

MEDICAL INVENTORY MANAGEMENT SYSTEM

COLLEGE : KG college of Arts and Science

TEAM ID : NM2025TMID23630

TEAM SIZE : 4

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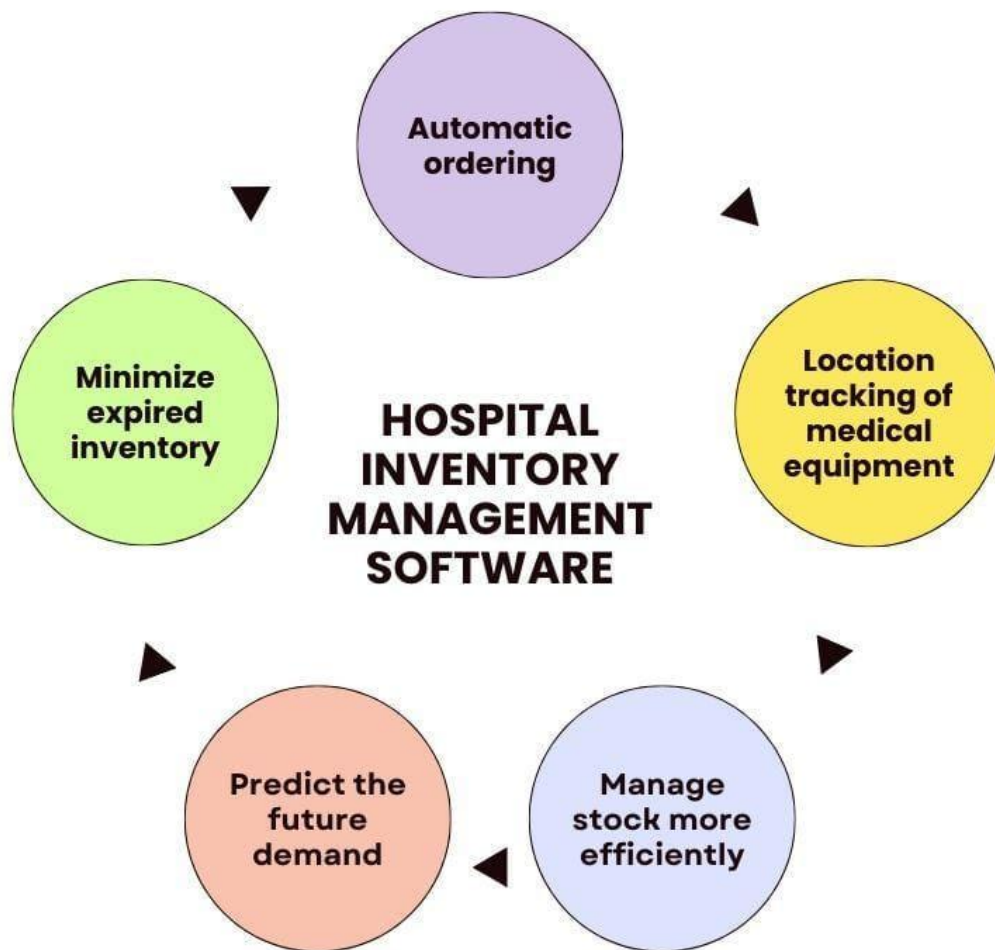
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INTRODUCTION

1.1 Project Overview

The Medical Inventory Management system is designed to streamline the tracking, storage, and distribution of medical supplies. It helps healthcare facilities maintain accurate stock levels, reduce wastage, and ensure timely availability of critical items.



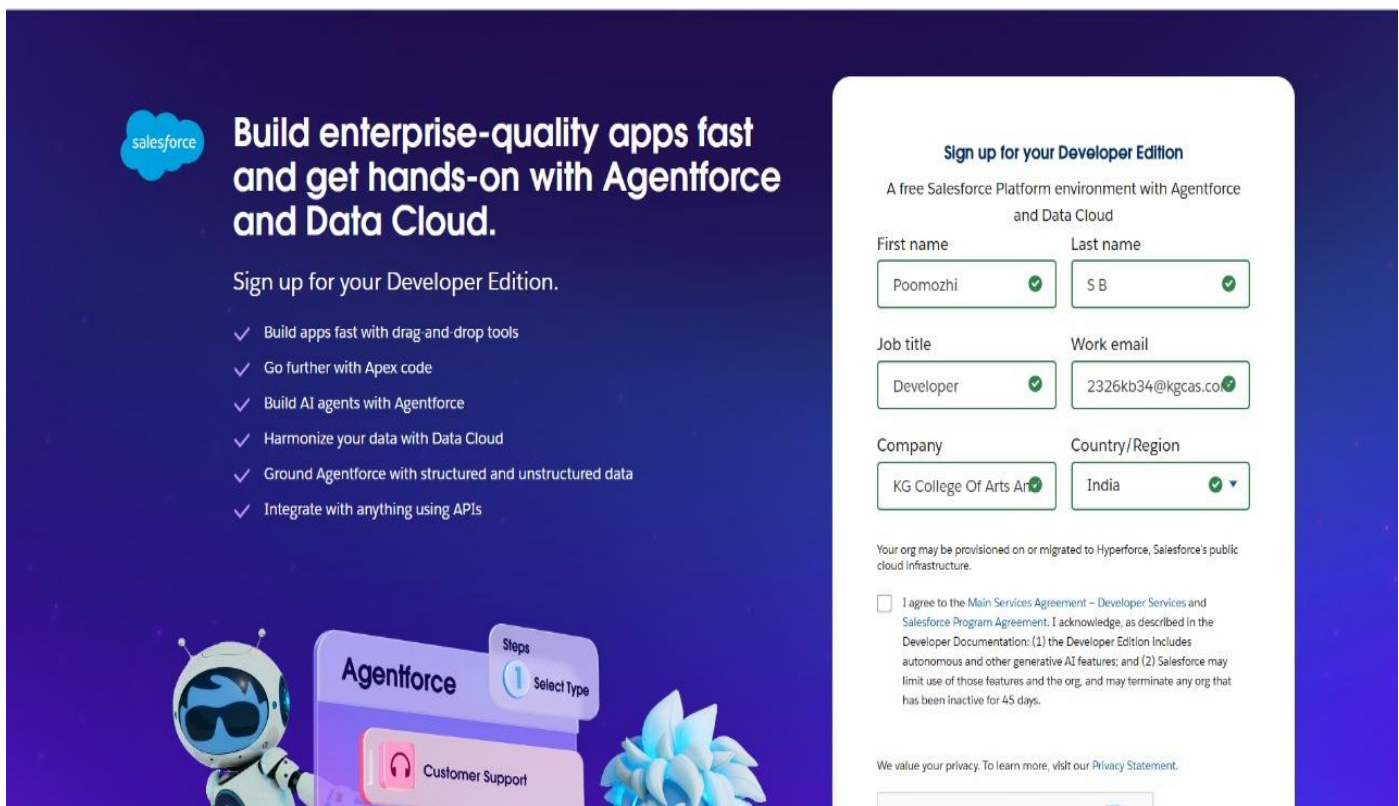
1.2 Purpose

The purpose of a Medical Inventory Management system is to ensure the efficient tracking, control, and distribution of medicines and medical supplies. It helps healthcare organizations maintain optimal stock levels, prevent shortages or overstocking, reduce wastage due to expiry, and provide timely availability of essential items for patient care.

