

A CRM APPLICATION TO MANAGE THE MALL

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1. Project Overview:

This project involves the development of a Customer Relationship Management (CRM) application tailored for mall management, leveraging the Salesforce platform for its robust features and scalability. The application is designed to manage tenants, leases, and issue tracking efficiently. It includes creating custom objects such as Tenant, Lease Tracking, and Tenant Issues, along with corresponding fields, relationships, and custom tabs.

A Lightning App will integrate these components for seamless navigation. Automation is implemented using flows, including record-triggered and scheduled flows, while Apex triggers handle advanced logic like email notifications for unpaid rents and validation for PAN card entries. Asynchronous Apex is utilized for scheduled tasks, and detailed reporting and dashboards are provided for lease management, tenant issues, and overall tenant data. This comprehensive solution aims to streamline mall operations and enhance tenant management.

2. Objectives:

The primary objective of this project is to design and implement a robust CRM application using the Salesforce platform to streamline mall management operations. The system aims to efficiently manage tenant information, lease agreements, and tenant issue tracking while providing actionable insights through reports and dashboards. By creating custom objects like Tenant, Lease Tracking, and Tenant Issues, the application ensures that all critical data points

are captured and organized. The integration of custom tabs and a Lightning App allows for intuitive navigation and centralized access to relevant information. This application enhances operational efficiency by automating key processes, such as sending email alerts for unpaid rents and validating tenant PAN card entries, ensuring accuracy and timely follow-ups.

Another key objective is to harness Salesforce's capabilities to deliver a data-driven approach to mall management. Through the creation of flows and Apex triggers, the application automates repetitive tasks, saving time and minimizing human errors. The use of asynchronous Apex ensures that scheduled processes run seamlessly without affecting system performance. Additionally, by generating comprehensive reports and dashboards, the application provides stakeholders with valuable insights into tenant performance, lease management, and issue resolution trends. Ultimately, this project seeks to enhance tenant satisfaction, reduce administrative overhead, and empower mall management with tools to make informed decisions.

3. Salesforce key Features and Concepts Utilised:

✓ Custom Objects and Fields:

Custom objects like Tenant, Lease Tracking, and Tenant Issues are created to capture specific mall management data. These objects include tailored fields and relationships to ensure accurate and relevant information storage.

✓ **Lightning App Builder:**

A custom Lightning App is designed to provide a centralized and user-friendly interface for managing tenant data, lease agreements, and issue tracking within the Salesforce environment.

✓ **Automation with Flows:**

Record-triggered and scheduled flows are implemented to automate repetitive processes, such as generating alerts for lease renewals or tracking overdue rents, enhancing operational efficiency.

✓ **Apex Triggers and Asynchronous Apex:**

Advanced business logic is implemented using Apex triggers for tasks like sending email notifications for overdue payments and validating tenant data. Scheduled Apex jobs are utilized for time-based automated tasks.

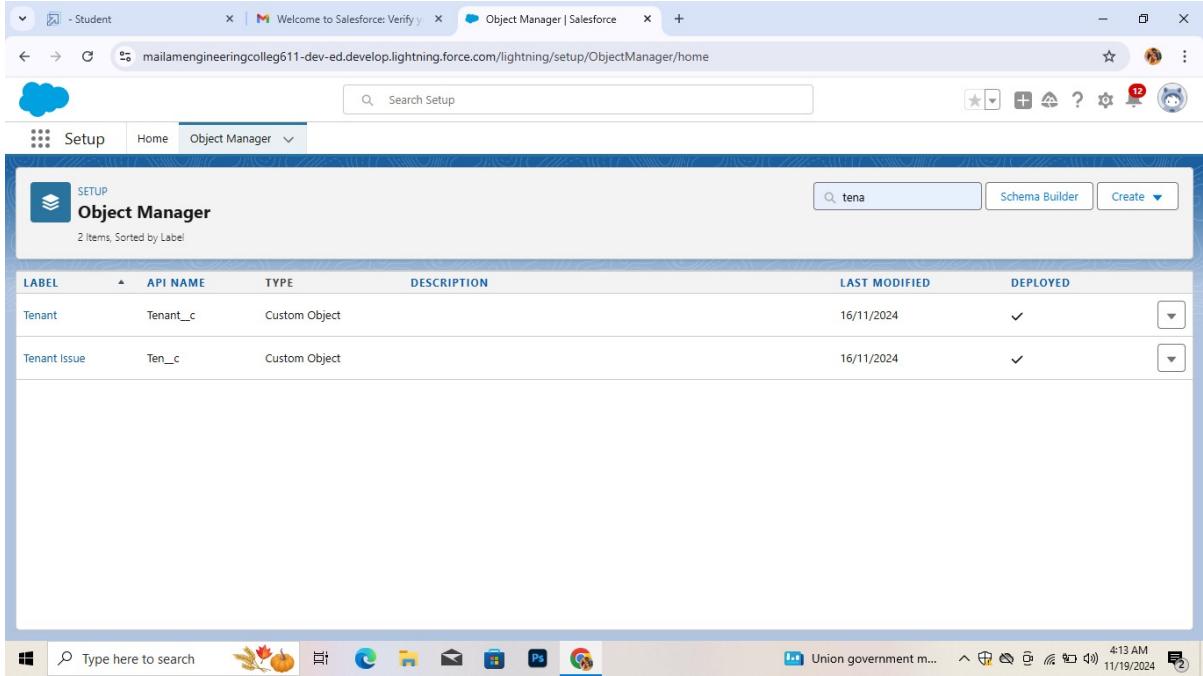
✓ **Reports and Dashboards:**

Custom reports and dashboards are created to provide actionable insights into lease management, tenant performance, and issue resolution trends, enabling data-driven decision-making.

4.Solution Design Steps for the Salesforce Mall Management CRM Application:

✓ Create Custom Objects:

We should create a custom objects in salesforce, follow these details:



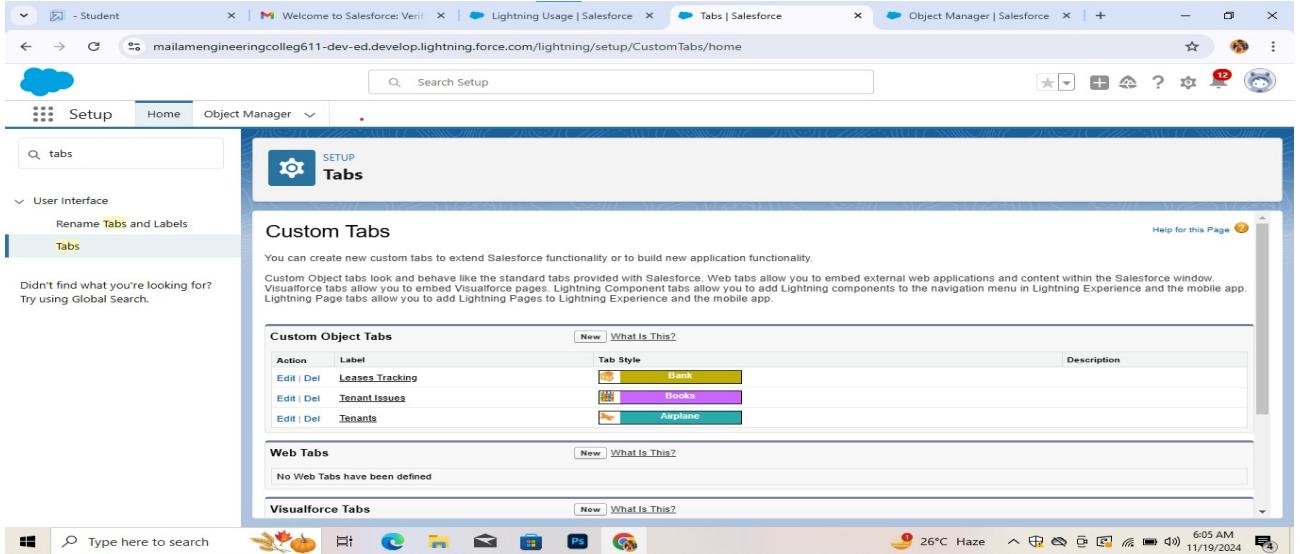
The screenshot shows the Salesforce Object Manager interface. The search bar at the top contains the text "tena". The table below lists two custom objects:

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Tenant	Tenant_c	Custom Object		16/11/2024	✓
Tenant Issue	Ten_c	Custom Object		16/11/2024	✓

✓ Create a Tabs:

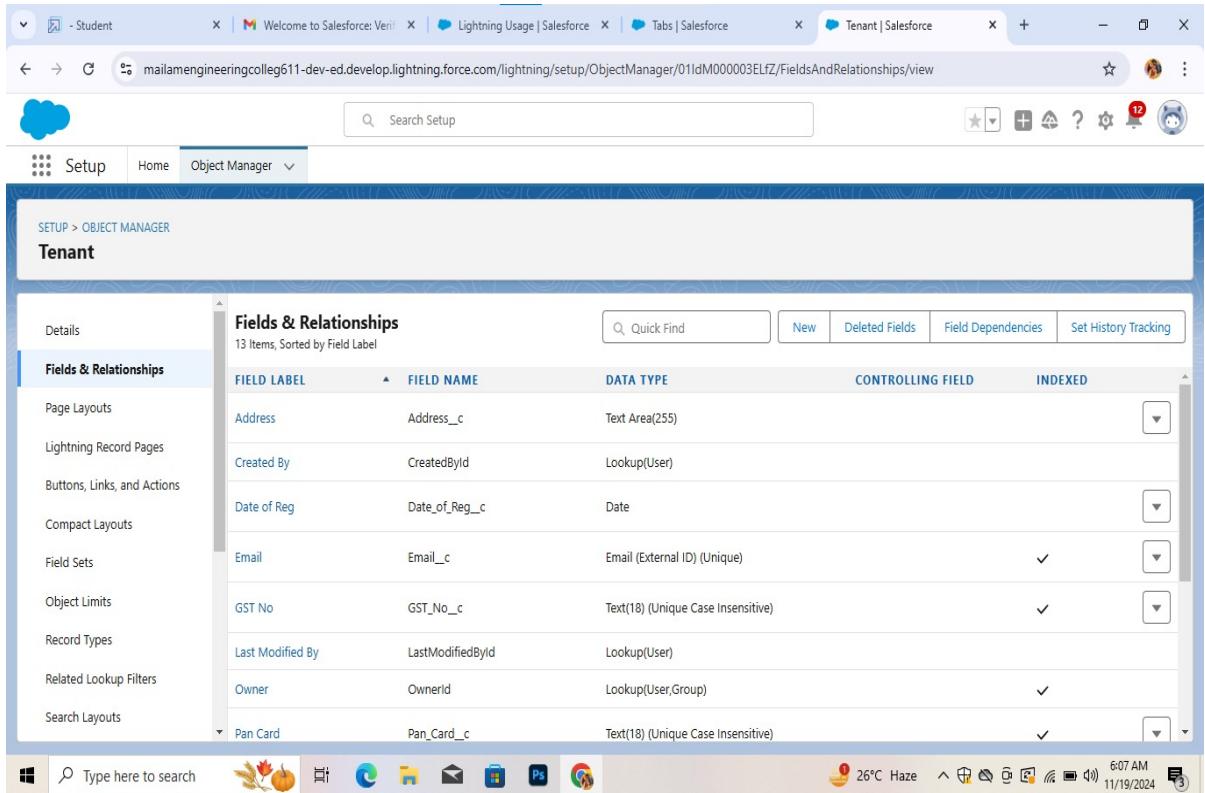
Tabs in a CRM (Customer Relationship Management) application for a mall typically serve as organized sections to manage various aspects of customer and business interactions. Here are common tab ideas.

Overview of key metrics, such as footfall, sales data, and tenant performance.



The screenshot shows the Salesforce Tabs setup page. The main section is titled "Custom Tabs" with a sub-section "Custom Object Tabs". It lists three tabs: "Leases Tracking" (Bank tab style), "Tenant Issues" (Books tab style), and "Tenants" (Airplane tab style). Below this is a "Web Tabs" section which is currently empty. At the bottom right of the page, there is a "Help for this Page" link.

✓ Create fields on tenant object:



The screenshot shows the Salesforce Object Manager page for the "Tenant" object. The left sidebar has sections like Details, Fields & Relationships (which is selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, and Search Layouts. The main area is titled "Fields & Relationships" and lists 13 items. The table columns are FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Address	Address__c	Text Area(255)		
Created By	CreatedBy	Lookup(User)		
Date of Reg	Date_of_Reg__c	Date		
Email	Email__c	Email (External ID) (Unique)		
GST No	GST_No__c	Text(18) (Unique Case Insensitive)		
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		
Pan Card	Pan_Card__c	Text(18) (Unique Case Insensitive)		

✓ Create fields on Lease tracking object:

Fields & Relationships

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount Paid	Amount_Paid_c	Number(18, 0) (Unique)		✓
Created By	CreatedById	Lookup(User)		
Date of Possession	Date_of_Possession_c	Date		
End Date of Possession	End_Date_of_Possession_c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Lease Tracking No	Name	Auto Number		✓
Related Tenant	Related_Tenant_c	Master-Detail(Tenant)		✓

✓ Create fields on tenant issues:

Fields & Relationships

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount Paid	Amount_Paid_c	Number(18, 0) (Unique)		✓
Created By	CreatedById	Lookup(User)		
Date of Possession	Date_of_Possession_c	Date		
End Date of Possession	End_Date_of_Possession_c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Lease Tracking No	Name	Auto Number		✓
Related Tenant	Related_Tenant_c	Master-Detail(Tenant)		✓

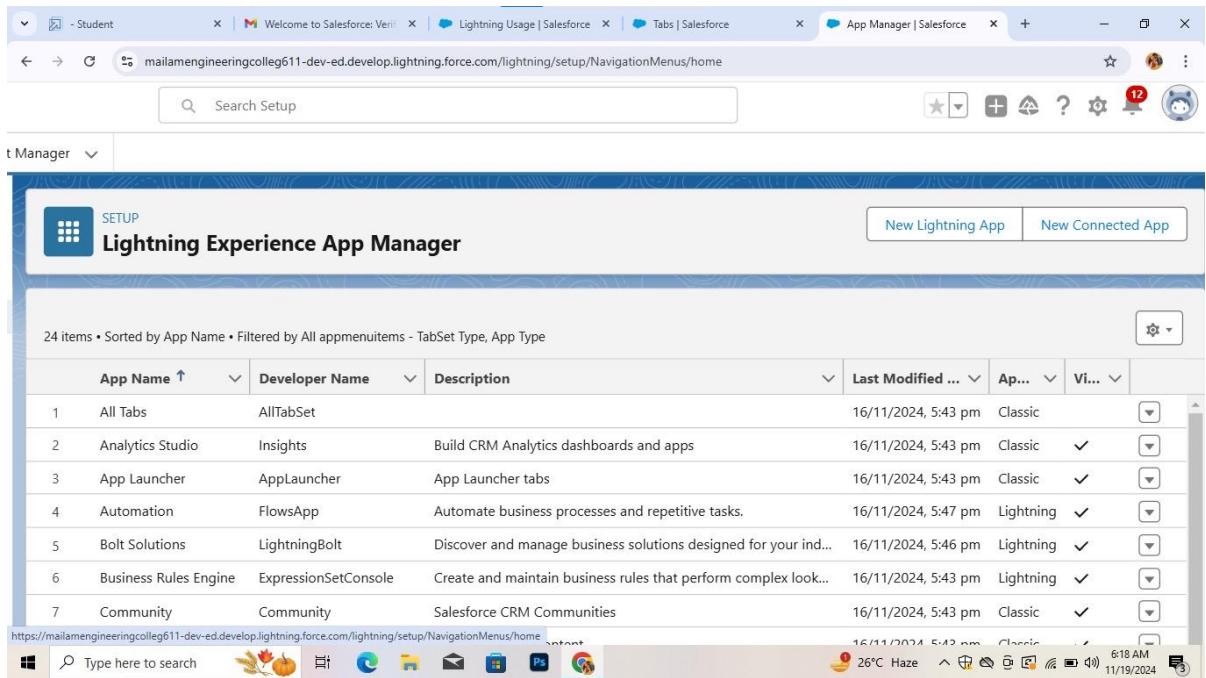
✓ **Create a lightning app:**

Create a Custom Lightning App that integrates the following components:

- o Opportunity Records
- o Automobile Information records
- o Invoices related to Opportunities

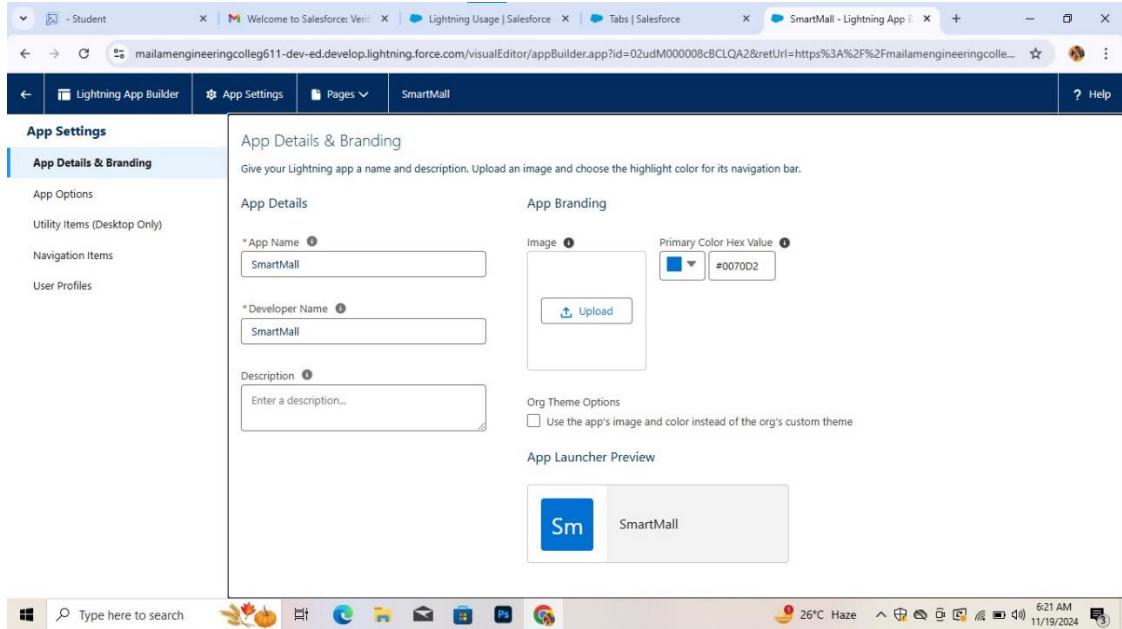
The app should include:

- o Navigation to all relevant objects (Opportunities, Automobiles, Invoices).
- o A dashboard to visualize Total Sales, Invoices due, opportunity stage.



The screenshot shows the Salesforce Lightning Experience App Manager. The title bar reads "Lightning Experience App Manager". The main content area displays a table of 24 items, sorted by App Name. The columns are: App Name, Developer Name, Description, Last Modified, App Type, and Version. The table includes rows for All Tabs, Analytics Studio, App Launcher, Automation, Bolt Solutions, Business Rules Engine, and Community. The interface includes a search bar at the top, a navigation bar with tabs like "Manager", and a status bar at the bottom showing the URL, date, and system information.

App Name	Developer Name	Description	Last Modified	App Type	Version
All Tabs	AllTabSet		16/11/2024, 5:43 pm	Classic	
Analytics Studio	Insights	Build CRM Analytics dashboards and apps	16/11/2024, 5:43 pm	Classic	
App Launcher	AppLauncher	App Launcher tabs	16/11/2024, 5:43 pm	Classic	
Automation	FlowsApp	Automate business processes and repetitive tasks.	16/11/2024, 5:47 pm	Lightning	
Bolt Solutions	LightningBolt	Discover and manage business solutions designed for your industry.	16/11/2024, 5:46 pm	Lightning	
Business Rules Engine	ExpressionSetConsole	Create and maintain business rules that perform complex lookups.	16/11/2024, 5:43 pm	Lightning	
Community	Community	Salesforce CRM Communities	16/11/2024, 5:43 pm	Classic	



App Settings

App Details & Branding

App Options

Utility Items (Desktop Only)

Navigation Items

User Profiles

App Details

*App Name: SmartMall

*Developer Name: SmartMall

Description: Enter a description...

App Branding

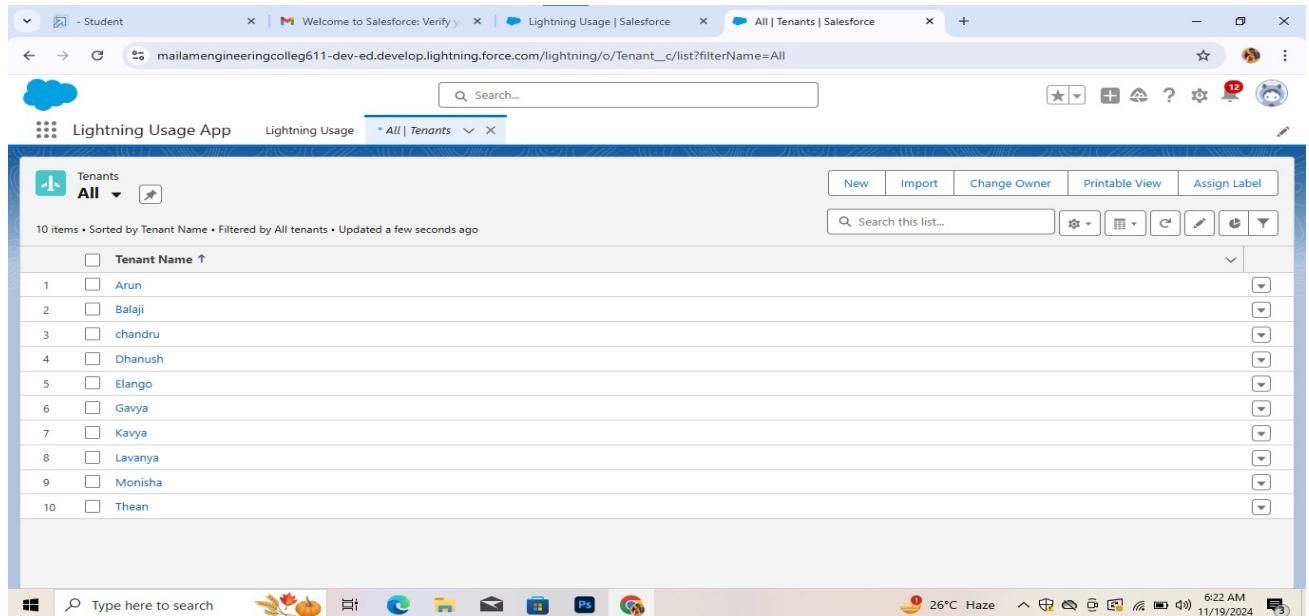
Image: Primary Color Hex Value: #007002

Org Theme Options: Use the app's image and color instead of the org's custom theme

App Launcher Preview

Sm SmartMall

✓ Inserting records in tenant object:



Lightning Usage App

Tenants

All

10 items • Sorted by Tenant Name • Filtered by All tenants • Updated a few seconds ago

