PROJECT REPORT

Naan Mudhalvan – Salesforce Developer

Project Title:

TripAdvisor E-Management

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ANNA UNIVERSITY
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Report: TripAdvisor E-Management

Project Overview

Project Title: *TripAdvisor E-Management*

This project is focused on developing the *TripAdvisor E-Management System* using Salesforce to streamline travel-related services, such as hotel, food option, and flight management, along with customer discount automation and notification services. The project aims to address inefficiencies in data handling and communication within TripAdvisor's ecosystem by implementing a comprehensive and automated solution. The primary challenge was to ensure seamless integration of various services to enhance operational efficiency, reduce manual errors, and improve the user experience.

By leveraging Salesforce's robust platform features, such as automation tools, Apex triggers, and schedulable classes, this project provides a scalable, reliable, and efficient solution to meet the business needs of TripAdvisor.

Project Description:

The TripAdvisor E-Management system, integrated with Salesforce, aims to provide an all-in-one travel companion app that empowers users to plan, book, and make the most of their trips. This system brings TripAdvisor's massive repository of user-generated reviews and insights into the Salesforce ecosystem, allowing users to access information on hotels, flights, food options, and customer deals seamlessly. This report outlines the system requirements, acceptance criteria, and solutions developed for this integration, with a focus on automation and streamlined customer experience.

Short Description:

TripAdvisor E-Management Solution streamlines travel itinerary management, centralizing booking data, trip tracking, and user feedback, making it easier for organizations to oversee and enhance travel experiences.

Objectives

Business Goals:

1. Automate the management of hotels, flights, and food options to reduce manual administrative tasks.
2. Provide a personalized customer experience through automated discount mechanisms.
3. Ensure timely communication with customers via email notifications for flight reminders.

Specific Outcomes:

1. Automated tracking and updating of hotel information based on food options.
2. Automated discount calculation and application based on customer purchase thresholds.
3. Flight reminder emails sent automatically 24 hours before flight departure, improving customer satisfaction.
4. Accurate, real-time reporting and data analytics for better business insights.

Salesforce Key Features and Concepts Utilized

The project leverages the following Salesforce features and functionalities:

1.Custom Objects:

- **Hotel Object**: Stores hotel-related data and calculates the total number of food options associated with each hotel.
- **Food Option Object**: Tracks food options linked to hotels.
- **Flight Object**: Manages flight bookings and departure schedules.
- **Customer Object**: Stores customer information, such as name and booking details.

2.Apex Triggers:

- Ensures automatic updating of hotel data whenever food options are added or modified.
- Example: Updating the total count of food options for each hotel.

3.Flows:

- Automates customer discount application based on purchase amounts.
- Example: Full discounts for purchases exceeding 3000 and partial discounts for purchases between 1500 and 3000.

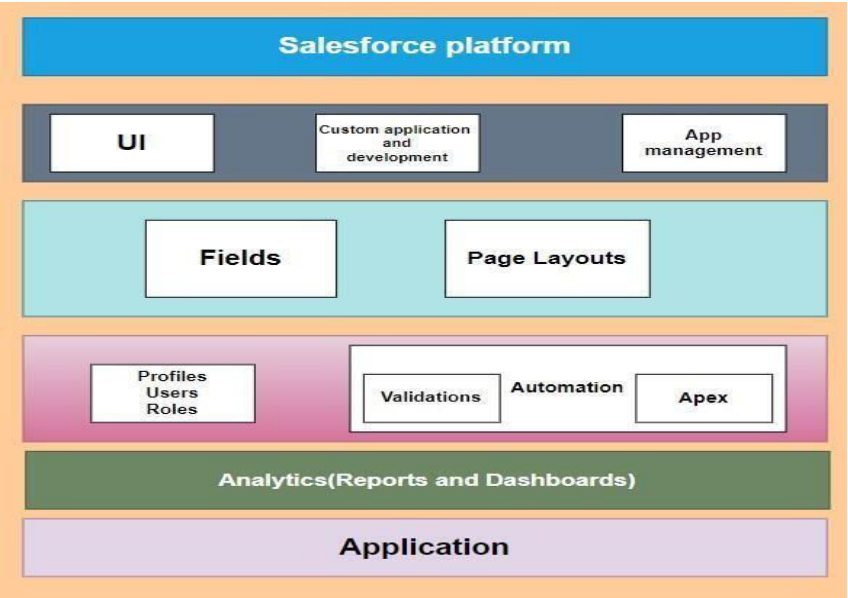
4.Schedulable Apex Classes:

- Handles scheduled email notifications for customers regarding upcoming flights.
- Example: Sends email reminders 24 hours before the scheduled departure.