DEVELOPMENT PHASE

Creating Developer Account:

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



The image shows the Salesforce Developer Edition sign-up form. On the left, there is a promotional banner for Agentforce and Data Cloud, featuring a robot character and a list of benefits. The main form area on the right is titled 'Sign up for your Developer Edition' and includes fields for personal and professional information, a terms and conditions checkbox, and a privacy policy link.

Build enterprise-quality apps fast and get hands-on with Agentforce and Data Cloud.

Sign up for your Developer Edition.

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- ✓ Go further with Apex code
- ✓ Build AI agents with Agentforce
- ✓ Harmonize your data with Data Cloud
- ✓ Ground Agentforce with structured and unstructured data
- ✓ Integrate with anything using APIs

Sign up for your Developer Edition

A free Salesforce Platform environment with Agentforce and Data Cloud

First name: Poomozhi ✓ Last name: S B ✓

Job title: Developer ✓ Work email: 2326kb34@kgcas.co.in ✓

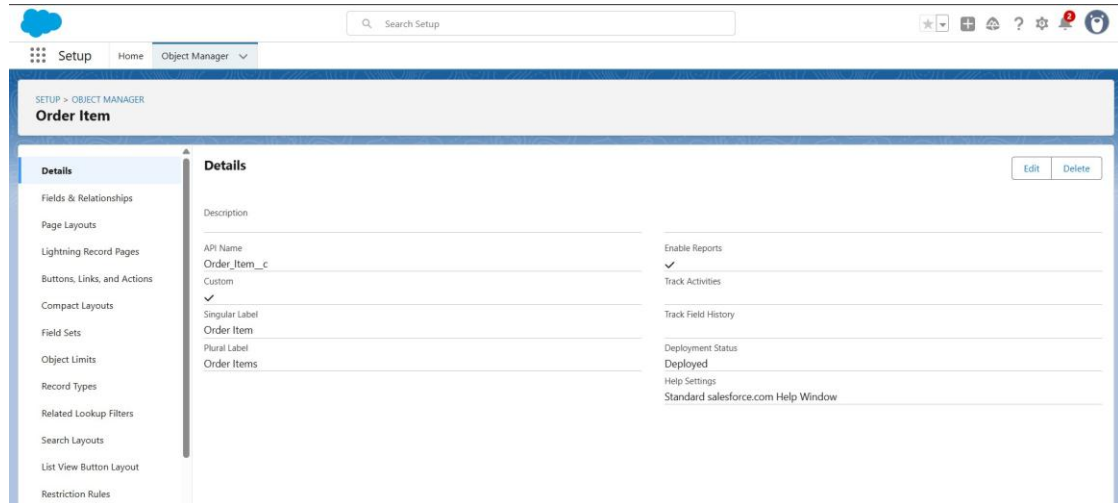
Company: KG College Of Arts And ✓ Country/Region: India ✓

Your org may be provisioned on or migrated to Hyperforce, Salesforce's public cloud infrastructure.

☐ I agree to the Main Services Agreement – Developer Services and Salesforce Program Agreement. I acknowledge, as described in the Developer Documentation: (1) the Developer Edition includes autonomous and other generative AI features; and (2) Salesforce may limit use of those features and the org, and may terminate any org that has been inactive for 45 days.

We value your privacy. To learn more, visit our [Privacy Statement](#).

- Created objects: Order Item, Supplier, Purchase Order, Product



orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/011gl000002GTw9/Details/view

Setup Home Object Manager

SETUP > OBJECT MANAGER

Supplier objects

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

Details

Description

API Name
Supplier_objects_c

Custom
✓

Singular Label
Supplier objects

Plural Label
Supplier objects

Enable Reports
✓

Track Activities

Track Field History

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

Edit Delete

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/011gl000002GTw9/Details/view

Setup Home Object Manager

SETUP > OBJECT MANAGER

Purchase Order

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

Details

Description

API Name
Purchase_Order_c

Custom
✓

Singular Label
Purchase Order

Plural Label
Purchase Orders

Enable Reports
✓

Track Activities

Track Field History

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

Edit Delete

Setup Home Object Manager

SETUP > OBJECT MANAGER

Product

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

Details

Edit Delete

Description

API Name
Product__c

Custom

✓ Singular Label
Product

Plural Label
Products

Enable Reports
✓

Track Activities

Track Field History

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

- Configured fields and relationships

Setup Home Object Manager

SETUP > OBJECT MANAGER

Supplier objects

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

Fields & Relationships
4 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)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Supplier objects Name	Name	Text(80)		✓

Setup > OBJECT MANAGER

Supplier objects

Details

Fields & Relationships
4 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)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User.Group)		✓
Supplier objects Name	Name	Text(80)		✓

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

Purchase Order | Sales | Download file | iLove | Download history | SF-Sample Project D | Developer Edition with | Google Gemini

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01gl000002GU0z/FieldsAndRelationships/view

Setup > OBJECT MANAGER

Purchase Order

Details

Fields & Relationships
4 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)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User.Group)		✓
Purchase Order Name	Name	Text(80)		✓

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
- Object Access

The screenshot shows the Salesforce Setup interface. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'. The left sidebar lists various setup areas, with 'Fields & Relationships' selected. The main content area displays the 'Fields & Relationships' section for the 'Product' object, showing 4 items sorted by Field Label. The table lists fields with their labels, names, data types, controlling fields, and indexed status.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Product ID	Name	Text(80)		✓

- Developed Lightning App with relevant tabs

The screenshot shows the Salesforce Lightning App Builder interface. The top navigation bar includes 'Lightning App Builder', 'App Settings', 'Pages', and 'Medical Inventory Management'. The left sidebar lists various app settings, with 'App Details & Branding' selected. The main content area displays the 'App Details & Branding' section, allowing users to configure app details and branding.

