LEASE MANAGEMENT

College Name: KALLAM HARANADHAREEDY INSTITUTE OF TECHNOLOGY

TEAM ID: LTVIP2025TMID30830

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Team Member: Pamulapati Ravindra

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.

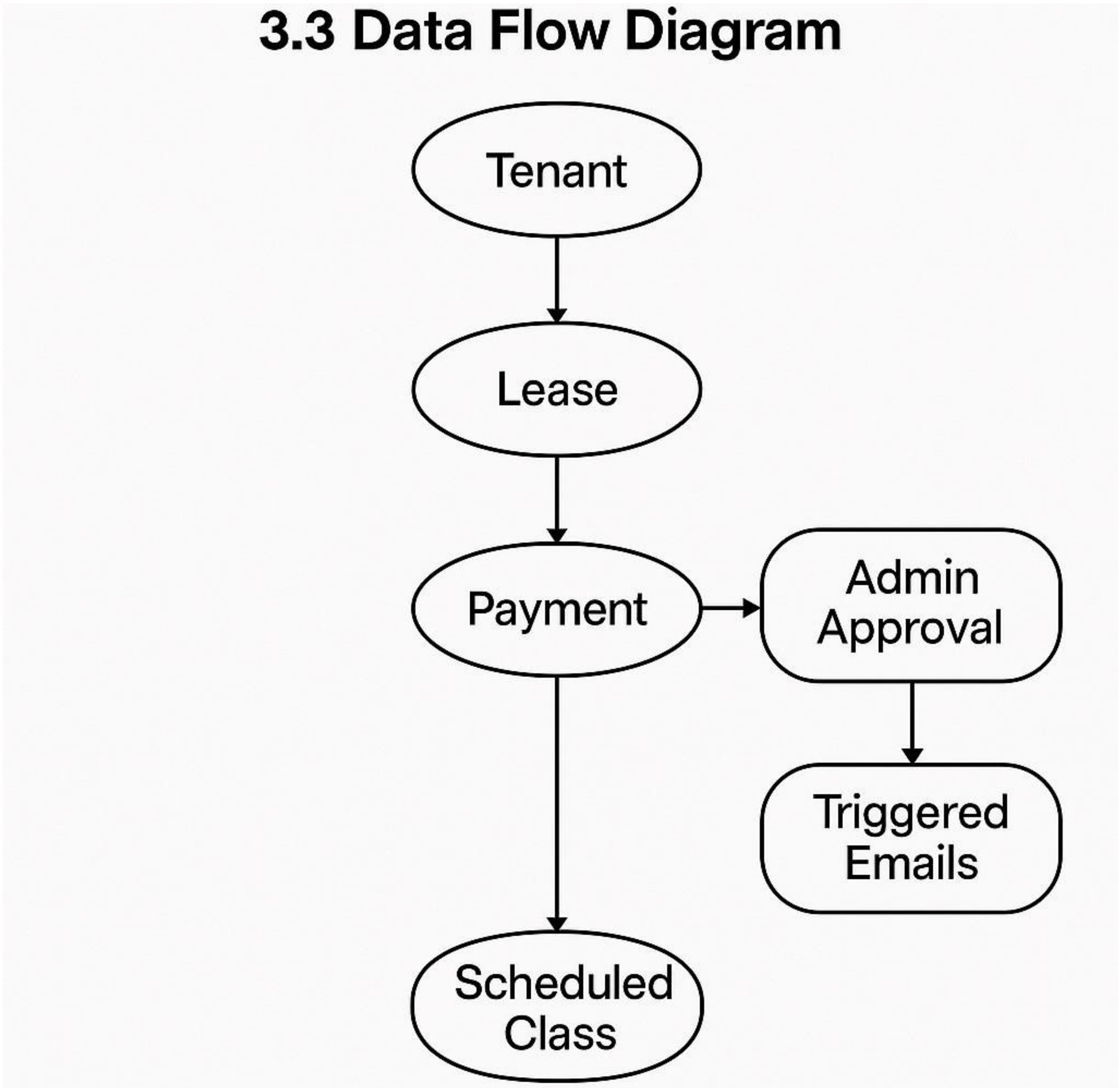
3.2 Solution Requirement

- 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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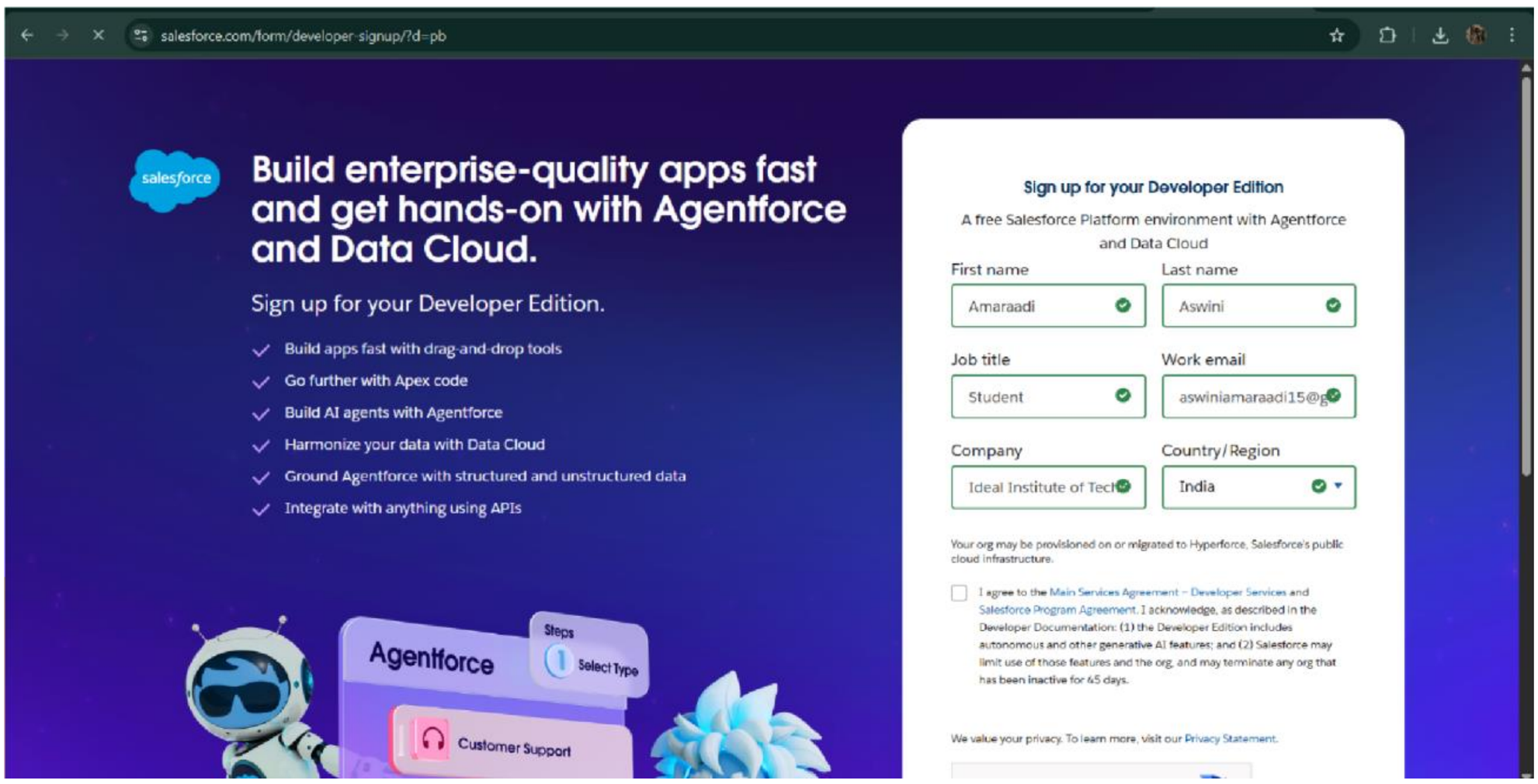
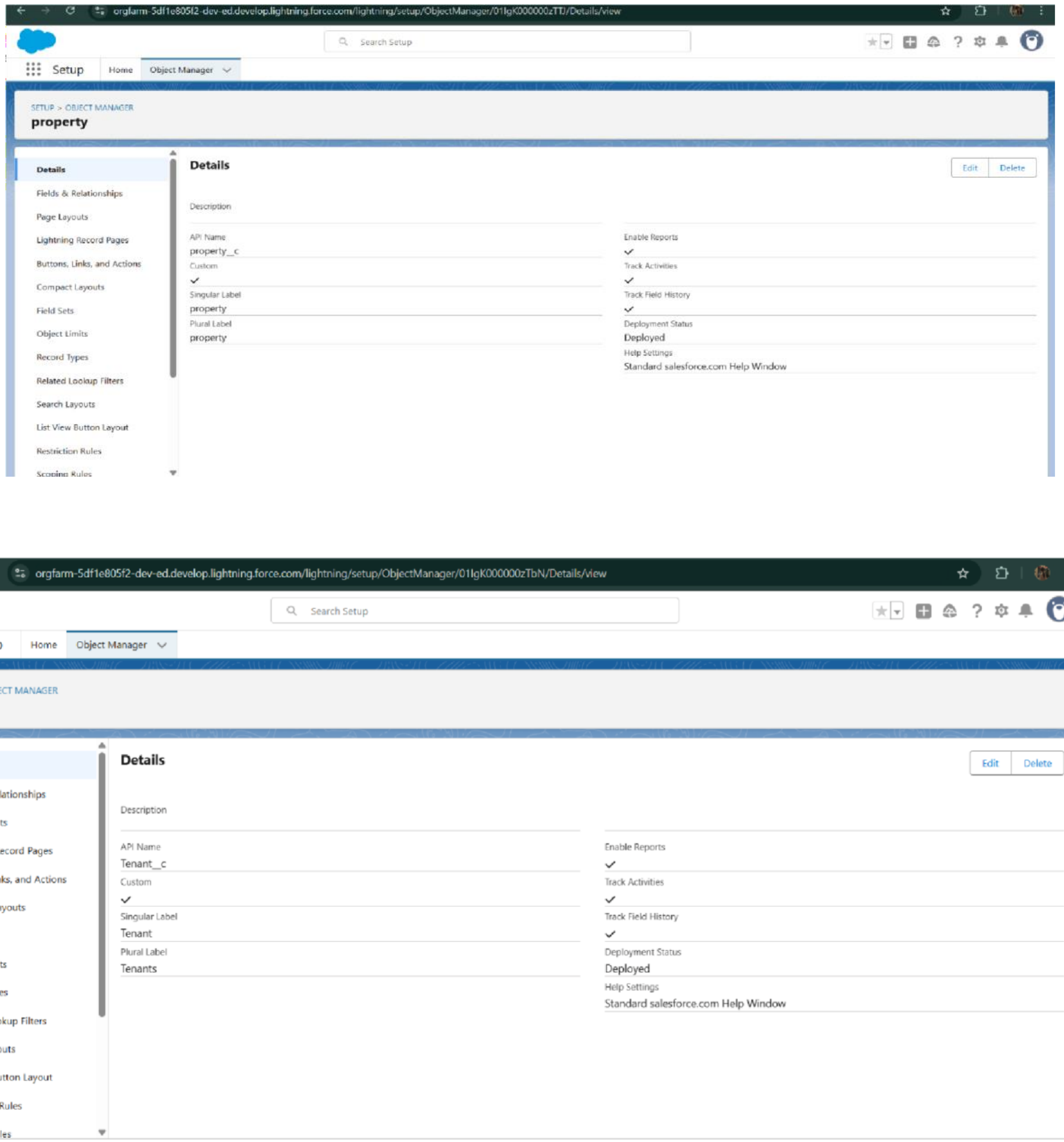
6. DEVELOPMENT PHASE

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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Page Layouts
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Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Search Layouts
List View Button Layout
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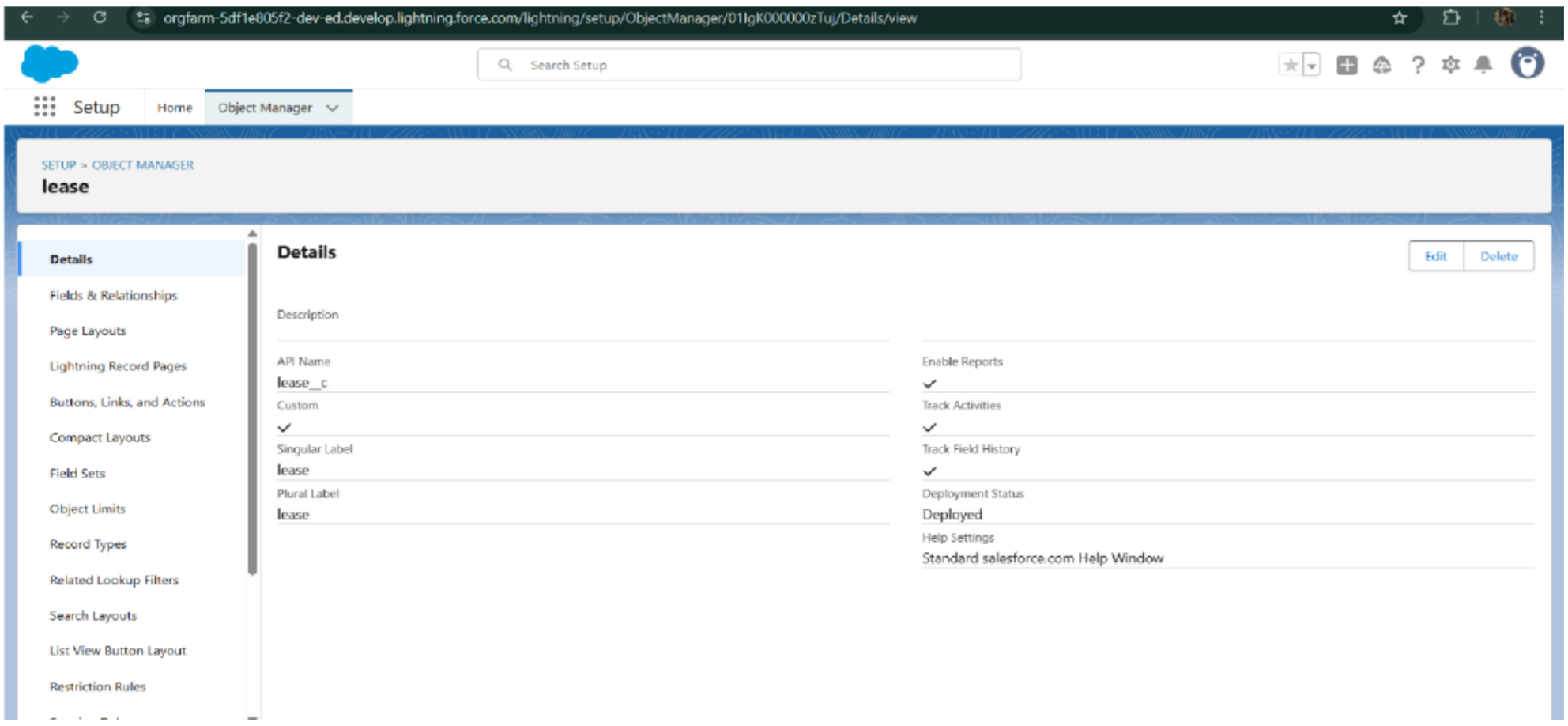
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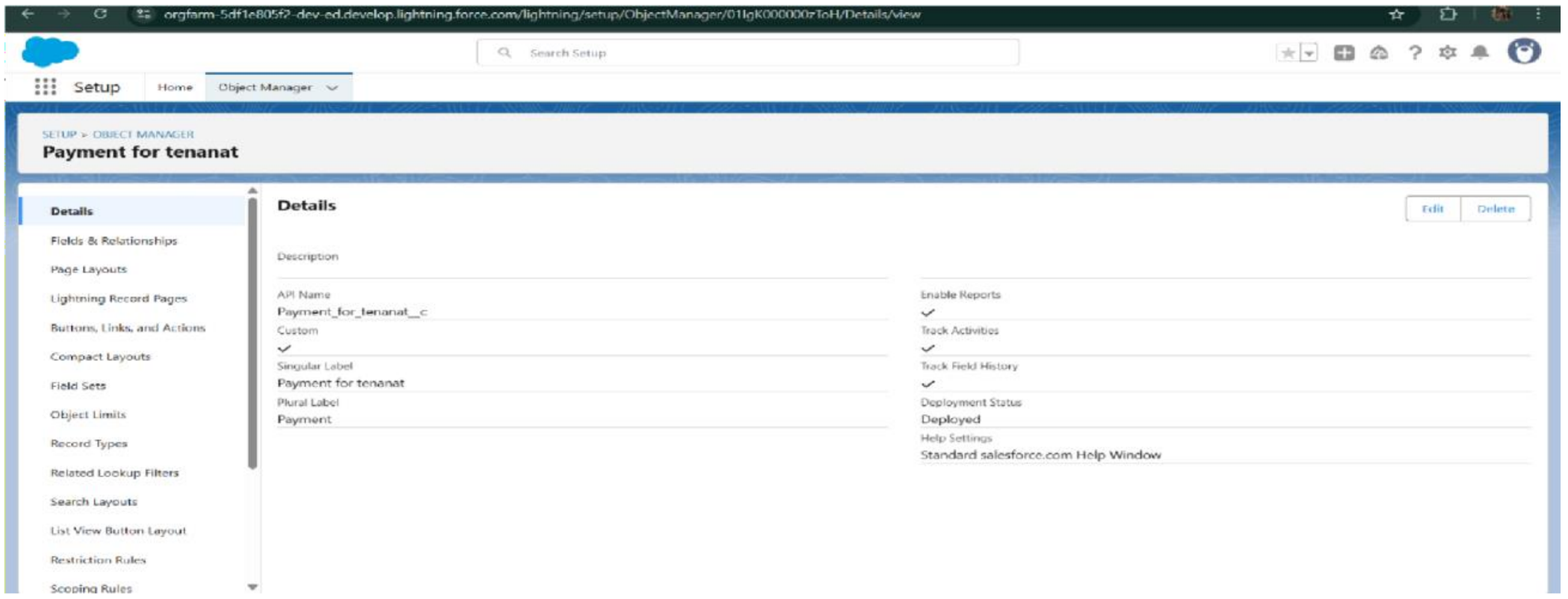
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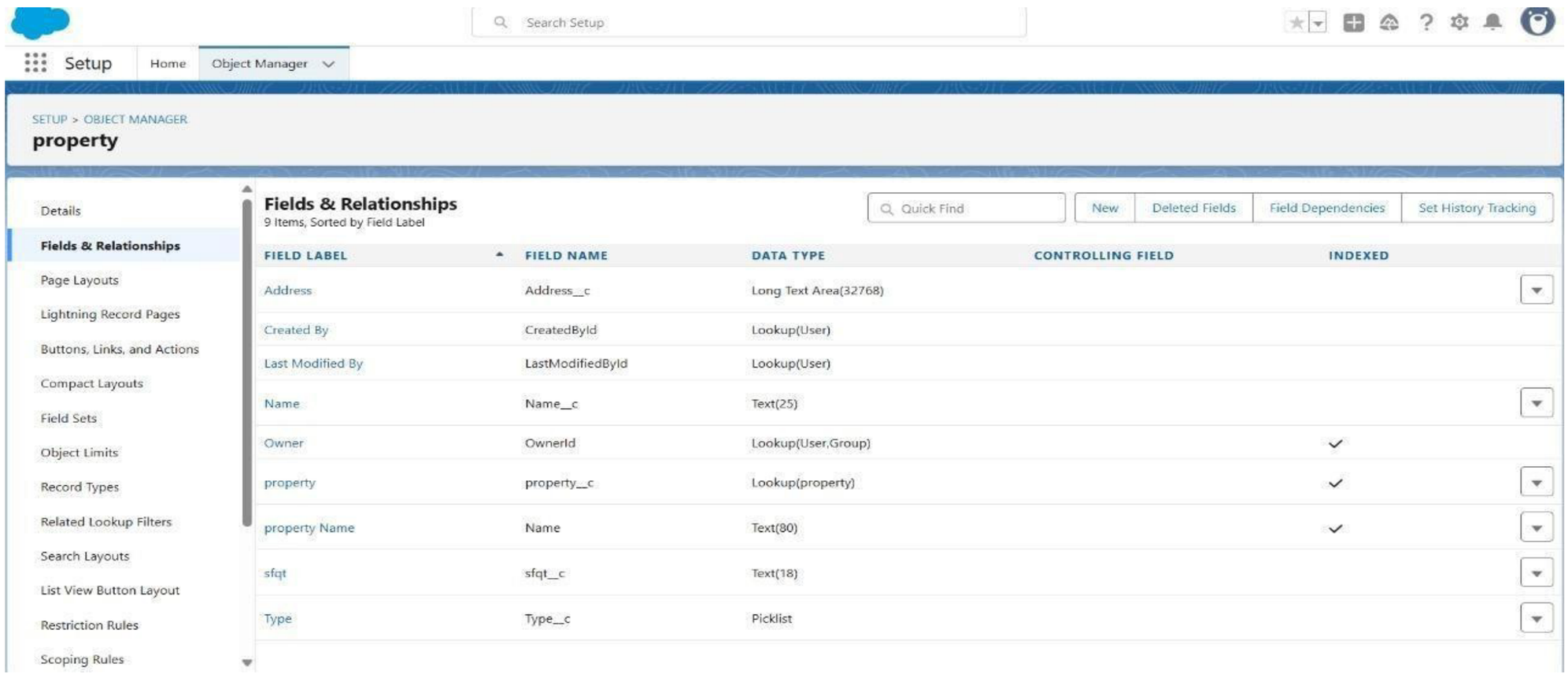
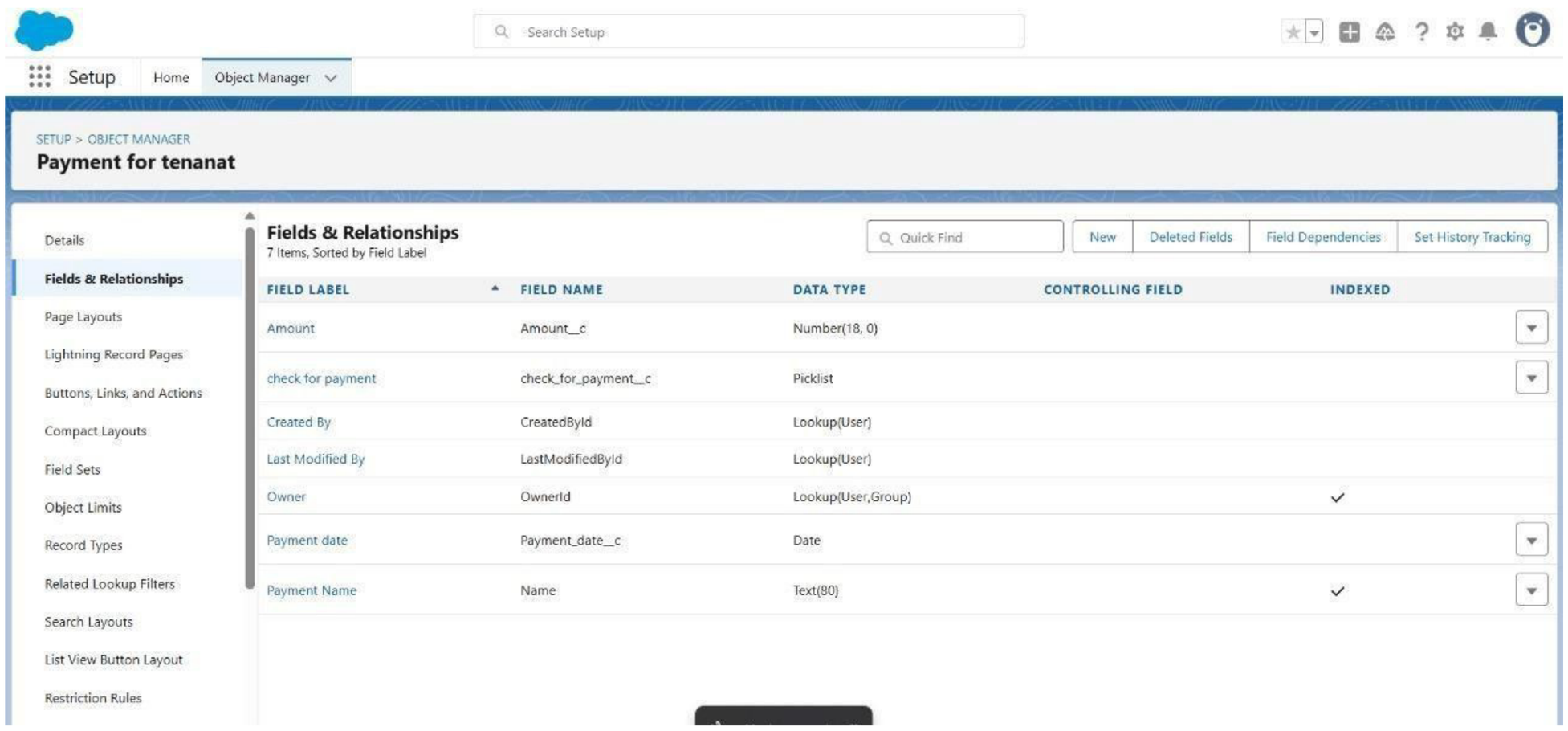
- Configured fields and relationships