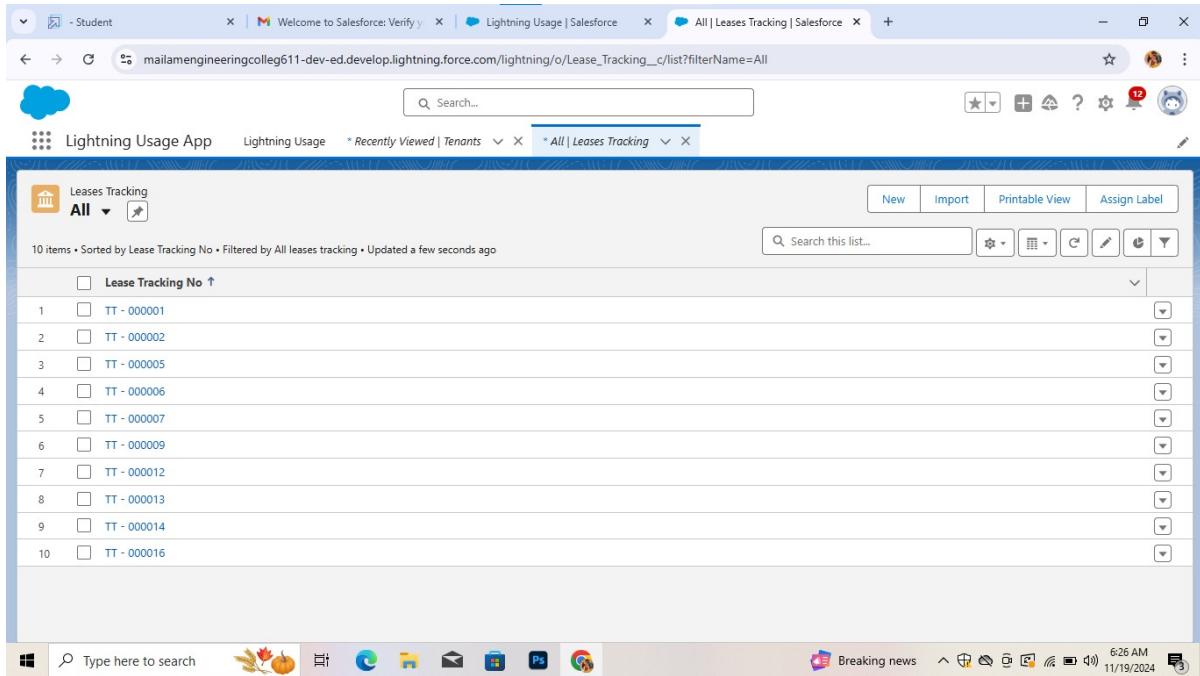
	Tenant Name ↑	
1	Arun	
2	Balaji	
3	chandru	
4	Dhanush	
5	Elango	
6	Gavya	
7	Kavya	
8	Lavanya	
9	Monisha	
10	Thean	

New Import Change Owner Printable View Assign Label

Search this list...

Type here to search

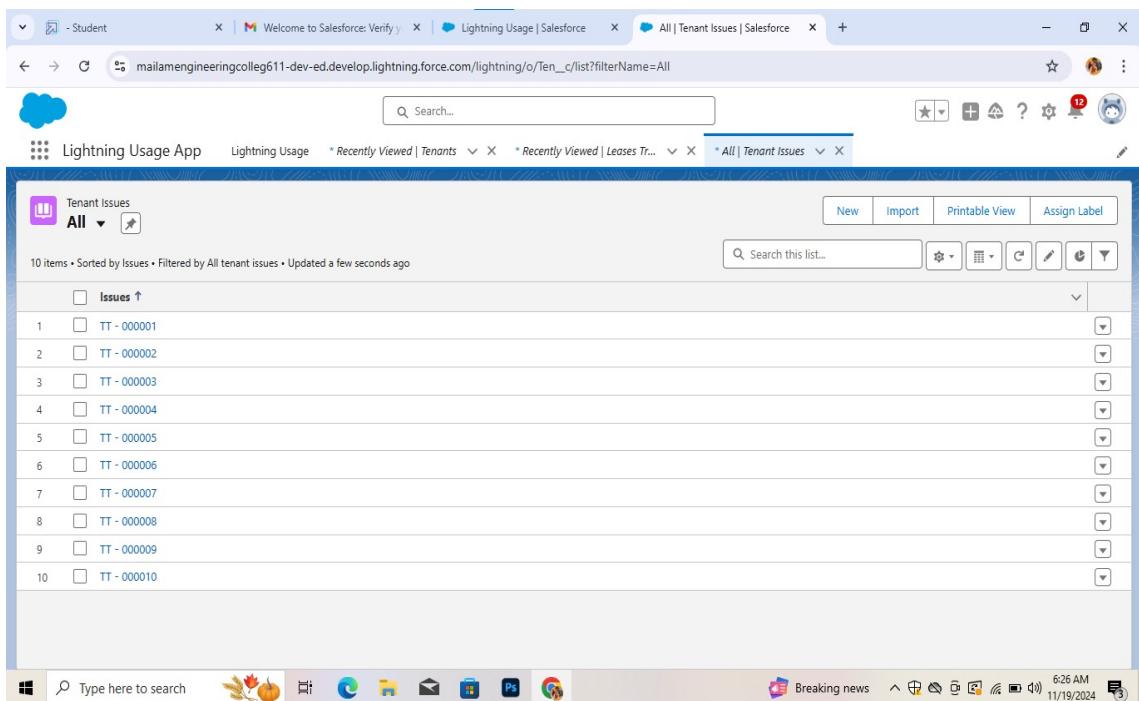
✓ Inserting records in lease tracking object:



The screenshot shows the Salesforce Lightning Usage App interface. The top navigation bar includes tabs for 'Lightning Usage' and 'Leases Tracking'. The main content area displays a list of 10 items under the heading 'Leases Tracking'. The list is sorted by 'Lease Tracking No' in ascending order. Each item is represented by a checkbox followed by the identifier 'TT - 000001' through 'TT - 000016'. The interface features standard Salesforce navigation and search tools.

Index	Identifier
1	TT - 000001
2	TT - 000002
3	TT - 000003
4	TT - 000006
5	TT - 000007
6	TT - 000009
7	TT - 000012
8	TT - 000013
9	TT - 000014
10	TT - 000016

✓ Inserting records in tenant issues object:

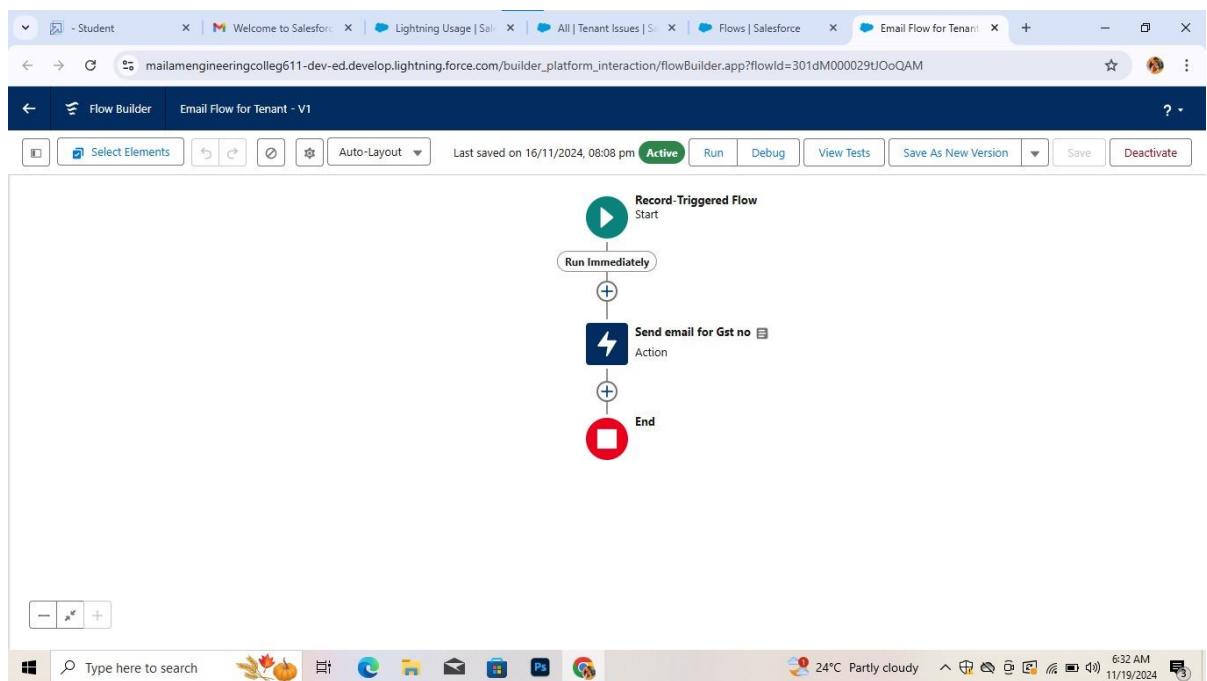


The screenshot shows the Salesforce Lightning Usage App interface. The top navigation bar includes tabs for 'Lightning Usage' and 'Tenant Issues'. The main content area displays a list of 10 items under the heading 'Tenant Issues'. The list is sorted by 'Issues' in ascending order. Each item is represented by a checkbox followed by the identifier 'TT - 000001' through 'TT - 000010'. The interface features standard Salesforce navigation and search tools.

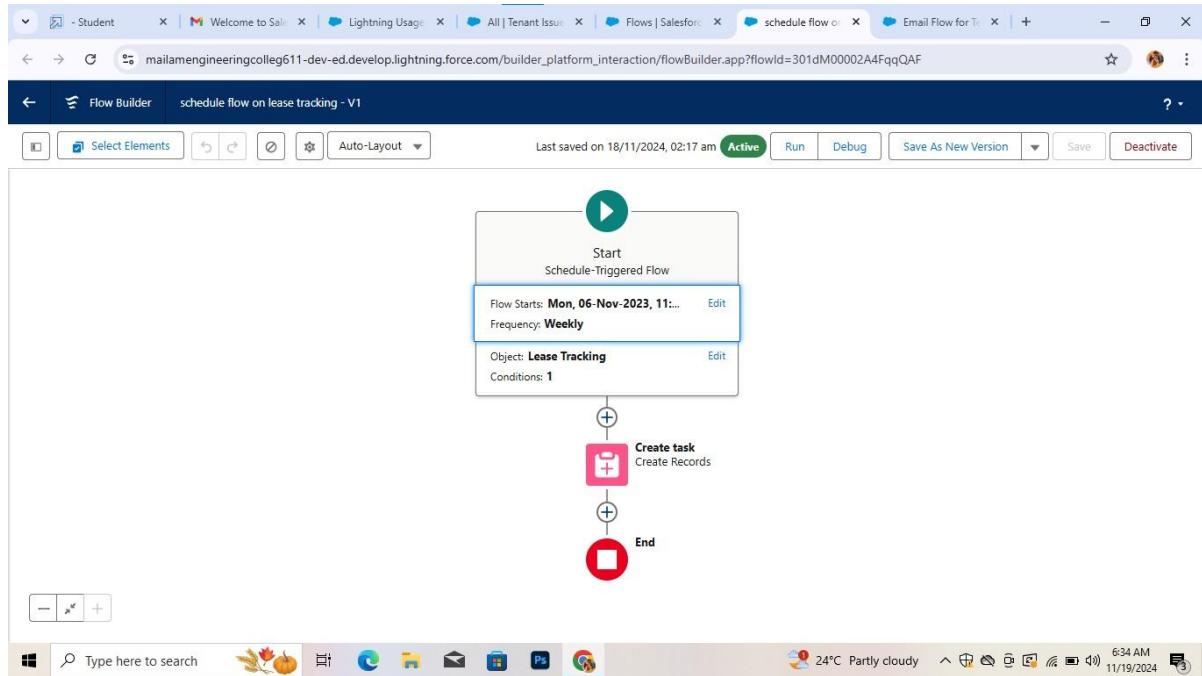
Index	Identifier
1	TT - 000001
2	TT - 000002
3	TT - 000003
4	TT - 000004
5	TT - 000005
6	TT - 000006
7	TT - 000007
8	TT - 000008
9	TT - 000009
10	TT - 000010

✓ Create Flows:

Designing a CRM (Customer Relationship Management) application for a mall involves creating a set of comprehensive, user-centric workflows to optimize operations, enhance customer experience, and provide valuable insights to stakeholders. Below are detailed flows tailored to the key user groups: Mall Administrators, Store Managers, and Customers.



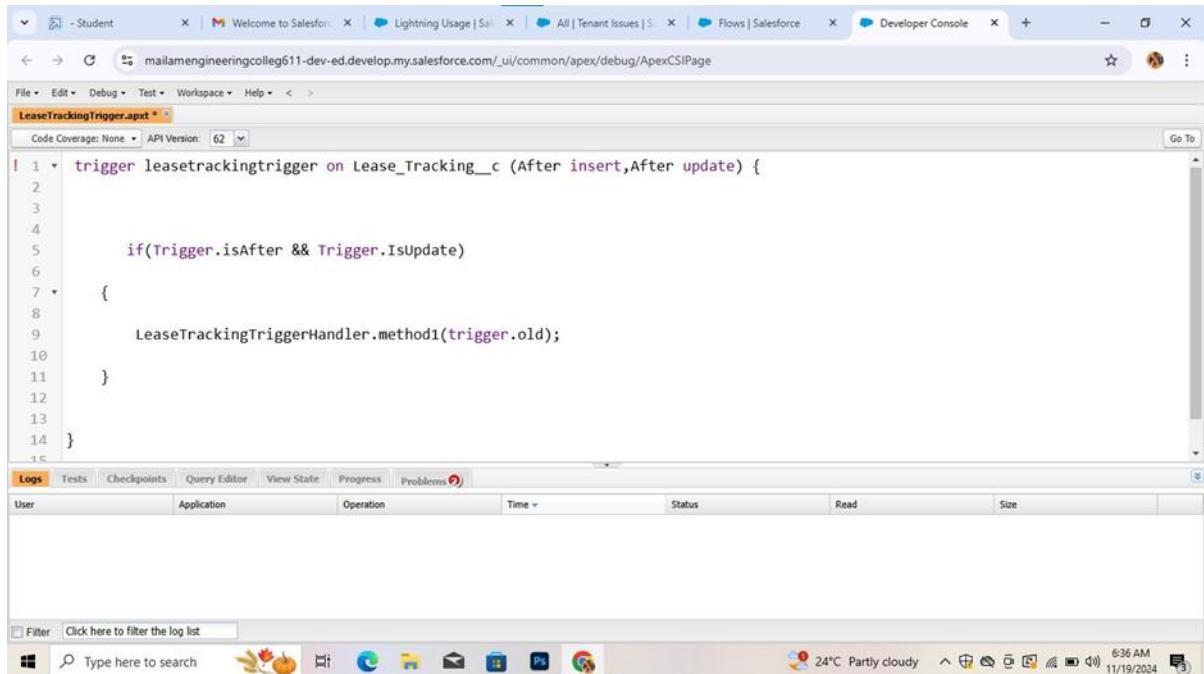
✓ Create a schedule flow on lease management object:



✓ Apex Triggers:

An Apex trigger is a set of instructions that execute when certain events occur on a Salesforce object (like when a record is created, updated, deleted, or restored).