App Details

- * App Name: Medical Inventory Management
- * Developer Name: Medical_Inventory_Management_System
- Description: Enter a description...

App Branding

- Image: [Image placeholder]
- Primary Color Hex Value: #0070D2

Org Theme Options

- ☐ Use the app's image and color instead of the org's custom theme

App Launcher Preview

- Medical Inventory Manage...

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/visualEditor/appBuilder.app?id=02ugl000006ngkDQAQ&retUrl=https%3A%2F%2Forgfarm-5dbd278a84-dev-ed.develop.lightning.force.com

Lightning App Builder App Settings Pages Medical Inventory Management ? Help

App Settings

- App Details & Branding
- App Options
- Utility Items (Desktop Only)
- Navigation Items**
- User Profiles

Navigation Items

Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename the items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format that the item doesn't support.

Available Items

- Accounts
- Activation Targets
- Activations
- All Sites
- Alternative Payment Methods
- Analytics
- App Launcher
- Appointment Categories
- Appointment Invitations
- Approval Requests
- Approval Submission Details
- Approval Submissions

Create

Selected Items

- Products
- Purchase Orders
- Order Items
- Inventory Transactions
- Supplier objects

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/visualEditor/appBuilder.app?id=02ugl000006ngkDQAQ&retUrl=https%3A%2F%2Forgfarm-5dbd278a84-dev-ed.develop.lightning.force.com

Lightning App Builder App Settings Pages Medical Inventory 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

- 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
- Customer Community Plus Login User

Selected Profiles

- System Administrator

- 

Sales

Home

Opportunities

Leads

Tasks

Files

Accounts

Contacts

Campaigns

Dashboards


Reports

Chatter

Groups

Calendar

More

 Opportunity

[Follow](#)
[New Case](#)
[New Note](#)
[Clone](#)

Burlington Textiles Weaving Plant Generator

Account Name

Burlington Textiles Corp of America

Close Date

7/12/2025

Amount

\$235,000.00

Opportunity Owner

[OrgFarm EPIC](#)

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

Closed Won

Change Closed Stage

Activity

Details

Chatter

New Task

Log a Call

New Event

Email

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.

Related

Products (0)

Notes & Attachments (0)

Upload Files

Or drop files

Contact Roles (0)

- Ensure that a lease record is valid only if the leased medical equipment has not expired (i.e., medicine/equipment expiry date is later than lease end date).

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01lgL000002GU0z/FieldsAndRelationships/page?address=%2Fp%2Fsetup%2Fcustent%2FCustom...

Setup

Home

Object Manager

Search Setup

Star

Plus

Refresh

Help

Settings

Notifications

User

SETUP > OBJECT MANAGER

Purchase Order

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

Field

Purchase Order Name

Help for this Page

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name

Purchase Order Name

Example: Account Name

Data Type

Text

Save

Cancel

Recent Accounts

Account Name	City
Acme	New York
Global Media	Toronto
Salesforce.com	San Francisco

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01lgL000002GU0z/FieldsAndRelationships/Name/view

Setup

Home

Object Manager

Search Setup

Star

Plus

Refresh

Help

Settings

Notifications

User

SETUP > OBJECT MANAGER

Purchase Order

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

Purchase Order Field

Purchase Order Name

Back to Purchase Order

Set Field-Level Security

View Field Accessibility

Field Information

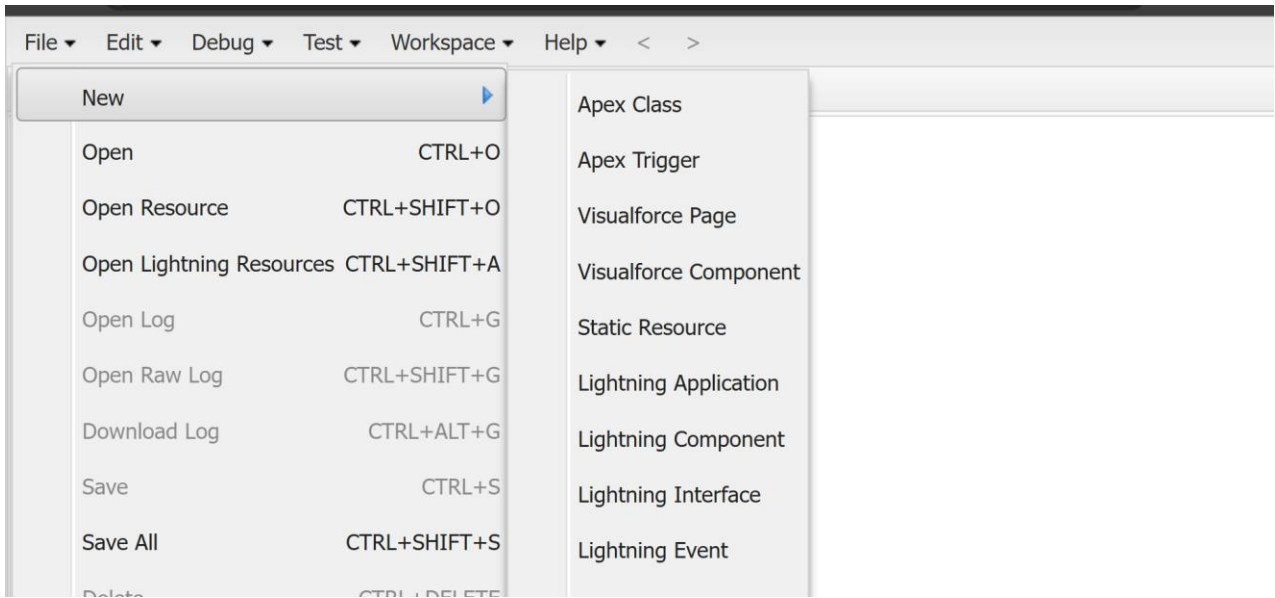
Field Label	Purchase Order Name	Field Name	Name
Data Type	Text(80)		
Description			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			