Search Setup

Setup | Home | Object Manager

SETUP > OBJECT MANAGER

lease

- Details
- **Fields & Relationships**
- Page Layouts
- Lightning Record Pages
- Buttons, Links, and Actions
- Compact Layouts
- Field Sets
- Object Limits
- Record Types
- Related Lookup Filters
- Search Layouts
- List View Button Layout
- Restriction Rules
- Scoping Rules

Fields & Relationships

7 Items, Sorted by Field Label

Quick Find | New | Deleted Fields | Field Dependencies | Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
End date	End_date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
lease Name	Name	Text(80)		✓
Owner	OwnerId	Lookup(User,Group)		✓
property	property__c	Lookup(property)		✓
start date	start_date__c	Date		

Search Setup

Setup | Home | Object Manager

SETUP > OBJECT MANAGER

Tenant

- Details
- **Fields & Relationships**
- Page Layouts
- Lightning Record Pages
- Buttons, Links, and Actions
- Compact Layouts
- Field Sets
- Object Limits
- Record Types
- Related Lookup Filters
- Search Layouts
- List View Button Layout
- Restriction Rules
- Scoping Rules

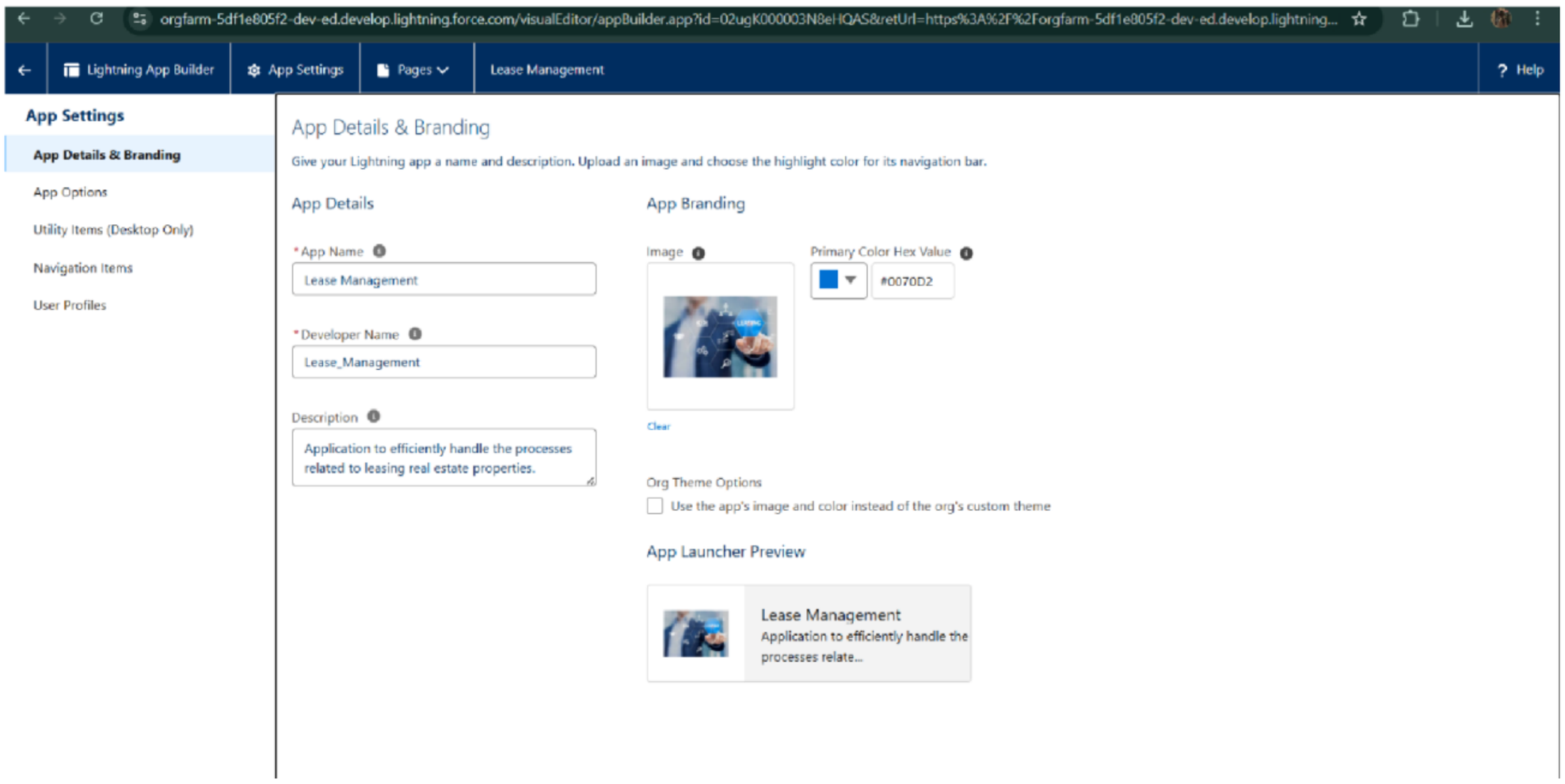
Fields & Relationships

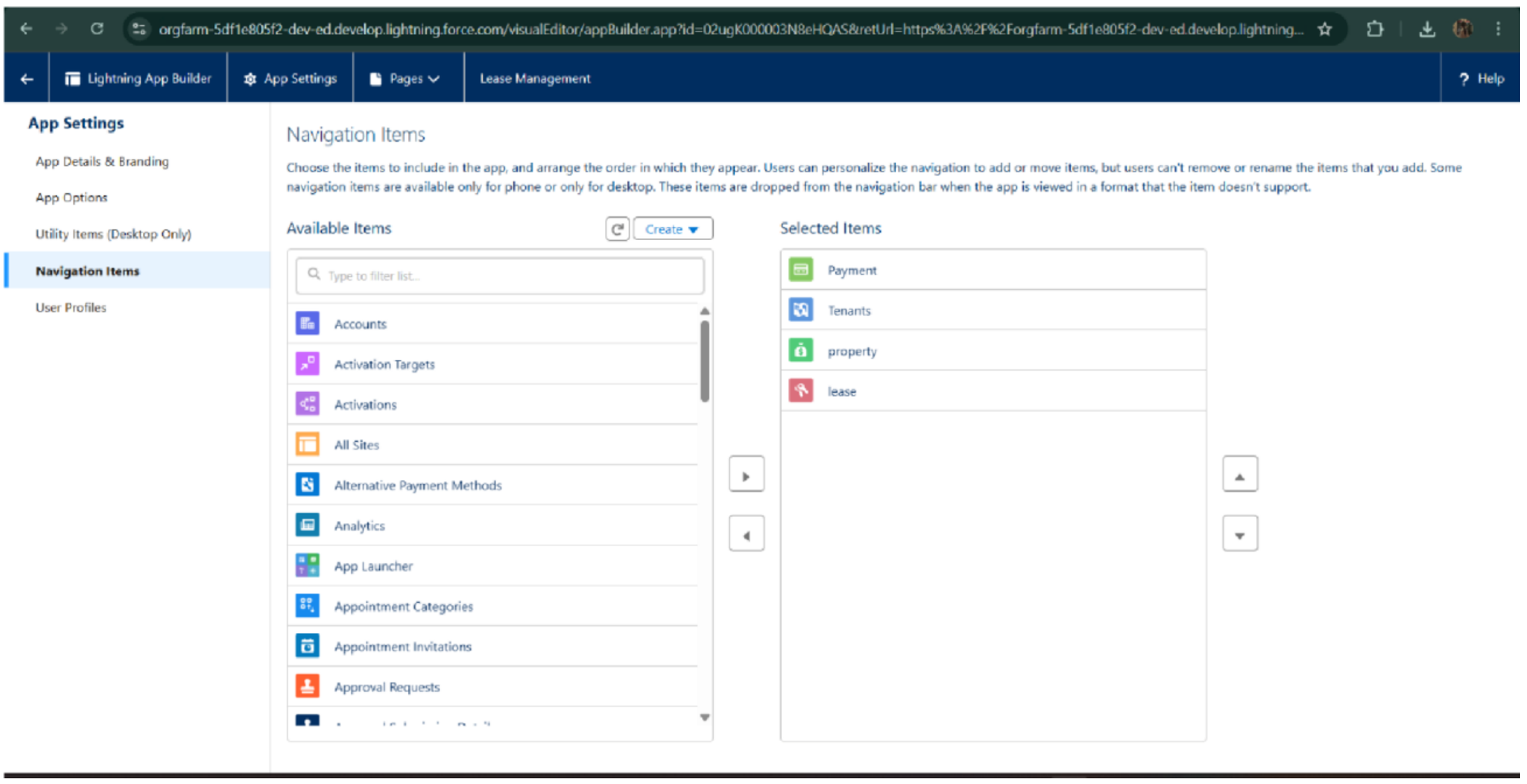
7 Items, Sorted by Field Label

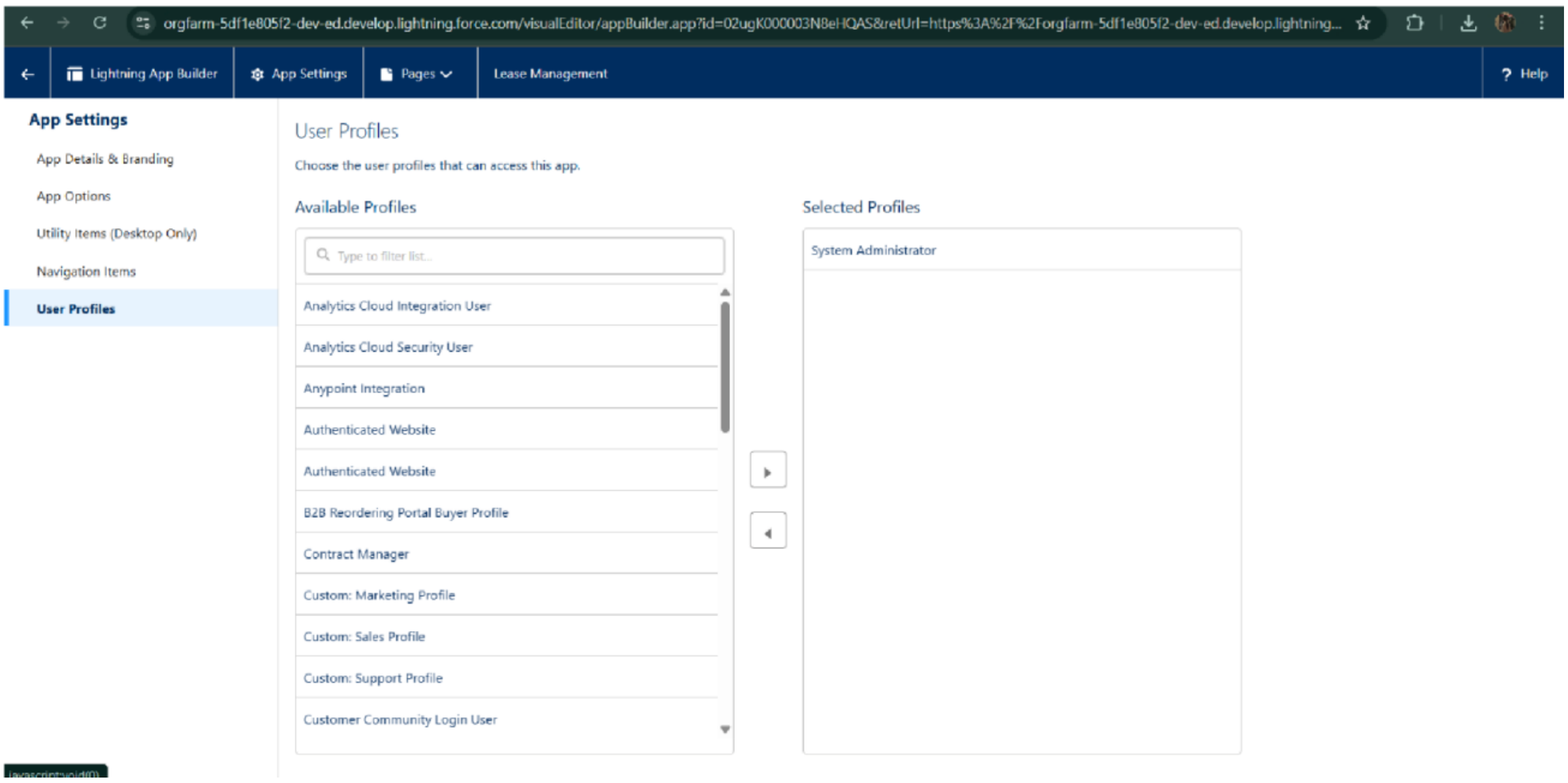
Quick Find | New | Deleted Fields | Field Dependencies | Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Email	Email__c	Email		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Phone	Phone__c	Phone		
status	status__c	Picklist		
Tenant Name	Name	Text(80)		✓

