College Facility Issue Tracker using Salesforce CRM

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Roll no :- 43

Project Overview:

The College Facility Issue Tracker CRM is a Salesforce-based application designed to streamline the reporting and resolution of infrastructure and maintenance issues within a college campus.

In most colleges, students and faculty face challenges in reporting problems such as broken classroom equipment, non-functional projectors, water leakage in hostels, or damaged furniture. These issues are usually handled through manual or informal communication methods like emails or verbal complaints, leading to delays and lack of accountability.

This CRM aims to create a centralized digital platform where students and staff can easily log facility-related issues through a web form or portal. Each complaint is automatically converted into a Case in Salesforce, categorized by type (Electrical, Plumbing, Furniture, etc.), and assigned to the appropriate maintenance team or vendor.

The system further integrates automation through Salesforce Flows, Validation Rules, and Approval Processes to ensure faster resolution and transparent communication. Management can monitor all activities via dashboards and reports, track SLA compliance, and analyse maintenance trends across the campus.

Ultimately, the project enhances operational efficiency, ensures timely repairs, and improves overall student and faculty satisfaction through structured issue management.

Objectives:

1. **Simplify Issue Reporting:**
   Provide an easy-to-use platform for students and faculty to report facility issues from anywhere, anytime.
2. **Automate Case Assignment:**
   Use Salesforce Flows and Triggers to auto-assign issues to relevant facility departments or vendors based on category or location.
3. **Ensure Accountability & Transparency:**
   Track each issue from reporting to resolution with clear ownership and SLA-based timelines.
4. **Enable Smart Approvals:**
   Implement automated approval processes for high-cost repairs or replacements to ensure proper budget utilization.

5. **Provide Actionable Insights:**
   Offer reports and dashboards to management for real-time visibility into issue status, resolution times, and team performance.
6. **Enhance Campus Experience:**
   Improve student and faculty satisfaction by ensuring a safer, well-maintained, and responsive campus environment.

Phase 1 – Problem Understanding & Industry Analysis

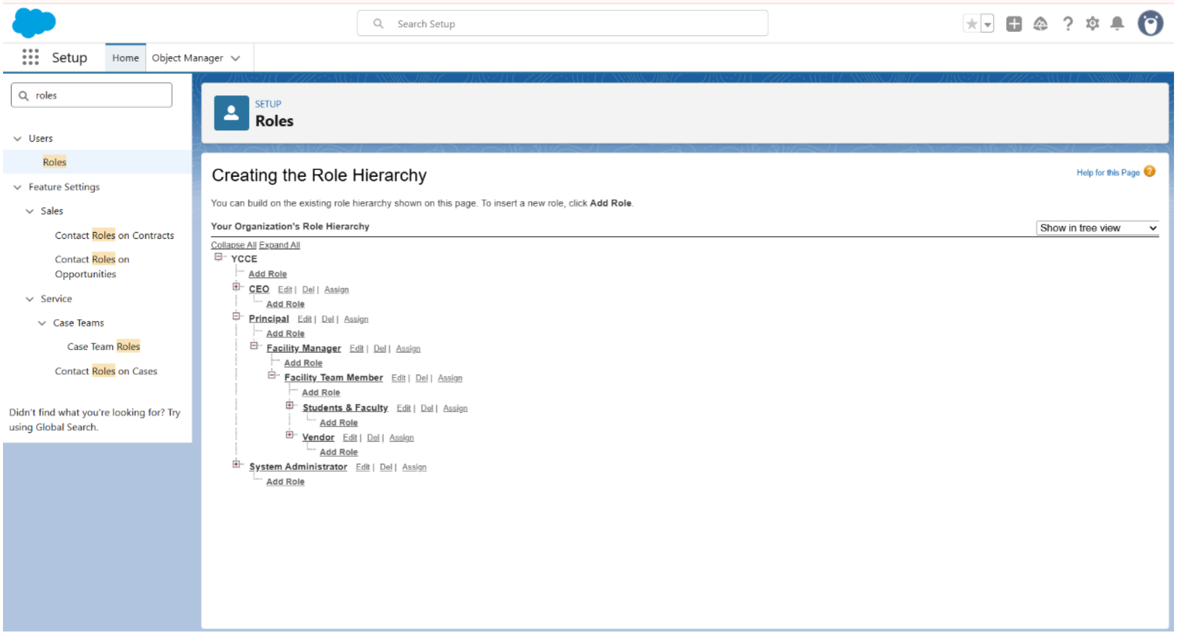
Goal: Establish the need for the project and study existing facility-management processes in colleges.
Tasks:

- **Requirement Gathering:** Interview students, faculty, and facility staff to identify key pain points.
- **Stakeholder Analysis:**
  - Students & Faculty – issue reporters
  - Facility Team – issue resolvers
  - Contractors – repair executors
  - Management – monitors & approvers

Phase 2 – Org Setup & Configuration

Goal: Create and configure your Salesforce org.
Tasks:

- Choose Developer Edition org.
- Configure Company Profile, Business Hours, Fiscal Year, Holidays.
- Create User Roles: Principal, Student, Faculty, Facility Manager, Facility Team Member, Vendor, System Administrator.
- Assign Profiles and Licenses.
- Enable Login Access Policies and security basics.



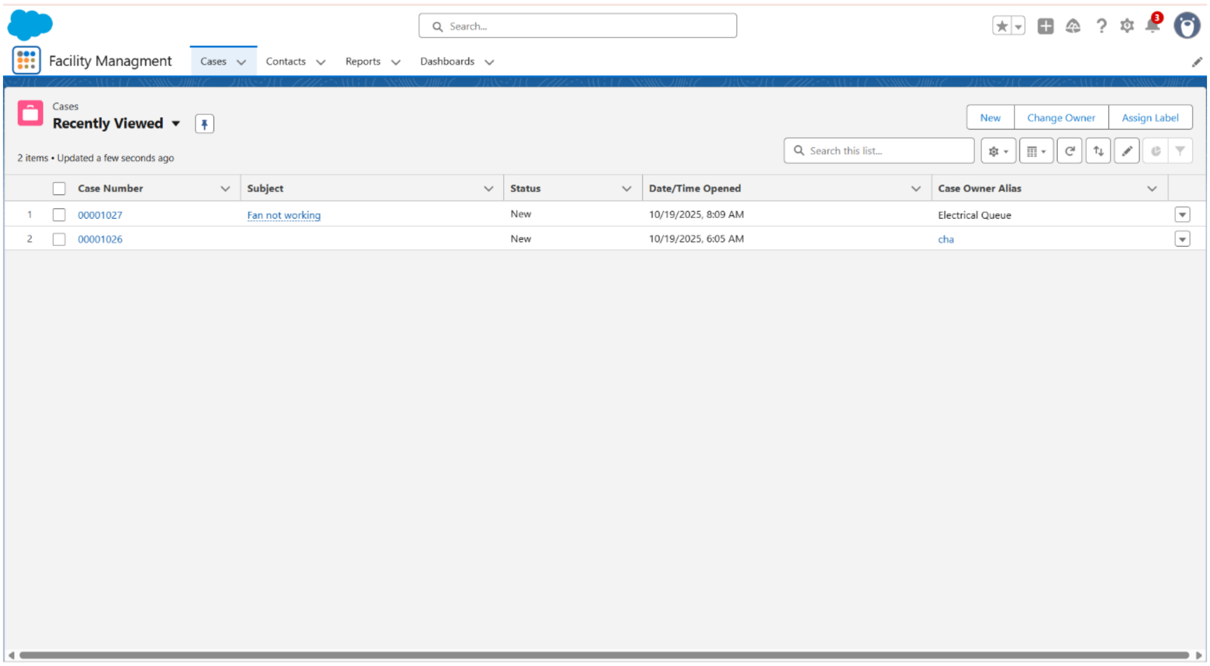
Phase 3 – Data Modelling & Relationships