Validation Rules

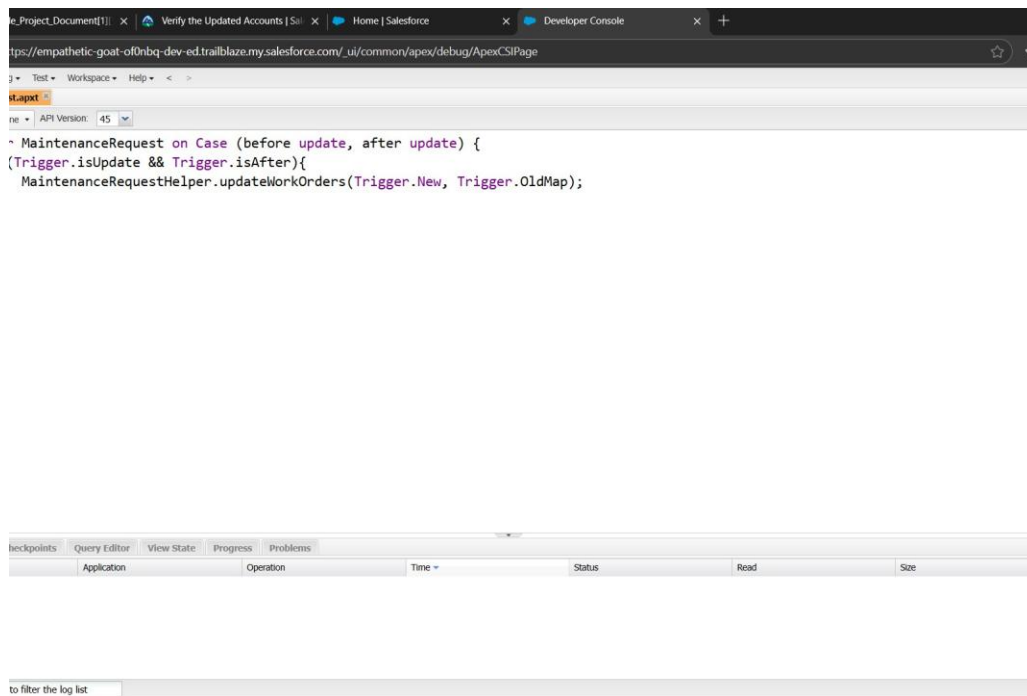
New

Validation Rules Help

No validation rules defined.



- Scheduled monthly reminder emails using Apex class



- Built and tested email templates for Product, Purchase Name, Order Item and Supplier.

The screenshot shows the Salesforce Classic Email Templates page. The left sidebar contains navigation links: Setup, Home, Object Manager, and a search bar. The main content area is titled "Classic Email Templates" and "Unfiled Public Classic Email Templates". Below this is a section for "Classic Email Template Availability" with a table listing various templates.

Action	Email Template Name	Template Type	Available For Use	Description	Author	Last Modified Date
Edit Del	Appointment for Unauthenticated User using Appointment Types - For Amazon Chime	Custom	✓	Email template for confirmation of an appointment when appointments are scheduled using appointment types with Amazon Chime.	stfcdm	9/10/2025
Edit Del	Appointment for Unauthenticated User using Appointment Types - For third party	Custom	✓	Email template for confirmation of an appointment when appointments are scheduled using appointment types with third party video applications.	stfcdm	9/10/2025
Edit Del	Appointment for Unauthenticated User using Engagement Channels For Amazon Chime	Custom	✓	Email template for confirmation of an appointment when appointments are scheduled using engagement channels with Amazon Chime.	stfcdm	9/10/2025
Edit Del	Appointment for Unauthenticated User using Engagement Channels For third party	Custom	✓	Email template for confirmation of an appointment when appointments are scheduled using engagement channels with third party video applications.	stfcdm	9/10/2025
Edit Del	Canceled Service Appointment Confirmation Email	Custom	✓	Email Template to confirm canceling of a service appointment.	stfcdm	9/10/2025
Edit Del	Commerce Reorder Portal Invitation	Custom	✓	Invite a contact to a Commerce Reorder Portal.	autoprc	9/10/2025
Edit Del	Group Service Appointments Enrollment Confirmation Email	Custom	✓	Email Template to confirm enrollment of an attendee to a Group service appointment.	stfcdm	9/10/2025
Edit Del	Marketing Product Inquiry Response	Text	✓	Standard email response to website product inquiries	OEPIIC	9/10/2025
Edit Del	Rescheduled Service Appointment Confirmation Email	Custom	✓	Email Template to confirm rescheduling of a service appointment.	stfcdm	9/10/2025
Edit Del	Sales New Customer Email	Text	✓	Email to new customers	OEPIIC	9/10/2025
Edit Del	Scheduled Service Appointment Confirmation Email	Custom	✓	Email Template to confirm scheduling of a service appointment.	stfcdm	9/10/2025

The screenshot shows the details of the "Sales: New Customer Email" template. The left sidebar is the same as the previous screenshot. The main content area is titled "Classic Email Templates" and "Text Email Template: Sales: New Customer Email". Below this is a section for "Email Template Detail" with a table showing the template's properties.

Property	Value
Email Template Name	Sales: New Customer Email
Template Unique Name	SalesNewCustomerEmail
Encoding	Unicode (UTF-8)
Author	OrgFarm EPIC [Change]
Description	Email to new customers
Created By	OrgFarm EPIC, 9/10/2025, 5:27 PM
Modified By	OrgFarm EPIC, 9/10/2025, 5:27 PM

Below the table is a section for "Email Template" with a "Send Test and Verify Merge Fields" button. The "Subject" is "Welcome to the GenWatt Community". The "Plain Text Preview" shows the email body content:

```

Dear {Contact.FirstName},

All of us at GenWatt are glad to have {AccountName} as a customer.

I would like to introduce myself as your Account Manager. Should you have any questions, please feel free to call me at {User.Phone} or email me at {User.Email}.
  
```

The screenshot shows the Salesforce Setup interface for Classic Email Templates. The left sidebar contains a search bar with 'clas' and a navigation menu with categories: Email, Custom Code, and Data Classification. The main content area is titled 'Classic Email Templates' and displays a 'Custom Email Template' named 'Scheduled Service Appointment Confirmation Email'. Below the title, there are buttons for 'Edit Properties', 'Edit HTML Version', 'Edit Text Version', 'Delete', and 'Clone'. The 'Email Template Detail' section shows a table with the following information:

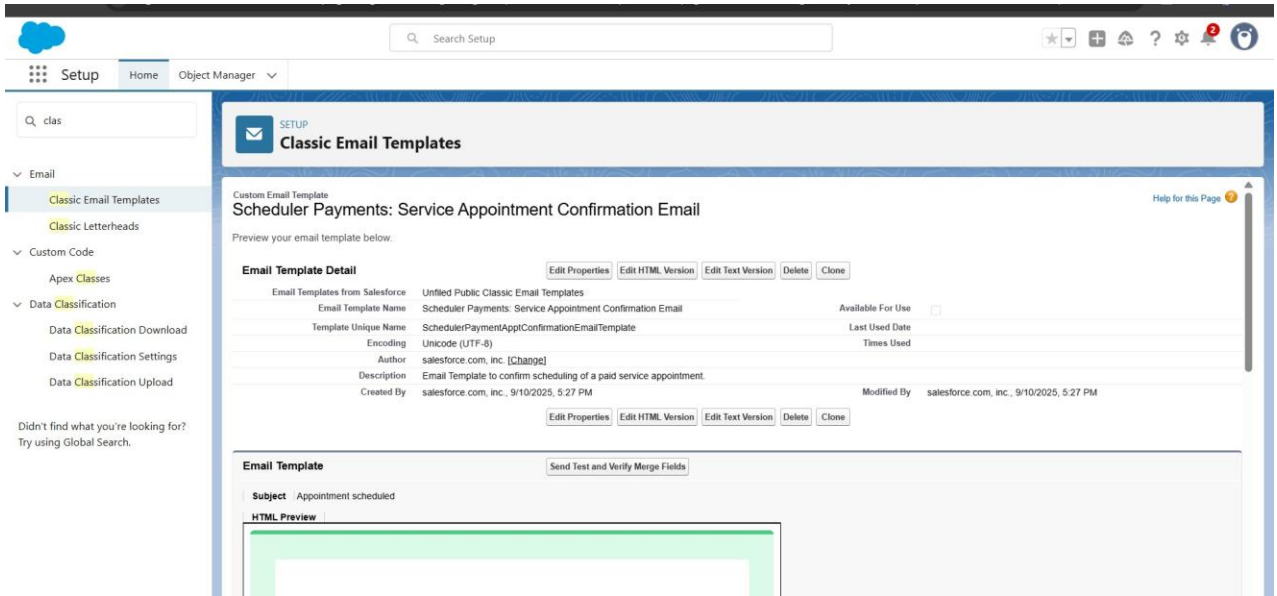
Field	Value
Email Templates from Salesforce	Unified Public Classic Email Templates
Email Template Name	Scheduled Service Appointment Confirmation Email
Template Unique Name	SalesforceSchedulerCreateAppEmailTemplate
Encoding	General US & Western Europe (ISO-8859-1, ISO-LATIN-1)
Author	salesforce.com, inc. [Change]
Description	Email Template to confirm scheduling of a service appointment.
Created By	salesforce.com, inc., 9/10/2025, 5:27 PM
Modified By	salesforce.com, inc., 9/10/2025, 5:27 PM

Below the details, there is an 'Email Template' section with a 'Subject' field containing 'Your service appointment is scheduled' and an 'HTML Preview' section.

The screenshot shows the Salesforce Setup interface for Classic Email Templates, displaying a different template. The left sidebar is identical to the first screenshot. The main content area is titled 'Classic Email Templates' and displays a 'Custom Email Template' named 'Scheduler Payments: Payment Reminder for Service Appointment Email'. Below the title, there are buttons for 'Edit Properties', 'Edit HTML Version', 'Edit Text Version', 'Delete', and 'Clone'. The 'Email Template Detail' section shows a table with the following information:

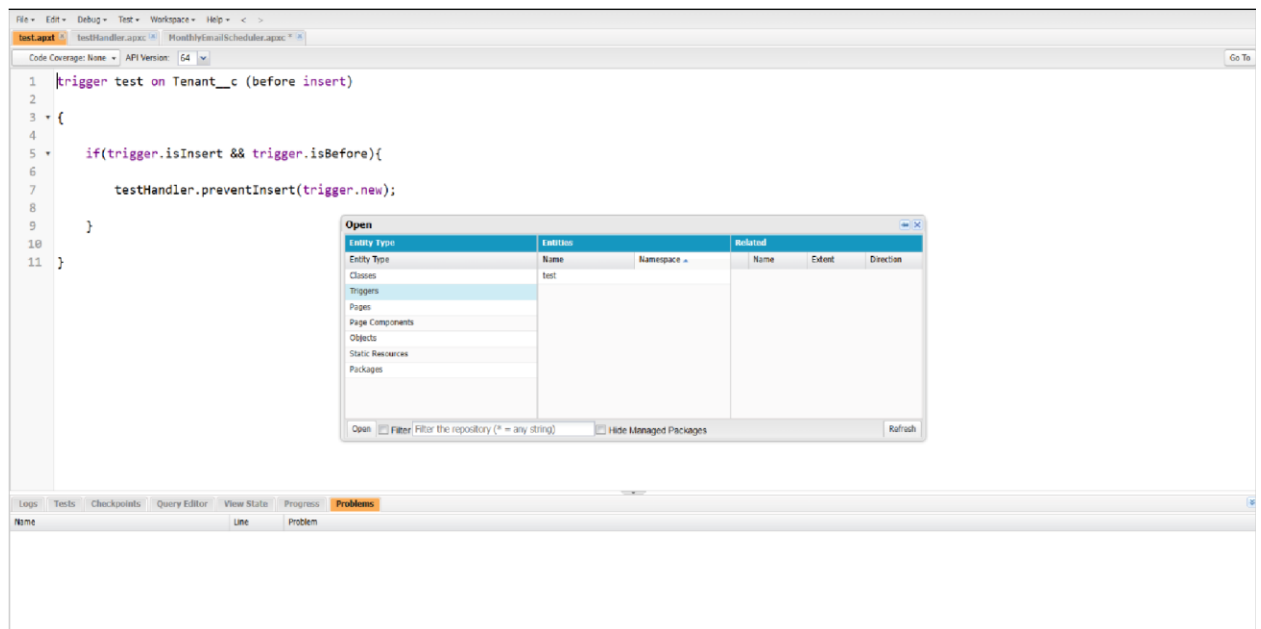
Field	Value
Email Templates from Salesforce	Unified Public Classic Email Templates
Email Template Name	Scheduler Payments: Payment Reminder for Service Appointment Email
Template Unique Name	SchedulerPaymentsReminderEmailTemplate
Encoding	Unicode (UTF-8)
Author	salesforce.com, inc. [Change]
Description	Email Template to remind customers to pay for their service appointment.
Created By	salesforce.com, inc., 9/10/2025, 5:27 PM
Modified By	salesforce.com, inc., 9/10/2025, 5:27 PM

Below the details, there is an 'Email Template' section with a 'Subject' field containing 'Complete your payment' and an 'HTML Preview' section.