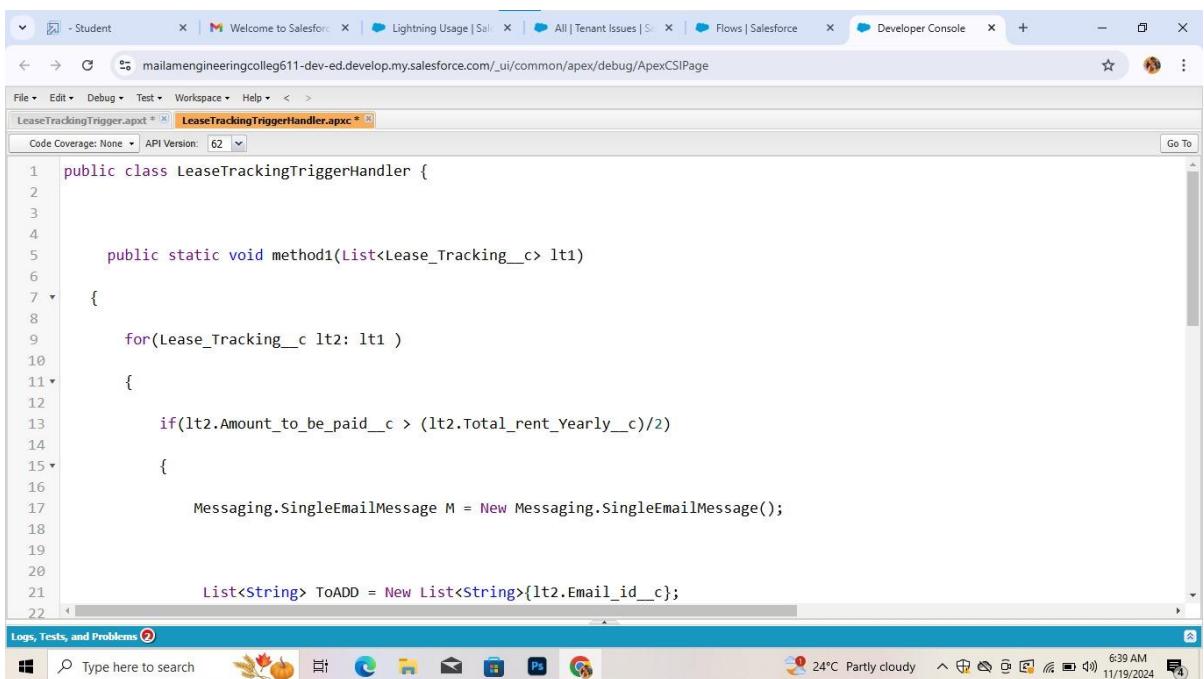
✓ Lease tracking trigger:



The screenshot shows the Salesforce Developer Console with the file "LeaseTrackingTrigger.apxt" open. The code defines a trigger named "leasetrackingtrigger" on the "Lease_Tracking__c" object. The trigger is set to run "After insert,After update". It contains logic to check if the trigger is after and if it's an update. If so, it calls a method on the "LeaseTrackingTriggerHandler" class.

```
trigger leasetrackingtrigger on Lease_Tracking__c (After insert,After update) {
    if(Trigger.isAfter && Trigger.IsUpdate)
    {
        LeaseTrackingTriggerHandler.method1(trigger.old);
    }
}
```

✓ Lease tracking trigger handler:

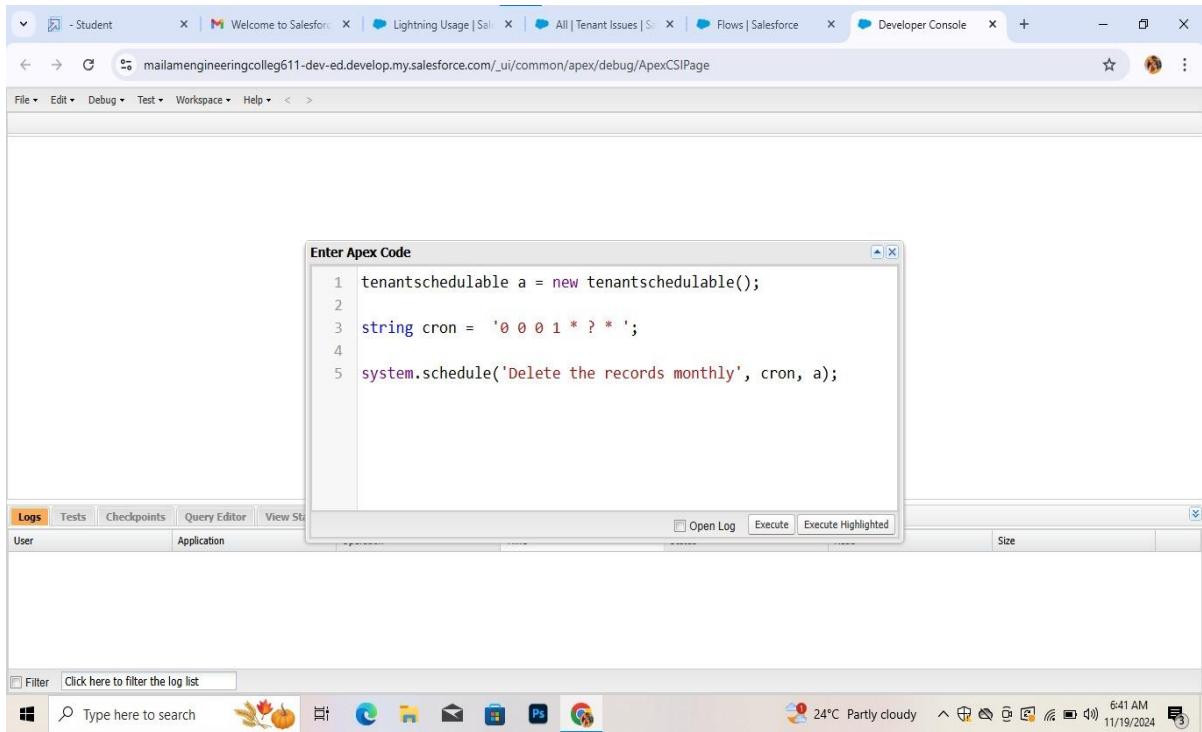


The screenshot shows the Salesforce Developer Console with the file "LeaseTrackingTriggerHandler.apxt" open. The code defines a public class named "LeaseTrackingTriggerHandler". It contains a static void method named "method1" which takes a list of "Lease_Tracking__c" objects. The method iterates through the list, checking if the "Amount_to_be_paid__c" field is greater than half of the "Total_rent_Yearly__c" field. If true, it creates a new "Messaging.SingleEmailMessage" and adds the "Email_id__c" field to a list of strings.

```
public class LeaseTrackingTriggerHandler {
    public static void method1(List<Lease_Tracking__c> lt1)
    {
        for(Lease_Tracking__c lt2: lt1 )
        {
            if(lt2.Amount_to_be_paid__c > (lt2.Total_rent_Yearly__c)/2)
            {
                Messaging.SingleEmailMessage M = New Messaging.SingleEmailMessage();
                List<String> ToADD = New List<String>{lt2.Email_id__c};
            }
        }
    }
}
```

✓ Asynchronous apex:

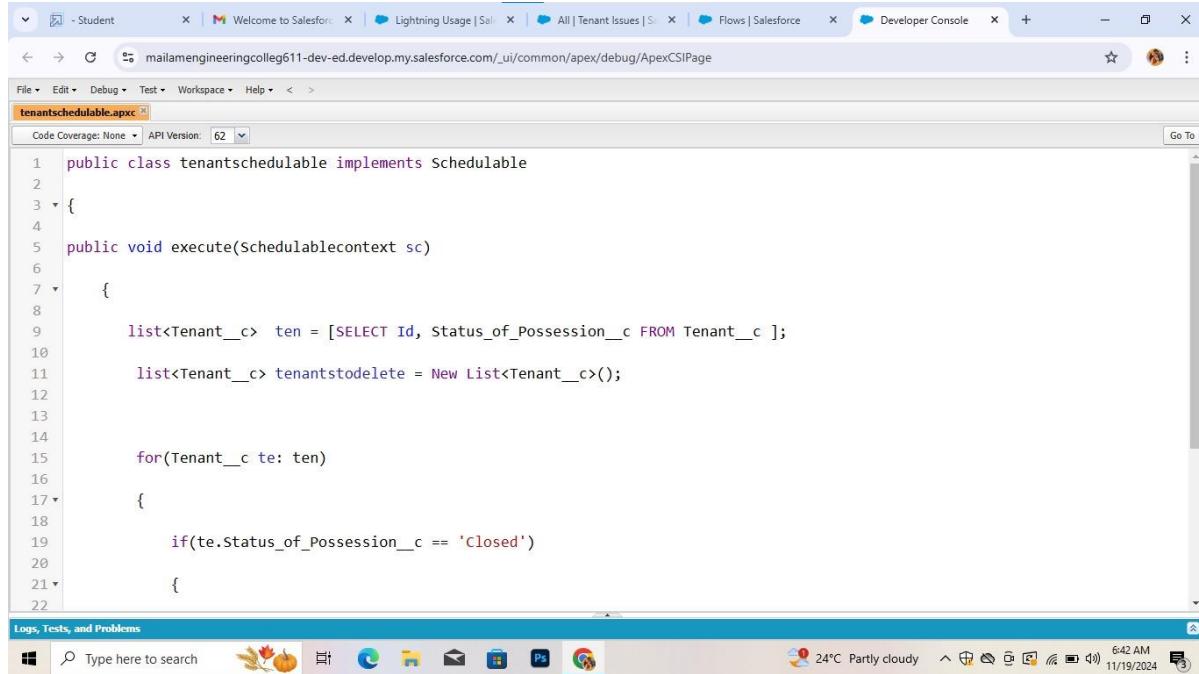
Asynchronous Apex can be applied to CRM systems for a mall to handle operations that are long-running, resource-intensive, or time-dependent, such as sending notifications, processing tenant records, or updating analytics dashboards. Below are examples of Asynchronous Apex implementations, including Scheduled Apex for specific scenarios in a mall CRM application.



The screenshot shows the Salesforce Developer Console interface. A modal window titled "Enter Apex Code" is open, displaying the following Apex code:

```
1 tenantschedulable a = new tenantschedulable();
2
3 string cron = '0 0 0 1 * ? * ';
4
5 system.schedule('Delete the records monthly', cron, a);
```

Below the modal, the main console interface is visible, showing tabs for Logs, Tests, Checkpoints, Query Editor, and View Site. The Logs tab is selected. At the bottom of the screen, there is a taskbar with various icons and a system status bar indicating "24°C Partly cloudy" and the date "11/19/2024".



The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for Student, Welcome to Salesforce, Lightning Usage | Sales, All | Tenant Issues | S, Flows | Salesforce, and Developer Console. The main area displays the code for a scheduled Apex class named `tenantschedulable.apxc`. The code implements the `Schedulable` interface and contains logic to query tenant records and filter out those marked as closed.

```
1 public class tenantschedulable implements Schedulable
2 {
3     public void execute(SchedulableContext sc)
4     {
5         list<Tenant__c> ten = [SELECT Id, Status_of_Possession__c FROM Tenant__c ];
6
7         list<Tenant__c> tenantstodelete = New List<Tenant__c>();
8
9
10        for(Tenant__c te: ten)
11        {
12            if(te.Status_of_Possession__c == 'Closed')
13            {
14
15            }
16        }
17    }
18
19
20
21
22
```

✓ Reports:

Reports give you access to your Salesforce data. You can examine your Salesforce data in almost infinite combinations, display it in easy-to-understand formats, and share the resulting insights with others. Before building, reading, and sharing reports, review these reporting basics.

• Create A Report of lease Management Records:

Lease management records play a critical role in the administration of real estate properties, especially for commercial spaces like malls, office buildings, or residential complexes. A well-organized lease management system helps property managers track lease agreements, rental payments, terms, renewals, and compliance with lease conditions.

Total Records: 10 Total Amount Paid: 3,82,000

Date of Reg.	Tenant: Tenant Name	Lease Tracking: Lease Tracking No.	Amount Paid	Date of Possession
16/11/2024 (2)	Thean	TT - 000012	43,000	20/11/2026
	Thean	TT - 000016	54,000	26/11/2026
Subtotal			97,000	
19/11/2024 (1)	Elango	TT - 000013	48,000	14/11/2025
Subtotal			48,000	
20/11/2024 (1)	Arun	TT - 000097	5,000	13/11/2026
Subtotal			5,000	
21/11/2024 (2)	Kavya	TT - 000014	57,000	05/11/2025
	Kavya	TT - 000092	40,000	17/07/2025
Subtotal			97,000	
23/11/2024 (2)	Lavanya	TT - 000009	36,000	27/11/2026
	Lavanya	TT - 000001	30,000	12/02/2026
Row Counts	Detail Rows	Subtotals	Grand Total	

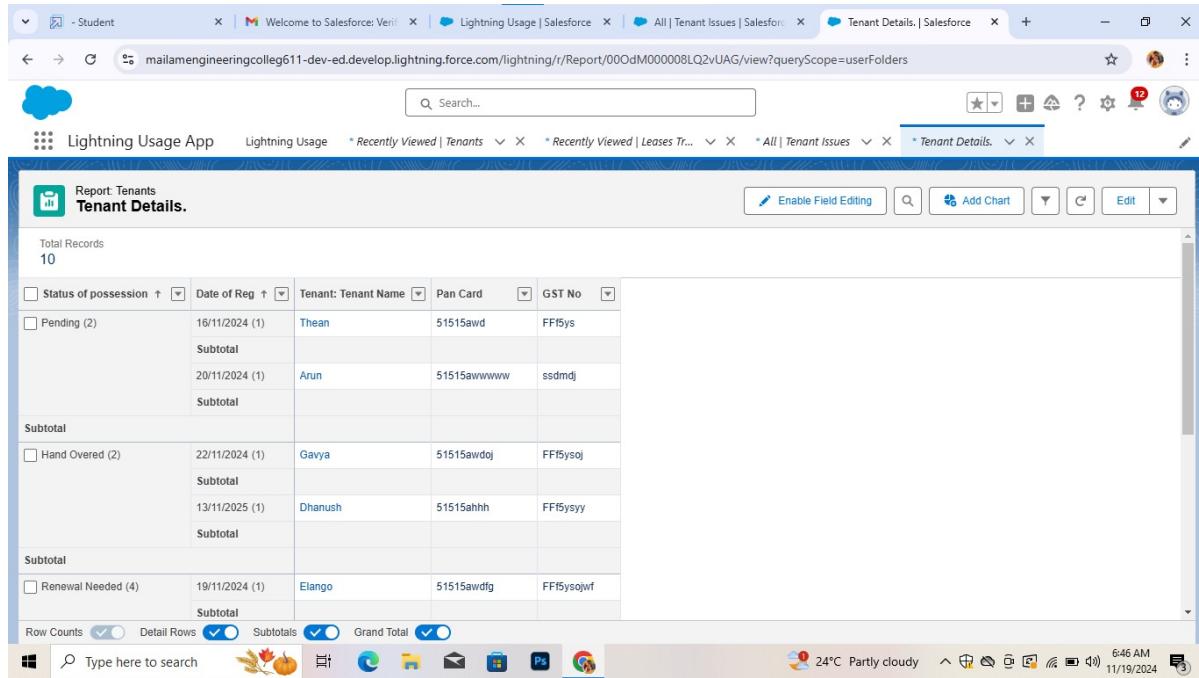
- **Create a report of Tenant issue:**

This report will outline the key components of lease management records, including the structure, data, and key performance indicators (KPIs) relevant to tracking lease agreements.