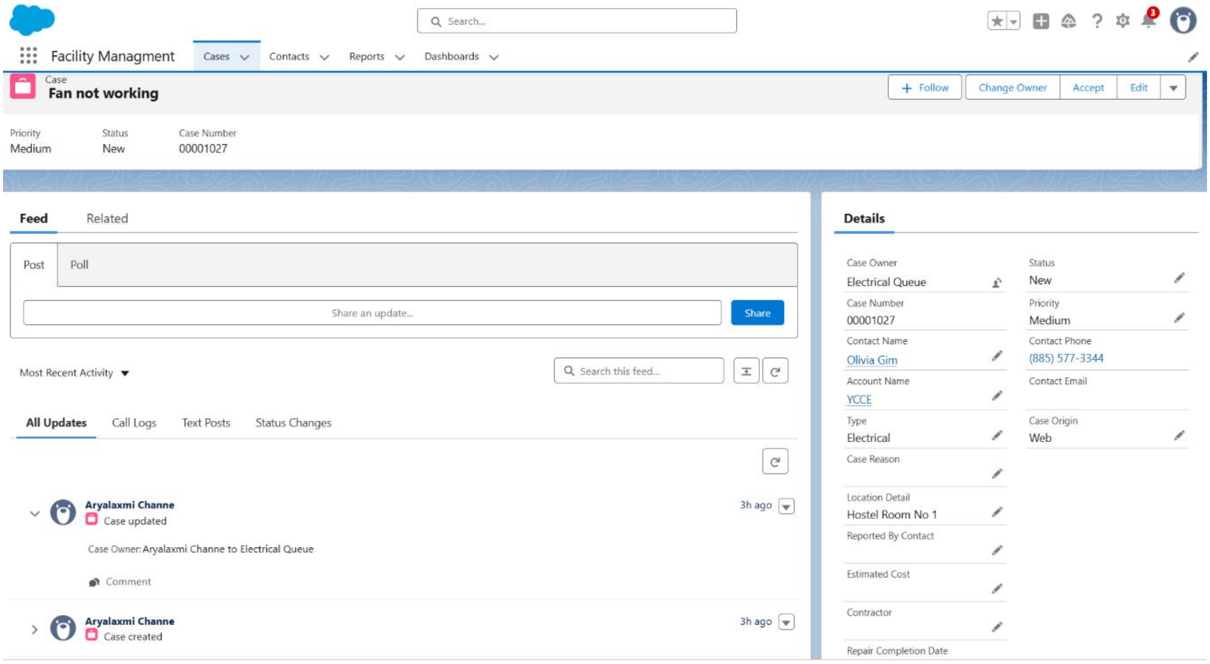
Goal: Design the CRM data model.
Objects:

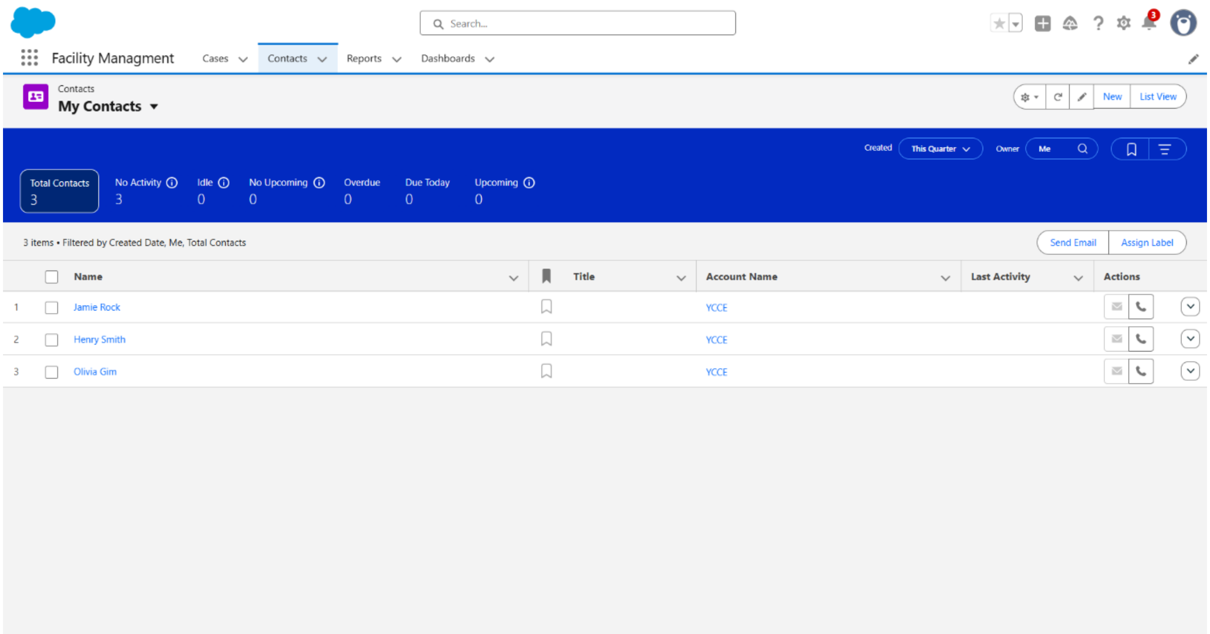
1. Case (Standard) – Represents each facility issue.
2. Contact (Standard) – Facility staff/contractors.
3. Facility Asset (Custom) – Asset details (type, location, warranty).
4. Feedback (Custom) – Student feedback after issue resolution.

Relationships:

- Case ↔ Contact (Lookup)
- Case ↔ Facility Asset (Lookup)
- Facility Asset ↔ Feedback (Master-Detail)



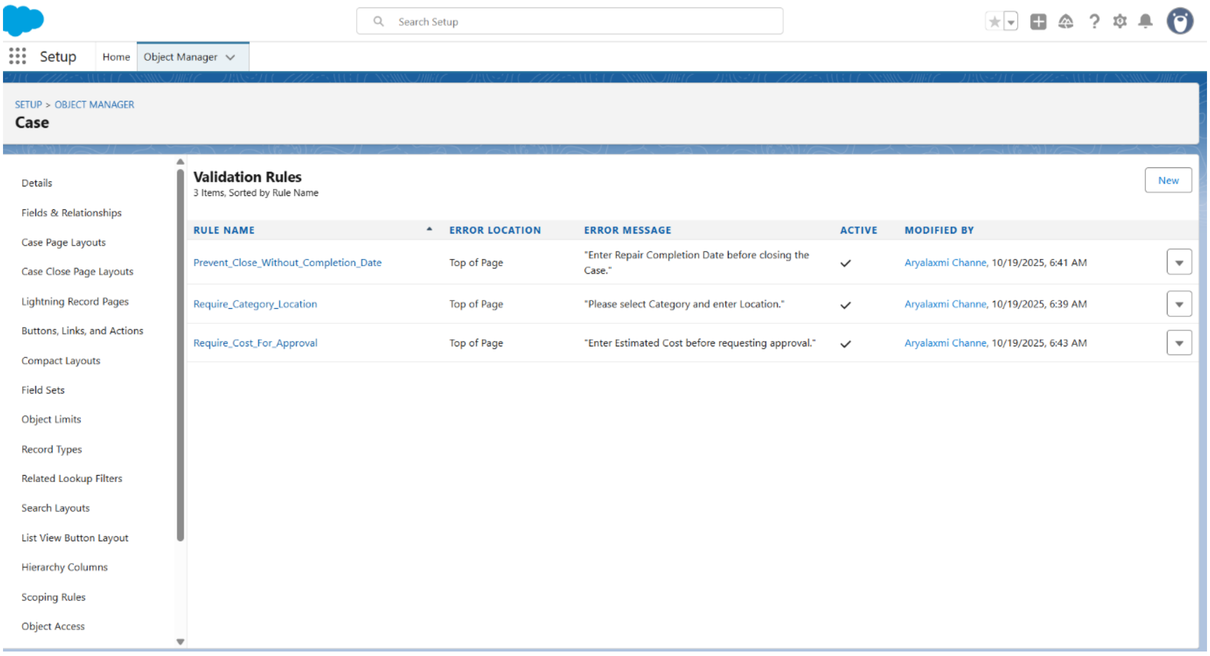

Search...
Facility Managment
Cases
Contacts
Reports
Dashboards
Case
Fan not working
+ Follow
Change Owner
Accept
Edit
Priority
Medium
Status
New
Case Number
00001027
Feed
Related
Post
Poll
Share an update...
Share
Most Recent Activity
Search this feed...
All Updates
Call Logs
Text Posts
Status Changes
Aryalaxmi Channe
Case updated
3h ago
Case Owner: Aryalaxmi Channe to Electrical Queue
Comment
Aryalaxmi Channe
Case created
3h ago
Details
Case Owner
Electrical Queue
Status
New
Case Number
00001027
Priority
Medium
Contact Name
Olivia Gim
Contact Phone
(885) 577-3344
Account Name
YCCE
Contact Email
Type
Electrical
Case Origin
Web
Case Reason
Location Detail
Hostel Room No 1
Reported By Contact
Estimated Cost
Contractor
Repair Completion Date

