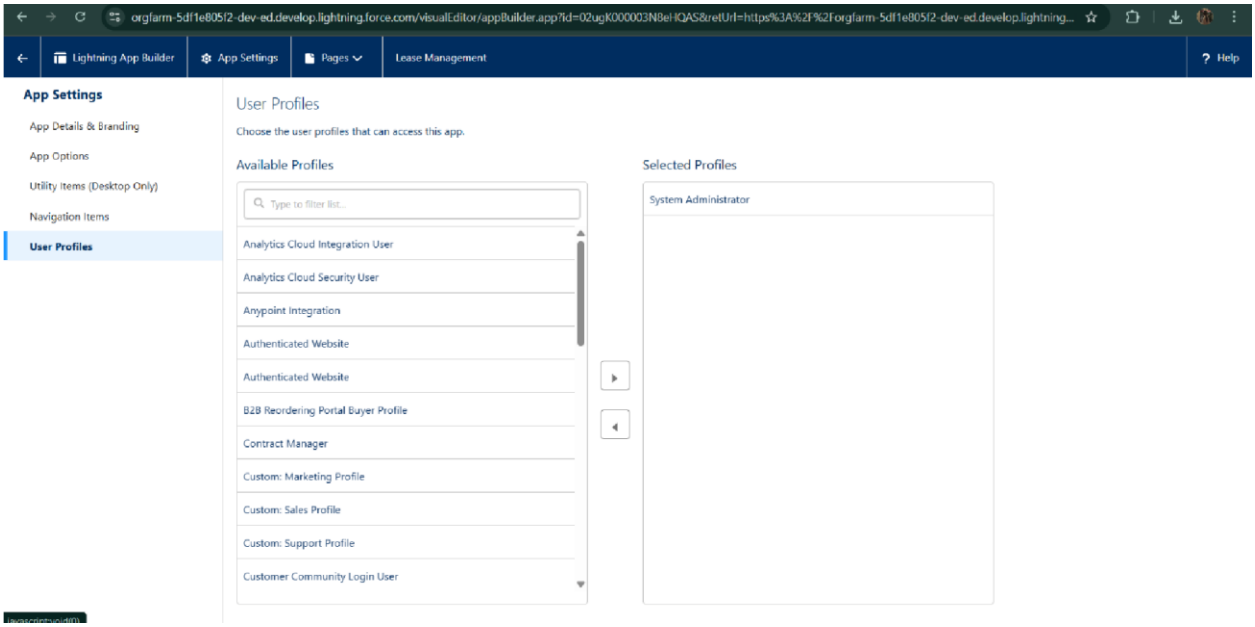
- Developed Lightning App with relevant tabs



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Analytics Cloud Security User
Anypoint Integration
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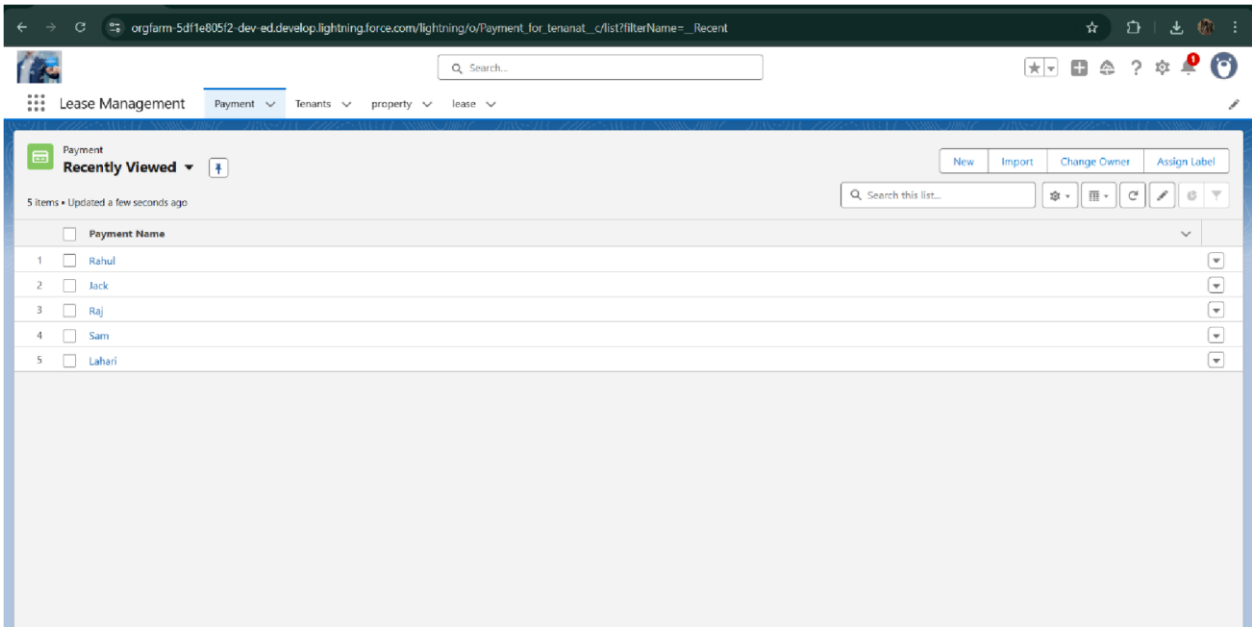
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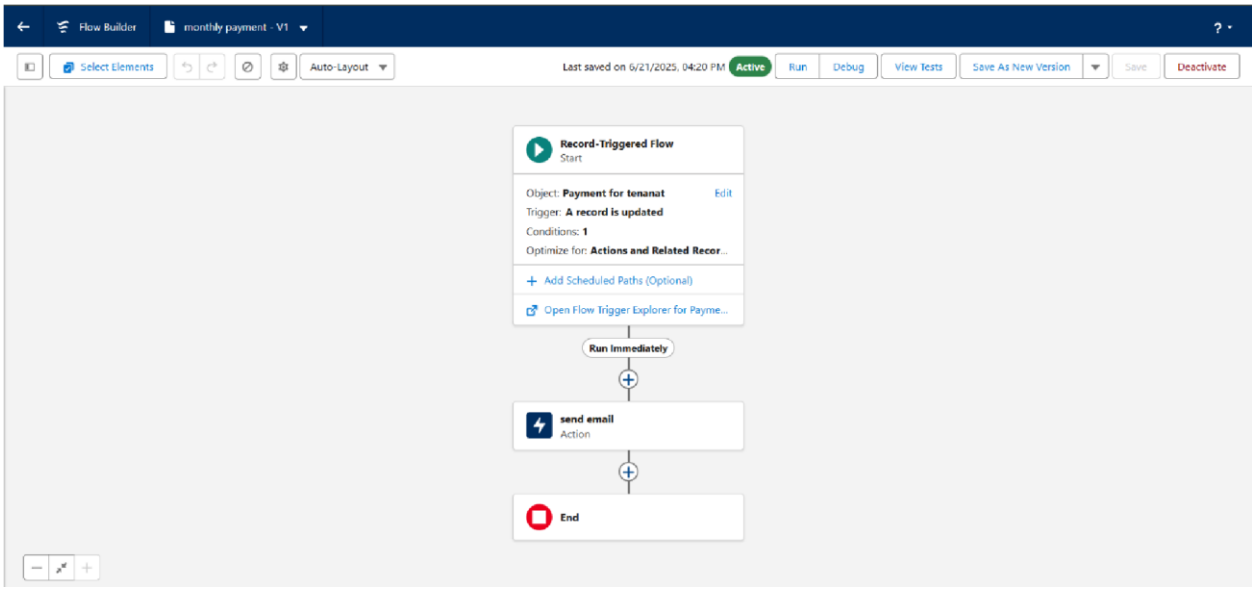
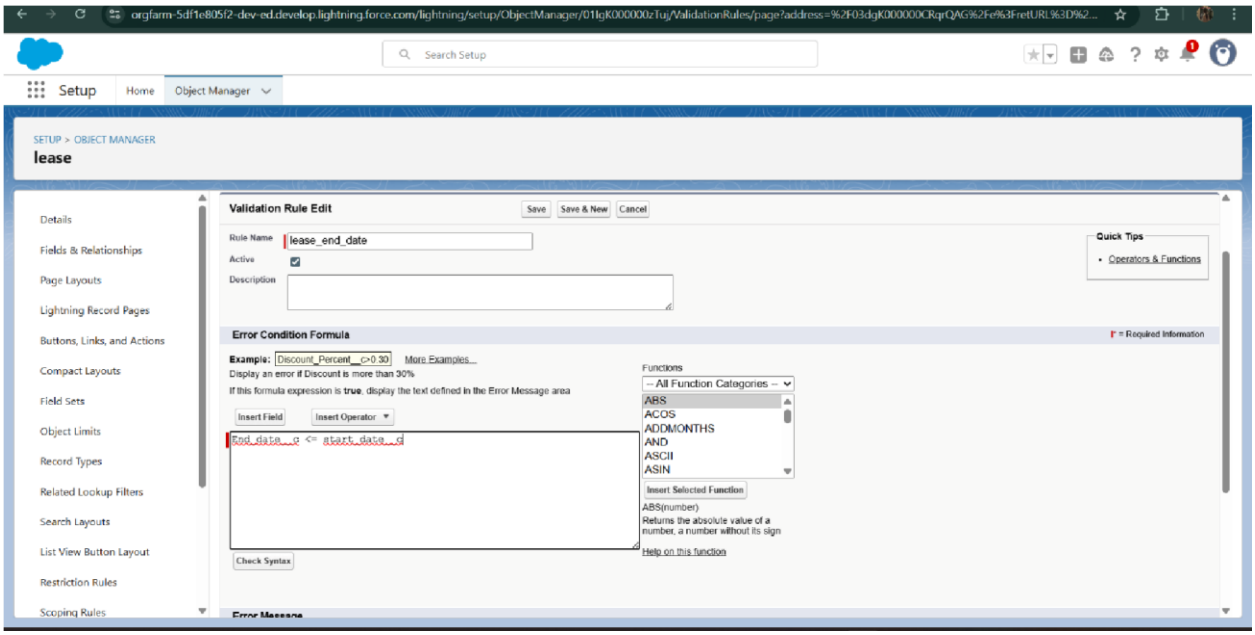
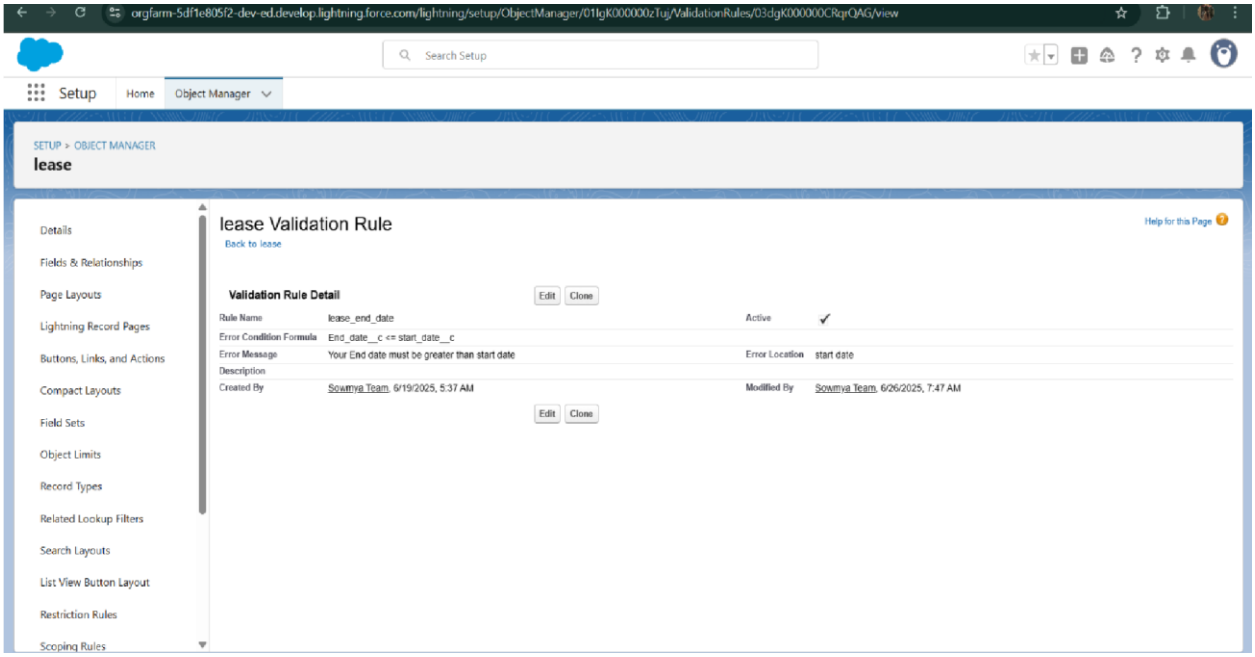
2 Jack
3 Raj
4 Sam
5 Lahari