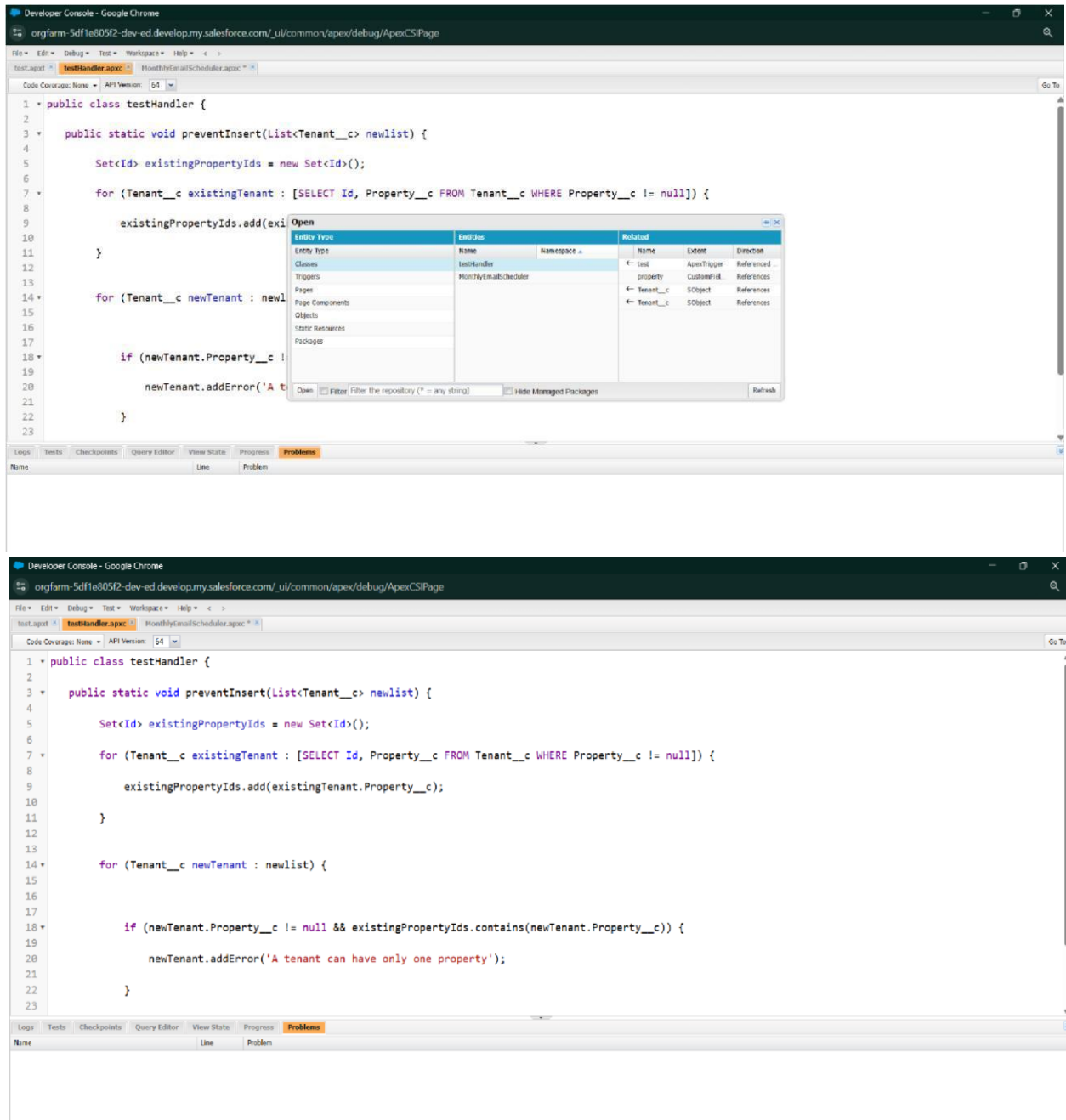


- Apex Trigger

Create an Apex Trigger



Create an Apex Handler class



The first screenshot shows the initial code for the `testHandler` class. It includes a `preventInsert` method that checks for existing properties before inserting new tenants. A modal window is open, showing the class hierarchy.

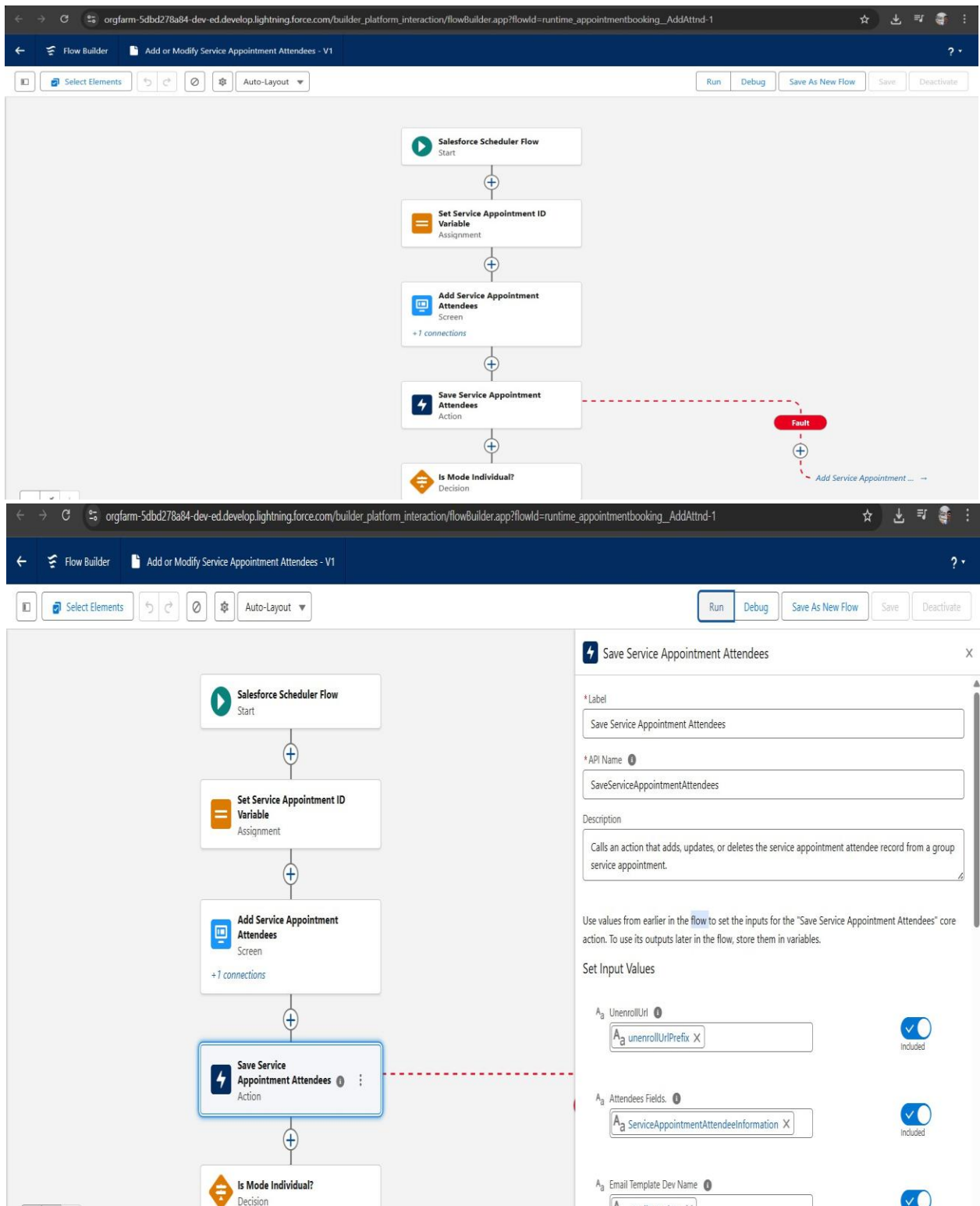
Entity Type	Entity Name	Namespace	Related Name	Extent	Direction
Classes	testHandler		test	ApexTrigger	Referenced
Triggers	MonthlyEmailScheduler		property	CustomField	References
Pages			Tenant__c	SOBJECT	References
Page Components			Tenant__c	SOBJECT	References
Objects					
Static Resources					
Packages					