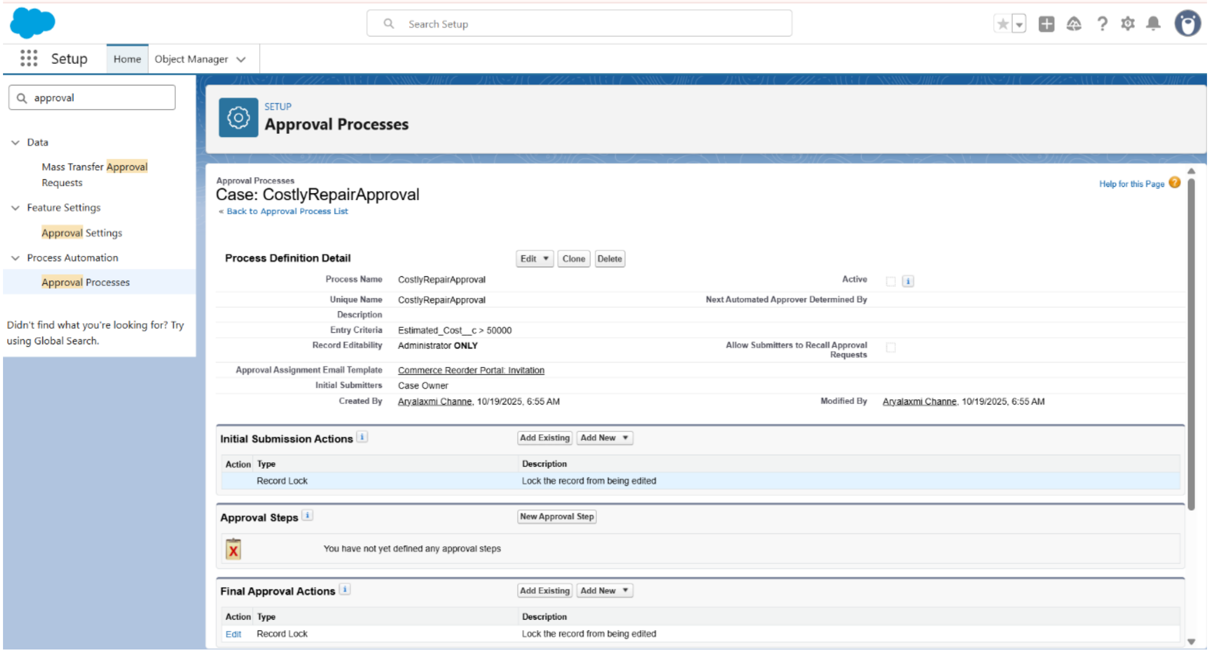

Search...
Facility Managment
Cases
Contacts
Reports
Dashboards
Contacts
My Contacts
New
List View
Created
This Quarter
Owner
Me
Total Contacts
3
No Activity
3
Idle
0
No Upcoming
0
Overdue
0
Due Today
0
Upcoming
0
3 items • Filtered by Created Date, Me, Total Contacts
Send Email
Assign Label
Name
Title
Account Name
Last Activity
Actions
1
Jamie Rock
YCCE
2
Henry Smith
YCCE
3
Olivia Gim
YCCE

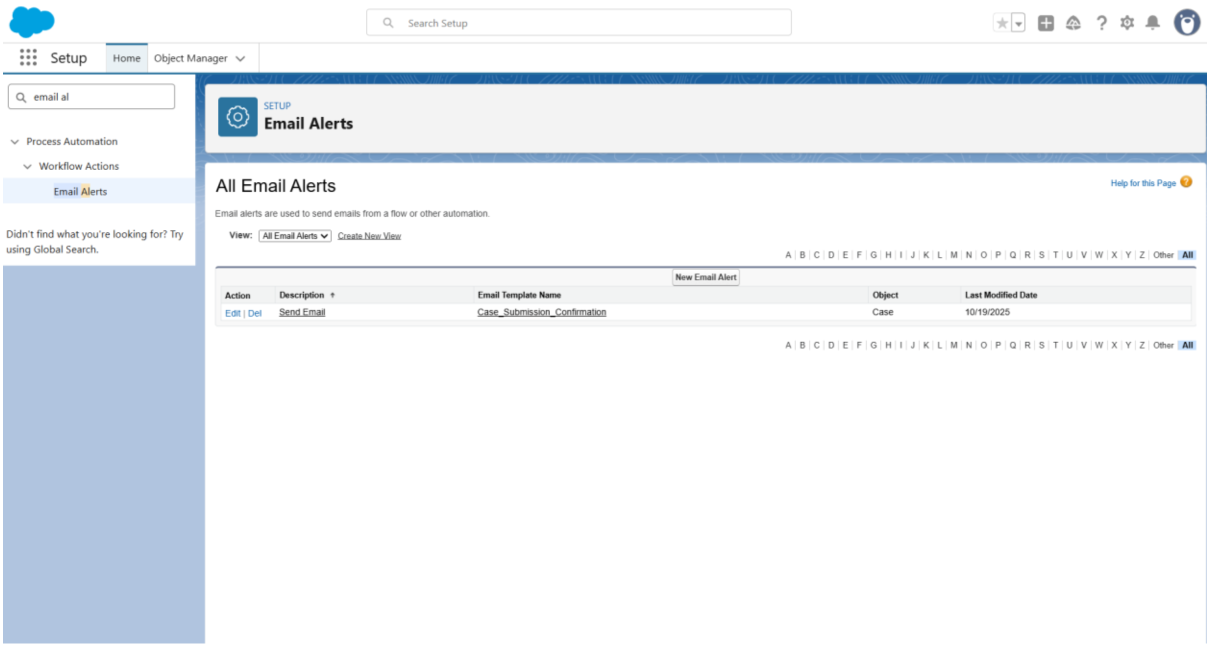
Phase 4 – Process Automation (Admin)

Goal: Automate core business processes.
Tasks:

- **Validation Rules:**
    - Category & Location required.
    - Case cannot be closed until Completion Date is entered.
- **Flow Builder:** Auto-assign cases based on category (e.g., IT issues → IT Team).
- **Approval Process:** Needed if repair cost > ₹50,000 (approval by Principal).
- **Email Alerts:** Notify students on case updates.