- Implemented Flows for monthly rent and payment success

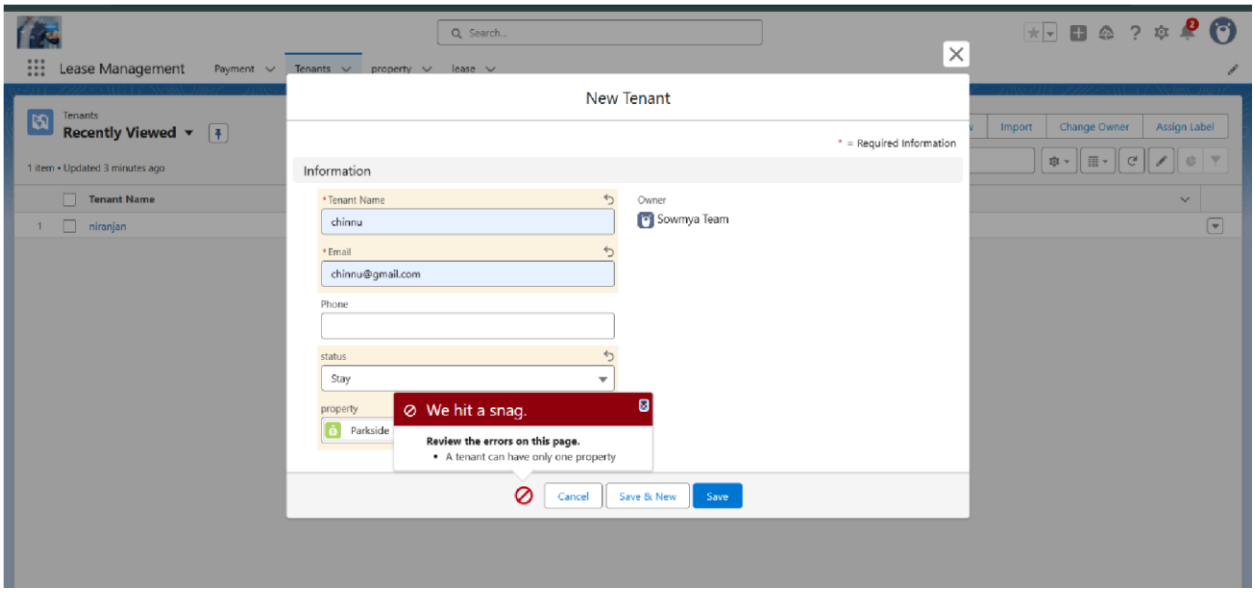


- To create a validation rule to a Lease Object

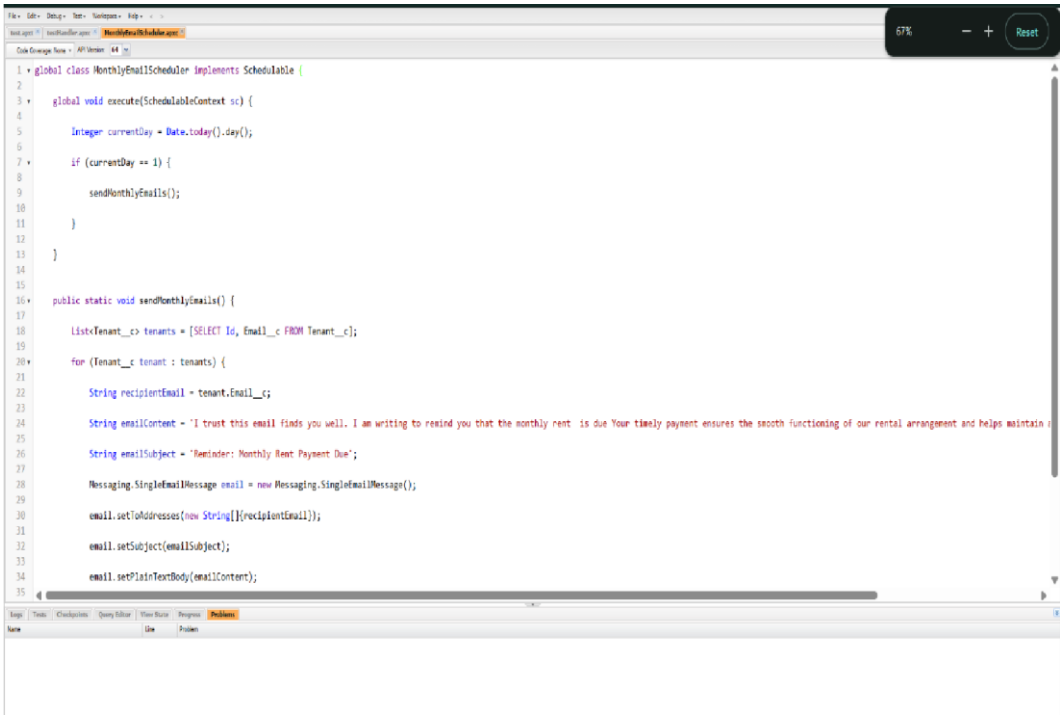




- Added Apex trigger to restrict multiple tenants per property

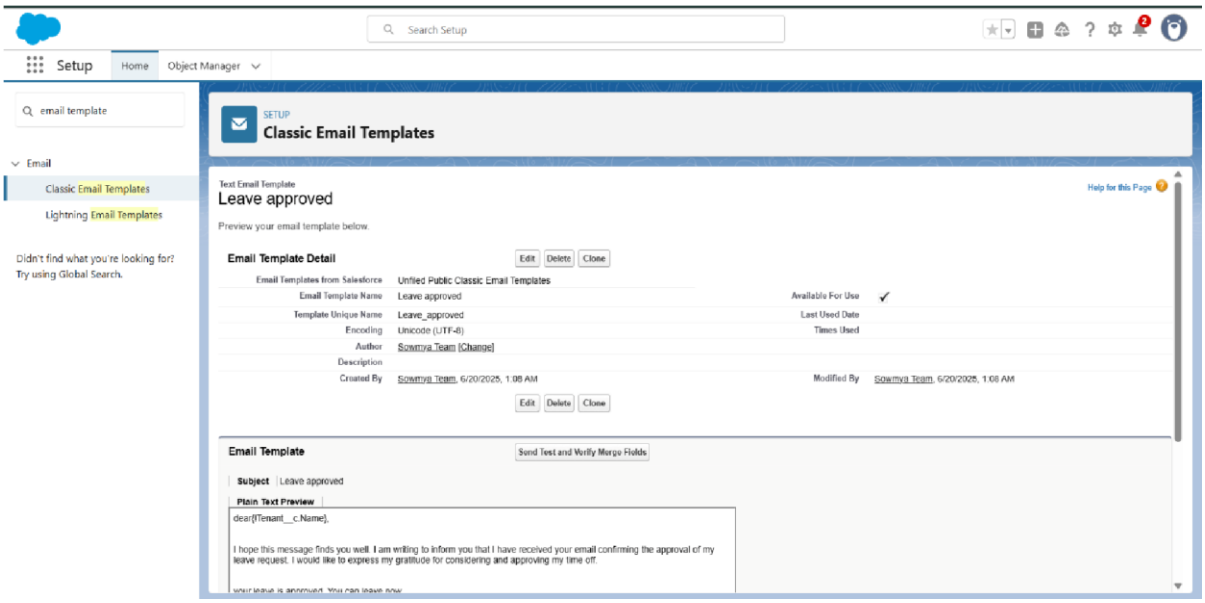


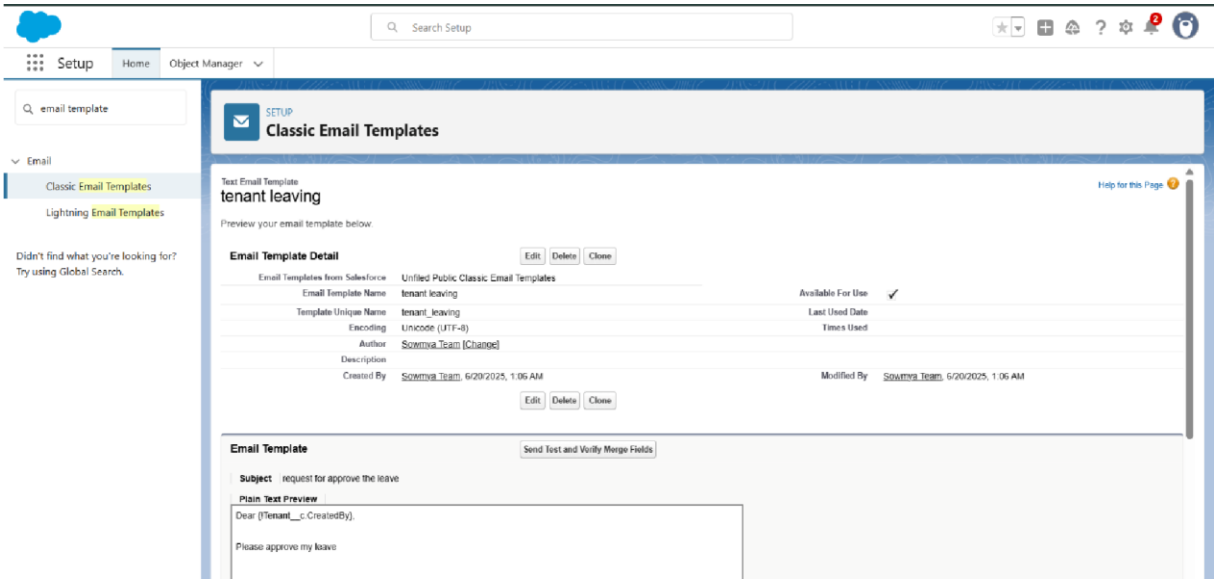
- Scheduled monthly reminder emails using Apex class



```
global class MonthlyEmailScheduler implements Schedulable {

    global void execute(SchedulableContext sc) {

        Integer currentDay = Date.today().day();

        if (currentDay == 1) {

            sendMonthlyEmails();

        }

    }


    public static void sendMonthlyEmails() {

        List<Tenant__c> tenants = [SELECT Id, Email__c FROM Tenant__c];

        for (Tenant__c tenant : tenants) {

            String recipientEmail = tenant.Email__c;

            String emailContent = 'I trust this email finds you well. I am writing to remind you that the monthly rent  is due Your timely payment ensures the smooth functioning of our rental arrangement and helps maintain

            String emailSubject = 'Reminder: Monthly Rent Payment Due';

            Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();

            email.setToAddresses(new String[]{recipientEmail});

            email.setSubject(emailSubject);

            email.setPlainTextBody(emailContent);
```

- Built and tested email templates for leave request, approval, rejection, payment, and reminders