The second screenshot shows the updated code for the `testHandler` class. The `preventInsert` method now checks if a tenant already has a property before adding an error.

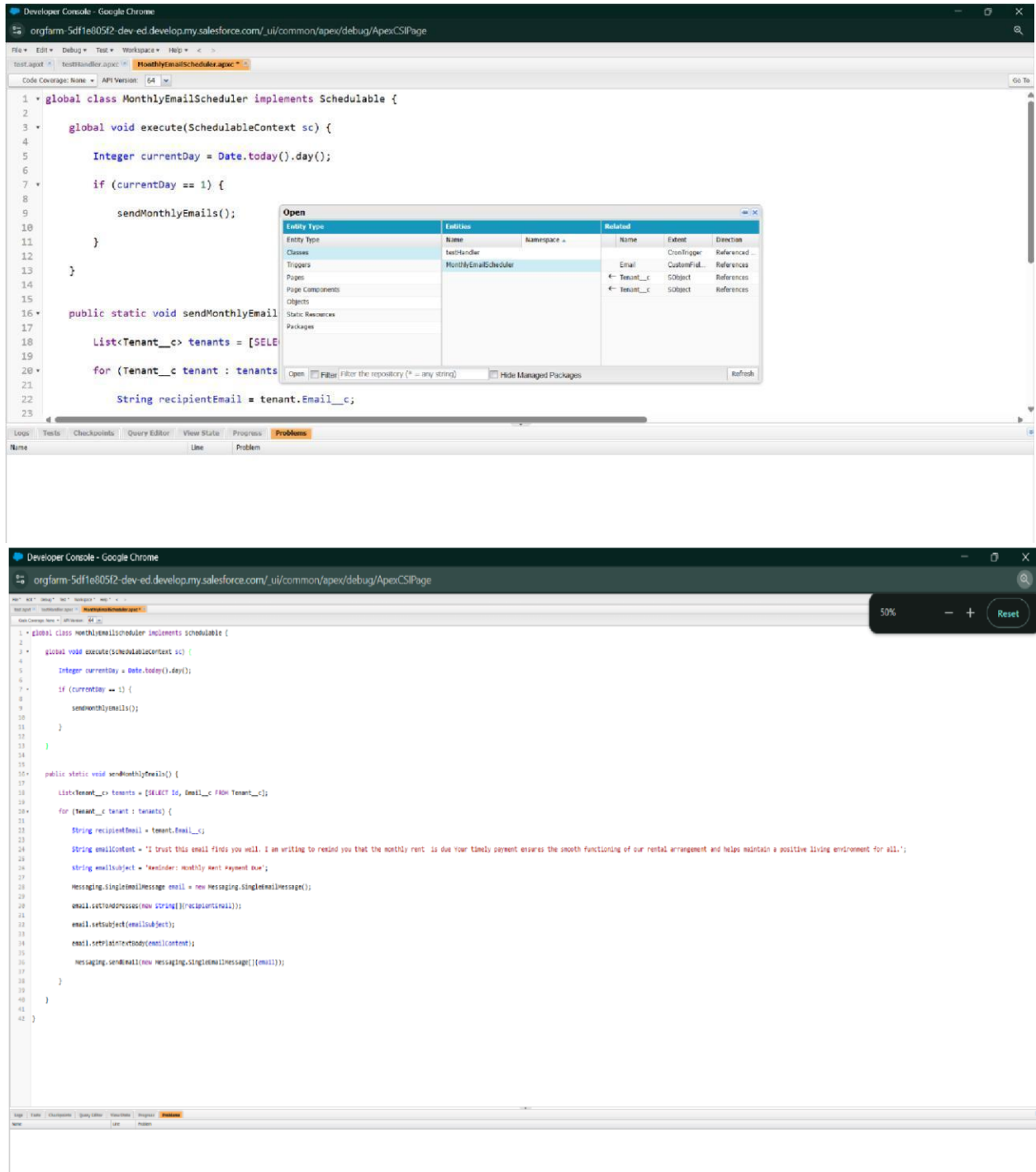
```

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         for (Tenant__c newTenant : newList) {
14
15
16
17             if (newTenant.Property__c != null && existingPropertyIds.contains(newTenant.Property__c)) {
18
19                 newTenant.addError('A tenant can have only one property');
20
21             }
22
23         }
24     }
25 }
  
```


• FLOWS



- Schedule class:
Create an Apex
Class



ADVANTAGES

Accurate Tracking – Monitors medicines, suppliers, leases, and patients in real time.

Automation – Flows handle monthly rent, payment alerts, and stock updates automatically.

Error Prevention – Validation rules ensure data integrity (e.g., lease dates, rent values).

Reduced Wastage – Tracks expiry dates to avoid expired stock usage.

Improved Efficiency – Saves time by reducing manual record-keeping and errors.

DISADVANTAGES

Implementation Cost – Requires investment in Salesforce setup, licenses, or tools.

Training Need – Users must learn how to operate the system properly.

Customization Complexity – Creating flows, validation rules, and roll-ups may need admin or developer expertise.

Data Dependency – System is only as good as the accuracy of the data entered.

Maintenance – Requires regular updates, monitoring, and troubleshooting.