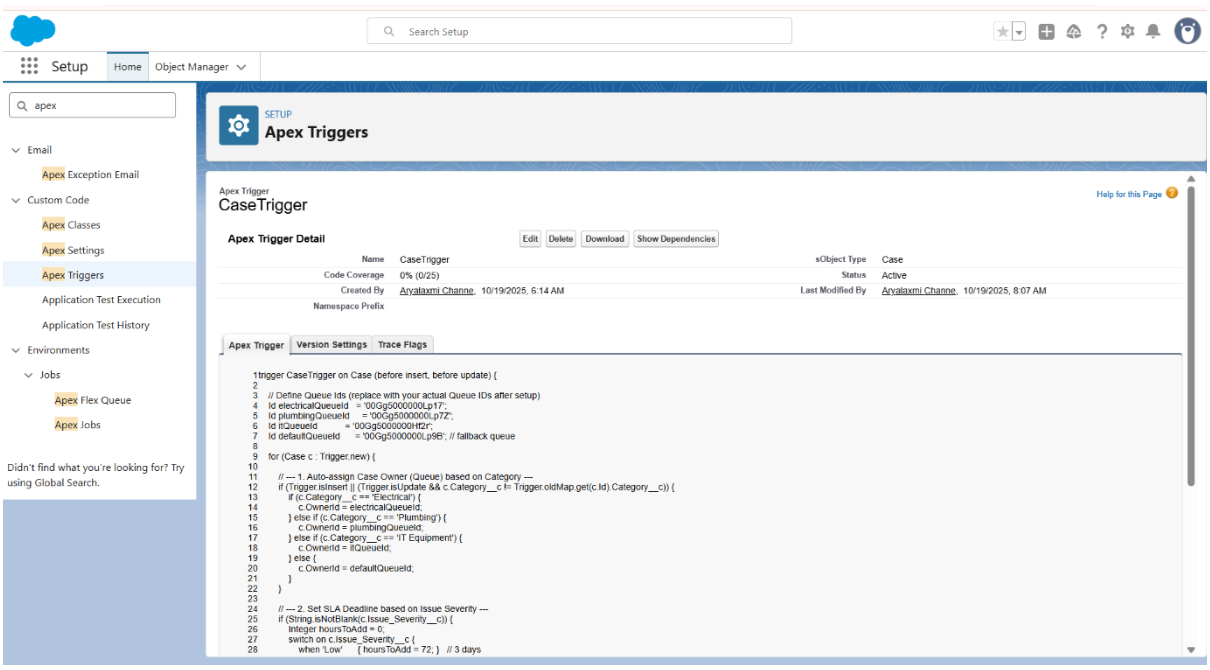

Search Setup
Setup
Home
Object Manager
approval
Data
Mass Transfer Approval Requests
Feature Settings
Approval Settings
Process Automation
Approval Processes
Didn't find what you're looking for? Try using Global Search.
SETUP
Approval Processes
Approval Processes
Case: CostlyRepairApproval
« Back to Approval Process List
Help for this Page
Process Definition Detail
Edit
Clone
Delete
Process Name CostlyRepairApproval
Active
Unique Name CostlyRepairApproval
Next Automated Approver Determined By
Description
Entry Criteria Estimated_Cost__c > 50000
Record Editability Administrator ONLY
Allow Submitters to Recall Approval Requests
Approval Assignment Email Template Commerce Reorder Portal: Invitation
Initial Submitters Case Owner
Created By Aryalaxmi Channe, 10/19/2025, 6:55 AM
Modified By Aryalaxmi Channe, 10/19/2025, 6:55 AM
Initial Submission Actions
Add Existing
Add New
Action Type Description
Record Lock Lock the record from being edited
Approval Steps
New Approval Step
You have not yet defined any approval steps
Final Approval Actions
Add Existing
Add New
Action Type Description
Edit Record Lock Lock the record from being edited

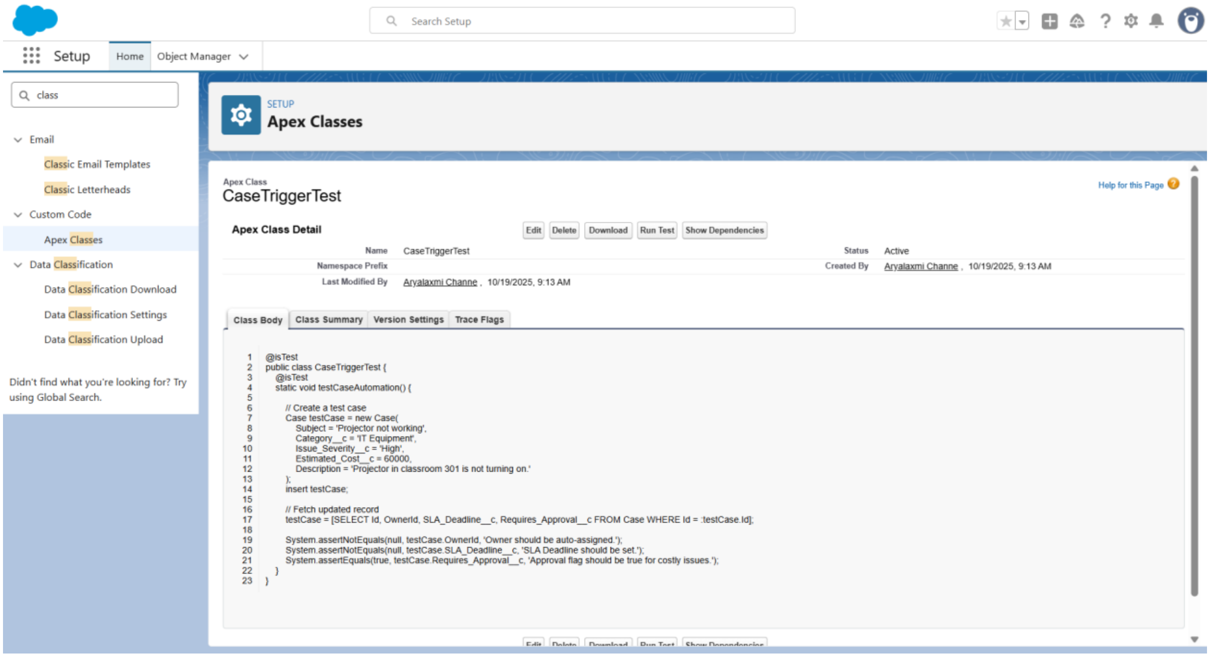

Search Setup
Setup
Home
Object Manager
email al
Process Automation
Workflow Actions
Email Alerts
Didn't find what you're looking for? Try using Global Search.
SETUP
Email Alerts
All Email Alerts
Help for this Page
Email alerts are used to send emails from a flow or other automation.
View: All Email Alerts Create New View
A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All
New Email Alert
Action Description Email Template Name Object Last Modified Date
Edit | Del Send Email Case_Submission_Confirmation Case 10/19/2025
A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All

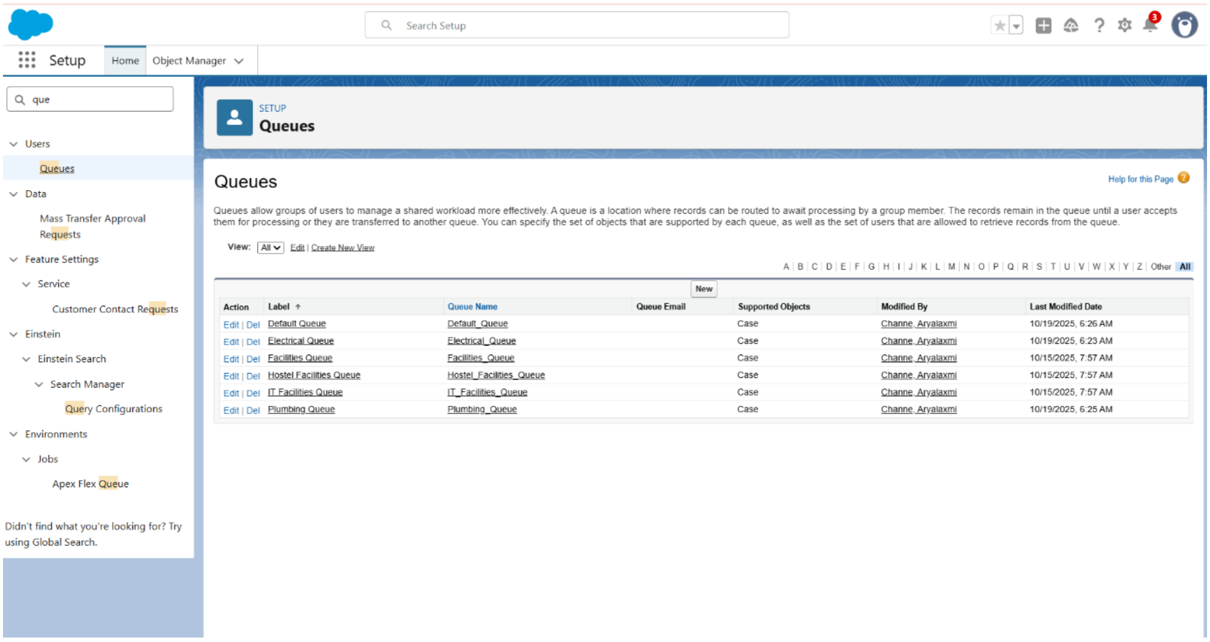
Phase 5 – Apex Programming (Developer)

Goal: Extend automation using code.
Tasks:

- Apex Trigger: Prevent closing a Case until "Completion Date" filled.
- Apex Class: Send custom notification to vendor after case assignment.
- SOQL Queries: Retrieve open cases by category.
- Test Class: Achieve ≥ 75 % coverage.
- Scheduled Apex: Weekly email summary of open cases to Facility Head.