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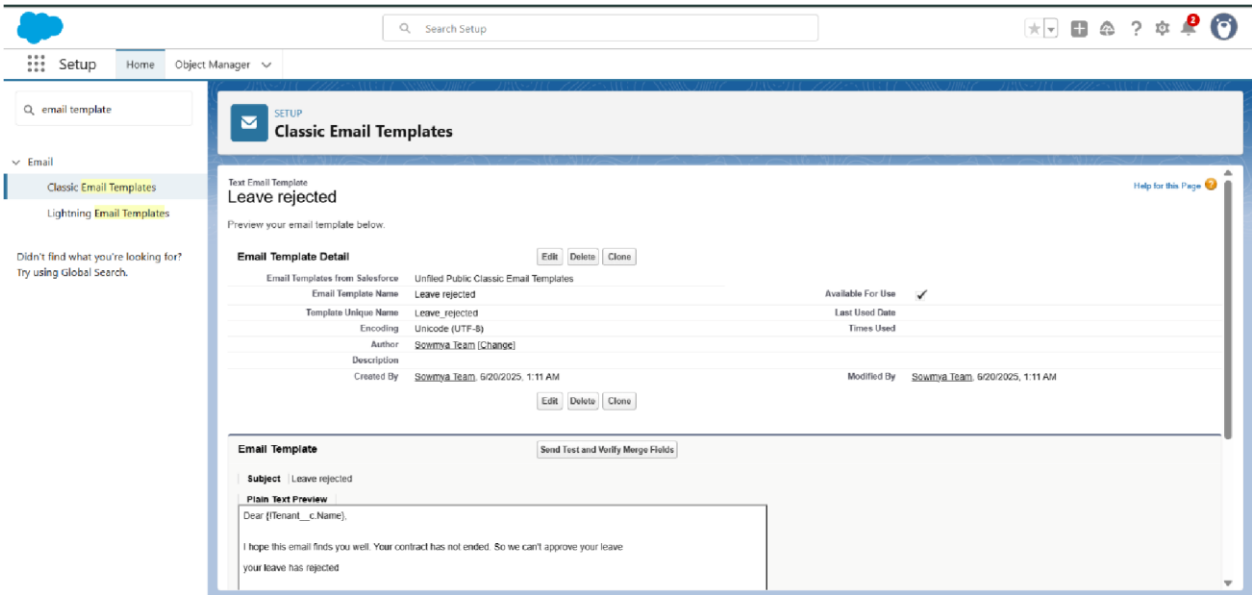
Email Template
Send Test and Verify Merge Fields
Subject
request for approve the leave
Plain Text Preview
Dear {!Tenant__c.CreatedBy},
Please approve my leave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Help for this Page
Preview your email template below.
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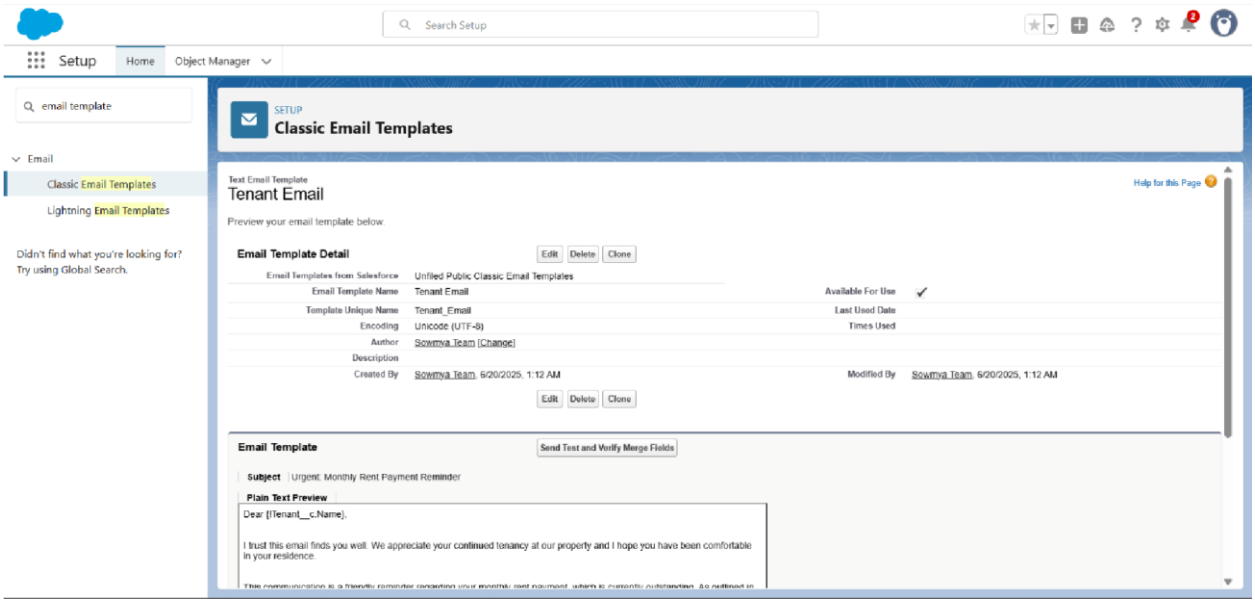
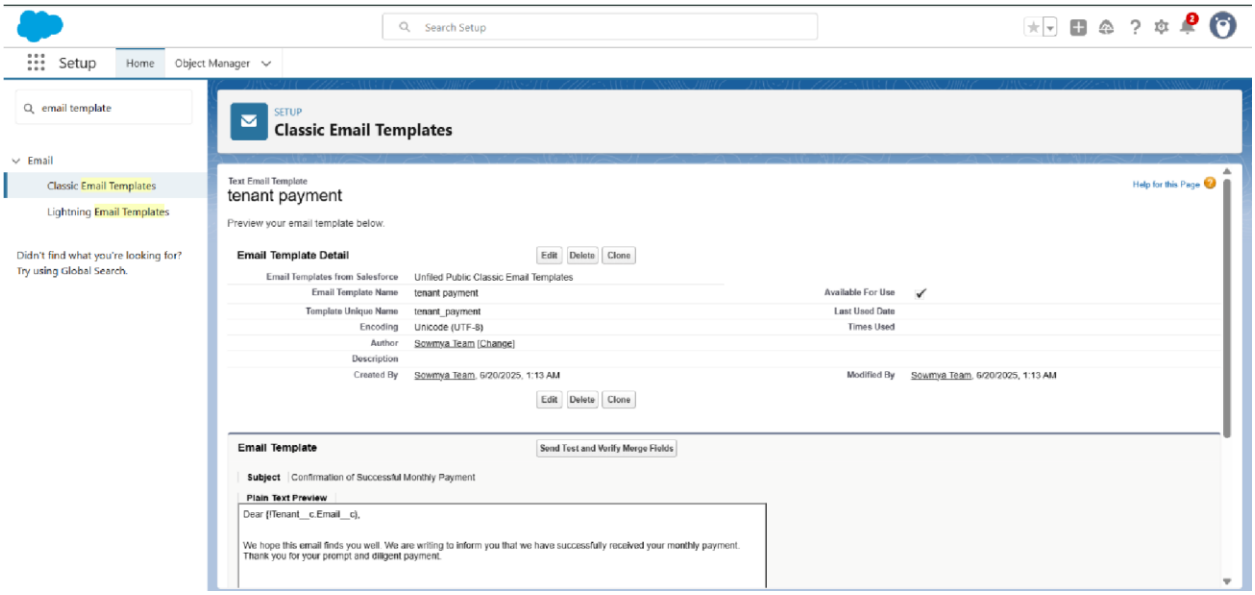
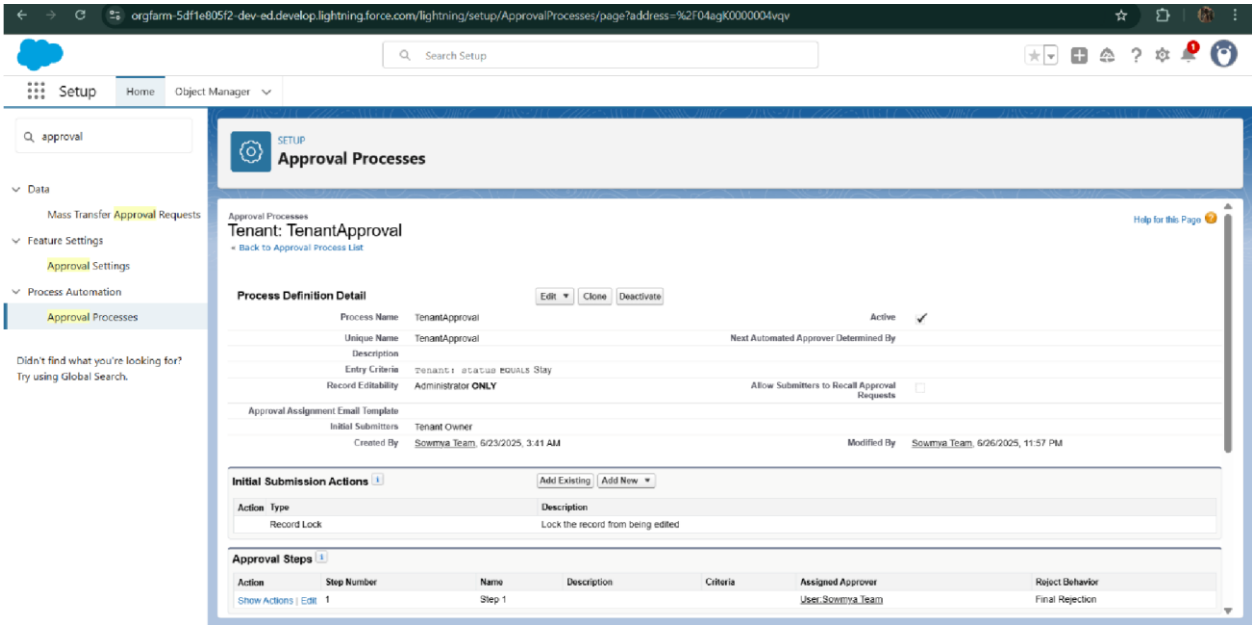
Email Template
Send Test and Verify Merge Fields
Subject
Leave rejected
Plain Text Preview
Dear {!Tenant__c.Name},
I hope this email finds you well. Your contract has not ended. So we can't approve your leave
your leave has rejected



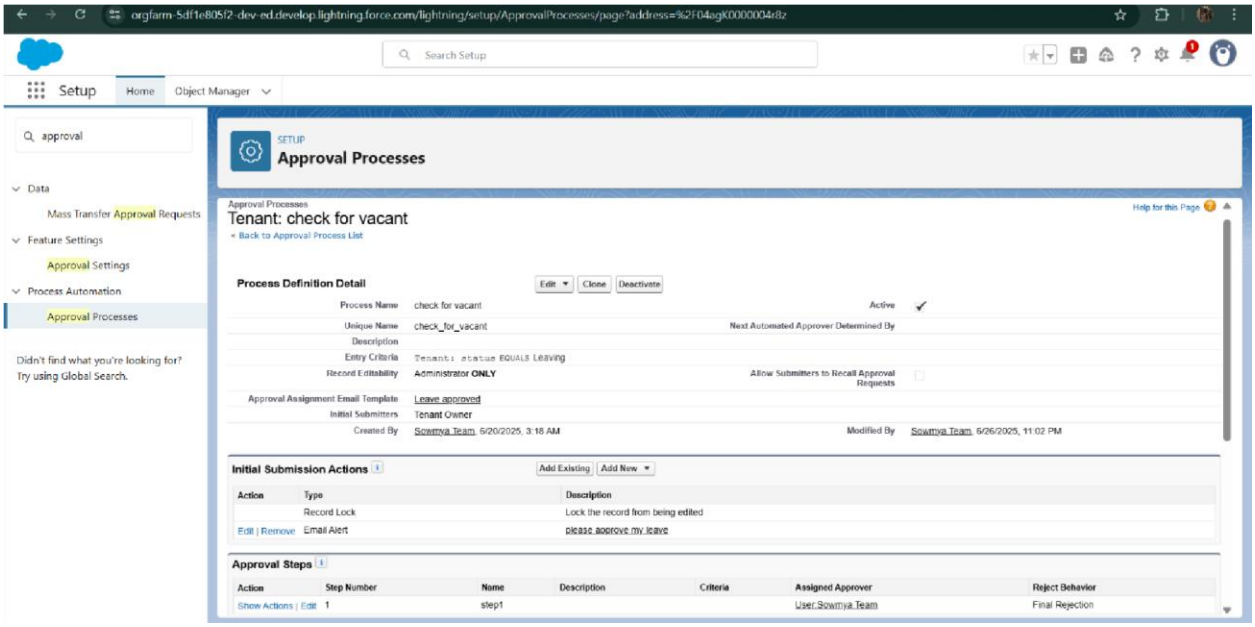


- Approval Process creation

  For Tenant Leaving:

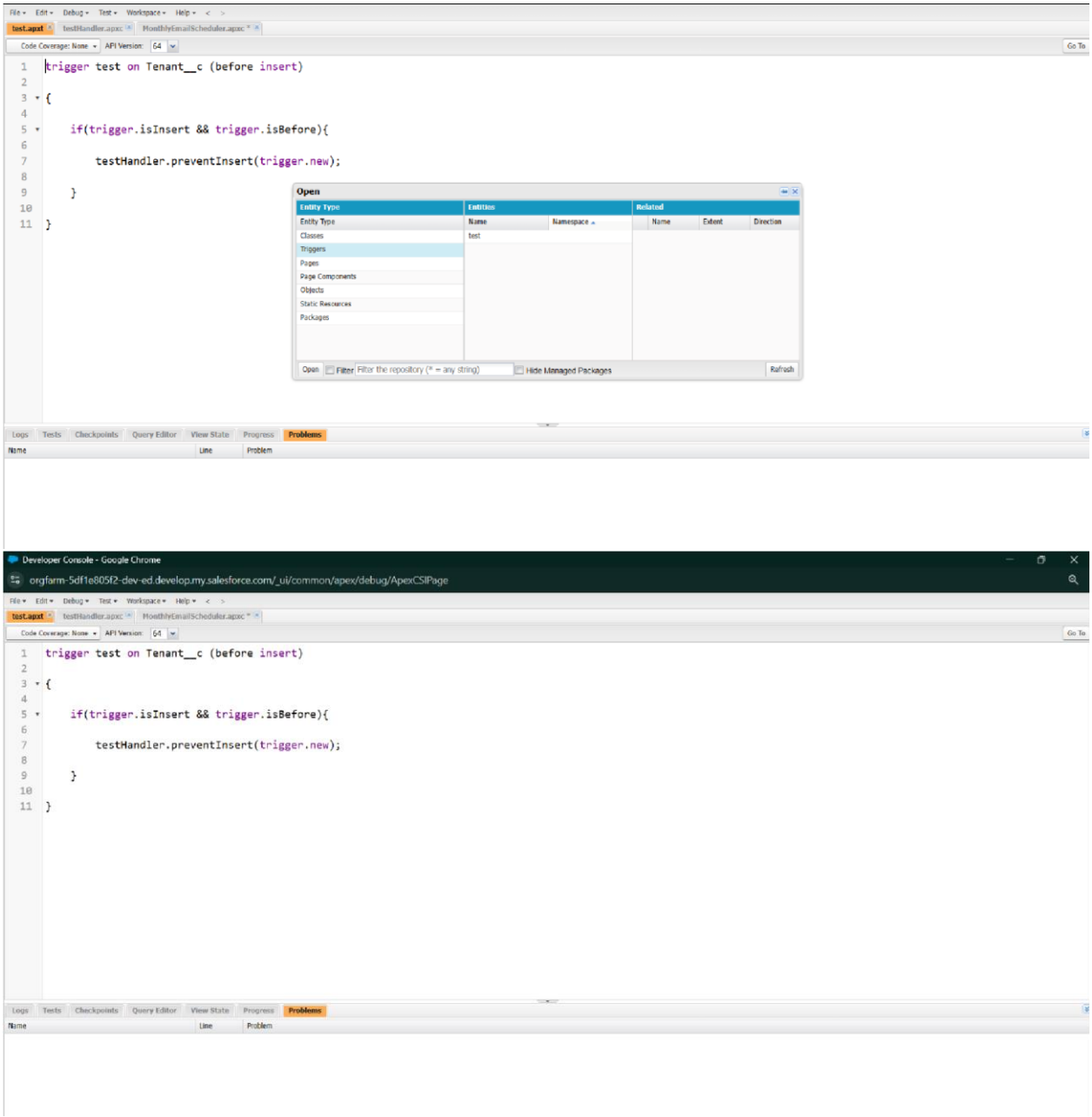


For Check for Vacant:

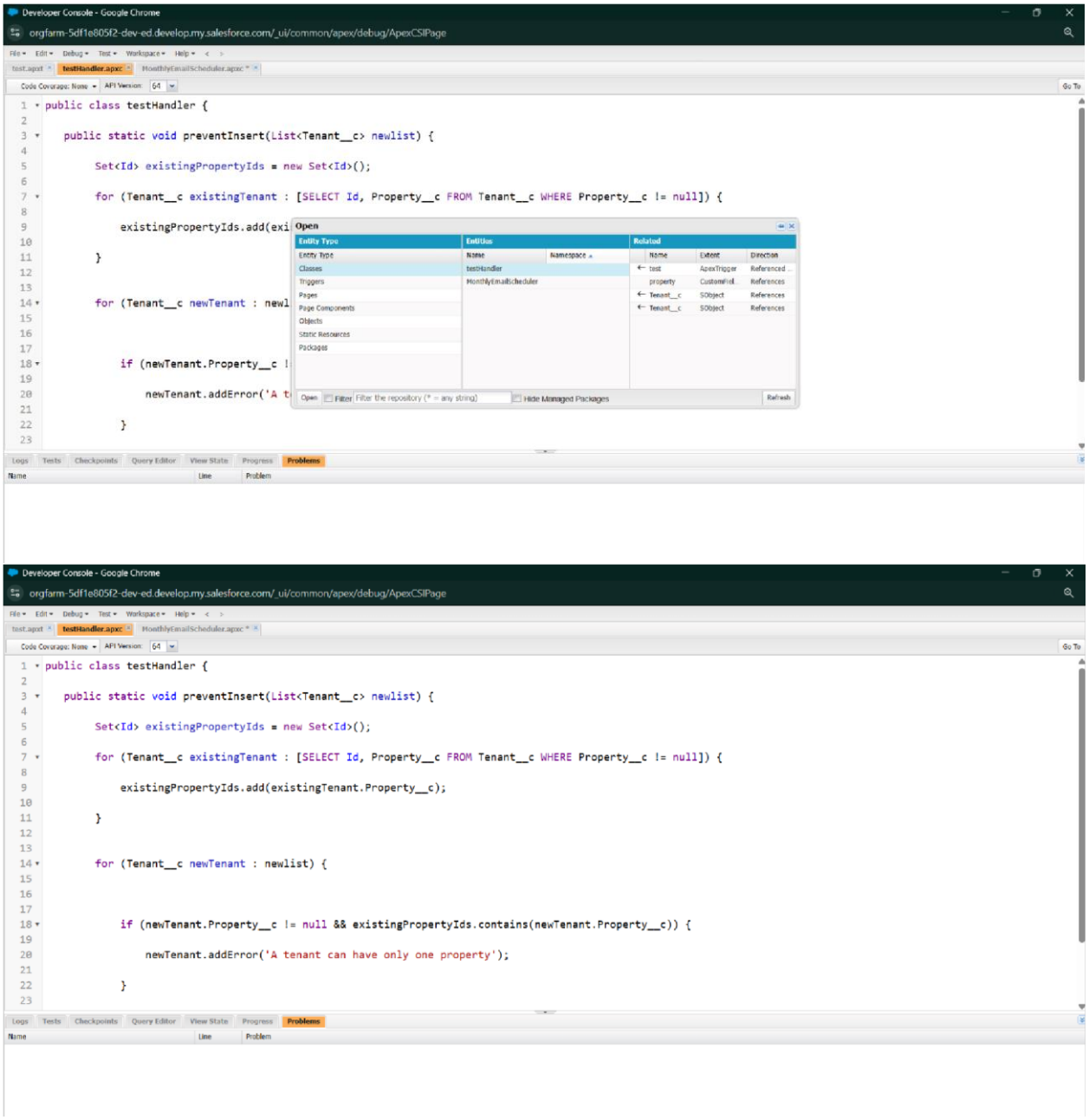


- Apex Trigger

  Create an Apex Trigger



Create an Apex Handler class


Developer Console - Google Chrome
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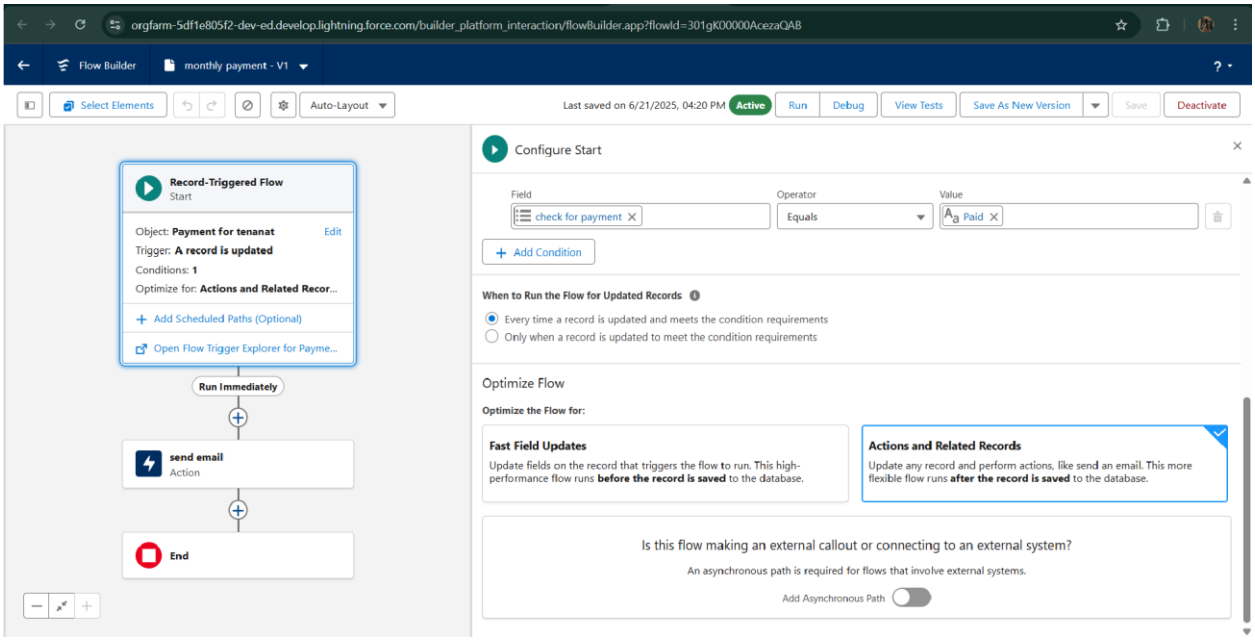
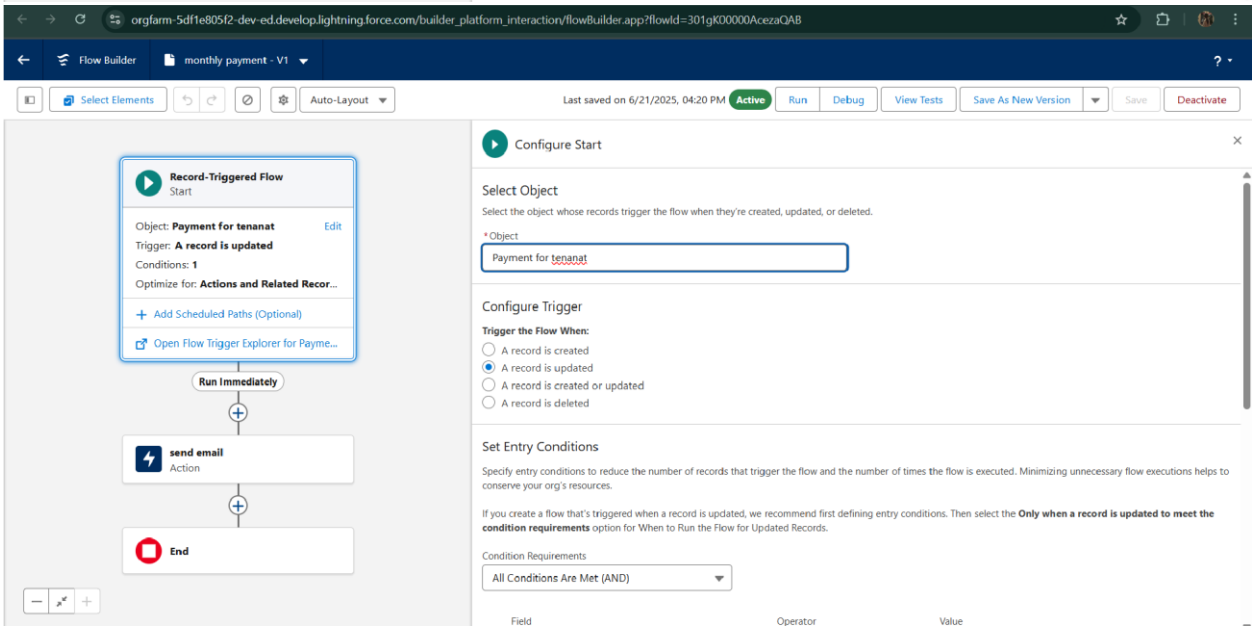
public class testHandler {
public static void preventInsert(List<Tenant__c> newlist) {
Set<Id> existingPropertyIds = new Set<Id>();
for (Tenant__c existingTenant : [SELECT Id, Property__c FROM Tenant__c WHERE Property__c != null]) {
existingPropertyIds.add(exi
}
for (Tenant__c newTenant : newl
if (newTenant.Property__c !
newTenant.addError('A t
}
Open
Entity Type
EntUtils
Related
Classes
Triggers
Pages
Page Components
Objects
Static Resources
Packages
testHandler
MonthlyEmailScheduler
test
property
Tenant__c
Tenant__c
Logs
Tests
Checkpoints
Query Editor
View State
Progress
Problems
Name
Line
Problem

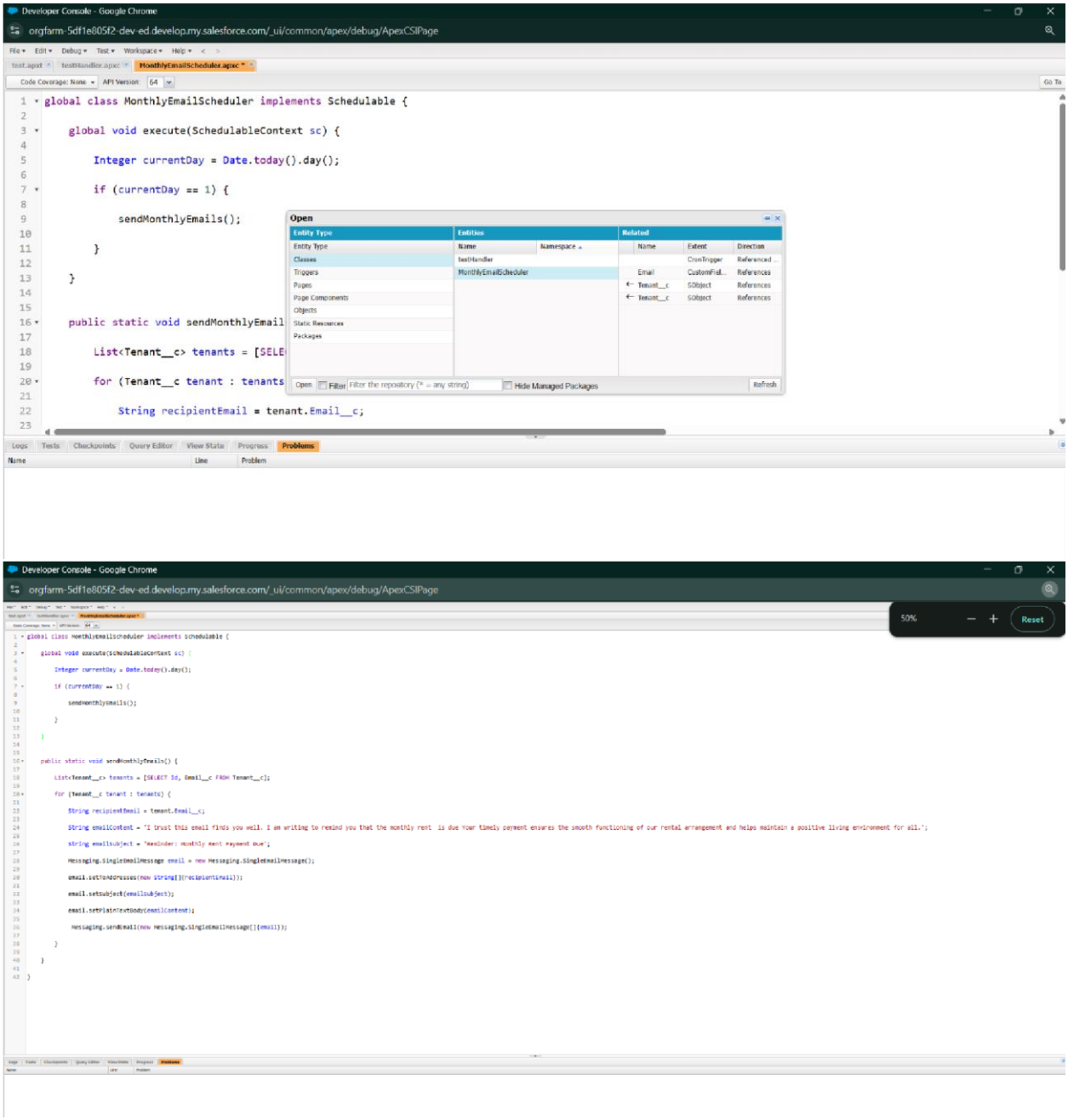
Developer Console - Google Chrome
orgfarm-5df1e805f2-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage
public class testHandler {
public static void preventInsert(List<Tenant__c> newlist) {
Set<Id> existingPropertyIds = new Set<Id>();
for (Tenant__c existingTenant : [SELECT Id, Property__c FROM Tenant__c WHERE Property__c != null]) {
existingPropertyIds.add(existingTenant.Property__c);
}
for (Tenant__c newTenant : newlist) {
if (newTenant.Property__c != null && existingPropertyIds.contains(newTenant.Property__c)) {
newTenant.addError('A tenant can have only one property');
}
Logs
Tests
Checkpoints
Query Editor
View State
Progress
Problems
Name
Line
Problem