Total Records: 10

	Tenant: Tenant Name	Tenant Issue: Issues	Origin	Priority	Status
1	Kavya	TT - 000002	1.Phone	2.Medium	4.Working
2	Lavanya	TT - 000001	1.Phone	1.Low	1.Not contacted
3	Balaji	TT - 000010	1.Phone	1.Low	1.Not contacted
4	chandru	TT - 000009	1.Phone	1.Low	1.Not contacted
5	Monisha	TT - 000003	1.Phone	1.Low	1.Not contacted
6	Dhanush	TT - 000004	1.Phone	2.Medium	1.Not contacted
7	Arun	TT - 000005	1.Phone	2.Medium	4.Working
8	Elango	TT - 000006	1.Phone	2.Medium	3.In progress
9	Gavya	TT - 000007	1.Phone	2.Medium	4.Working
10	Thean	TT - 000008	1.Low	1.Not contacted	

- **Create A Report on Tenant Records:**



Tenant Details.

Total Records 10

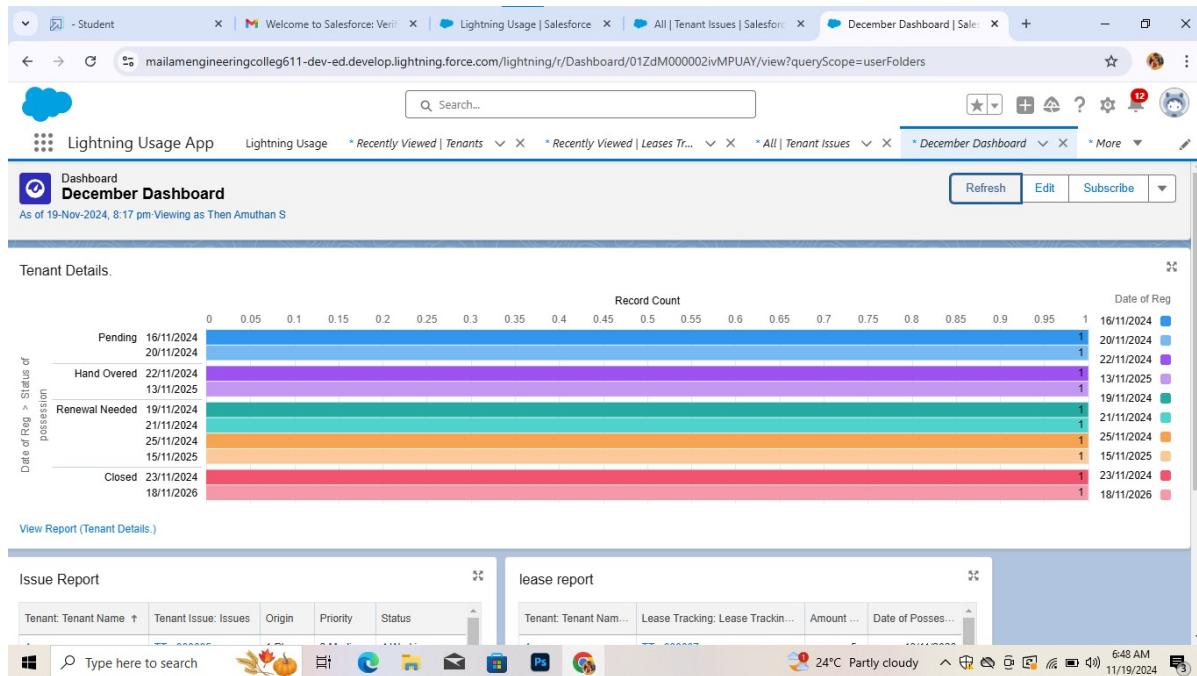
Status of possession	Date of Reg	Tenant: Tenant Name	Pan Card	GST No
Pending (2)	16/11/2024 (1)	Thean	51515awd	FFFf5ys
		Subtotal		
	20/11/2024 (1)	Arun	51515awwwww	ssdmdj
		Subtotal		
		Subtotal		
Hand Overed (2)	22/11/2024 (1)	Gavya	51515awdobj	FFFf5ysoj
		Subtotal		
	13/11/2025 (1)	Dhanush	51515ahhh	FFFf5syyy
		Subtotal		
		Subtotal		
Renewal Needed (4)	19/11/2024 (1)	Elango	51515awdfg	FFFf5ysojwrf
		Subtotal		
		Row Counts	Detail Rows	Subtotals
				Grand Total

24°C Partly cloudy 6:46 AM 11/19/2024

✓ **Dashboard:**

Dashboards help you visually understand changing business conditions so you can make decisions based on the real-time data you've gathered with reports. Use dashboards to help users identify trends, sort out quantities, and measure the impact of their activities.

A set of steps designed to review, validate, and authorize tasks or transactions related to workforce management. This process ensures that actions like employee onboarding, promotions, leave requests, and payroll changes comply with organizational policies and are properly documented.



5. Testing and Validation of CRM Application for the Mall project:

Testing and validation for the CRM application for a mall are crucial to ensure the system functions as expected and provides a seamless user experience for both customers and mall management. The process begins with functional testing to verify that all features, such as customer registration, profile management, loyalty programs, and marketing campaign execution, are working as intended. Usability testing follows, focusing on the ease of navigation, mobile responsiveness, and overall user-friendliness, ensuring that both customers and mall staff can interact with the system effortlessly. Performance testing is essential to evaluate how the CRM handles high traffic, especially during peak shopping times or promotions, and whether it can scale as the mall grows.

Security testing ensures that customer data is secure, protecting sensitive information from unauthorized access and ensuring compliance with regulations like GDPR. Integration testing checks the seamless functioning of the CRM with other mall systems, such as POS, payment gateways, and tenant management software. Finally, user acceptance testing (UAT) involves real users to confirm the system meets business requirements and delivers the expected value. Throughout the process, any issues are logged, prioritized, and resolved before the final deployment. Post-launch, continuous monitoring and feedback collection are crucial for identifying and addressing any emerging issues, ensuring the CRM application continues to support the mall's operations efficiently.

6. Key Scenarios Addressed by Salesforce in the Implementation Project:

✓ Customer Data Management:

Scenario: Centralizing all customer data in one place to create a 360-degree view of each customer.

Implementation: Salesforce integrates various customer touchpoints (e.g., website, email, call centers) to aggregate customer data, ensuring that all interactions and transactions are captured and easily accessible to sales, marketing, and service teams.

✓ Lead and Opportunity Management:

Scenario: Managing and nurturing leads through the sales funnel to convert them into opportunities and eventually customers.

Implementation: Salesforce provides tools like Lead and Opportunity Management to track the lifecycle of potential customers, from initial interest to final sale. It allows for automatic lead assignment, status tracking, and personalized follow-up tasks.

✓ **Sales Forecasting and Reporting:**

Scenario: Generating accurate sales forecasts and performance reports for management and sales teams.

Implementation: Salesforce offers customizable dashboards, real-time analytics, and reporting tools to track sales performance, revenue, and forecasting. Users can visualize data in real time and generate reports to understand trends, close rates, and pipeline health.

✓ **Marketing Automation and Campaign Management:**

Scenario: Automating marketing tasks and creating personalized campaigns to engage customers and prospects.

Implementation: Salesforce Marketing Cloud enables the creation, automation, and tracking of marketing campaigns across multiple channels, including email, social media, and SMS. It allows businesses to send targeted messages based on customer behavior and preferences.

7.Conclusion:

In conclusion, implementing a CRM application for a mall provides a strategic advantage by centralizing customer data, streamlining operations, and enhancing customer engagement. The CRM system allows for efficient management of customer

relationships through personalized marketing, targeted promotions, loyalty programs, and responsive customer service. It empowers mall management with valuable insights into customer behavior, sales performance, and campaign effectiveness, enabling data-driven decision-making. Moreover, by integrating with other systems such as POS, tenant management, and inventory systems, the CRM application creates a seamless experience for both customers and mall operators. Ultimately, the CRM application not only boosts customer satisfaction and loyalty but also contributes to the mall's overall growth and operational efficiency, making it an indispensable tool for modern retail management.