Search Setup
Setup
Home
Object Manager
class
Email
Classic Email Templates
Classic Letterheads
Custom Code
Apex Classes
Data Classification
Data Classification Download
Data Classification Settings
Data Classification Upload
Didn't find what you're looking for? Try using Global Search.
SETUP
Apex Classes
Apex Class
CaseTriggerTest
Help for this Page
Apex Class Detail
Edit
Delete
Download
Run Test
Show Dependencies
Name CaseTriggerTest
Status Active
Namespace Prefix
Created By Aryalaxmi Channe , 10/19/2025, 9:13 AM
Last Modified By Aryalaxmi Channe , 10/19/2025, 9:13 AM
Class Body
Class Summary
Version Settings
Trace Flags
@isTest
public class CaseTriggerTest {
@isTest
static void testCaseAutomation() {
// Create a test case
Case testCase = new Case(
Subject = 'Projector not working',
Category__c = 'IT Equipment',
Issue_Severity__c = 'High',
Estimated_Cost__c = 60000,
Description = 'Projector in classroom 301 is not turning on.'
);
insert testCase;
// Fetch updated record
testCase = [SELECT Id, OwnerId, SLA_Deadline__c, Requires_Approval__c FROM Case WHERE Id = :testCase.Id];
System.assertNotEquals(null, testCase.OwnerId, 'Owner should be auto-assigned.');
System.assertNotEquals(null, testCase.SLA_Deadline__c, 'SLA Deadline should be set.');
System.assertEquals(true, testCase.Requires_Approval__c, 'Approval flag should be true for costly issues.');
}
}


Search Setup
Setup
Home
Object Manager
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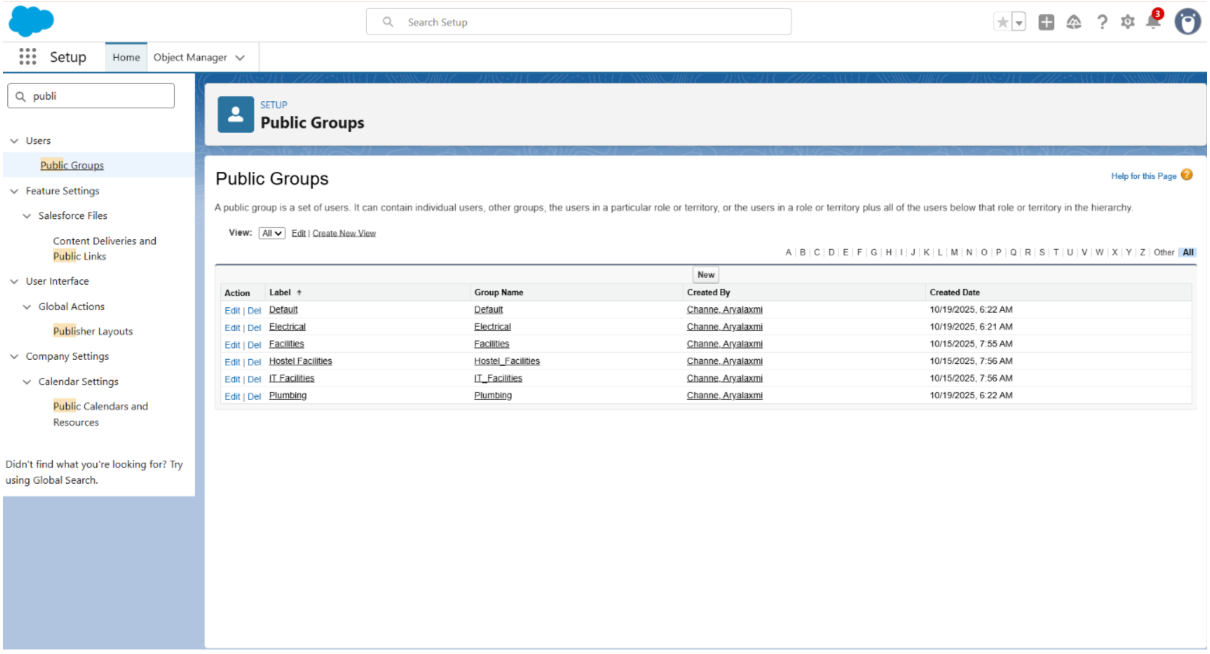
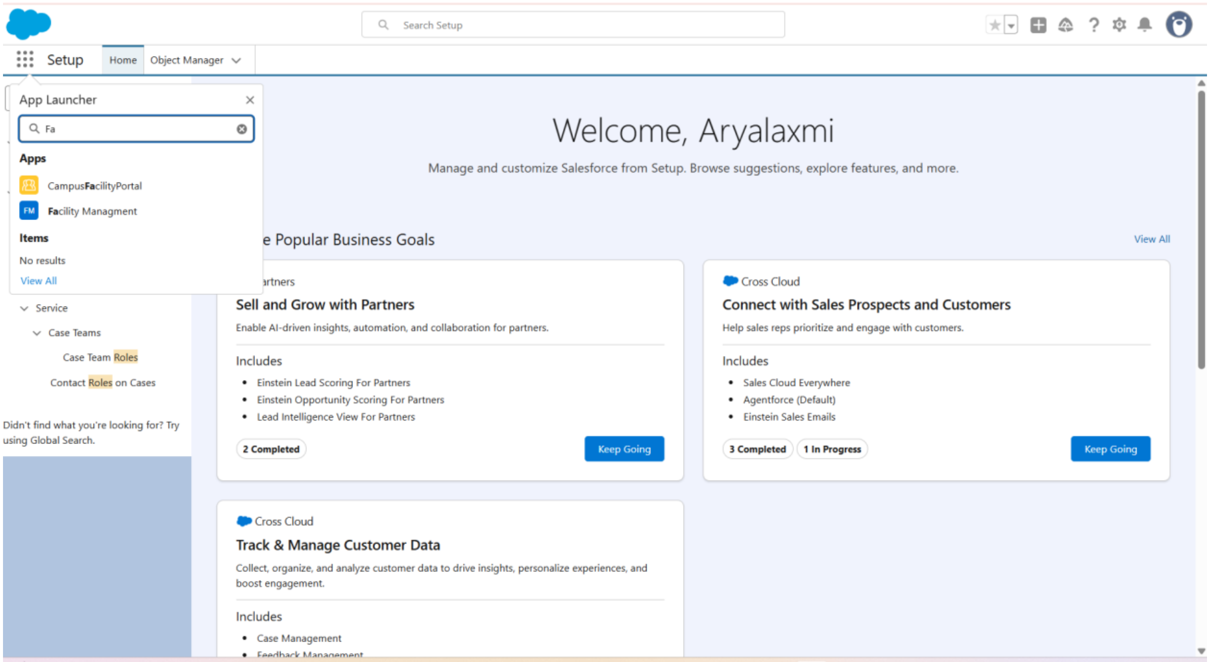
Users
Queues
Data
Mass Transfer Approval Requests
Feature Settings
Service
Customer Contact Requests
Einstein
Einstein Search
Search Manager
Query Configurations
Environments
Jobs
Apex Flex Queue
Didn't find what you're looking for? Try using Global Search.
SETUP
Queues
Queues
Help for this Page
Queues allow groups of users to manage a shared workload more effectively. A queue is a location where records can be routed to await processing by a group member. The records remain in the queue until a user accepts them for processing or they are transferred to another queue. You can specify the set of objects that are supported by each queue, as well as the set of users that are allowed to retrieve records from the queue.
View: All | Edit | Create New View
A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All
New
Action | Label | Queue Name | Queue Email | Supported Objects | Modified By | Last Modified Date
Edit | Del | Default Queue | Default_Queue | | Case | Channe, Aryalaxmi | 10/19/2025, 6:26 AM
Edit | Del | Electrical Queue | Electrical_Queue | | Case | Channe, Aryalaxmi | 10/19/2025, 6:23 AM
Edit | Del | Facilities Queue | Facilities_Queue | | Case | Channe, Aryalaxmi | 10/15/2025, 7:57 AM
Edit | Del | Hostel Facilities Queue | Hostel_Facilities_Queue | | Case | Channe, Aryalaxmi | 10/15/2025, 7:57 AM
Edit | Del | IT Facilities Queue | IT_Facilities_Queue | | Case | Channe, Aryalaxmi | 10/15/2025, 7:57 AM
Edit | Del | Plumbing Queue | Plumbing_Queue | | Case | Channe, Aryalaxmi | 10/19/2025, 6:25 AM