- FLOWS

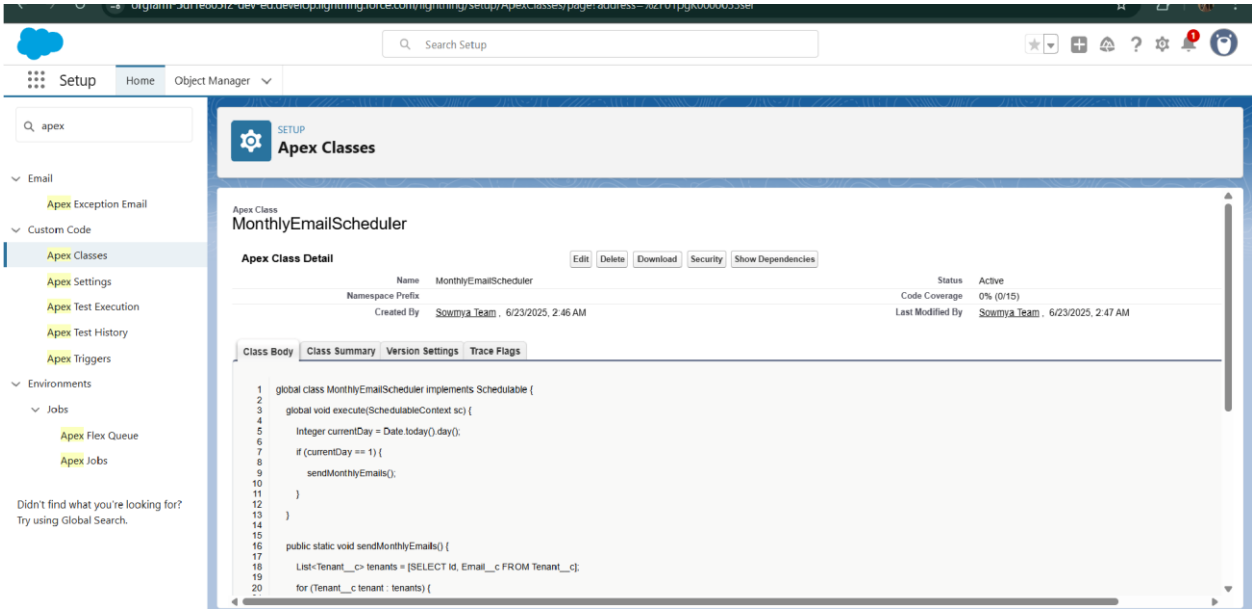


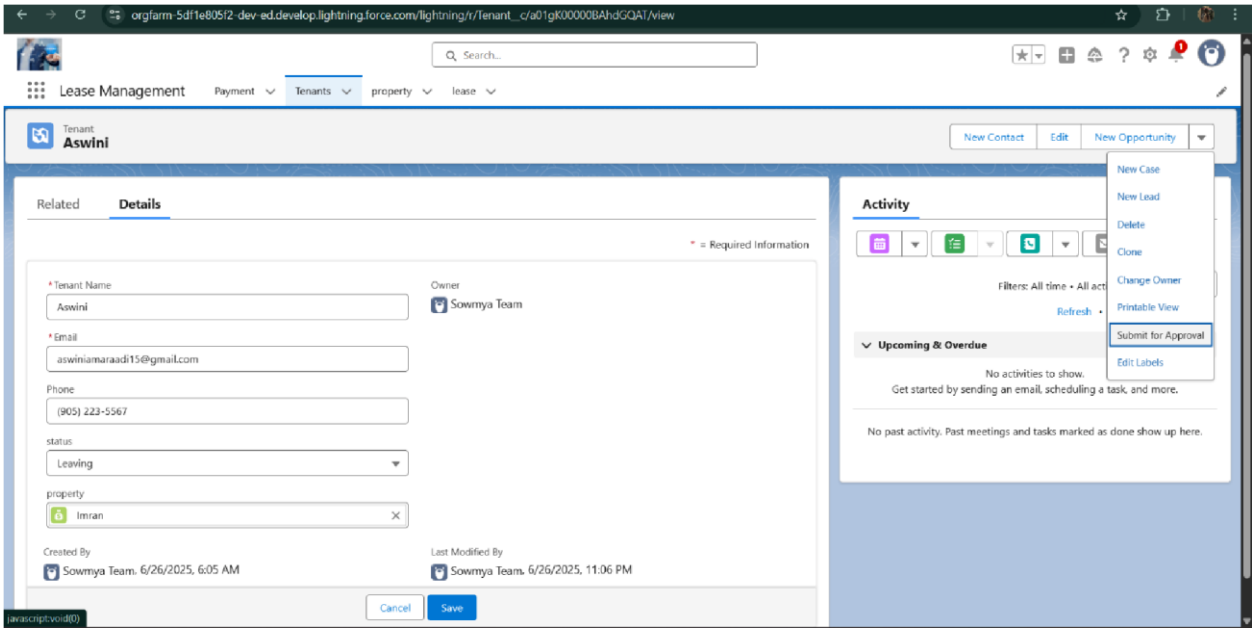


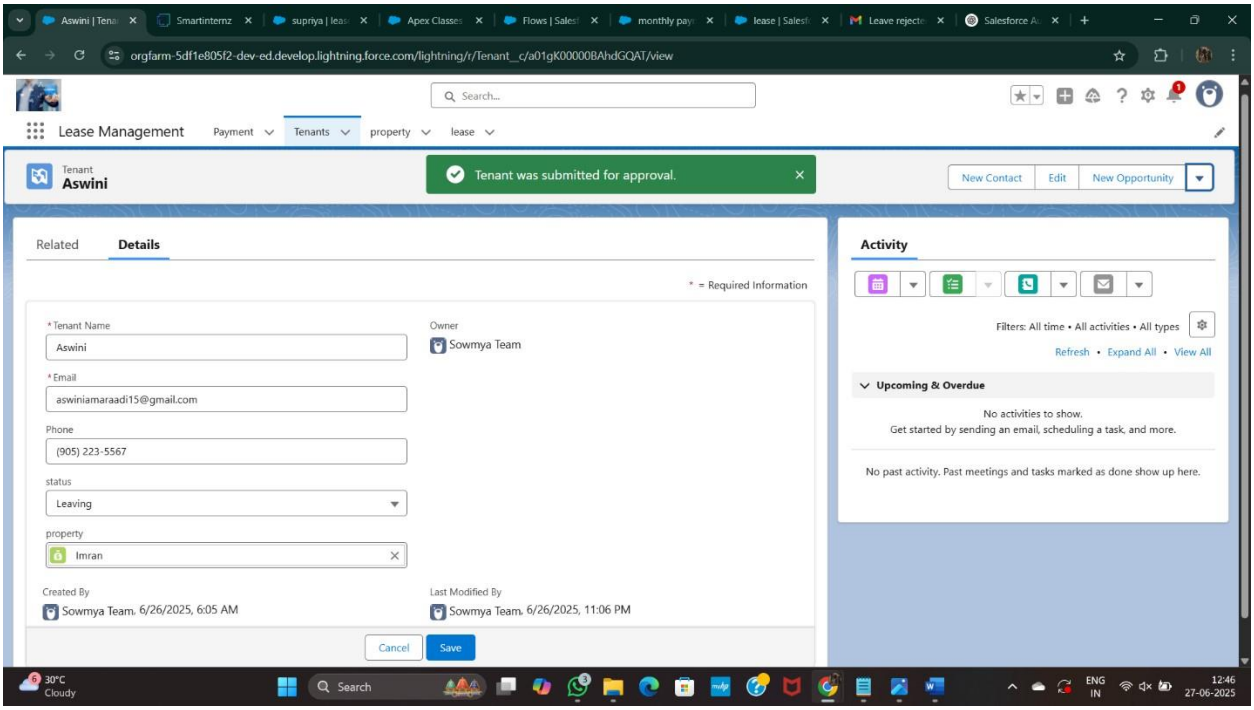
- Schedule class:
  Create an Apex Class

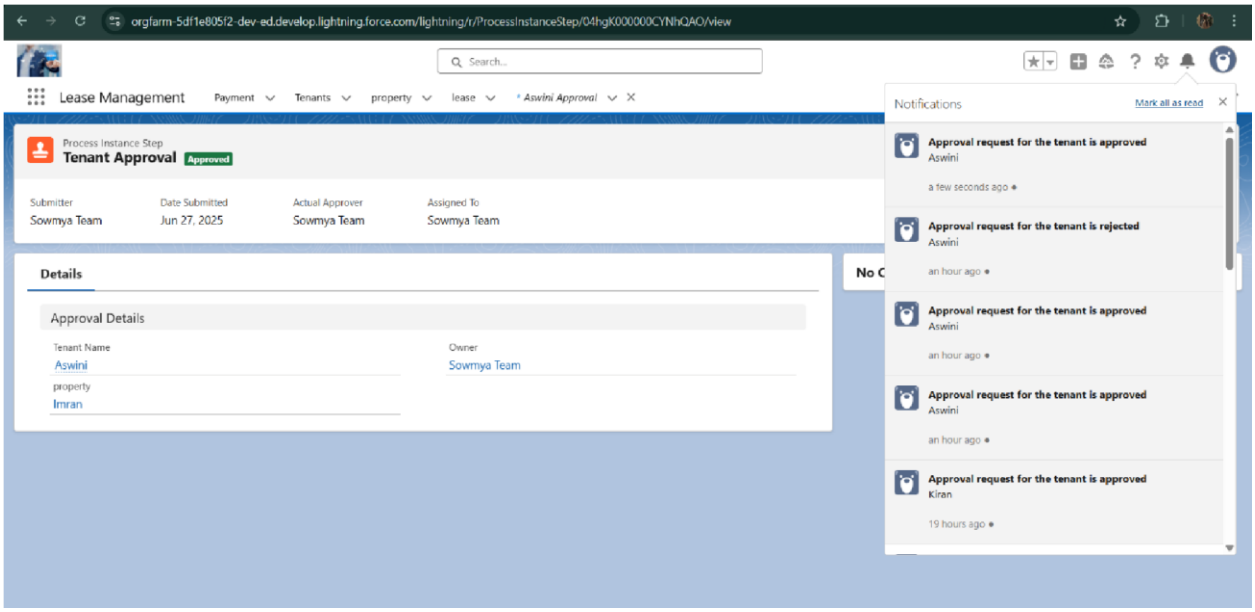


Schedule Apex class


Search Setup
Setup
Home
Object Manager
apex
Email
Apex Exception Email
Custom Code
Apex Classes
Apex Settings
Apex Test Execution
Apex Test History
Apex Triggers
Environments
Jobs
Apex Flex Queue
Apex Jobs
Didn't find what you're looking for?
Try using Global Search.
SETUP
Apex Classes
Apex Class
MonthlyEmailScheduler
Apex Class Detail
Edit
Delete
Download
Security
Show Dependencies
Name MonthlyEmailScheduler
Namespace Prefix
Created By Sowmya Team , 6/23/2025, 2:46 AM
Status Active
Code Coverage 0% (0/15)
Last Modified By Sowmya Team , 6/23/2025, 2:47 AM
Class Body
Class Summary
Version Settings
Trace Flags
global class MonthlyEmailScheduler implements Schedulable {
global void execute(SchedulableContext sc) {
Integer currentDay = Date.today().day();
if (currentDay == 1) {
sendMonthlyEmails();
}
}
public static void sendMonthlyEmails() {
List<Tenant__c> tenants = [SELECT Id, Email__c FROM Tenant__c];
for (Tenant__c tenant : tenants) {


orgfarm-5df1e805f2-dev-ed.develop.lightning.force.com/lightning/r/Tenant__c/a01gK00000BAhdGQAT/view
Search...
Lease Management
Payment
Tenants
property
lease
Tenant
Aswini
New Contact
Edit
New Opportunity
New Case
New Lead
Delete
Clone
Change Owner
Printable View
Submit for Approval
Edit Labels
Related
Details
* = Required Information
*Tenant Name
Aswini
Owner
Sowmya Team
*Email
aswiniamaraadi15@gmail.com
Phone
(905) 223-5567
status
Leaving
property
Imran
Created By
Sowmya Team, 6/26/2025, 6:05 AM
Last Modified By
Sowmya Team, 6/26/2025, 11:06 PM
Cancel
Save
Activity
Filters: All time • All act
Refresh
Upcoming & Overdue
No activities to show.
Get started by sending an email, scheduling a task, and more.
No past activity. Past meetings and tasks marked as done show up here.
javascript:void(0)

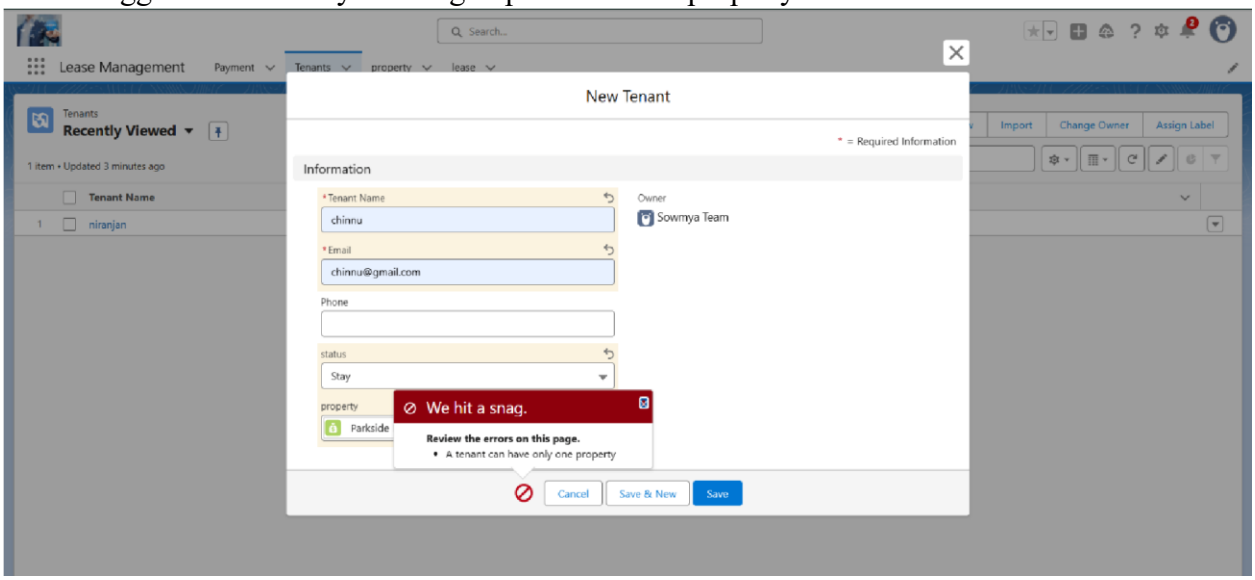

Lease Management
Payment
Tenants
property
lease
Tenant
Aswini
Tenant was submitted for approval.
New Contact
Edit
New Opportunity
Related
Details
* = Required Information
*Tenant Name
Aswini
Owner
Sowmya Team
*Email
aswiniamaraadi15@gmail.com
Phone
(905) 223-5567
status
Leaving
property
Imran
Created By
Sowmya Team, 6/26/2025, 6:05 AM
Last Modified By
Sowmya Team, 6/26/2025, 11:06 PM
Cancel
Save
Activity
Filters: All time • All activities • All types
Refresh • Expand All • View All
Upcoming & Overdue
No activities to show.
Get started by sending an email, scheduling a task, and more.
No past activity. Past meetings and tasks marked as done show up here.