- Developed Lightning App with relevant tabs



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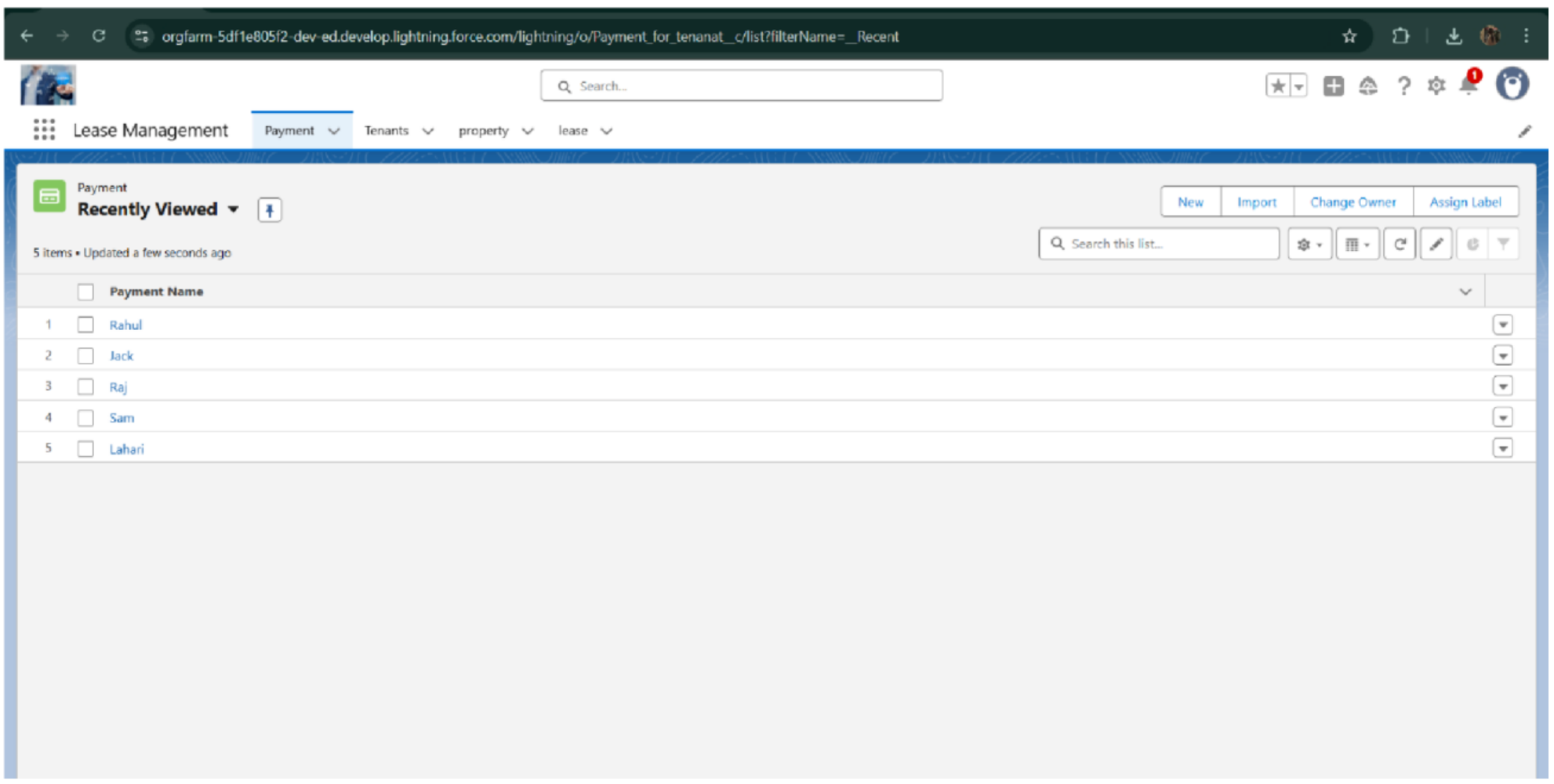
Lightning App Builder
App Settings
Pages
Lease Management
Help
App Settings
App Details & Branding
App Options
Utility Items (Desktop Only)
Navigation Items
User Profiles
User Profiles
Choose the user profiles that can access this app.
Available Profiles
Type to filter list...
Analytics Cloud Integration User
Analytics Cloud Security User
Anypoint Integration
Authenticated Website
Authenticated Website
B2B Reordering Portal Buyer Profile
Contract Manager
Custom: Marketing Profile
Custom: Sales Profile
Custom: Support Profile
Customer Community Login User
Selected Profiles
System Administrator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Lease Management
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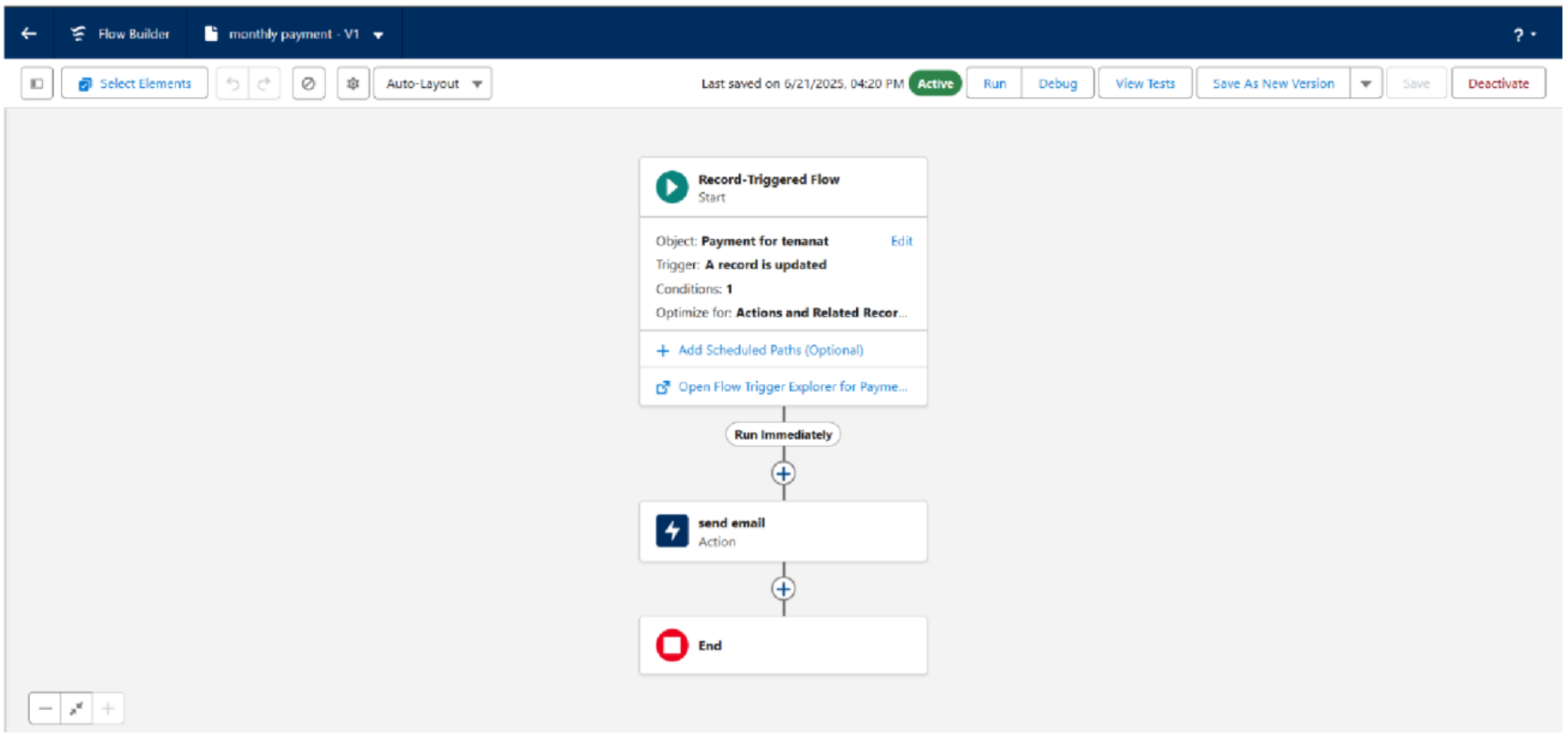
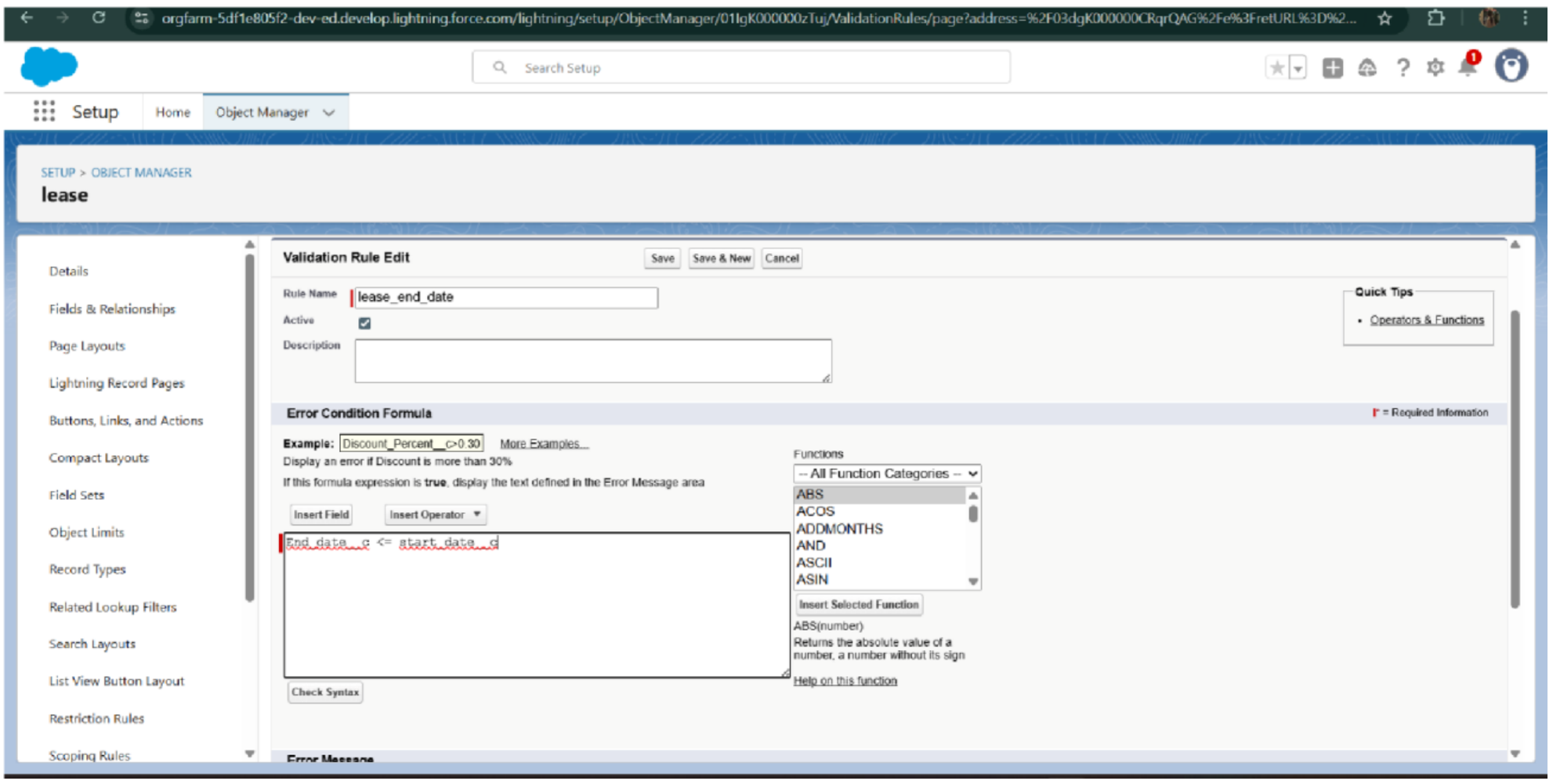
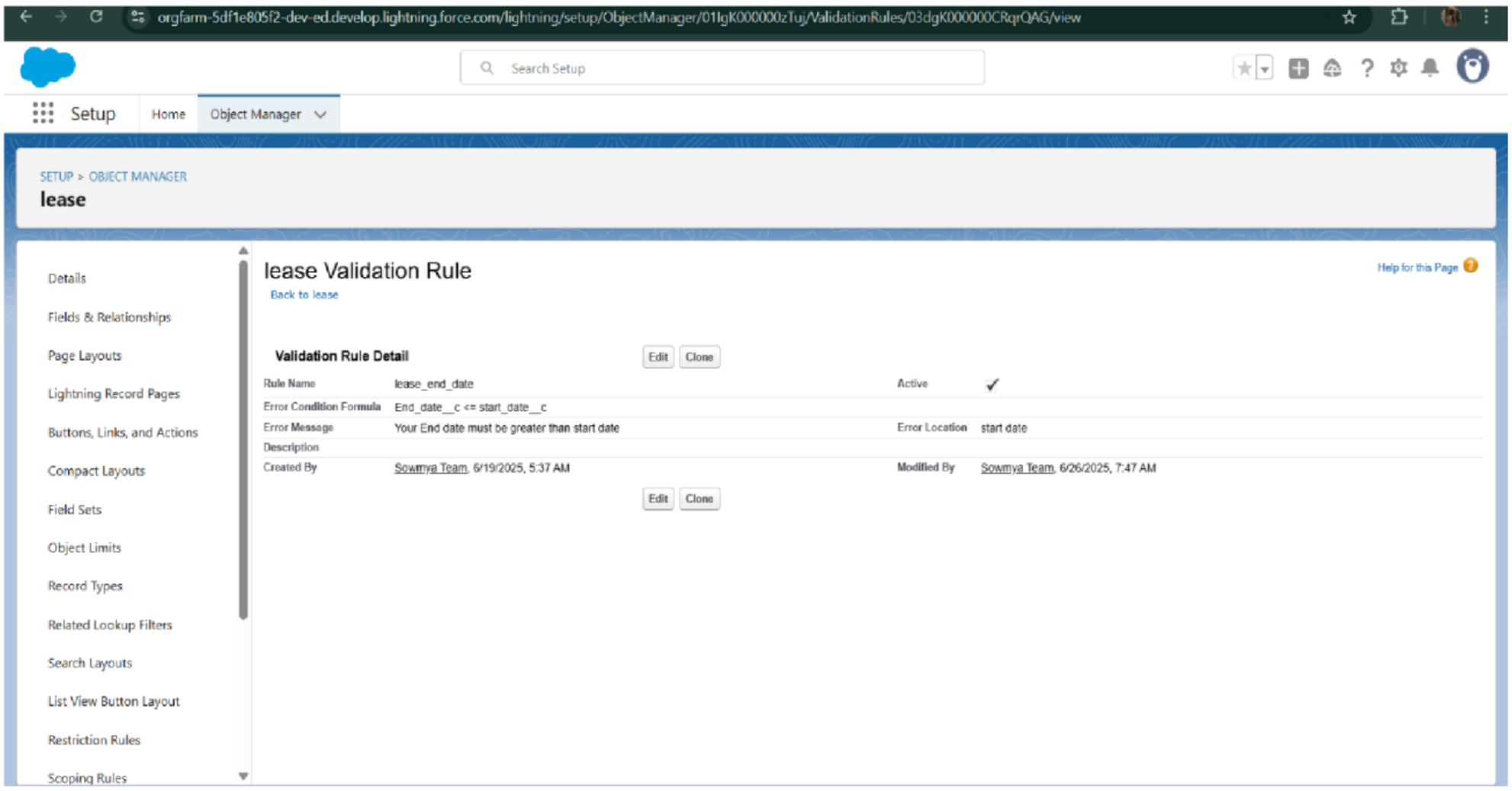
Tenants
property
lease
Payment
Recently Viewed
5 items • Updated a few seconds ago
New
Import
Change Owner
Assign Label
Search this list...
Payment Name
1 Rahul
2 Jack
3 Raj
4 Sam
5 Lahari

- Implemented Flows for monthly rent and payment success

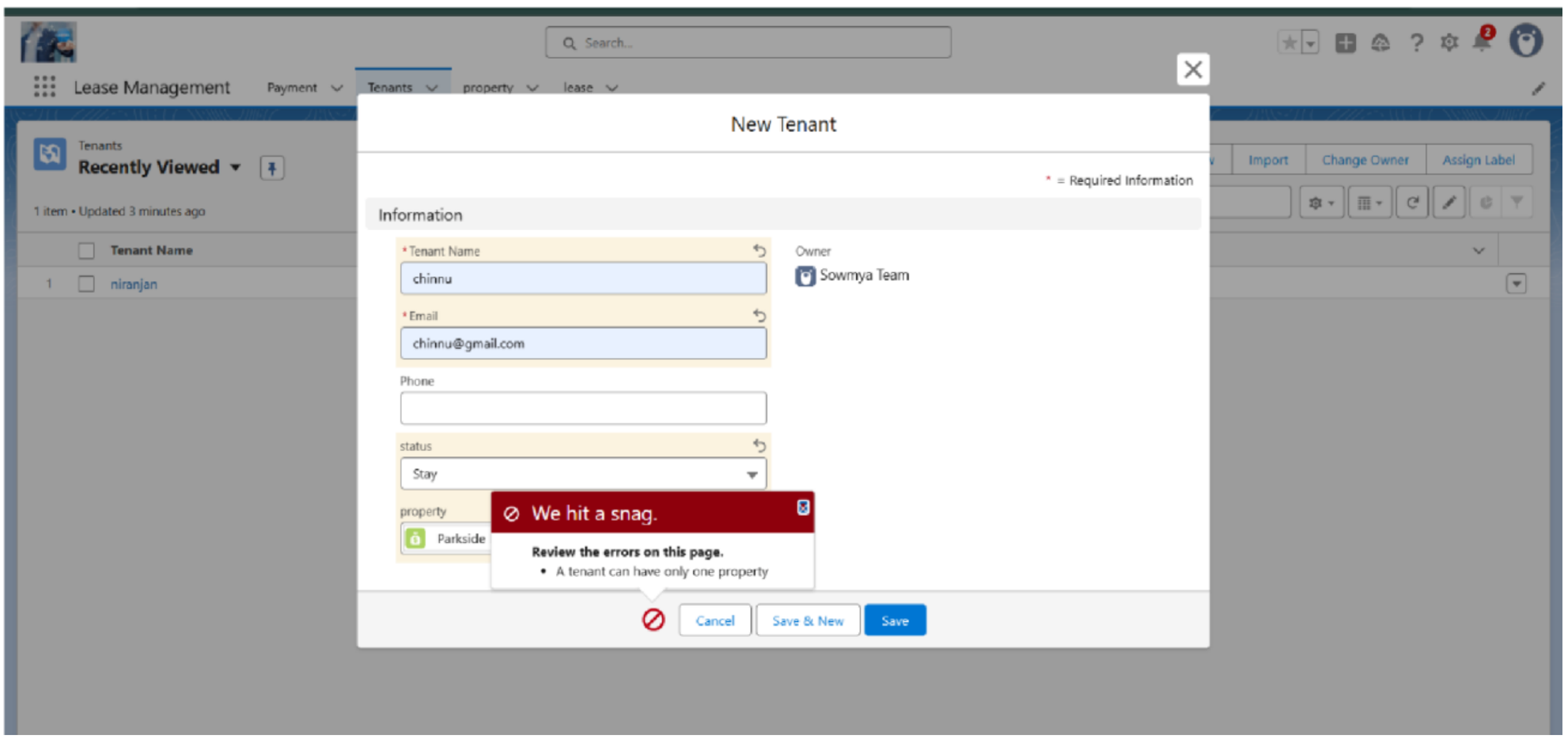


- To create a validation rule to a Lease Object





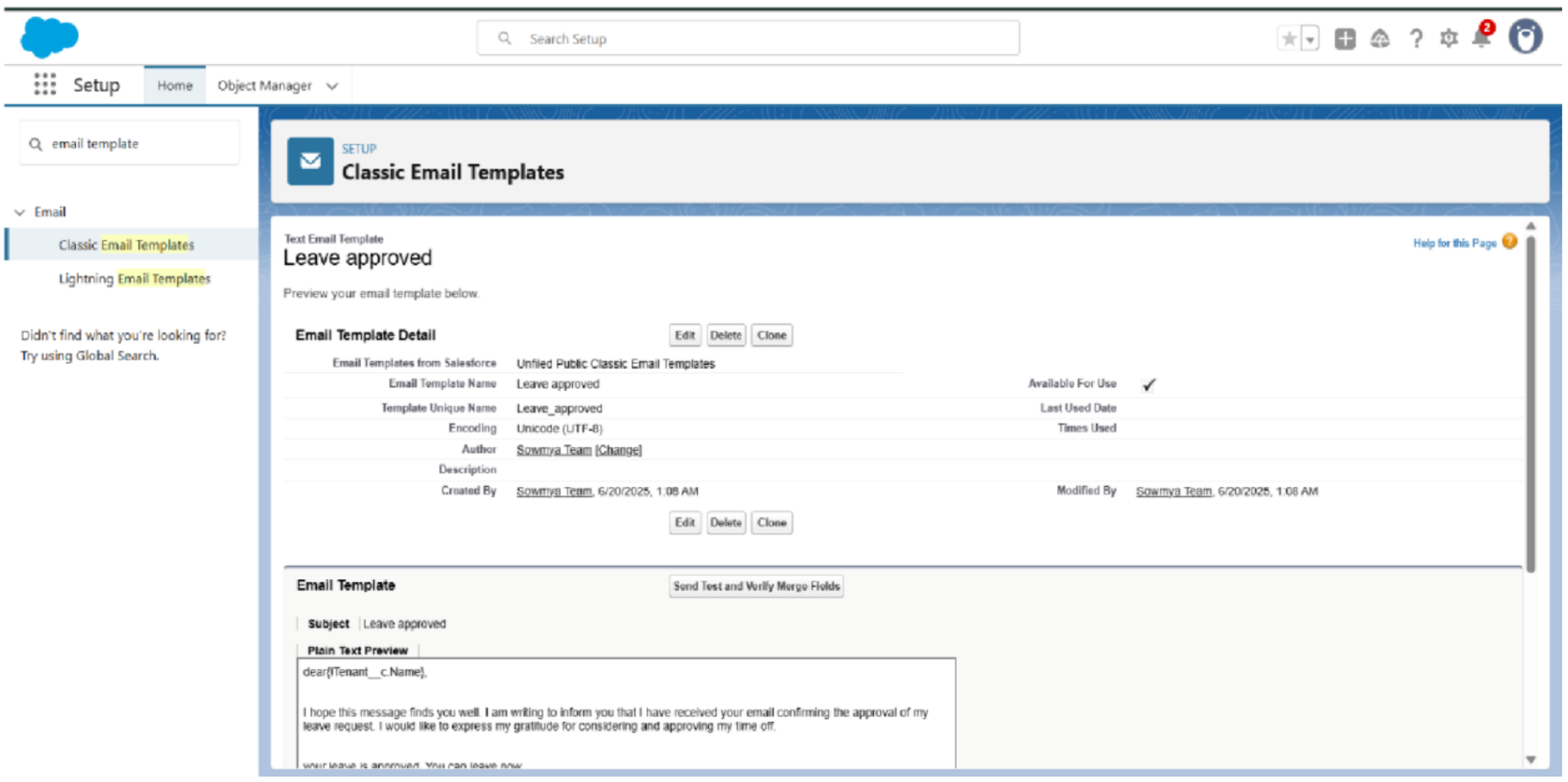
- Added Apex trigger to restrict multiple tenants per property



- 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

Email

Classic Email Templates

Lightning Email Templates

Didn't find what you're looking for?
Try using Global Search.