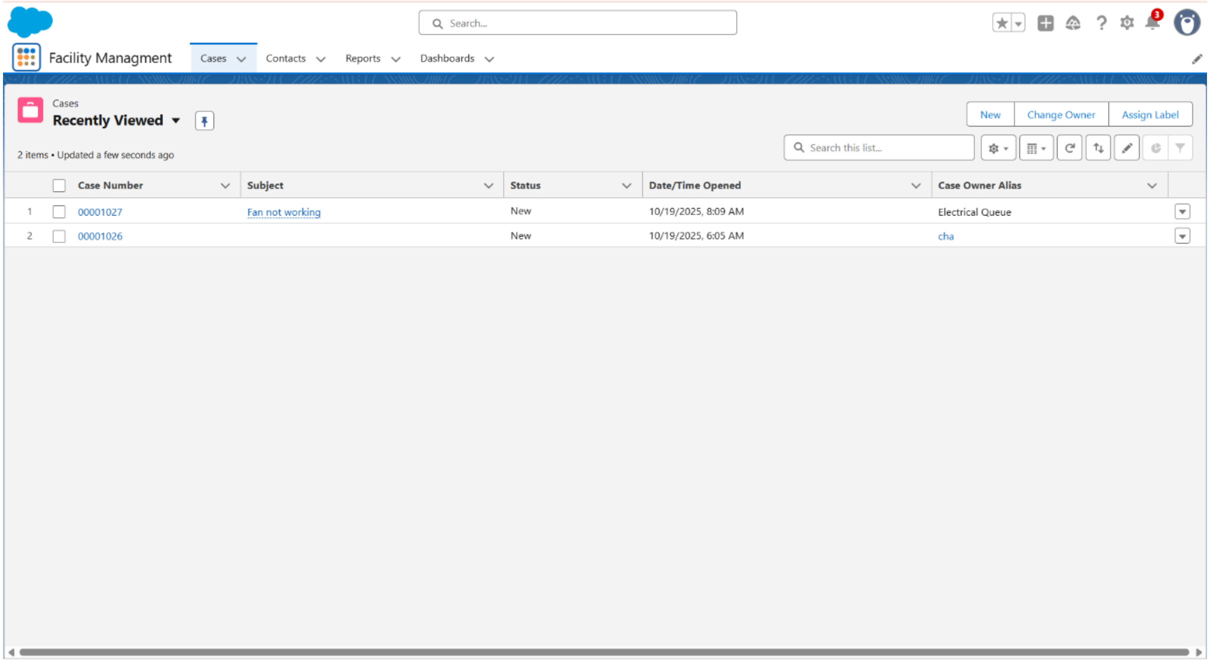

Search Setup
Setup
Home
Object Manager
publi
Users
Public Groups
Feature Settings
Salesforce Files
Content Deliveries and Public Links
User Interface
Global Actions
Publisher Layouts
Company Settings
Calendar Settings
Public Calendars and Resources
Didn't find what you're looking for? Try using Global Search.
SETUP
Public Groups
Public Groups
Help for this Page
A public group is a set of users. It can contain individual users, other groups, the users in a particular role or territory, or the users in a role or territory plus all of the users below that role or territory in the hierarchy.
View: All Edit | Create New View
A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other All
New
Action Label Group Name Created By Created Date
Edit | Del Default Default Channe, Aryalaxmi 10/19/2025, 6:22 AM
Edit | Del Electrical Electrical Channe, Aryalaxmi 10/19/2025, 6:21 AM
Edit | Del Facilities Facilities Channe, Aryalaxmi 10/15/2025, 7:55 AM
Edit | Del Hostel Facilities Hostel_Facilities Channe, Aryalaxmi 10/15/2025, 7:56 AM
Edit | Del IT Facilities IT_Facilities Channe, Aryalaxmi 10/15/2025, 7:56 AM
Edit | Del Plumbing Plumbing Channe, Aryalaxmi 10/19/2025, 6:22 AM

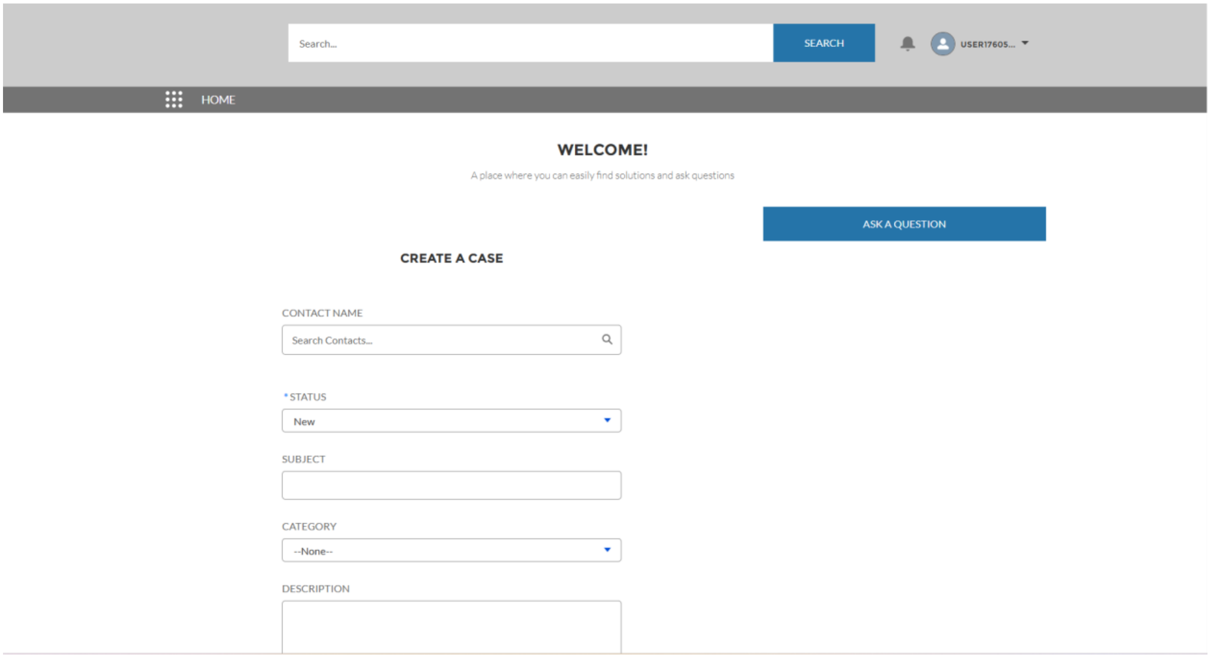
Phase 6 – User Interface Development

Goal: Build user-friendly Lightning pages.
Tasks:

- Custom Lightning App: Facility Tracker.
- Configure Record Pages, Home Page, and Utility Bar.
- Create Tabs for Facility Assets & Feedback.
- LWC Form: Allow students to raise issues from portal.
- Use Dynamic Forms for Category-specific fields.