Lease Management
Payment
Tenants
property
lease
* Aswini Approval
Process Instance Step
Tenant Approval
Approved
Submitter
Sowmya Team
Date Submitted
Jun 27, 2025
Actual Approver
Sowmya Team
Assigned To
Sowmya Team
Details
Approval Details
Tenant Name
Aswini
Owner
Sowmya Team
property
Imran
Notifications
Mark all as read
Approval request for the tenant is approved
Aswini
a few seconds ago
Approval request for the tenant is rejected
Aswini
an hour ago
Approval request for the tenant is approved
Aswini
an hour ago
Approval request for the tenant is approved
Aswini
an hour ago
Approval request for the tenant is approved
Kiran
19 hours ago

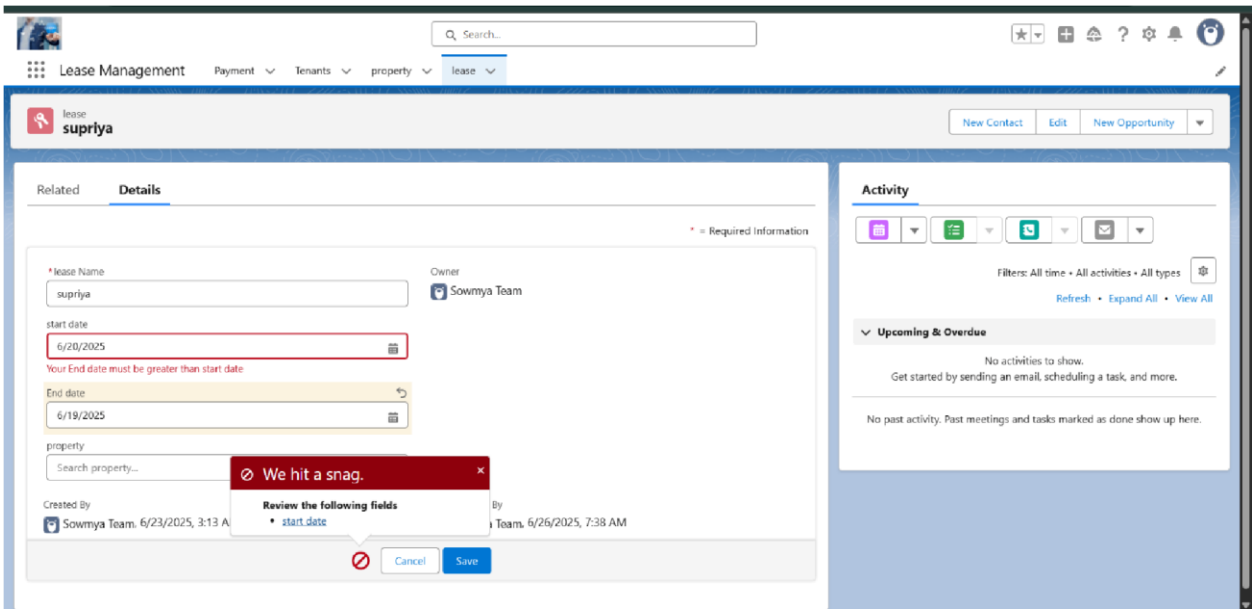
7. FUNCTIONAL AND PERFORMANCE TESTING

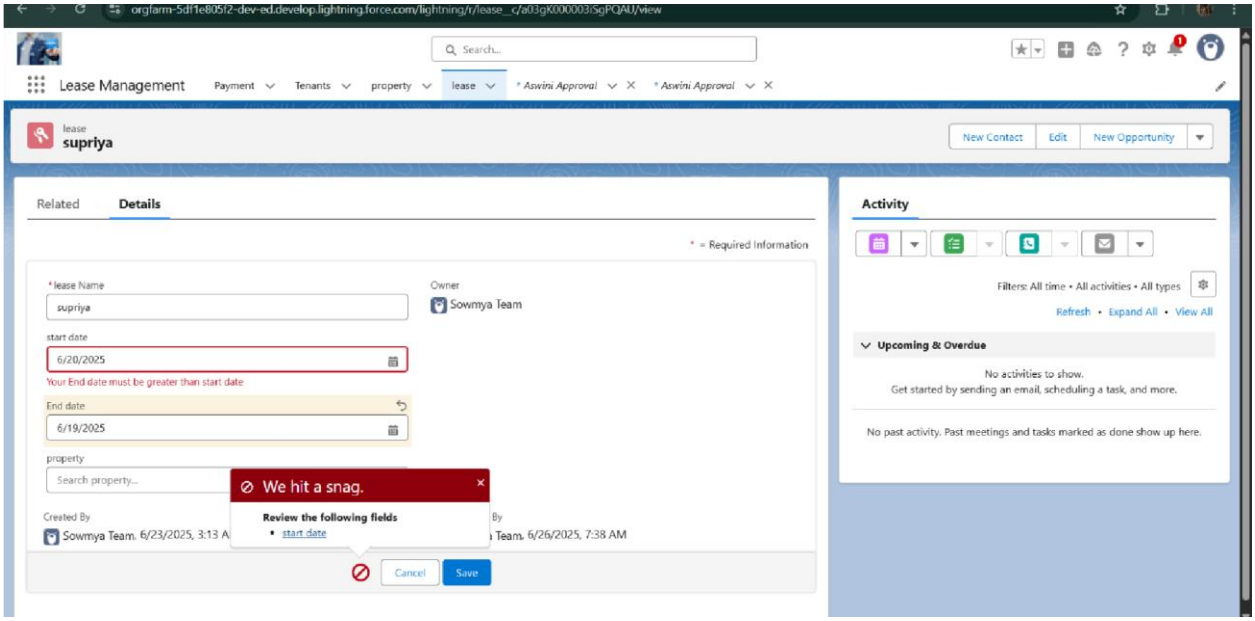
7.1 Performance Testing

- Trigger validation by entering duplicate tenant-property records

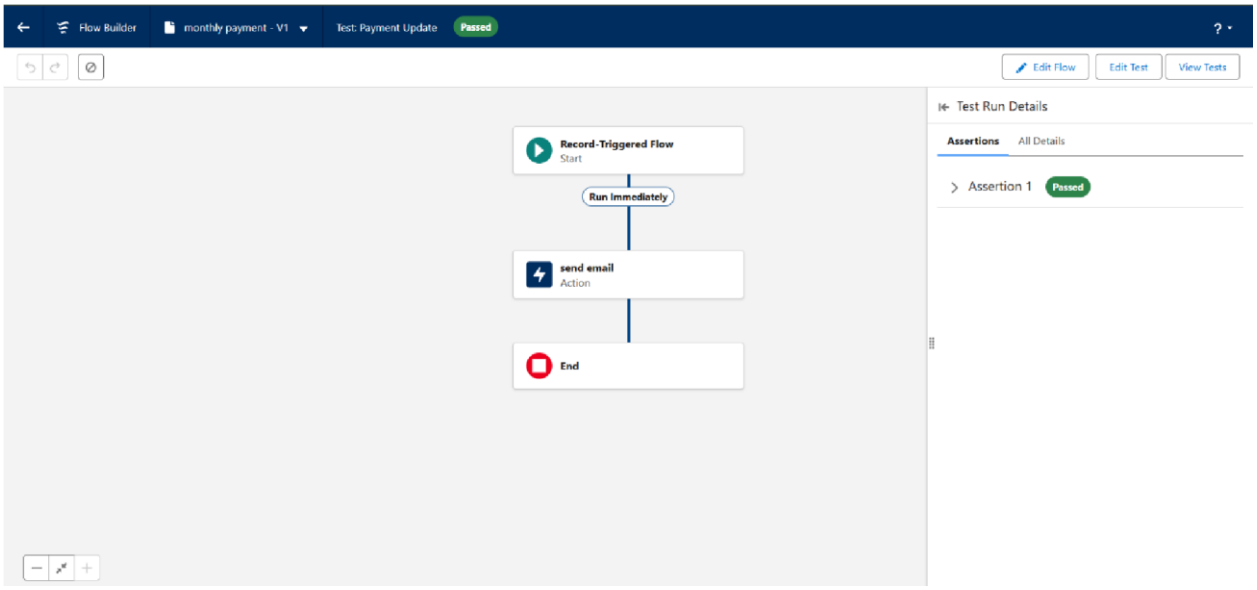


- Validation Rule checking

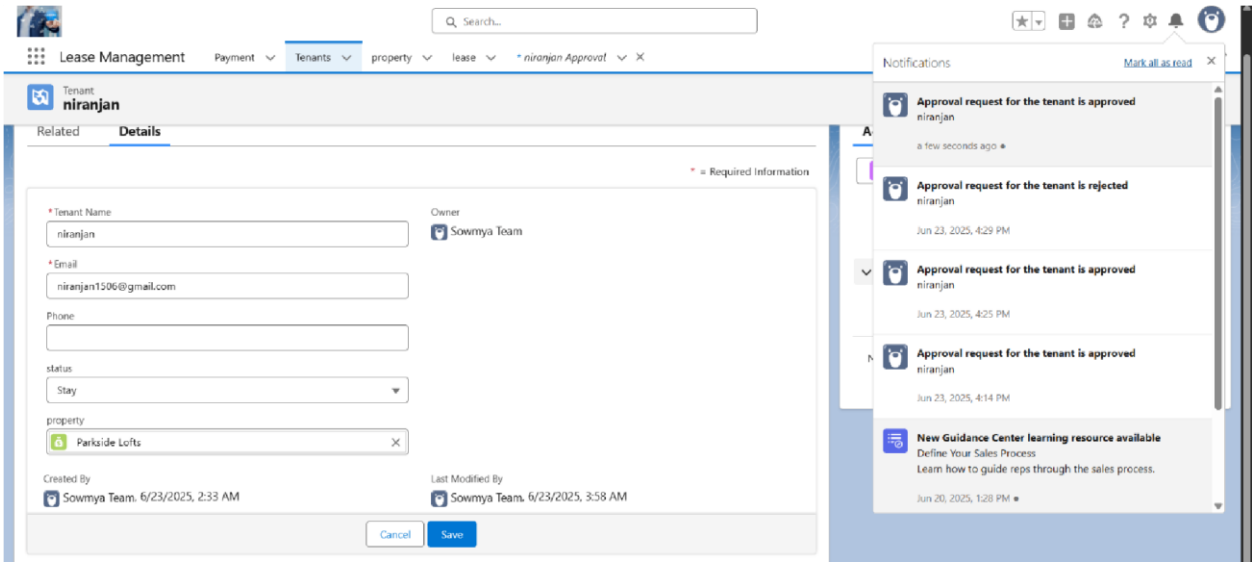


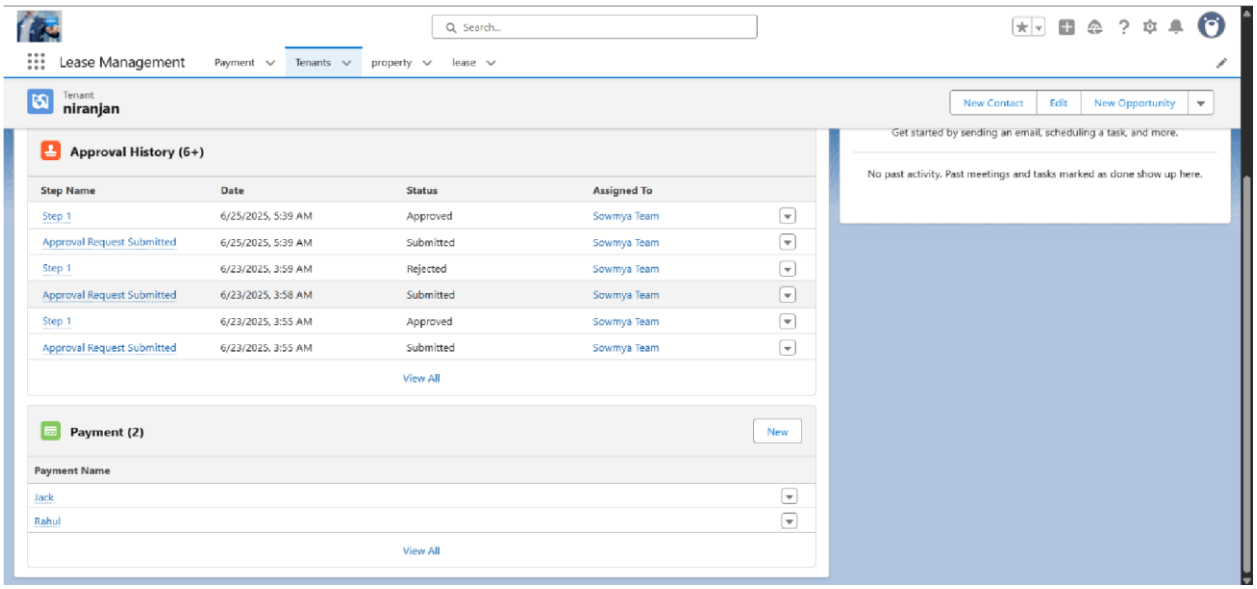


- Test flows on payment update



- Approval process validated through email alerts and status updates

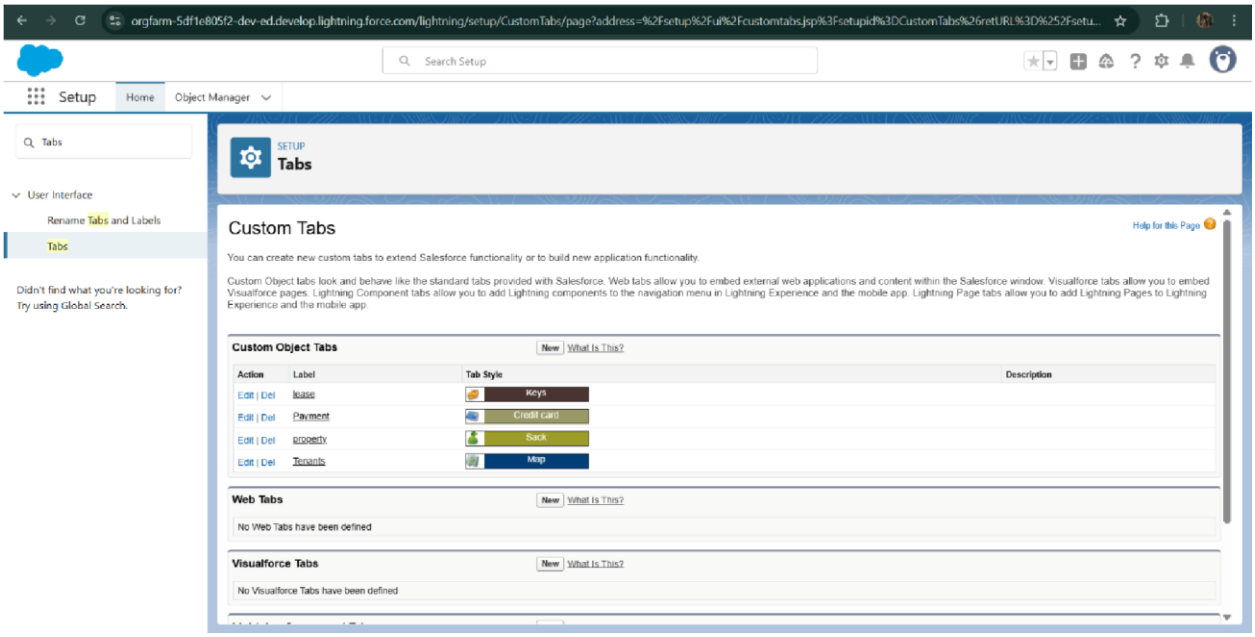

Search...
Lease Management
Payment
Tenants
property
lease
* niranjan Approval
Tenant
niranjan
Related
Details
* = Required Information
*Tenant Name
niranjan
Owner
Sowmya Team
*Email
niranjan1506@gmail.com
Phone
status
Stay
property
Parkside Lofts
Created By