SETUP
Classic Email Templates

Text Email Template
tenant leaving

Help for this Page

Preview your email template below.

Email Template Detail Edit | Delete | Clone

Email Templates from Salesforce	Unfiled Public Classic Email Templates		
Email Template Name	tenant leaving	Available For Use	✓
Template Unique Name	tenant_leaving	Last Used Date	
Encoding	Unicode (UTF-8)	Times Used	
Author	Sowmya Team [Change]		
Description			
Created By	Sowmya Team, 6/20/2025, 1:06 AM	Modified By	Sowmya Team, 6/20/2025, 1:06 AM

Edit | Delete | Clone

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

Search Setup

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email template

Email

Classic Email Templates

Lightning Email Templates

Didn't find what you're looking for?
Try using Global Search.

SETUP
Classic Email Templates

Text Email Template
Leave rejected

Help for this Page

Preview your email template below.

Email Template Detail Edit | Delete | Clone

Email Templates from Salesforce	Unfiled Public Classic Email Templates		
Email Template Name	Leave rejected	Available For Use	✓
Template Unique Name	Leave_rejected	Last Used Date	
Encoding	Unicode (UTF-8)	Times Used	
Author	Sowmya Team [Change]		
Description			
Created By	Sowmya Team, 6/20/2025, 1:11 AM	Modified By	Sowmya Team, 6/20/2025, 1:11 AM

Edit | Delete | Clone

Email Template Send Test and Verify Merge Fields

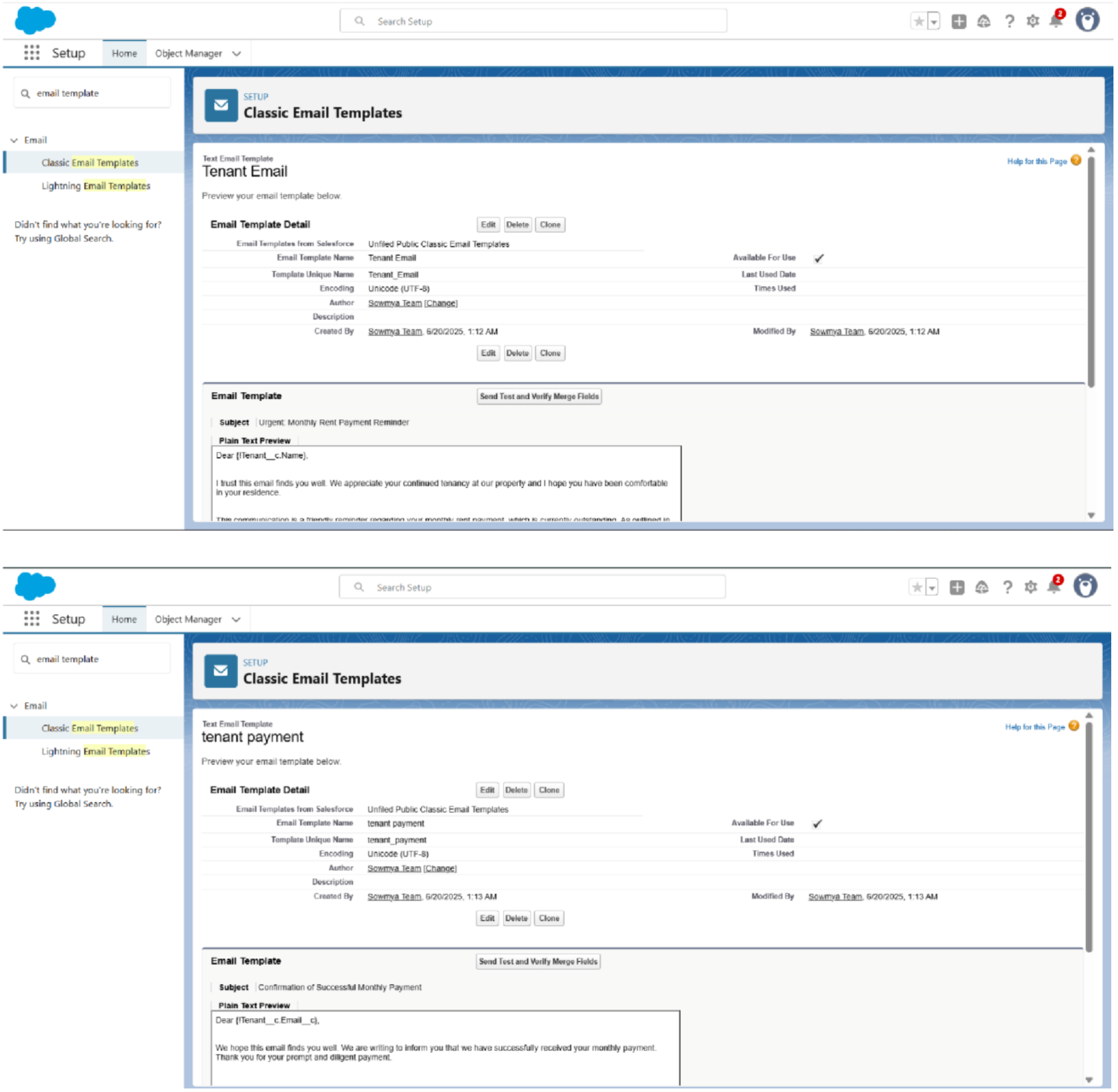
Subject Leave rejected

Plain Text Preview

Dear {!Tenant__c.Name},

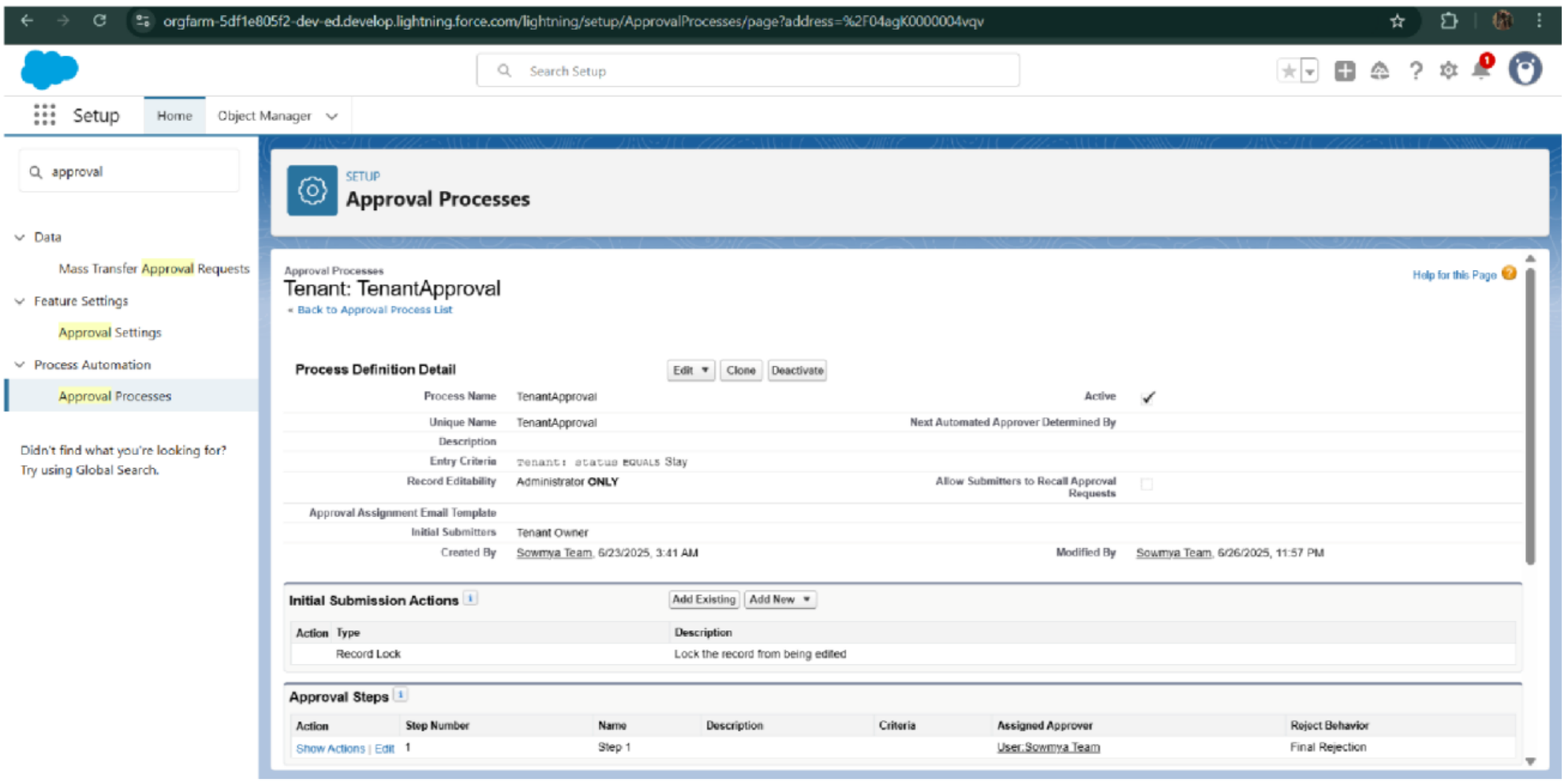
I hope this email finds you well. Your contract has not ended. So we can't approve your leave

your leave has rejected

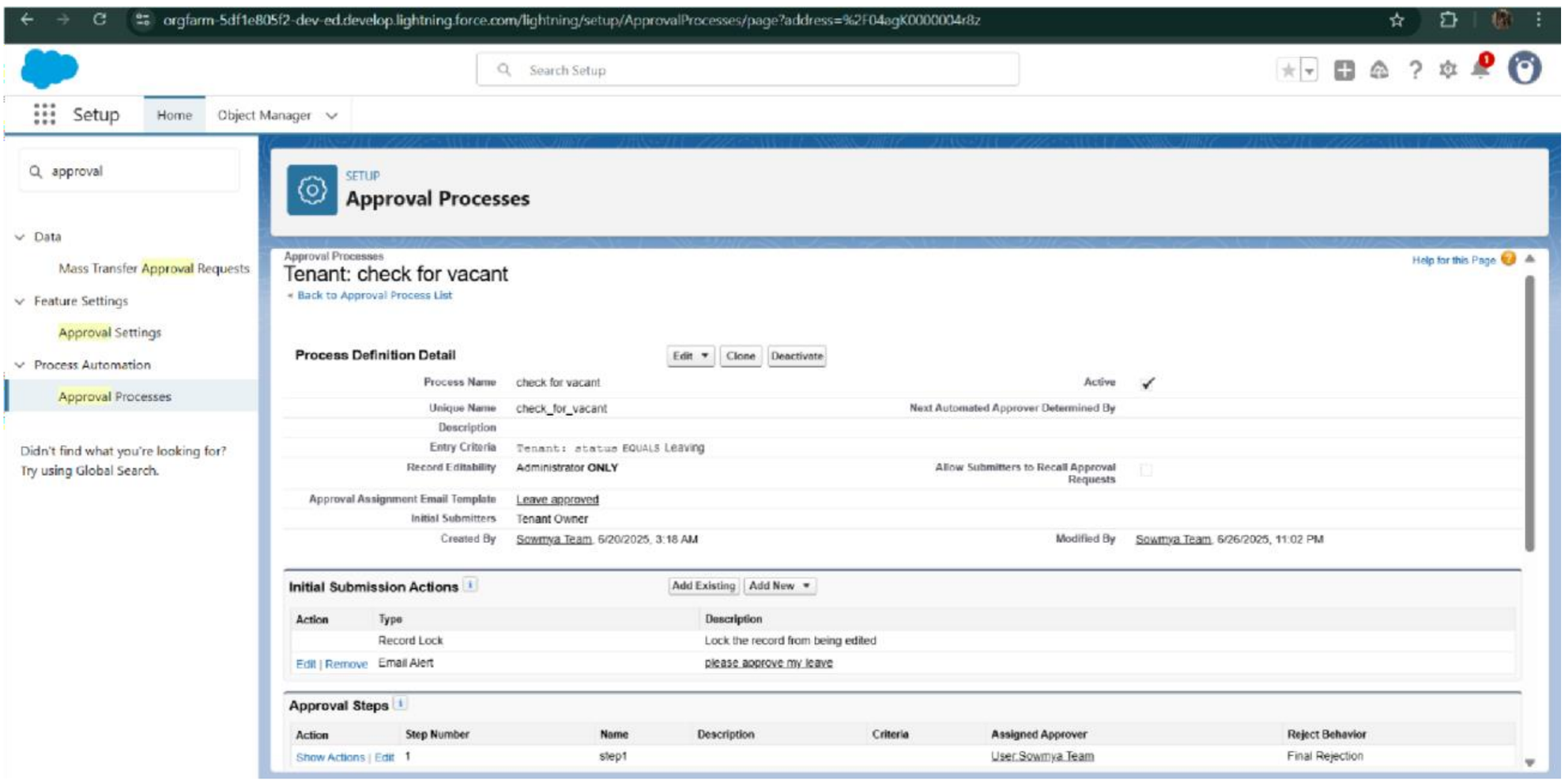


- Approval Process creation

For Tenant Leaving:

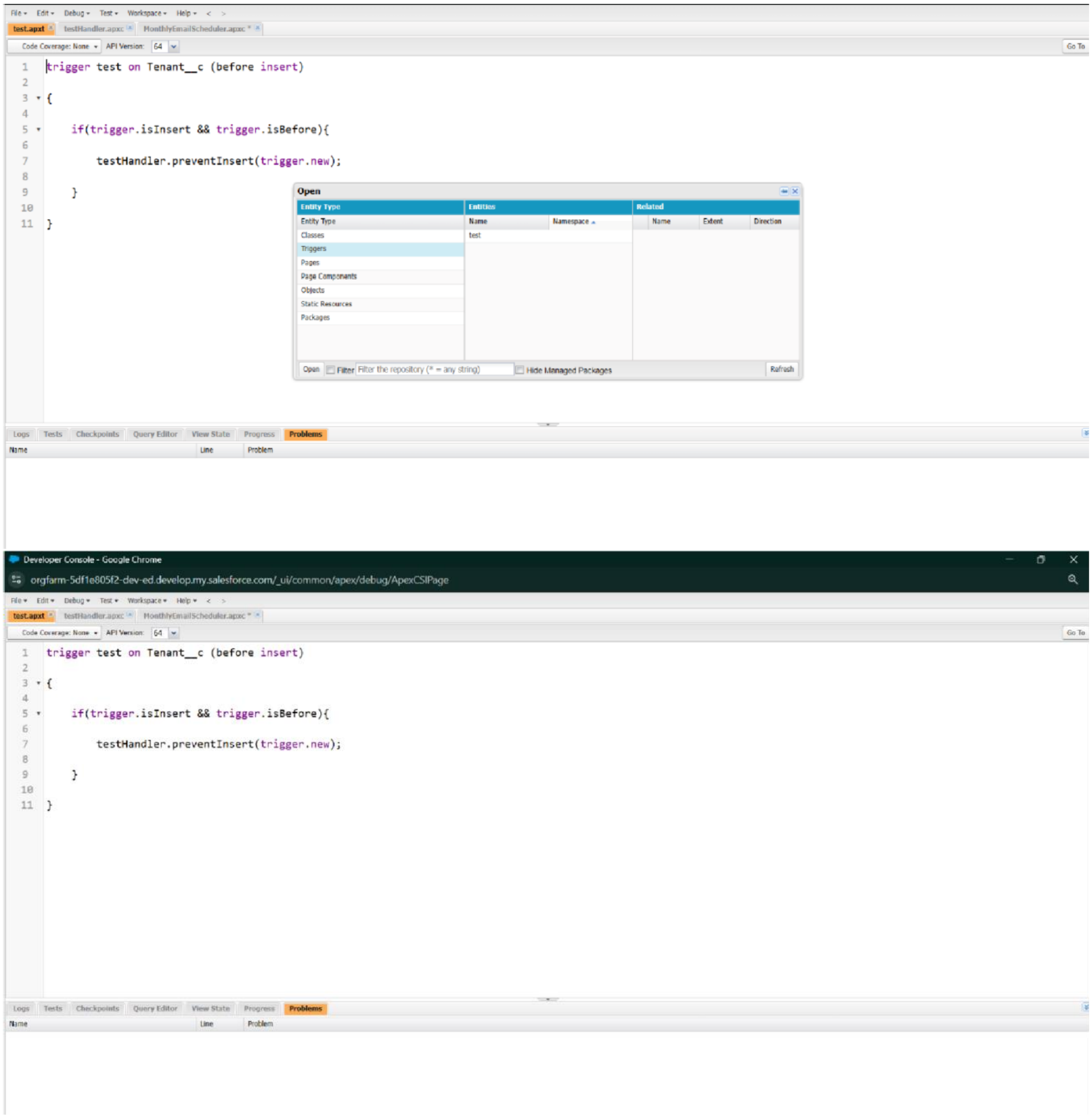


For Check for Vacant:

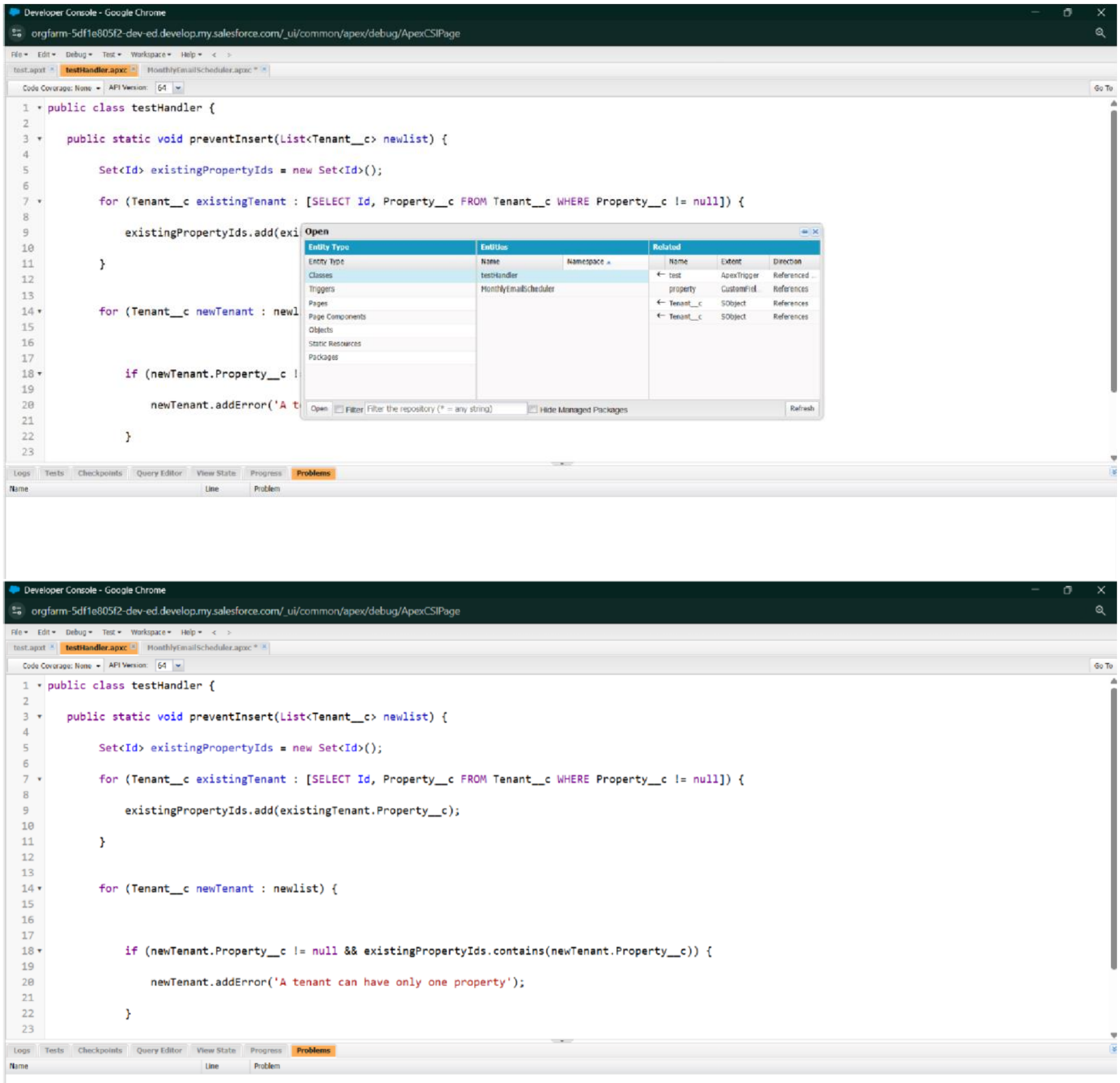


- Apex Trigger

Create an Apex Trigger



Create an Apex Handler class


Developer Console - Google Chrome
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test.apxt testHandler.apxc MonthlyEmailScheduler.apxc *
Code Coverage: None API Version: 64
Go To
1 public class testHandler {
2
3 public static void preventInsert(List<Tenant__c> newlist) {
4
5 Set<Id> existingPropertyIds = new Set<Id>();
6
7 for (Tenant__c existingTenant : [SELECT Id, Property__c FROM Tenant__c WHERE Property__c != null]) {
8
9 existingPropertyIds.add(exi
10
11 }
12
13
14 for (Tenant__c newTenant : newl
15
16
17
18 if (newTenant.Property__c !
19
20 newTenant.addError('A t
21
22 }
23
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Related
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Namespace
Extent
Direction
Classes
testHandler
MonthlyEmailScheduler
Triggers
Pages
Page Components
Objects
Static Resources
Packages
test
ApexTrigger
Referenced
property
CustomFiel
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Filter the repository (* = any string)
Hide Managed Packages
Refresh
Logs Tests Checkpoints Query Editor View State Progress Problems
Name
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Problem

Developer Console - Google Chrome
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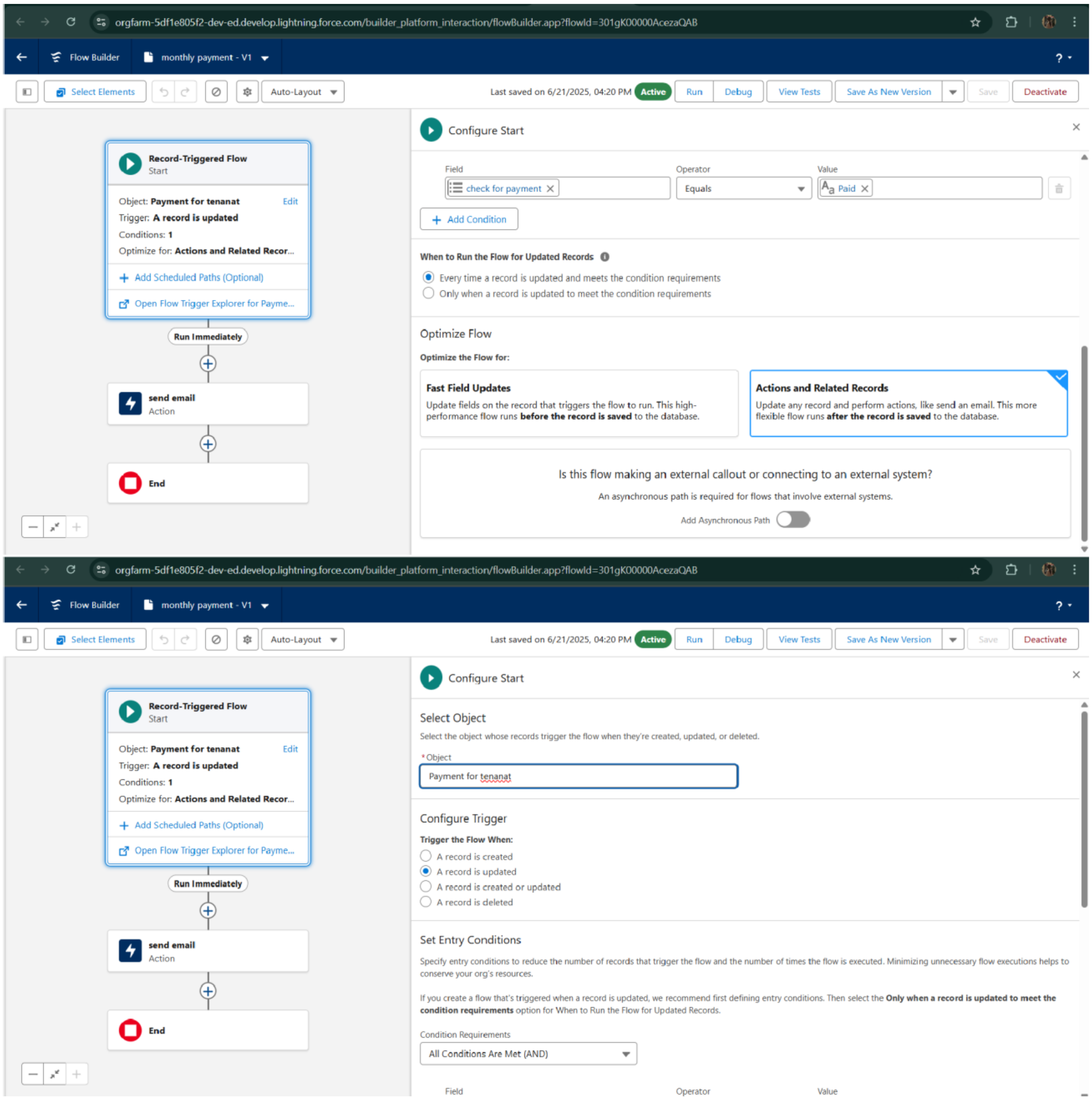
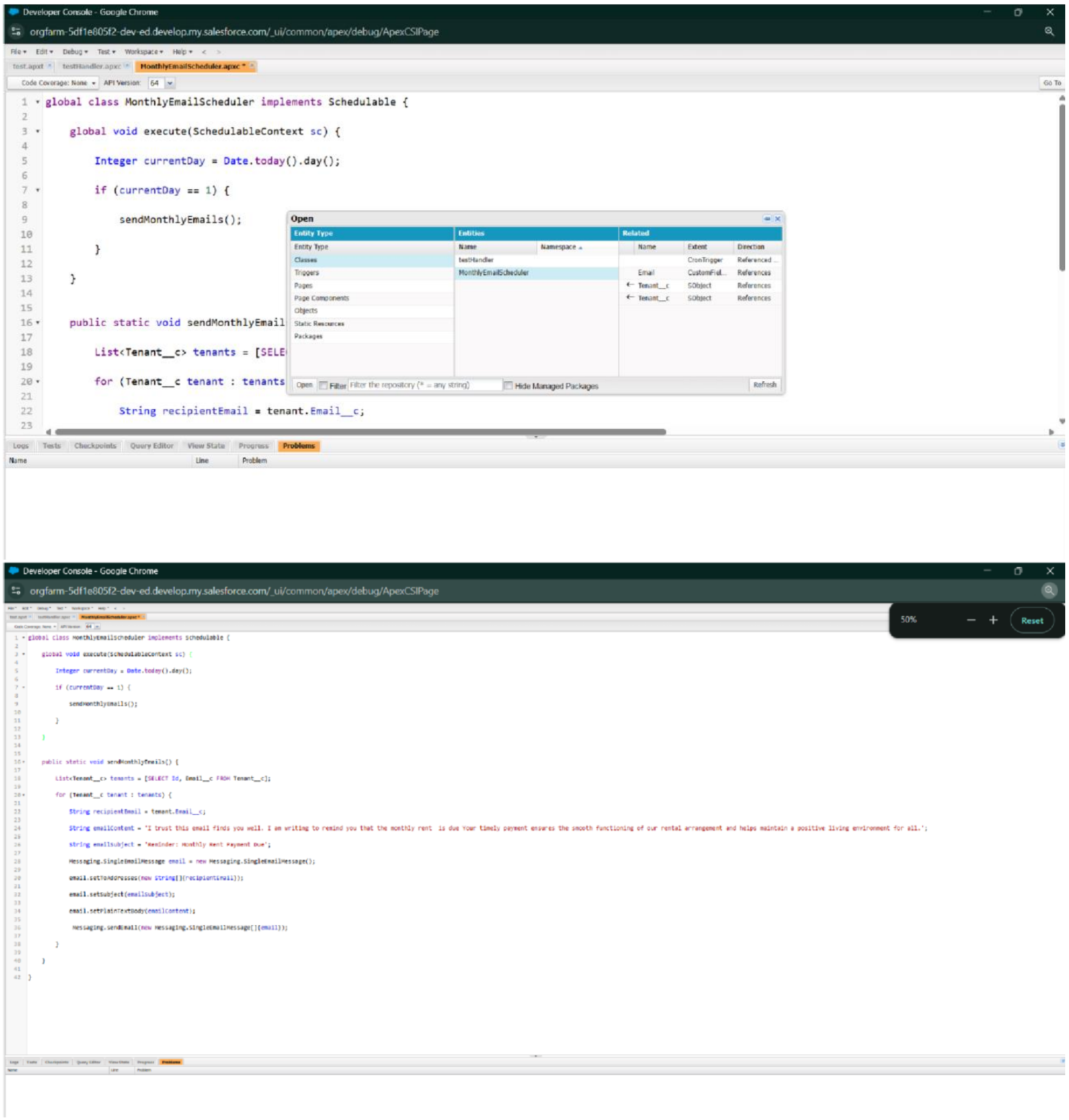
Code Coverage: None API Version: 64
Go To
1 public class testHandler {
2
3 public static void preventInsert(List<Tenant__c> newlist) {
4
5 Set<Id> existingPropertyIds = new Set<Id>();
6
7 for (Tenant__c existingTenant : [SELECT Id, Property__c FROM Tenant__c WHERE Property__c != null]) {
8
9 existingPropertyIds.add(existingTenant.Property__c);
10
11 }
12
13
14 for (Tenant__c newTenant : newlist) {
15
16
17
18 if (newTenant.Property__c != null && existingPropertyIds.contains(newTenant.Property__c)) {
19
20 newTenant.addError('A tenant can have only one property');
21
22 }
23
Logs Tests Checkpoints Query Editor View State Progress Problems
Name
Line
Problem

- FLOWS

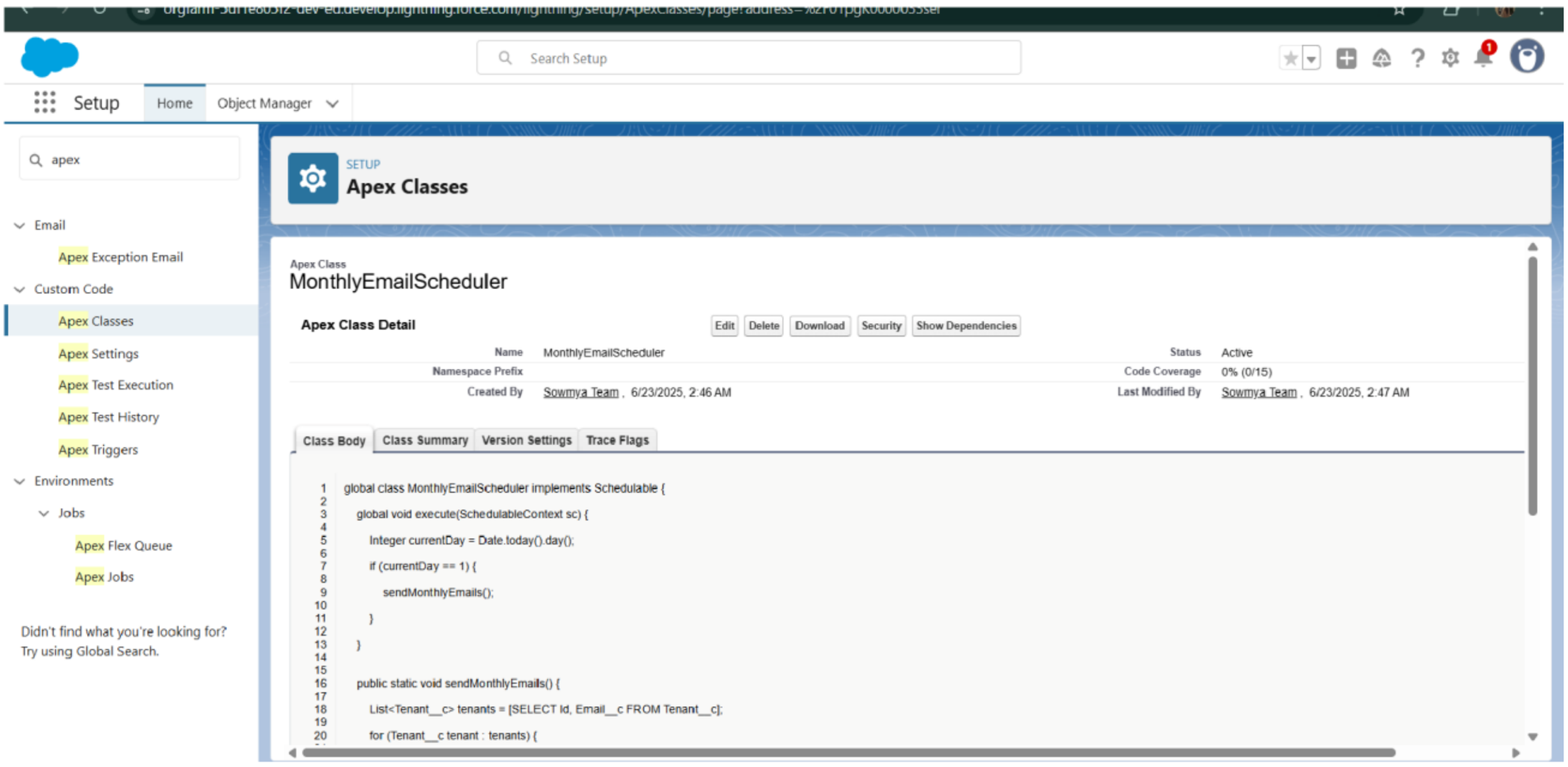


- Schedule class:

  Create an Apex Class



Schedule Apex class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Apex Exception Email
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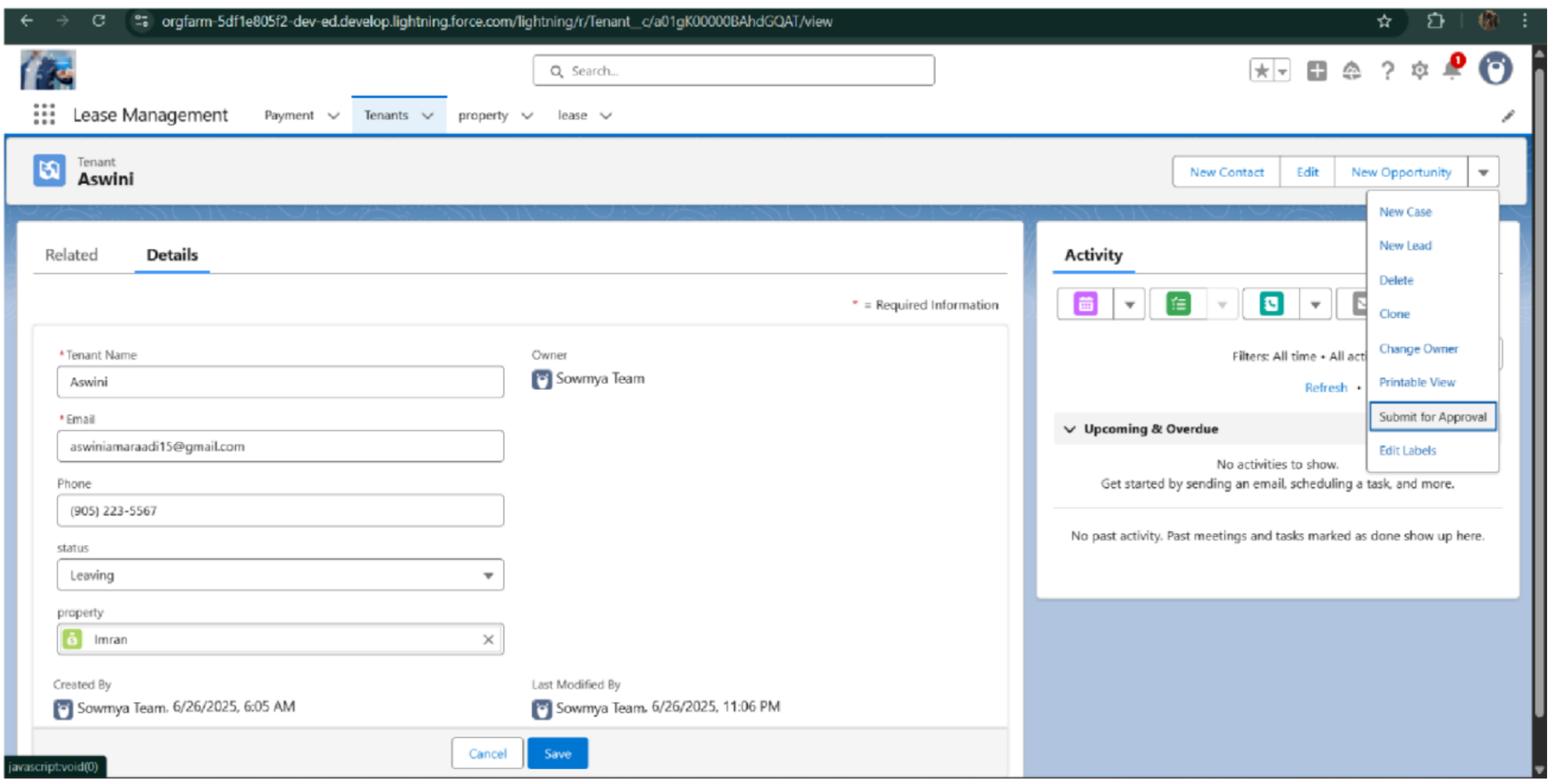
Apex Classes
Apex Class
MonthlyEmailScheduler
Apex Class Detail
Edit
Delete
Download
Security
Show Dependencies
Name
MonthlyEmailScheduler
Status
Active
Namespace Prefix
Code Coverage
0% (0/15)
Created By
Sowmya Team , 6/23/2025, 2:46 AM
Last Modified By
Sowmya Team , 6/23/2025, 2:47 AM
Class Body
Class Summary
Version Settings
Trace Flags
1 global class MonthlyEmailScheduler implements Schedulable {
3 global void execute(SchedulableContext sc) {
5 Integer currentDay = Date.today().day();
7 if (currentDay == 1) {
9 sendMonthlyEmails();
11 }
13 }
16 public static void sendMonthlyEmails() {
18 List<Tenant__c> tenants = [SELECT Id, Email__c FROM Tenant__c];
20 for (Tenant__c tenant : tenants) {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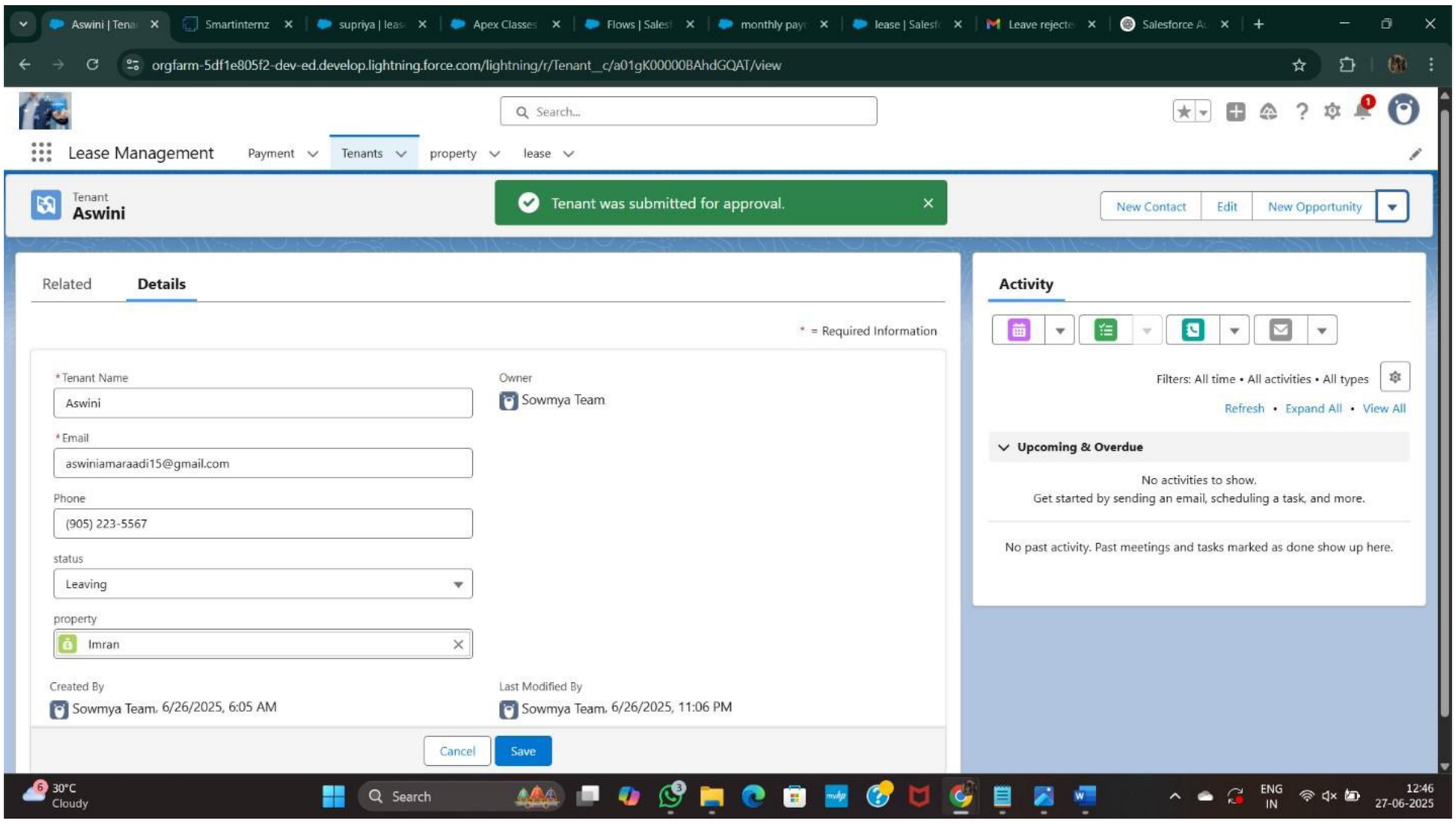
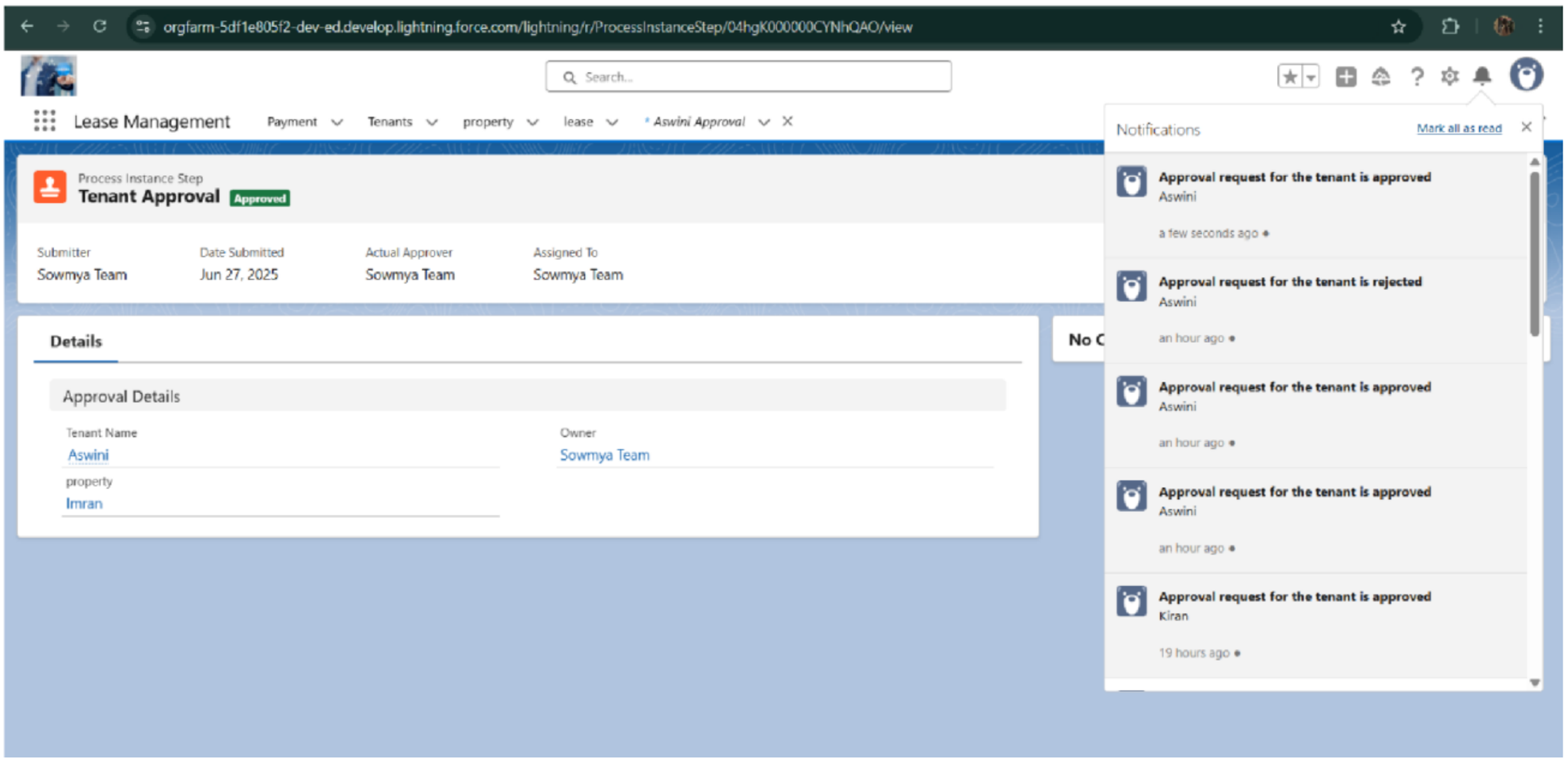
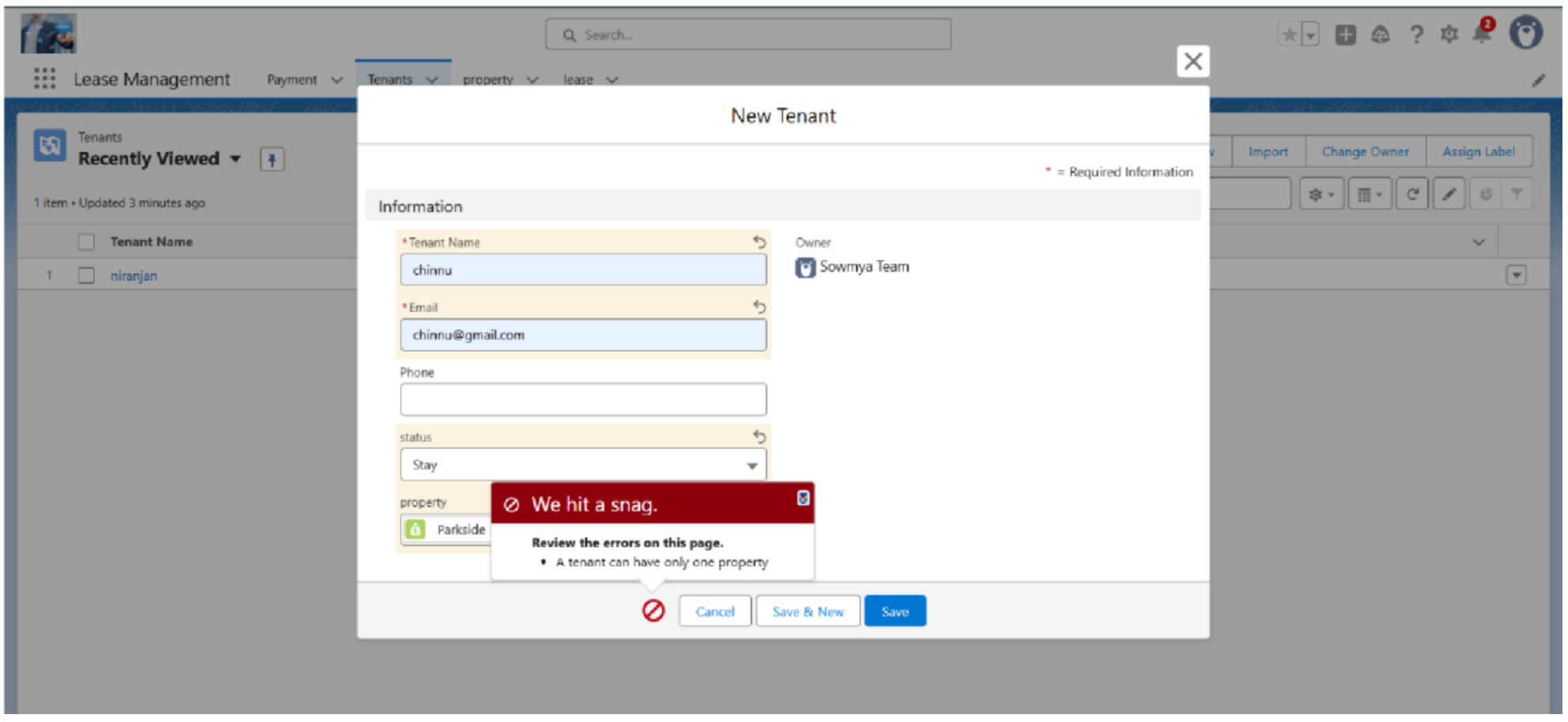
Tenants
property
lease
Tenant
Aswini
New Contact
Edit
New Opportunity
New Case
New Lead
Delete
Clone
Change Owner
Printable View
Submit for Approval
Edit Labels
Related
Details
* = Required Information
* Tenant Name
Aswini
Owner
Sowmya Team
* Email
aswiniamaraadi15@gmail.com
Phone
(905) 223-5567
status
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)


orgfarm-5df1e805f2-dev-ed.develop.lightning.force.com/lightning/r/Tenant__c/a01gK00000BAhdGQAT/view
Search...
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.
30°C
Cloudy
Search
ENG
IN
12:46
27-06-2025


orgfarm-5df1e805f2-dev-ed.develop.lightning.force.com/lightning/r/ProcessInstanceStep/04hgK000000CYNhQAO/view
Search...
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
Kiran
19 hours ago