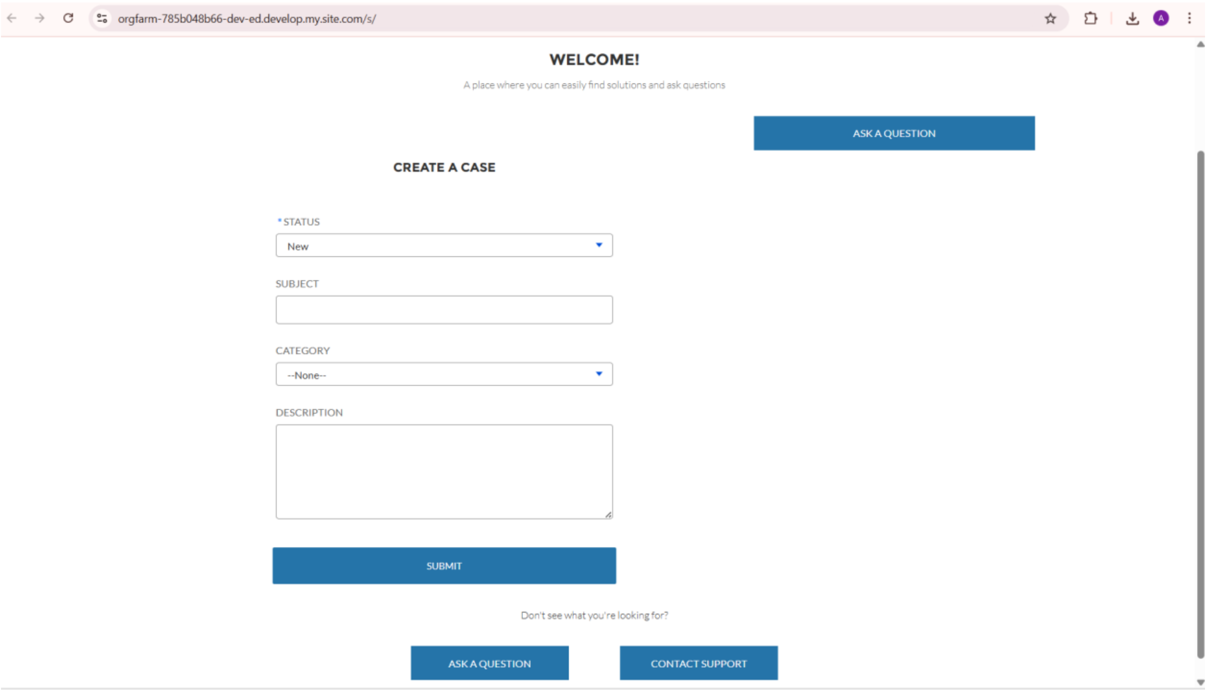

Search...
Facility Managment
Cases
Contacts
Reports
Dashboards
Cases
Recently Viewed
New
Change Owner
Assign Label
2 items • Updated a few seconds ago
Search this list...
Case Number
Subject
Status
Date/Time Opened
Case Owner Alias
1
00001027
Fan not working
New
10/19/2025, 8:09 AM
Electrical Queue
2
00001026
New
10/19/2025, 6:05 AM
cha


Search...
SEARCH
USER17605...
HOME
WELCOME!
A place where you can easily find solutions and ask questions
ASK A QUESTION
CREATE A CASE
CONTACT NAME
Search Contacts...
* STATUS
New
SUBJECT
CATEGORY
--None--
DESCRIPTION

Phase 7 – Integration & External Access

Goal: Enable external reporting and location capture.
Tasks:

- **Named Credential + Remote Site Setting:** Integrate with Google Maps API for geolocation of issue.
- **External Web Form:** Use Web-to-Case for non-logged-in users.
- Platform Event for "Issue Closed" to notify IoT sensors or dashboards.



Phase 8 – Data Management & Deployment

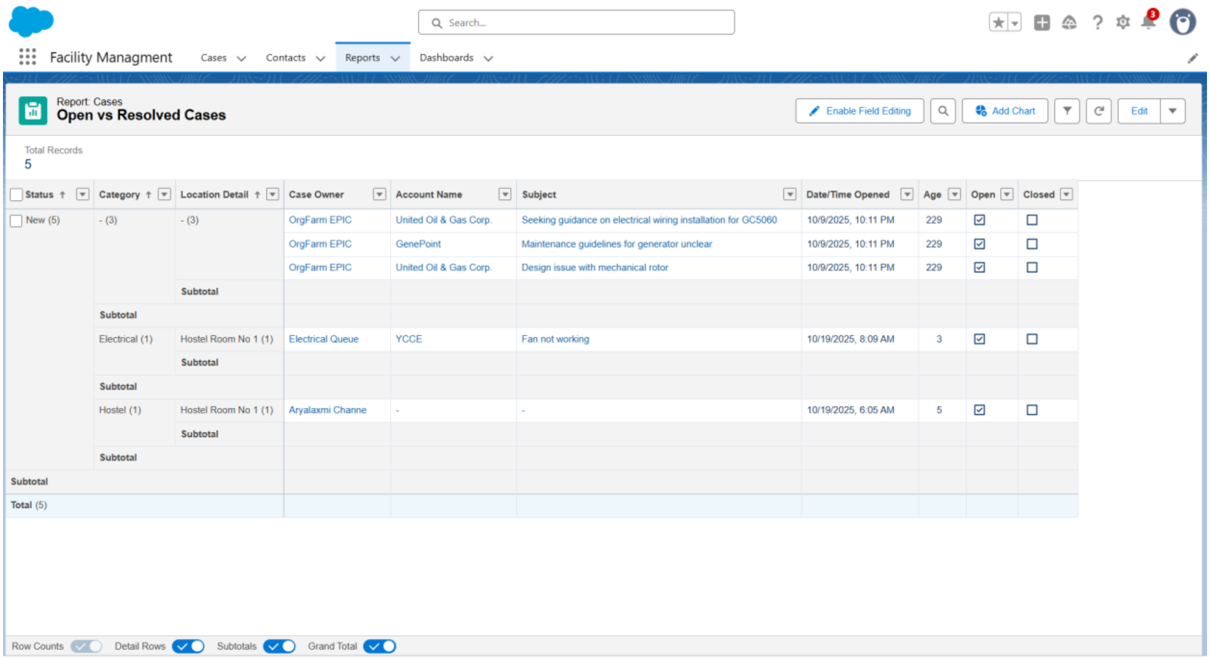
Goal: Handle data import/export and deploy changes.
Tasks:

- Use Data Import Wizard to load sample student & asset data.
- Data Loader for bulk updates.
- Duplicate Rules to avoid duplicate assets.
- Backup/Export of data weekly.