Sowmya Team, 6/23/2025, 2:33 AM
Last Modified By
Sowmya Team, 6/23/2025, 3:58 AM
Cancel
Save
Notifications
Mark all as read
Approval request for the tenant is approved
niranjan
a few seconds ago
Approval request for the tenant is rejected
niranjan
Jun 23, 2025, 4:29 PM
Approval request for the tenant is approved
niranjan
Jun 23, 2025, 4:25 PM
Approval request for the tenant is approved
niranjan
Jun 23, 2025, 4:14 PM
New Guidance Center learning resource available
Define Your Sales Process
Learn how to guide reps through the sales process.
Jun 20, 2025, 1:28 PM


Search...
Lease Management
Payment
Tenants
property
lease
Tenant
niranjan
New Contact
Edit
New Opportunity
Get started by sending an email, scheduling a task, and more.
No past activity. Past meetings and tasks marked as done show up here.
Approval History (6+)
Step Name
Date
Status
Assigned To
Step 1
6/25/2025, 5:39 AM
Approved
Sowmya Team
Approval Request Submitted
6/25/2025, 5:39 AM
Submitted
Sowmya Team
Step 1
6/23/2025, 3:59 AM
Rejected
Sowmya Team
Approval Request Submitted
6/23/2025, 3:58 AM
Submitted
Sowmya Team
Step 1
6/23/2025, 3:55 AM
Approved
Sowmya Team
Approval Request Submitted
6/23/2025, 3:55 AM
Submitted
Sowmya Team
View All
Payment (2)
New
Payment Name
Jack
Rahul
View All

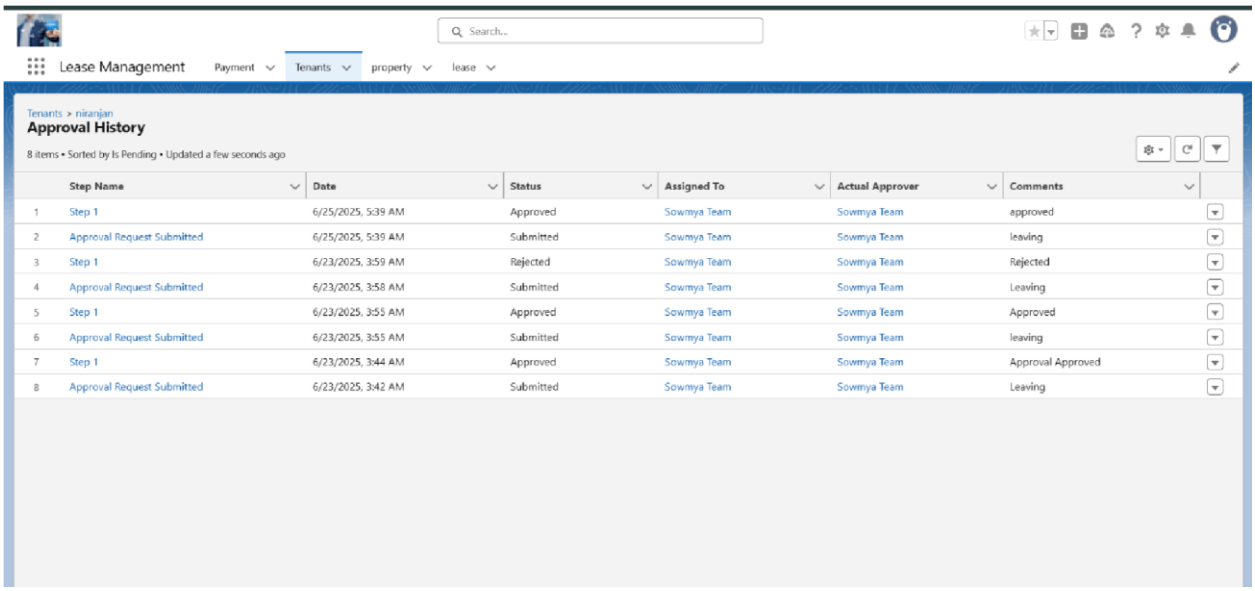
8. RESULTS

8.1 Output Screenshots

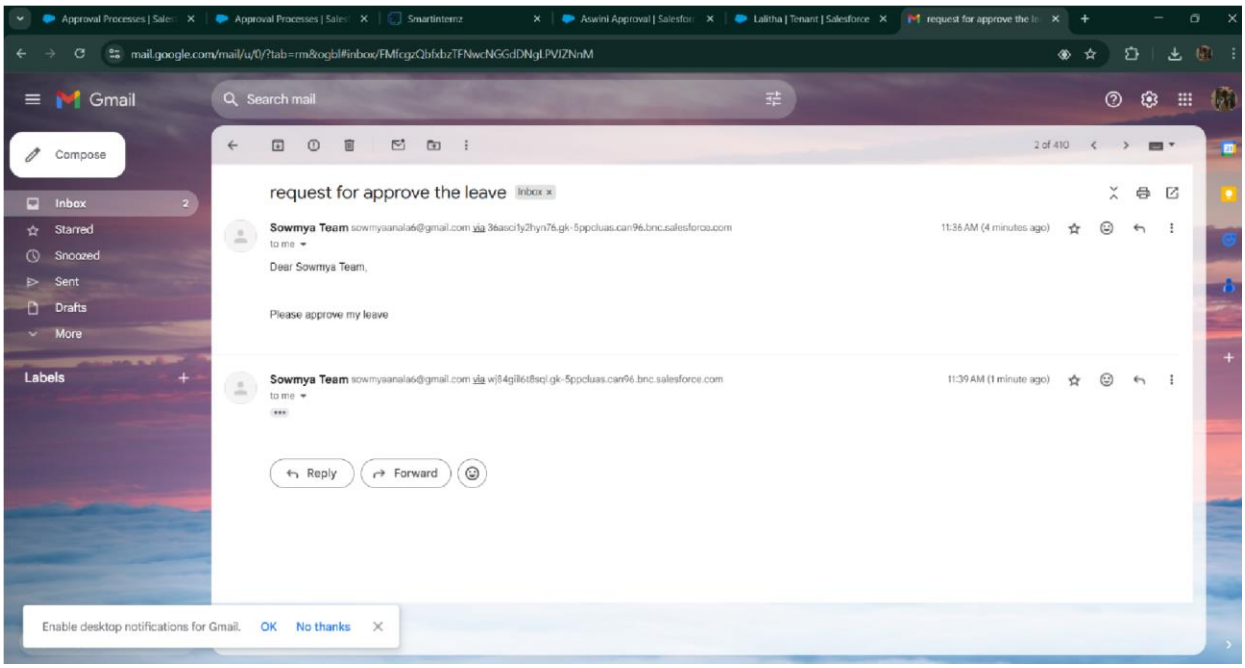
- Tabs for Property, Tenant, Lease, Payment