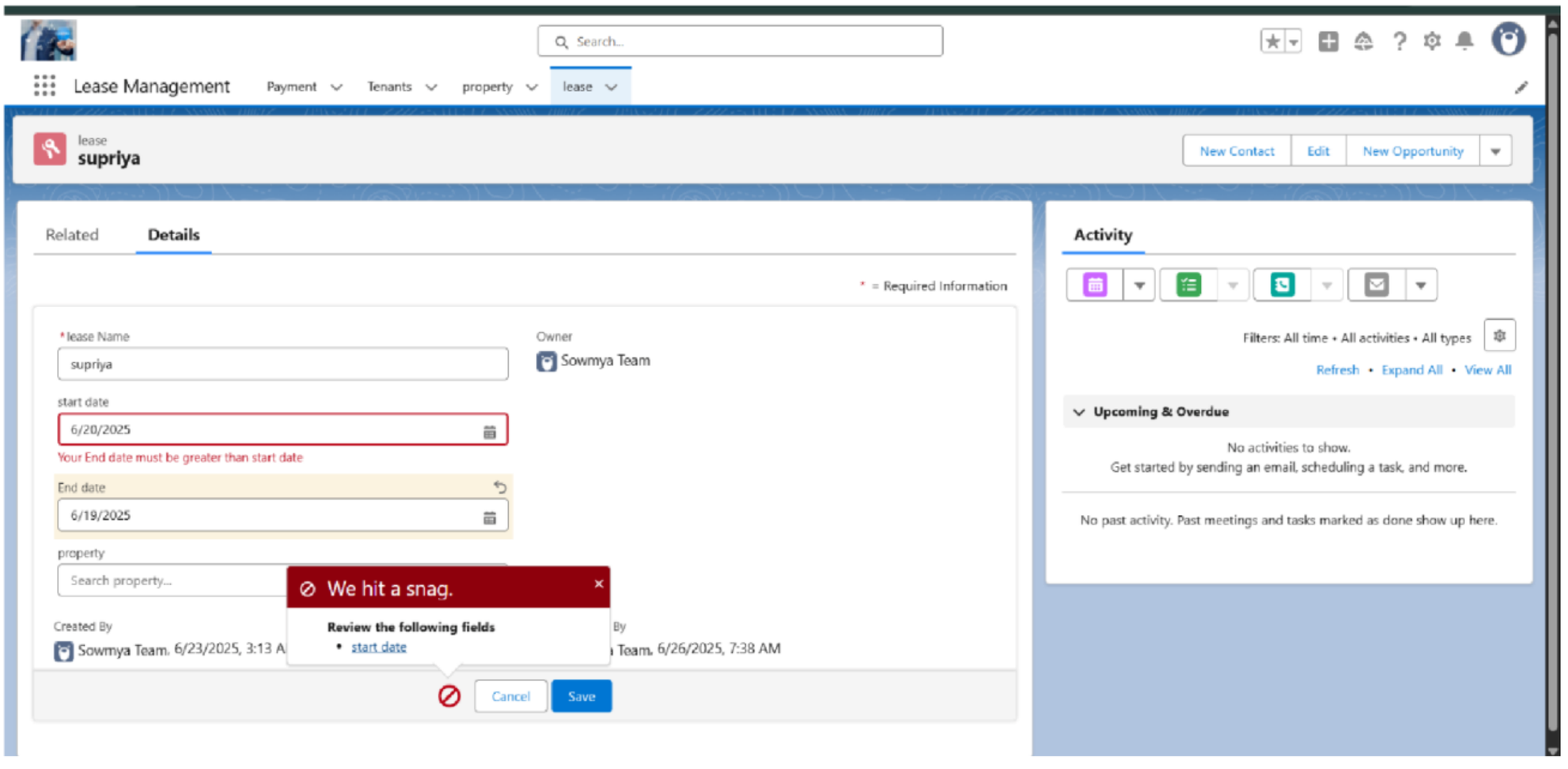
7.FUNCTIONAL AND PERFORMANCE TESTING

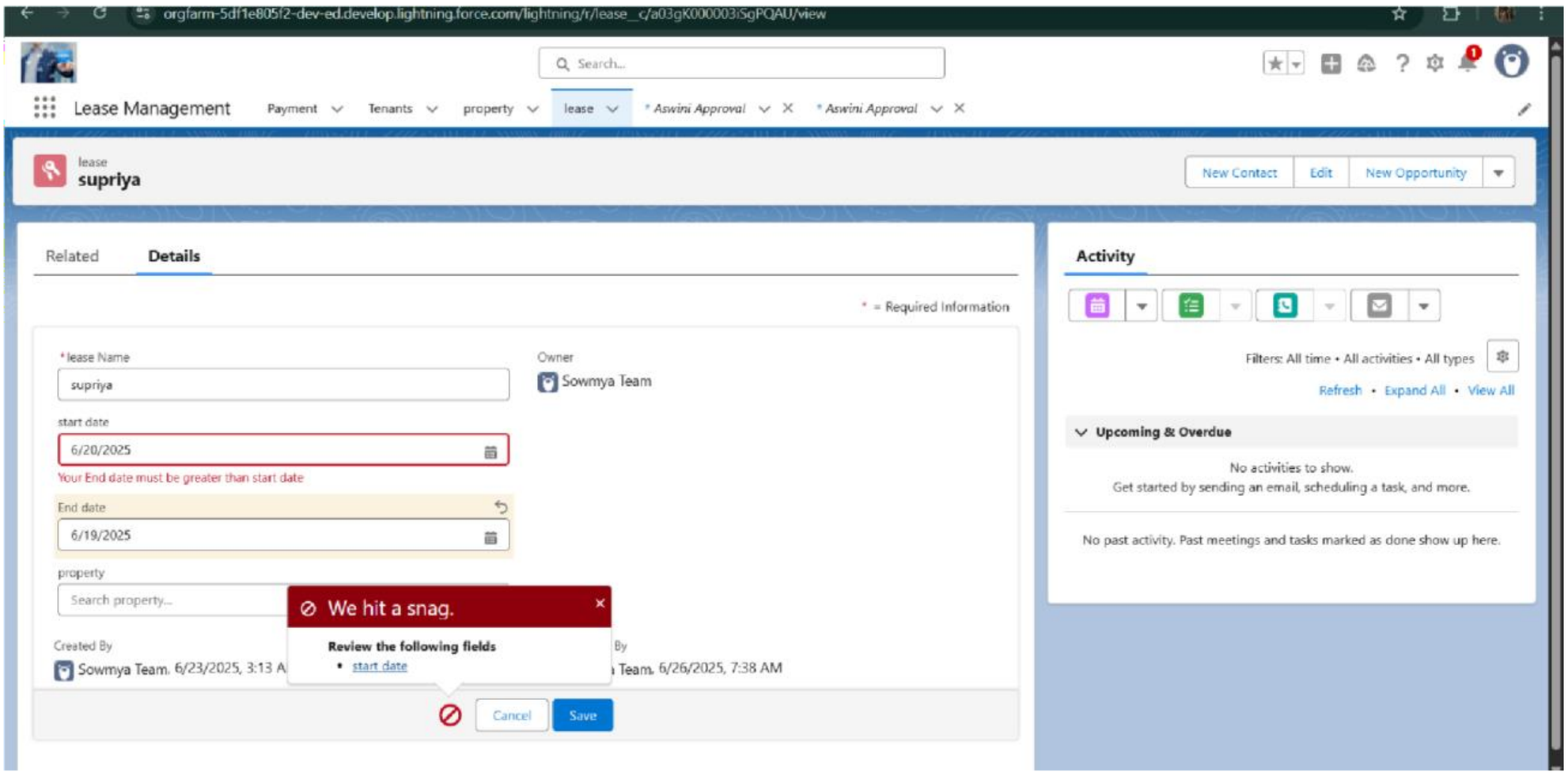
7.1 Performance Testing



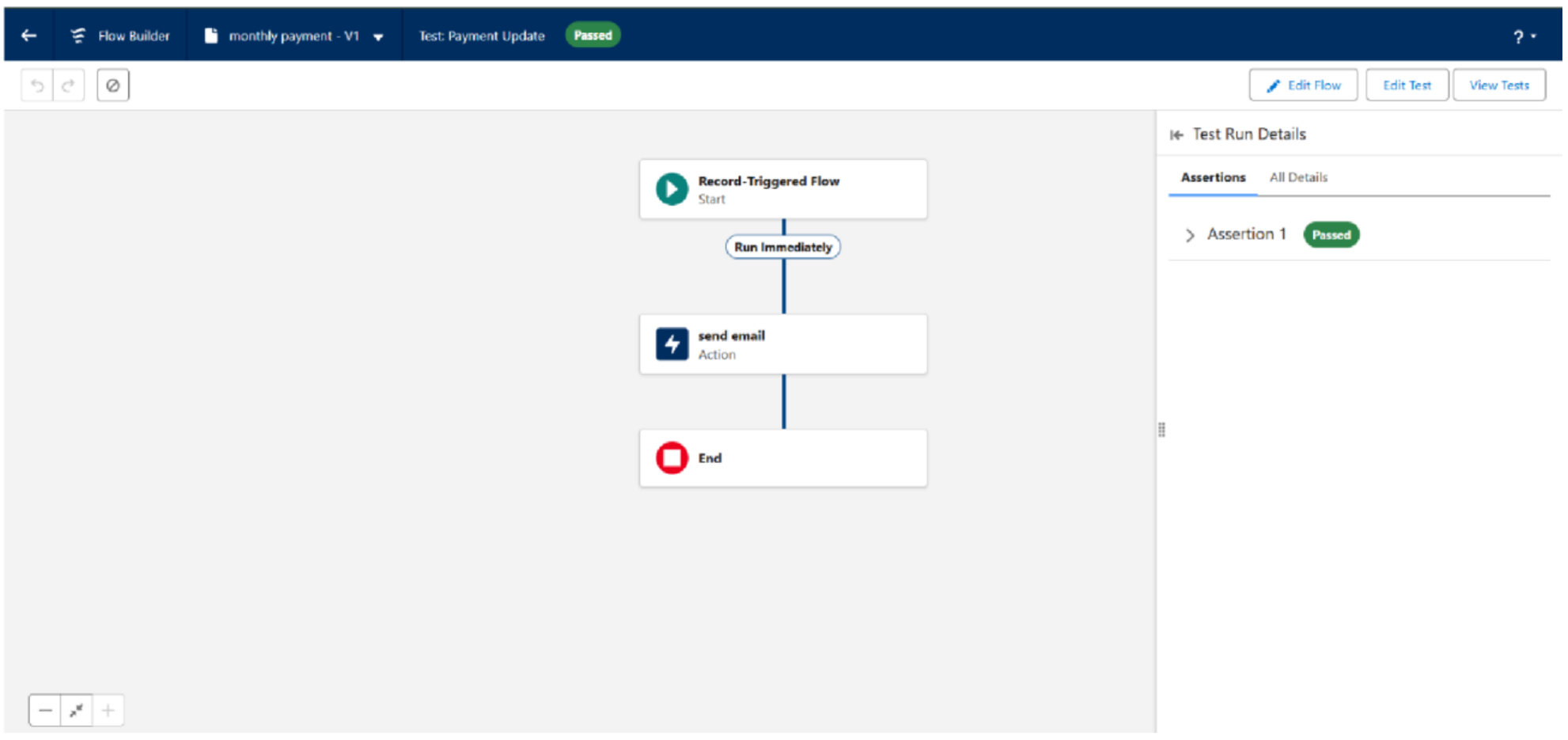
- Trigger validation by entering duplicate tenant-property records

- Validation Rule checking

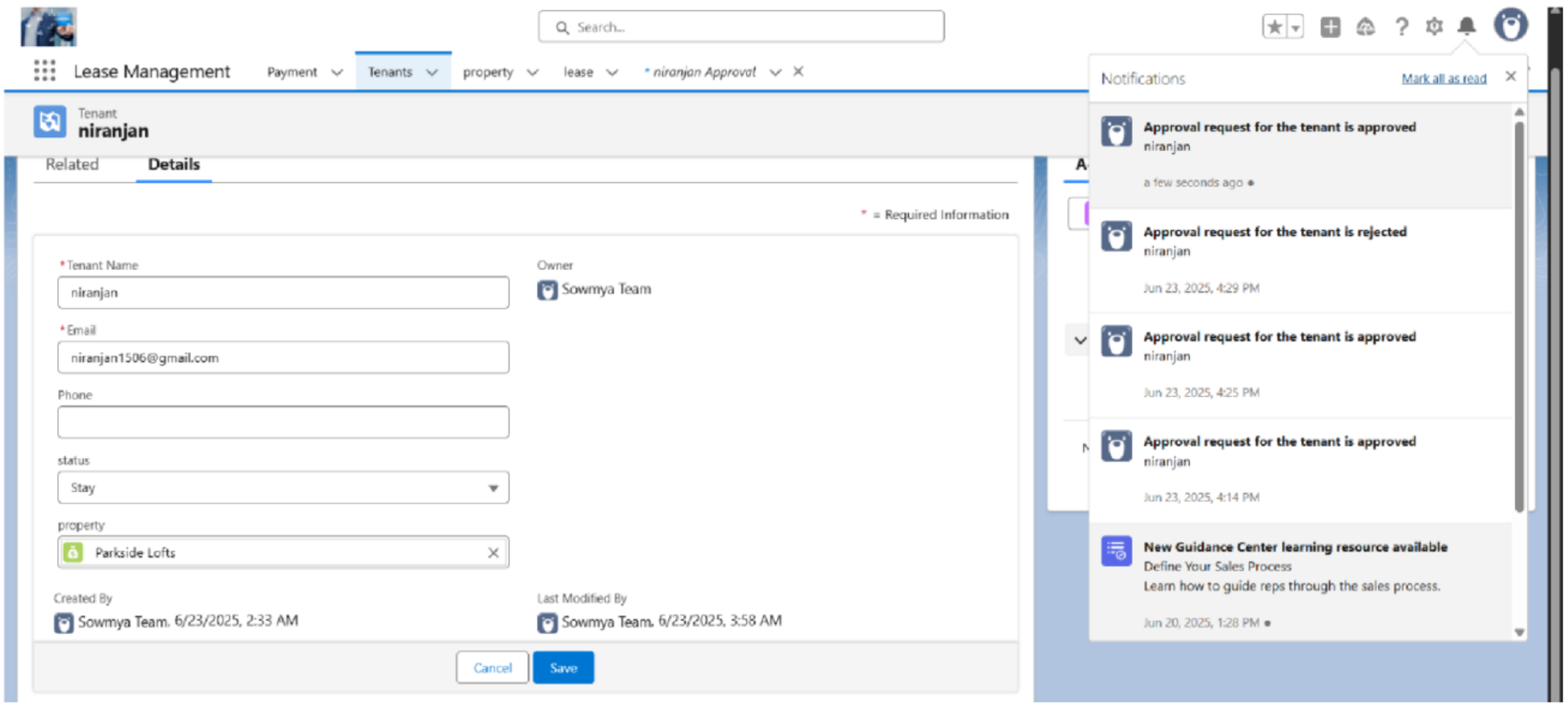


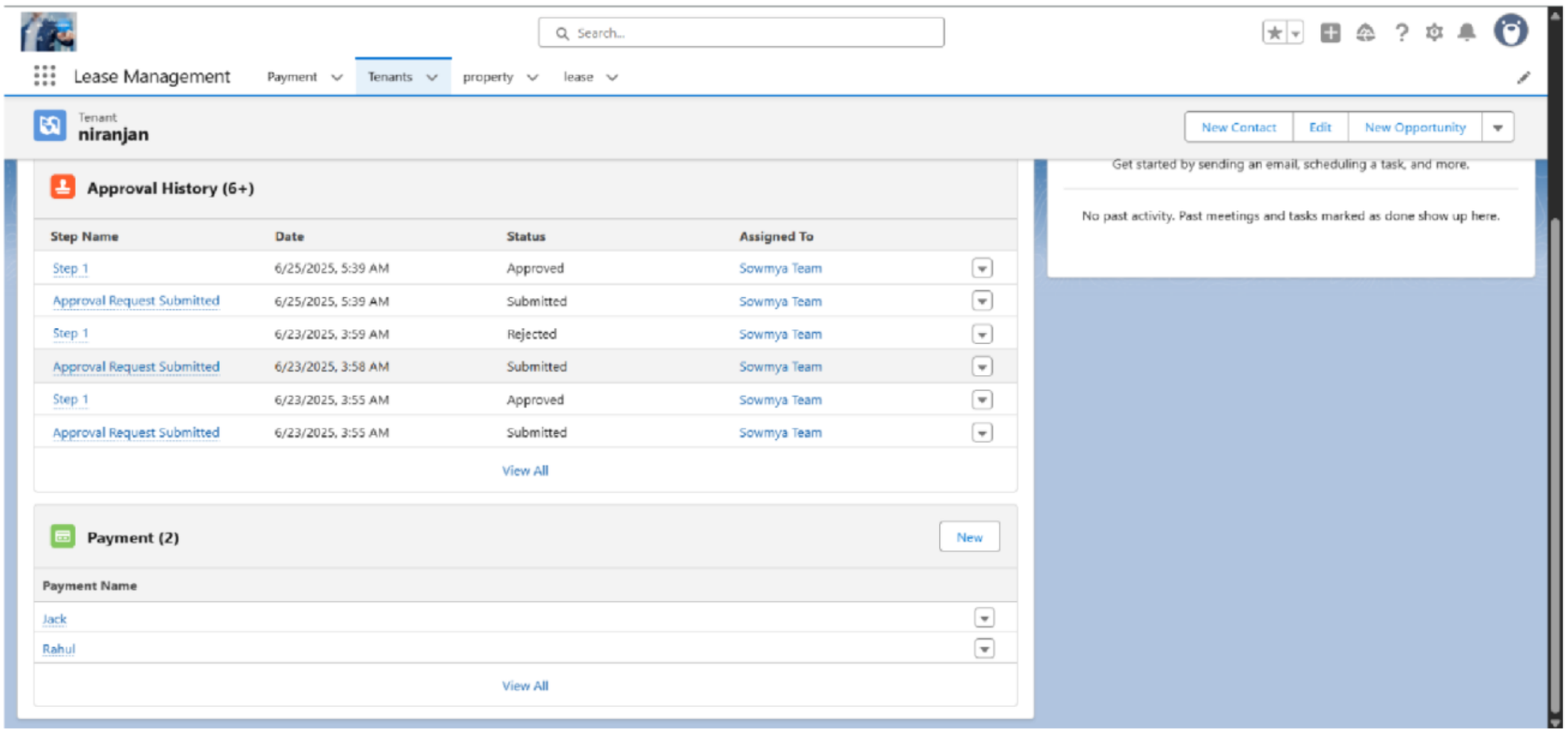


- Test flows on payment update



- Approval process validated through email alerts and status updates

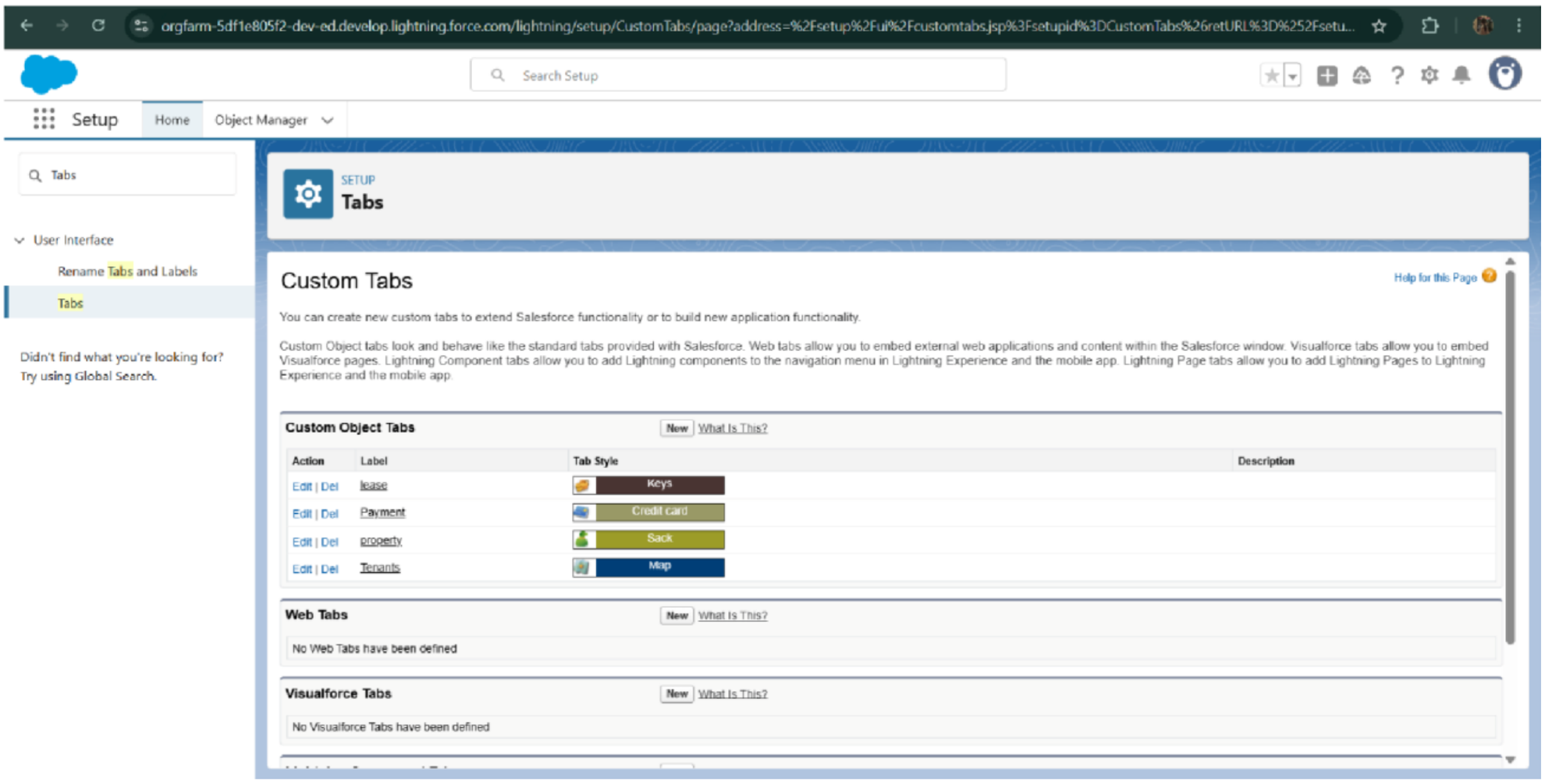

Search...
Lease Management
Payment
Tenants
property
lease
* niranjan Approval
Tenant
niranjan
Related
Details
* = Required Information
* Tenant Name
niranjan
Owner
Sowmya Team
* Email
niranjan1506@gmail.com
Phone
status
Stay
property
Parkside Lofts
Created By
Sowmya Team, 6/23/2025, 2:33 AM
Last Modified 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

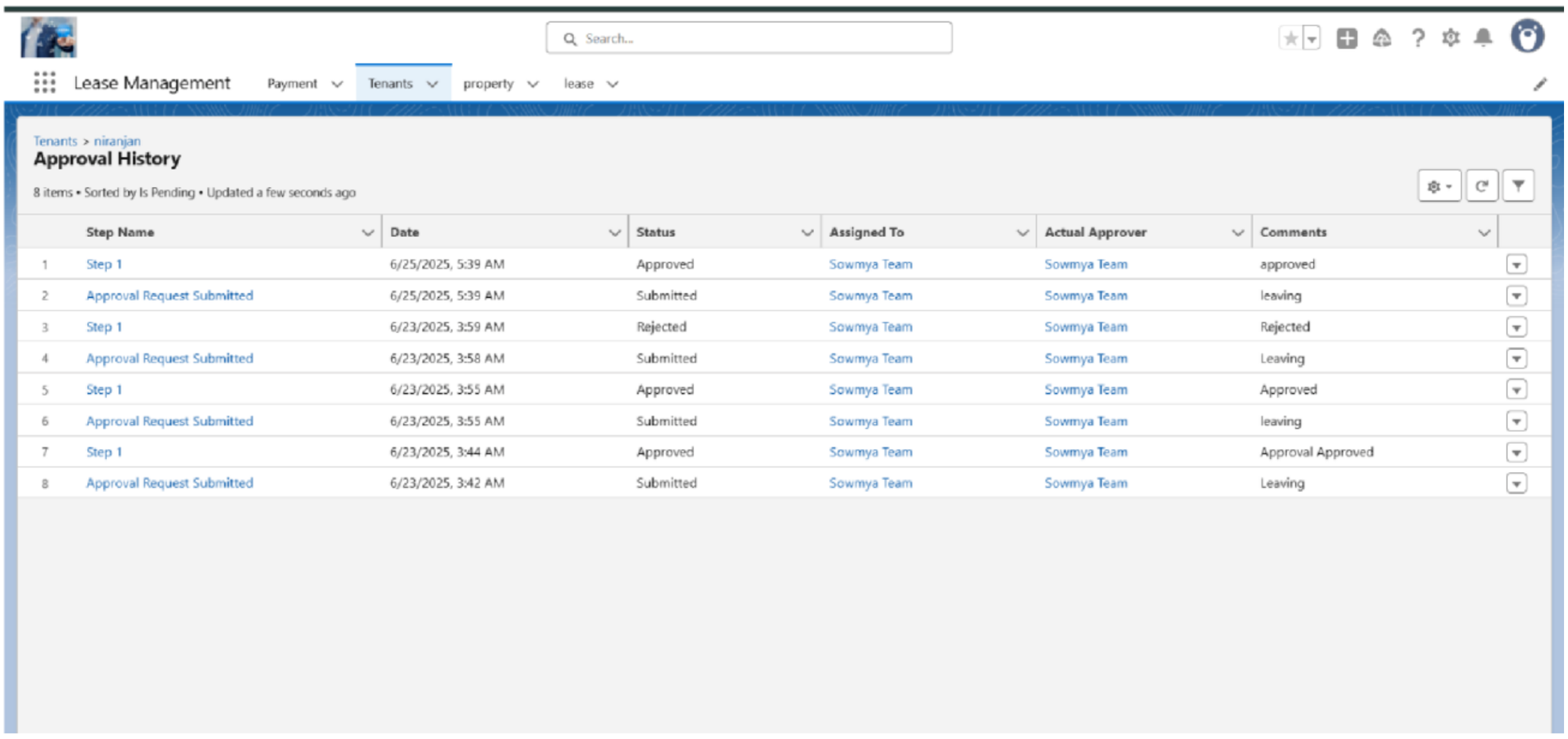
8.RESULTS

8.1 Output Screenshots

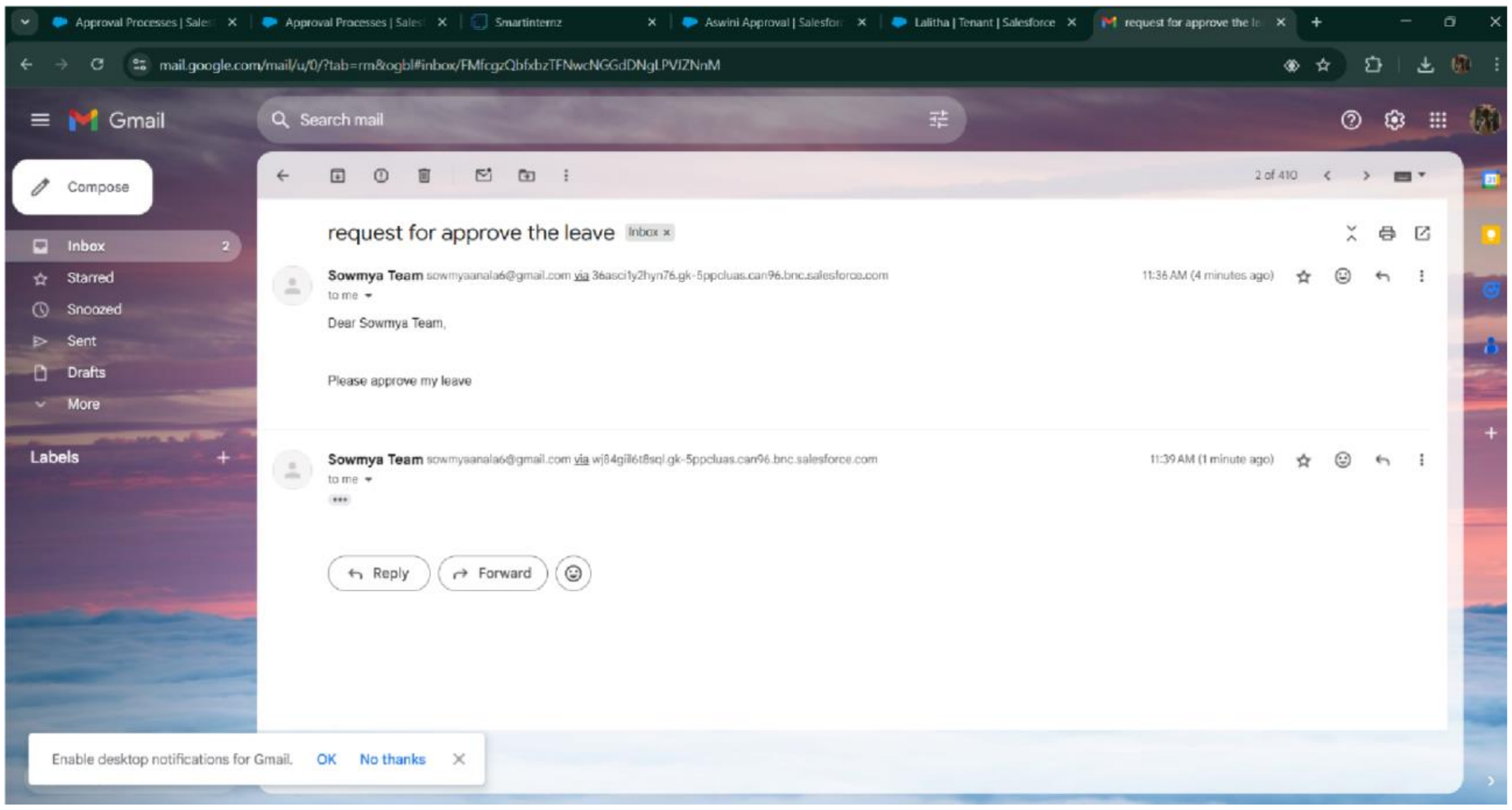
- Tabs for Property, Tenant, Lease, Payment