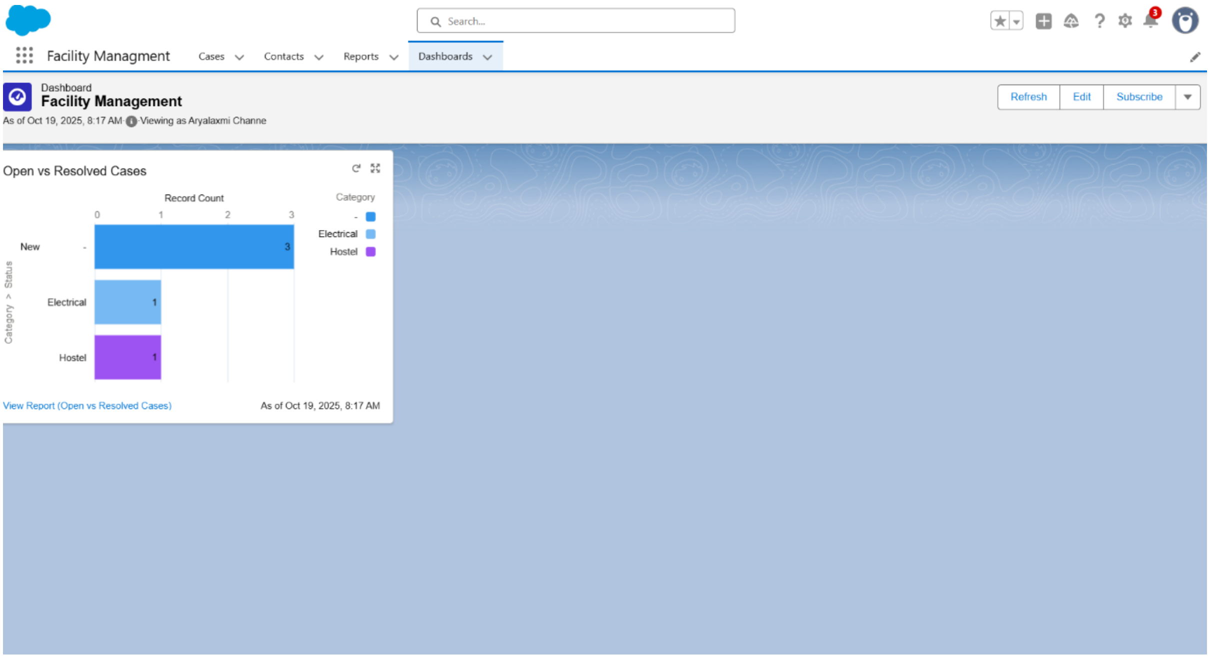
Phase 9 – Reporting, Dashboards & Security Review

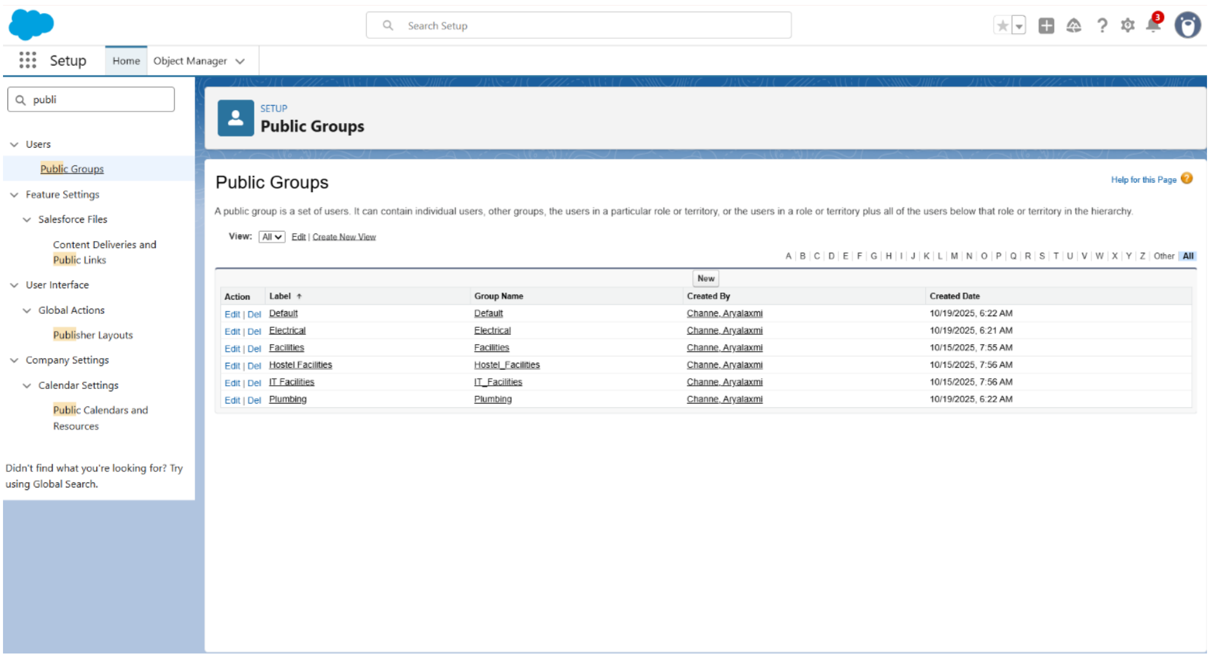
Goal: Build analytics and secure the app.
Tasks:

- **Reports:**
  - Open vs Closed Issues (Summary)
  - Issue by Category (Matrix)
  - Contractor Performance (Joined)
- **Dashboard:** "Campus Maintenance Insights" – show SLAs & trends.
- **Security:**
  - Define Profiles, Roles, Permission Sets.
  - Configure OWD, Sharing Rules, FLS.
  - Apply Login IP Ranges & Audit Trail.



Status	Category	Location Detail	Case Owner	Account Name	Subject	Date/Time Opened	Age	Open	Closed
New (5)	- (3)	- (3)	OrgFarm EPIC	United Oil & Gas Corp.	Seeking guidance on electrical wiring installation for GC5060	10/9/2025, 10:11 PM	229	☑	☐
			OrgFarm EPIC	GenePoint	Maintenance guidelines for generator unclear	10/9/2025, 10:11 PM	229	☑	☐
			OrgFarm EPIC	United Oil & Gas Corp.	Design issue with mechanical rotor	10/9/2025, 10:11 PM	229	☑	☐
		Subtotal							
	Subtotal								
	Electrical (1)	Hostel Room No 1 (1)	Electrical Queue	YCCE	Fan not working	10/19/2025, 8:09 AM	3	☑	☐
		Subtotal							
	Subtotal								
	Hostel (1)	Hostel Room No 1 (1)	Aryalaxmi Channe	-	-	10/19/2025, 6:05 AM	5	☑	☐
		Subtotal							
	Subtotal								
Subtotal									
Total (5)									


Search...
Facility Managment
Cases
Contacts
Reports
Dashboards
Dashboard
Facility Management
As of Oct 19, 2025, 8:17 AM · Viewing as Aryalaxmi Channe
Refresh
Edit
Subscribe
Open vs Resolved Cases
Record Count
Category
New
Electrical
Hostel
Category > Status
View Report (Open vs Resolved Cases)
As of Oct 19, 2025, 8:17 AM


Search Setup
Setup
Home
Object Manager
publi
Users
Public Groups
Feature Settings
Salesforce Files
Content Deliveries and Public Links
User Interface
Global Actions
Publisher Layouts
Company Settings
Calendar Settings
Public Calendars and Resources
Didn't find what you're looking for? Try using Global Search.
SETUP
Public Groups
Public Groups
Help for this Page
A public group is a set of users. It can contain individual users, other groups, the users in a particular role or territory, or the users in a role or territory plus all of the users below that role or territory in the hierarchy.
View: All Edit | Create New View
A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All
New
Action | Label | Group Name | Created By | Created Date
Edit | Del | Default | Default | Channe, Aryalaxmi | 10/19/2025, 6:22 AM
Edit | Del | Electrical | Electrical | Channe, Aryalaxmi | 10/19/2025, 6:21 AM
Edit | Del | Facilities | Facilities | Channe, Aryalaxmi | 10/15/2025, 7:55 AM
Edit | Del | Hostel Facilities | Hostel_Facilities | Channe, Aryalaxmi | 10/15/2025, 7:56 AM
Edit | Del | IT Facilities | IT_Facilities | Channe, Aryalaxmi | 10/15/2025, 7:56 AM
Edit | Del | Plumbing | Plumbing | Channe, Aryalaxmi | 10/19/2025, 6:22 AM

Phase 10 – Quality Assurance Testing

Goal: Validate every feature.
Tasks:

- Prepare Test Cases for all features (Flows, Approvals, Validation Rules, Apex Triggers).
- Table format:
  - Use Case / Input / Expected Output / Actual Output.
- Verify SLA triggers, approval routing, and closure logic.

Google drive link: Demo video link
https://drive.google.com/file/d/1zXDc7UMKs4CkTglieXR3Qf0dx3sAyj2a/view?usp=drive_link