RESULTS

Output Screenshots

orgfarm-5dbd278a84-dev-ed.develop.lightning.force.com/lightning/setup/CustomTabs/home

Search Setup

Setup Home Object Manager

tabs

User Interface

Rename Tabs and Labels

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

Custom Tabs

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

Custom Object Tabs

[New](#) [What Is This?](#)

Action	Label	Tab Style	Description
Edit Del	Inventory Transactions	Computer	
Edit Del	Order Items	Leaf	
Edit Del	Products	Heart	
Edit Del	Purchase Orders	Desk	
Edit Del	Supplier objects	Fan	

Web Tabs

[New](#) [What Is This?](#)

No Web Tabs have been defined

Visualforce Tabs

[New](#) [What Is This?](#)

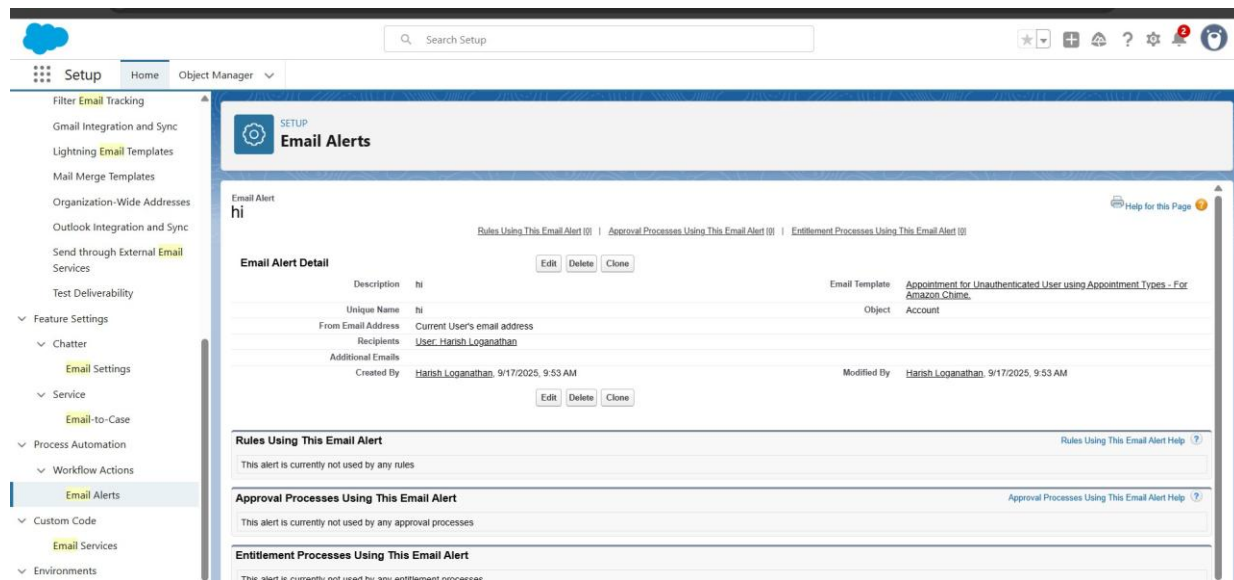
No Visualforce Tabs have been defined

Lightning Component Tabs

[New](#) [What Is This?](#)

Tabs for Product,Purchase Order, Order ID,Supplier

Email alerts



CONCLUSION

The Medical Inventory Management system ensures efficient handling of medicines, suppliers, purchase orders, patients, and lease records. By implementing automation through flows (monthly rent tracking and payment alerts) and enforcing validation rules on the Lease object (such as preventing expired equipment leases), the system enhances accuracy, safety, and compliance. Overall, it reduces manual errors, improves inventory control, and supports timely availability of critical medical supplies.

APPENDIX

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

```
public with sharing class MaintenanceRequestHelper {
    public static void updateWorkOrders(List<Case> updWorkOrders, Map<Id,Case>
nonUpdCaseMap) {
        Set<Id> validIds = new Set<Id>();
```

```
    For (Case c : updWorkOrders){
        if (nonUpdCaseMap.get(c.Id).Status != 'Closed' && c.Status == 'Closed'){
```

```

        if (c.Type == 'Repair' || c.Type == 'Routine Maintenance'){
            validIds.add(c.Id);
        }
    }
}

if (!validIds.isEmpty()){
    List<Case> newCases = new List<Case>();
    Map<Id,Case> closedCasesM = new Map<Id,Case>([SELECT Id, Vehicle__c,
Equipment__c, Equipment__r.Maintenance_Cycle__c,(SELECT Id,Equipment__c,Quantity__c
FROM Equipment_Maintenance_Items__r)
                                FROM Case WHERE Id IN :validIds]);
    Map<Id,Decimal> maintenanceCycles = new Map<ID,Decimal>();
    AggregateResult[] results = [SELECT Maintenance_Request__c,
MIN(Equipment__r.Maintenance_Cycle__c)cycle FROM Equipment_Maintenance_Item__c
WHERE Maintenance_Request__c IN :ValidIds GROUP BY Maintenance_Request__c];

    for (AggregateResult ar : results){
        maintenanceCycles.put((Id) ar.get('Maintenance_Request__c'), (Decimal) ar.get('cycle'));
    }

    for(Case cc : closedCasesM.values()){
        Case nc = new Case (
            ParentId = cc.Id,
            Status = 'New',
            Subject = 'Routine Maintenance',
            Type = 'Routine Maintenance',
            Vehicle__c = cc.Vehicle__c,
            Equipment__c =cc.Equipment__c,
            Origin = 'Web',
            Date_Reported__c = Date.Today()

        );

        If (maintenanceCycles.containsKey(cc.Id)){
            nc.Date_Due__c = Date.today().addDays((Integer) maintenanceCycles.get(cc.Id));
        }

        newCases.add(nc);
    }
}

```

```

insert newCases;

List<Equipment_Maintenance_Item__c> clonedWPs = new
List<Equipment_Maintenance_Item__c>();
for (Case nc : newCases){
    for (Equipment_Maintenance_Item__c wp :
closedCasesM.get(nc.ParentId).Equipment_Maintenance_Items__r){
        Equipment_Maintenance_Item__c wpClone = wp.clone();
        wpClone.Maintenance_Request__c = nc.Id;
        ClonedWPs.add(wpClone);

    }
}
insert ClonedWPs;
}
}
}

trigger MaintenanceRequest on Case (before update, after update) {
    if(Trigger.isUpdate && Trigger.isAfter){
        MaintenanceRequestHelper.updateWorkOrders(Trigger.New, Trigger.OldMap);
    }
}

```