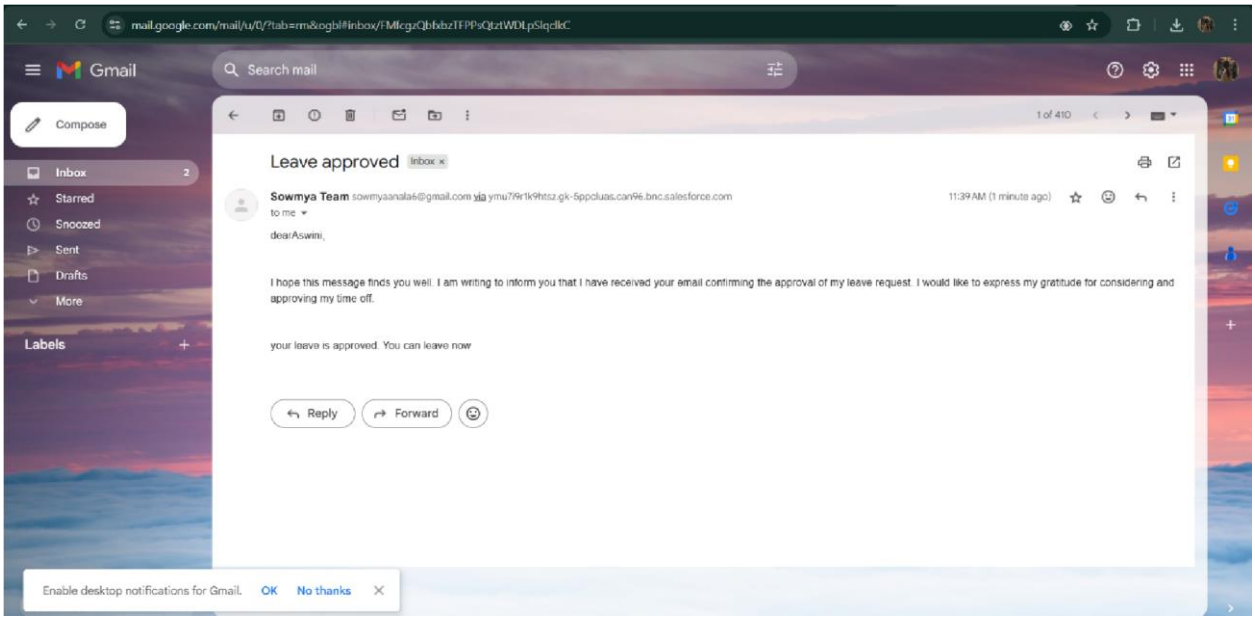
- Email alerts



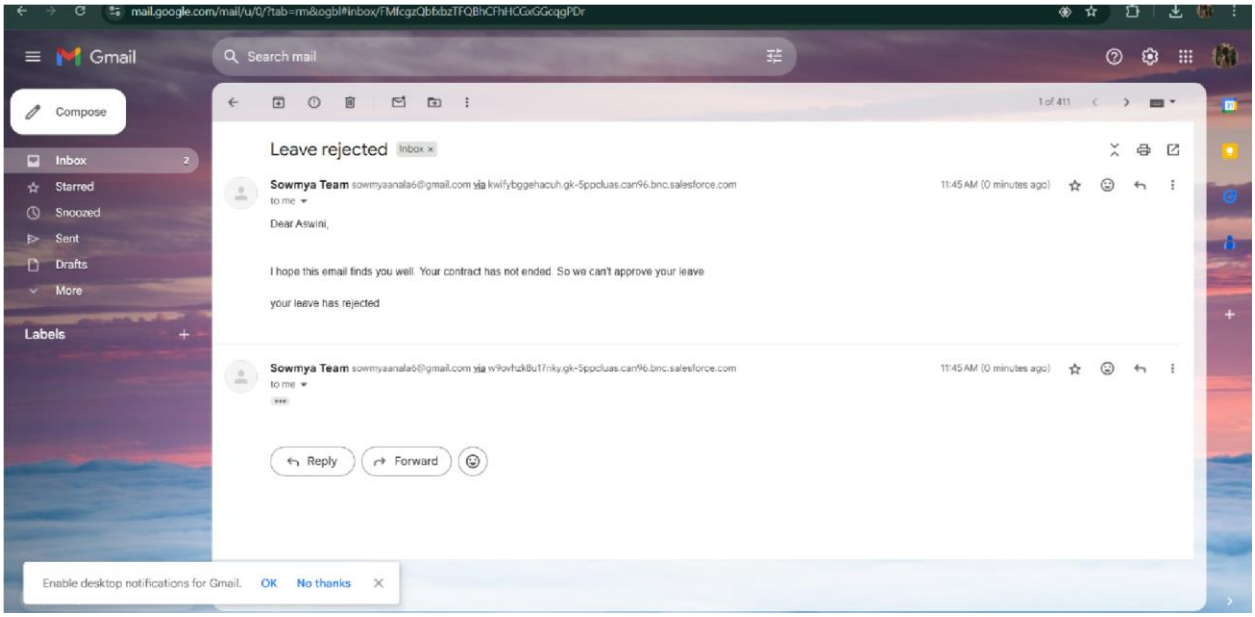
- Request for approve the leave



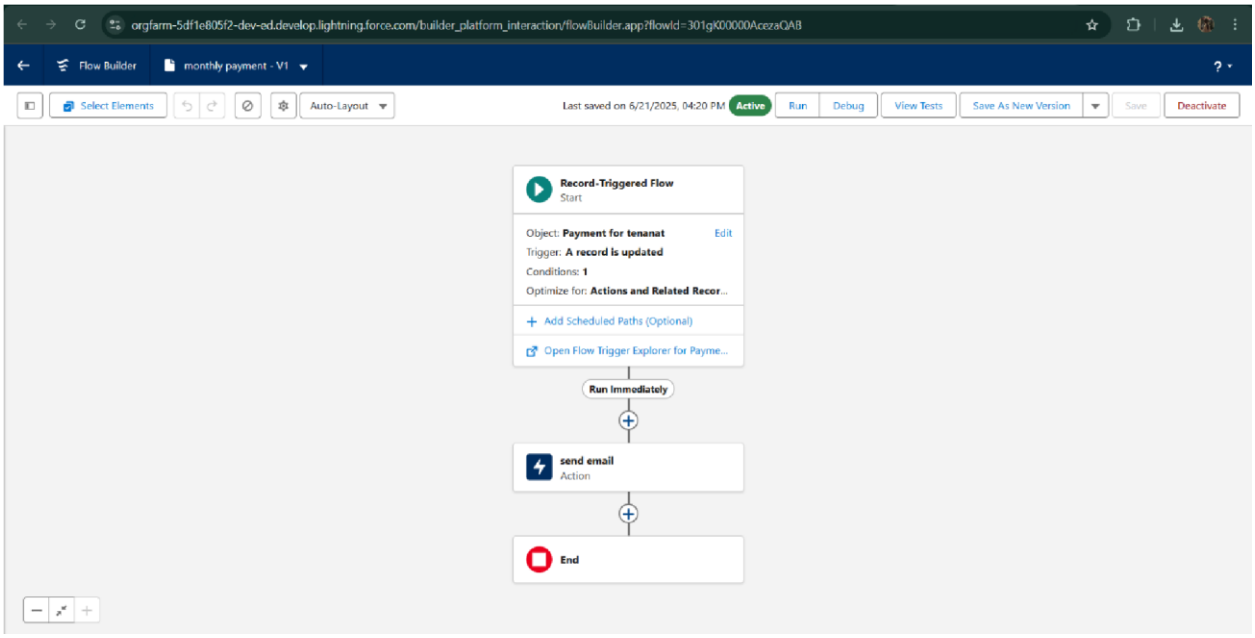
- Leave approved



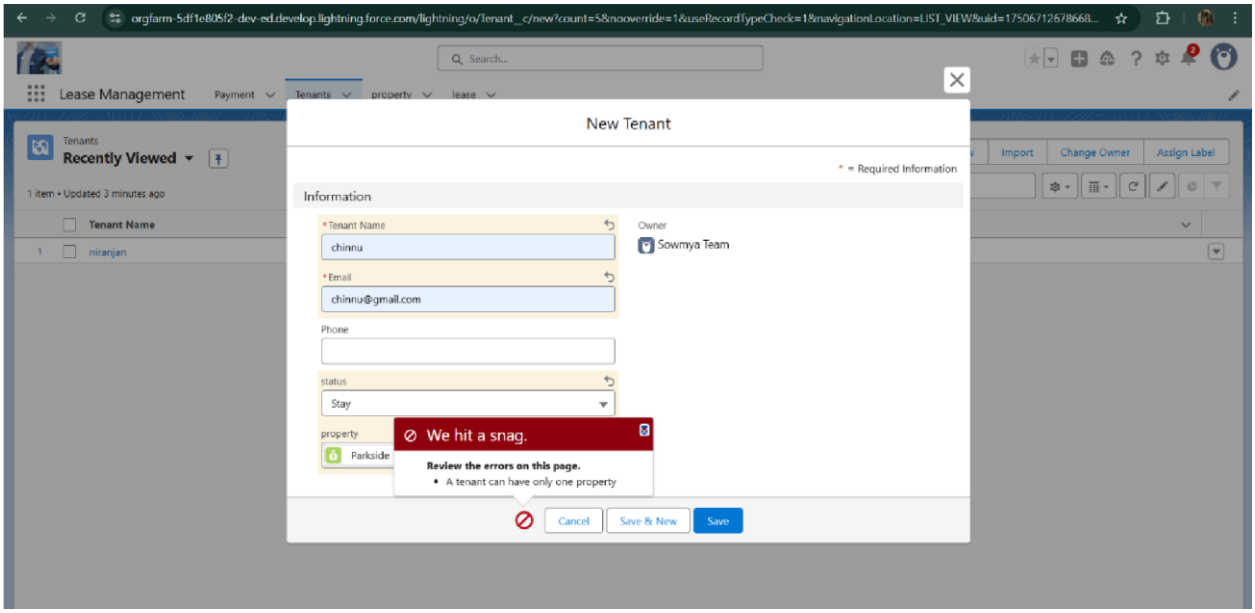
- Leave rejected



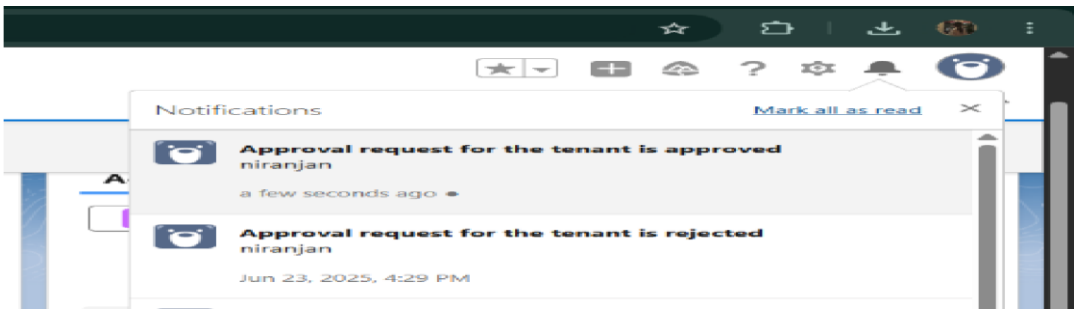
- Flow runs



- Trigger error messages



- Approval process notifications



---

9. ADVANTAGES & DISADVANTAGES

Advantages:

1. **Centralized lease data**
   All lease agreements, documents, and tenant information are stored in one system, improving organization and accessibility.
2. **Automated lease tracking**
   System-generated reminders for lease renewals, rent due dates, and compliance deadlines reduce missed tasks and penalties.

3. **Improved reporting and analytics**
   Real-time dashboards and reports provide insights into occupancy, lease expirations, and revenue, supporting better decision-making.
4. **Enhanced tenant communication**
   Automated emails and notifications streamline communication with tenants about payments, renewals, or maintenance updates.
5. **Audit readiness and compliance**
   Accurate records and change tracking help ensure compliance with lease accounting standards and audit requirements.

Disadvantages:

1. **Initial setup complexity**
   Implementing a lease management system can be time-consuming, requiring detailed data migration and configuration.
2. **User training required**
   Property managers and staff may need training to fully understand and use the system effectively.
3. **High implementation costs**
   Custom development, integration, and licensing fees can be expensive, especially for smaller firms.
4. **Dependence on digital access**
   Lease data is typically cloud-based, so system access requires internet connectivity and appropriate user permissions.
5. **Data security concerns**
   Storing sensitive lease and financial data digitally introduces the risk of unauthorized access or data breaches if not properly secured.

---

10. CONCLUSION

The Lease Management System successfully streamlines the operations of leasing through a structured, automated Salesforce application. It improves efficiency, communication, and data accuracy for both admins and tenants.

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11. FUTURE SCOPE

Future Scope of Lease Management System

1. **Integration with Online Payment Gateways**
   Integrating secure online payment gateways (like Stripe, Razorpay, or PayPal) will allow tenants to pay rent, deposits, and other charges directly through the system. This ensures faster transactions, automated receipts, and real-time payment tracking—reducing manual reconciliation for finance teams.
2. **Visual Dashboards for Better Insights**
   Advanced dashboards using tools like Salesforce Reports or third-party analytics platforms can provide real-time insights into lease status, occupancy rates, rent collection, pending renewals, and more. These visualizations help property managers make data-driven decisions and forecast trends effectively.
3. **SMS Notification Features**
   Alongside emails, SMS alerts can notify tenants and staff about payment due dates, lease renewals, maintenance schedules, or compliance reminders. SMS communication ensures broader reach and immediate attention, especially when tenants are offline or prefer mobile updates.
4. **Role-Based Access and Analytics**
   Implementing detailed role-based permissions allows specific users (e.g., admin, property manager, tenant) to access only relevant features and data. Coupling this with role-specific analytics helps each user view KPIs tailored to their responsibilities, improving operational efficiency and security**.**
5. **Mobile App Support**
   A dedicated mobile app or mobile-responsive interface can empower tenants and managers to manage leases, payments, documents, and communications on the go. This improves accessibility and user engagement.
6. **AI-Powered Predictive Maintenance**
   Future versions could use AI to analyse maintenance patterns and predict when certain property assets (like HVAC or plumbing systems) may require servicing—helping reduce downtime and costs.
7. **E-signature and Document Automation**
   Integration with e-signature platforms (e.g., DocuSign, Adobe Sign) will allow digital signing of lease agreements and auto-generation of documents, streamlining onboarding and renewals**.**

8. **Compliance and Legal Tracking**
   Future features could include automated compliance tracking based on local real estate laws, lease accounting standards (like IFRS 16), and tax implications—minimizing legal risks**.**
9. **IoT Integration for Smart Leasing**
   Long-term, the system can integrate with IoT devices (e.g., smart locks, energy meters) for automated check-ins/outs, usage-based billing, and enhanced security or environmental monitoring**.**
10. **Multi-property and Franchise Support**
    As property portfolios grow, the system can evolve to support multiple properties across regions, including different currencies, tax rules, and regulatory compliance—making it suitable for franchises or large real estate chains**.**

---

12. APPENDIX

- **Source Code:** Provided in Apex Classes and Triggers

Test.apxt:

```
trigger test on Tenant__c (before insert) {  if

(trigger.isInsert && trigger.isBefore){

testHandler.preventInsert(trigger.new);

        }

}
```

testHandler.apxc:

```
public class

testHandler {

public static void

preventInsert(List<

Tenant__c> newlist)

{  Set<Id>

existingPropertyIds

= new Set<Id>()

            for (Tenant__c existingTenant : [SELECT Id, Property__c FROM Tenant__c
        WHERE Property__c != null]) {

            existingPropertyIds.add(existingTenant.Property__c;

            } for (Tenant__c newTenant :

            newlist) {

                if (newTenant.Property__c != null &&
            existingPropertyIds.contains(newTenant.Property__c)) { newTenant.addError('A

                tenant can have only one property');

                }

            }

        }

}
```

MothlyEmailScheduler.apxc:

```
global class MonthlyEmailScheduler implements Schedulable {

        global void execute(SchedulableContext sc) { Integer
```

```
        currentDay = Date.today().day(); if (currentDay == 1) {

        sendMonthlyEmails();

                }

        }  public static void

sendMonthlyEmails() { List<Tenant__c>

tenants = [SELECT Id, Email__c FROM

Tenant__c]; for (Tenant__c tenant :

tenants) {

                 String recipientEmail = tenant.Email__c;

                 String emailContent = 'I trust this email finds you well. I am writing to remind
        you that the monthly rent  is due Your timely payment ensures the smooth functioning of
        our rental arrangement and helps maintain a positive living environment for all.';

                String emailSubject = 'Reminder: Monthly Rent Payment Due';

                Messaging.SingleEmailMessage email = new

                Messaging.SingleEmailMessage(); email.setToAddresses(new

                String[]{recipientEmail}); email.setSubject(emailSubject);

                email.setPlainTextBody(emailContent);

                  Messaging.sendEmail(new Messaging.SingleEmailMessage[]{email});

        }

    }

}
```

GitHub Link: https://github.com/AswiniAmaraadi/APSCHE---STB3

Demo Video Link:
https://drive.google.com/file/d/1qi7jVAObIjvhRHv5Qtfw5zoMrErNX-6I/view?usp=drive_link