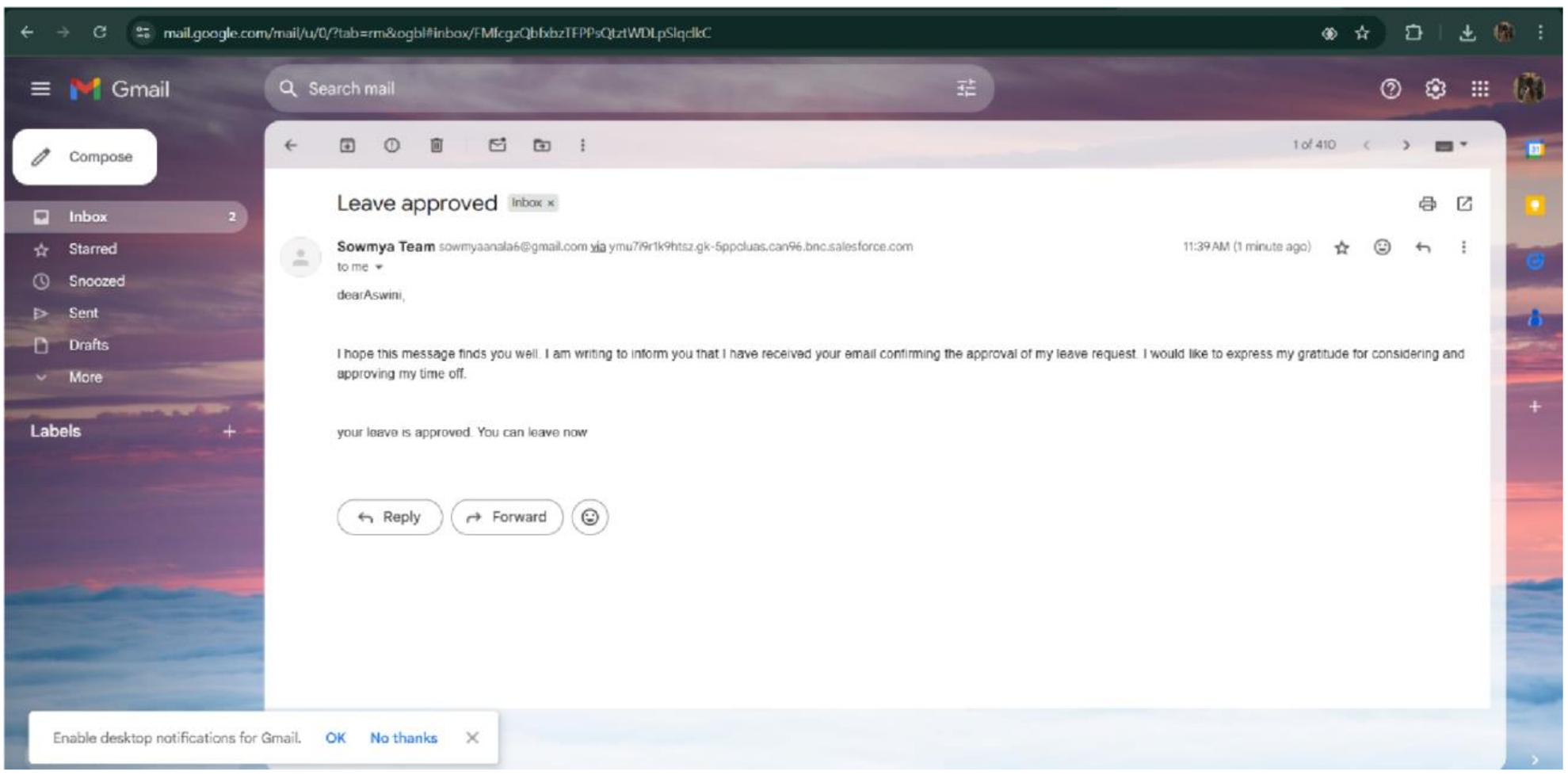
- Email alerts



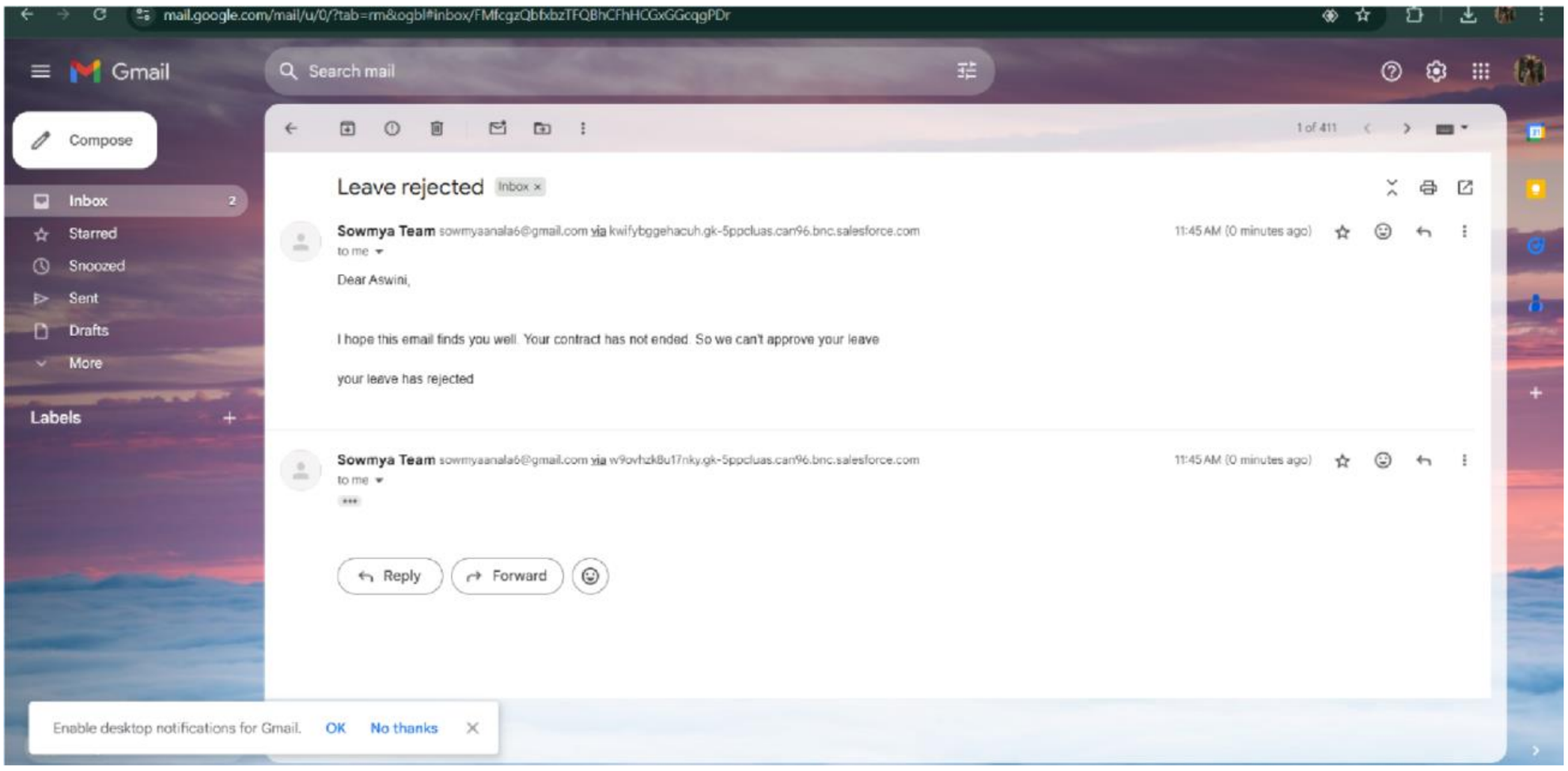
- Request for approve the leave



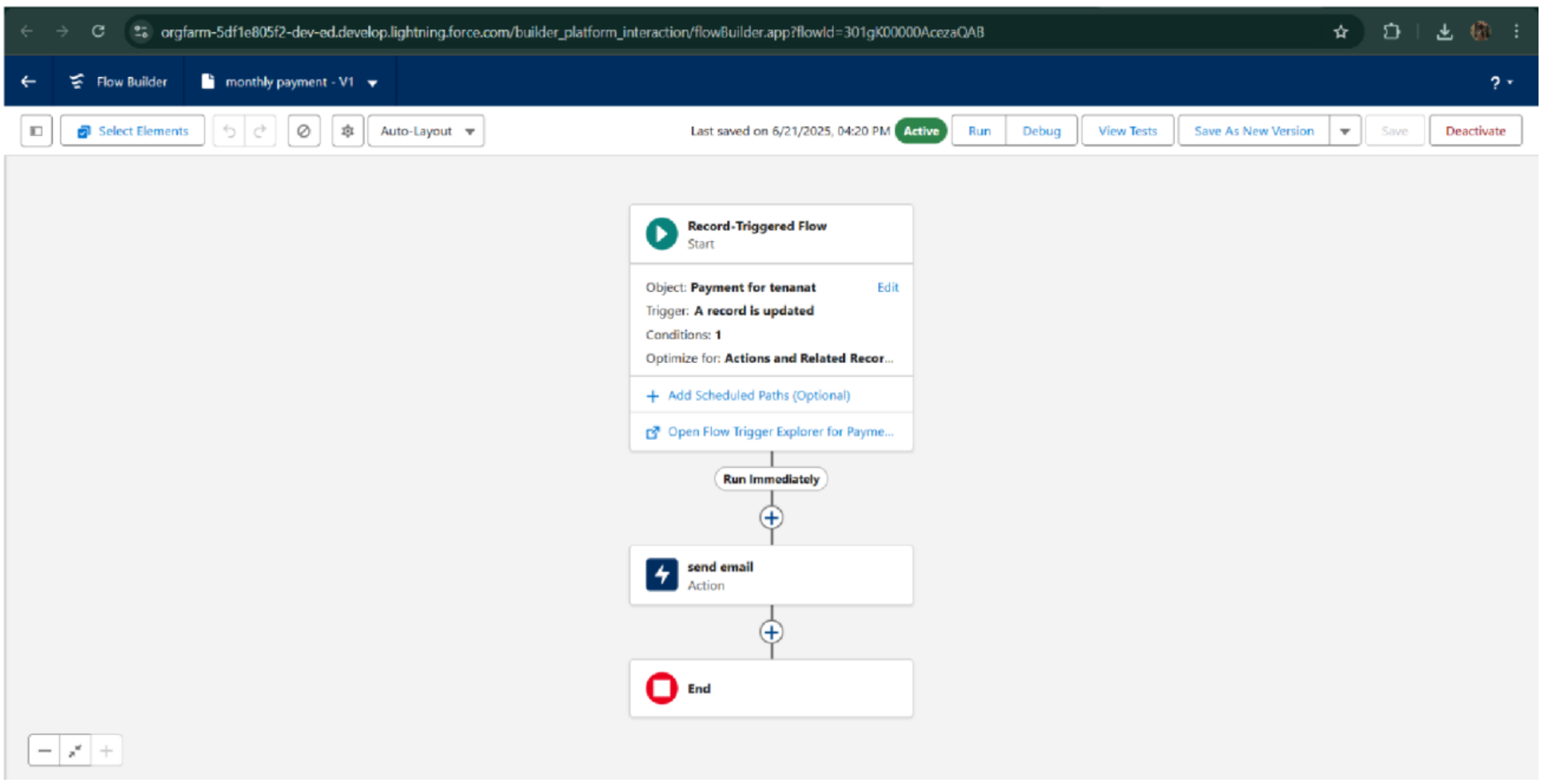
- Leave approved



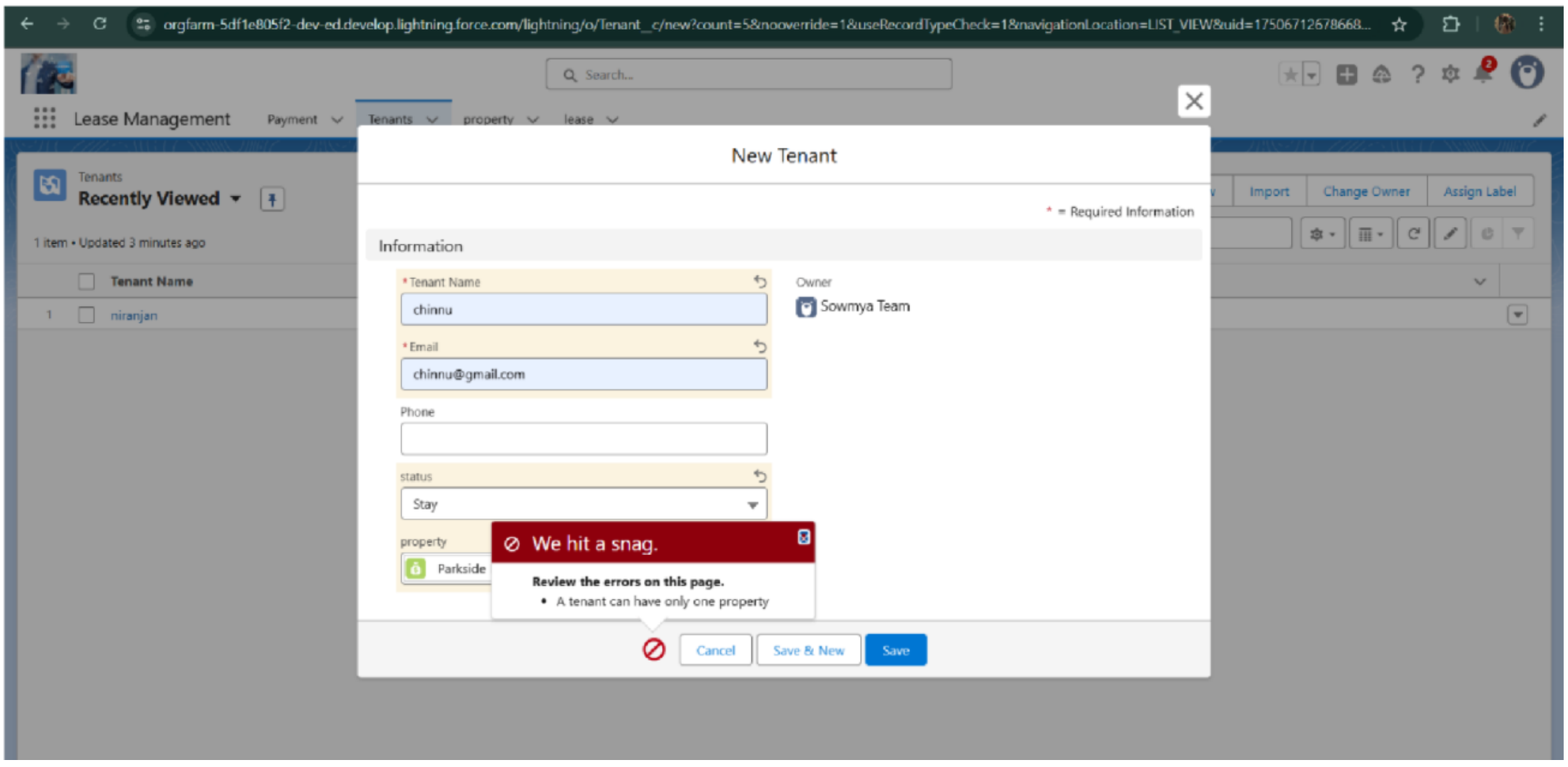
- Leave rejected



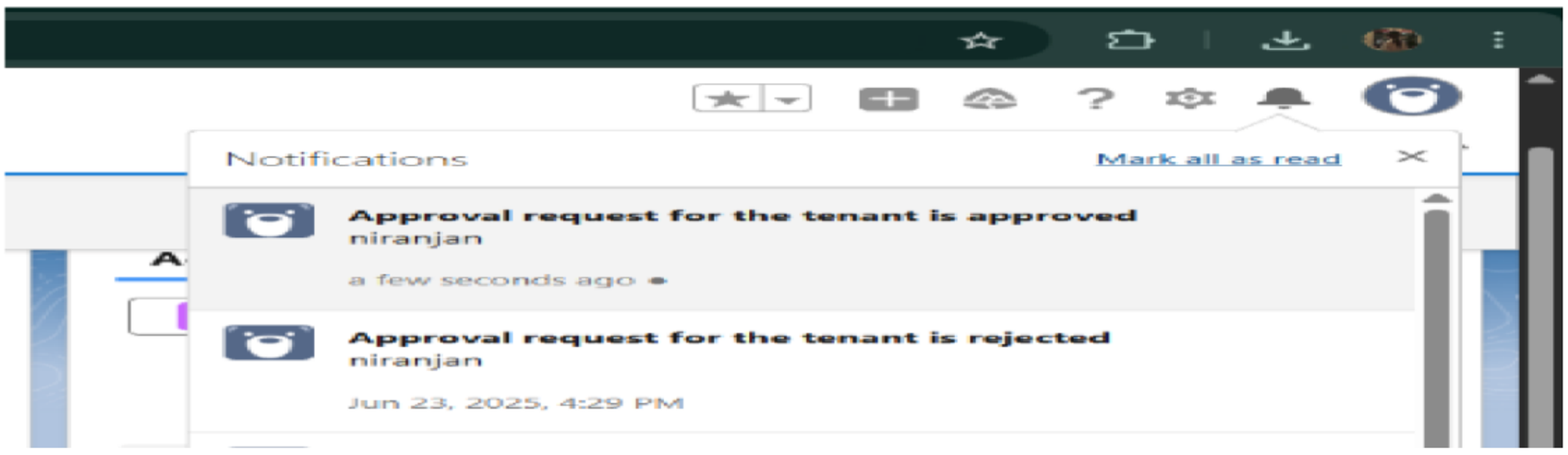
- Flow runs



- 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.

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});

            }

        }

}
```