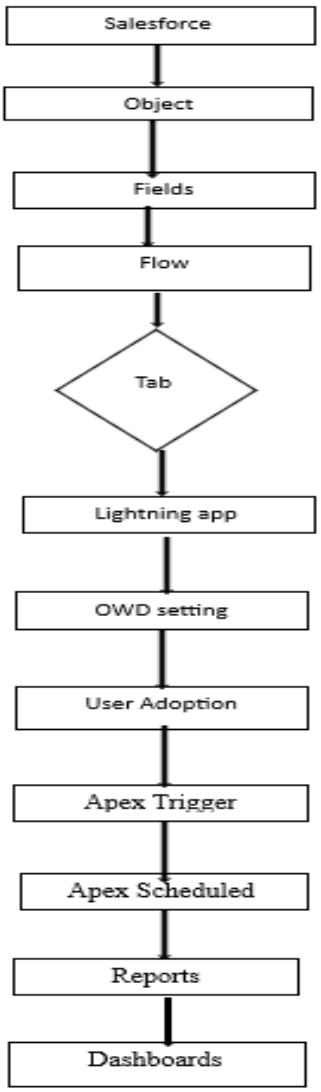
5.Reports and Dashboards:

- Tracks customer discounts, flight bookings, and hotel occupancy rates for operational insights.

Technical Architecture:



Project Flow:



Detailed Steps to Solution Design

Milestone 1- Salesforce

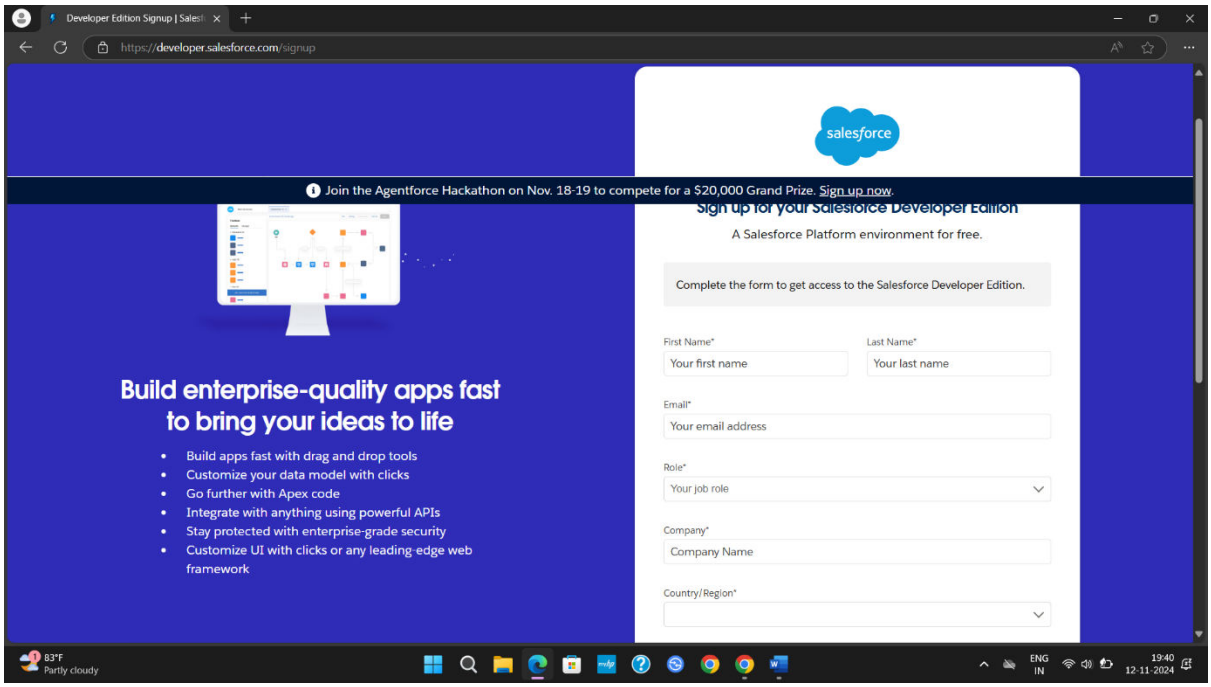
Developer Account Creation

To start working with Salesforce CRM, a developer account is essential. Follow these steps to create an account:

1.Sign-Up Process

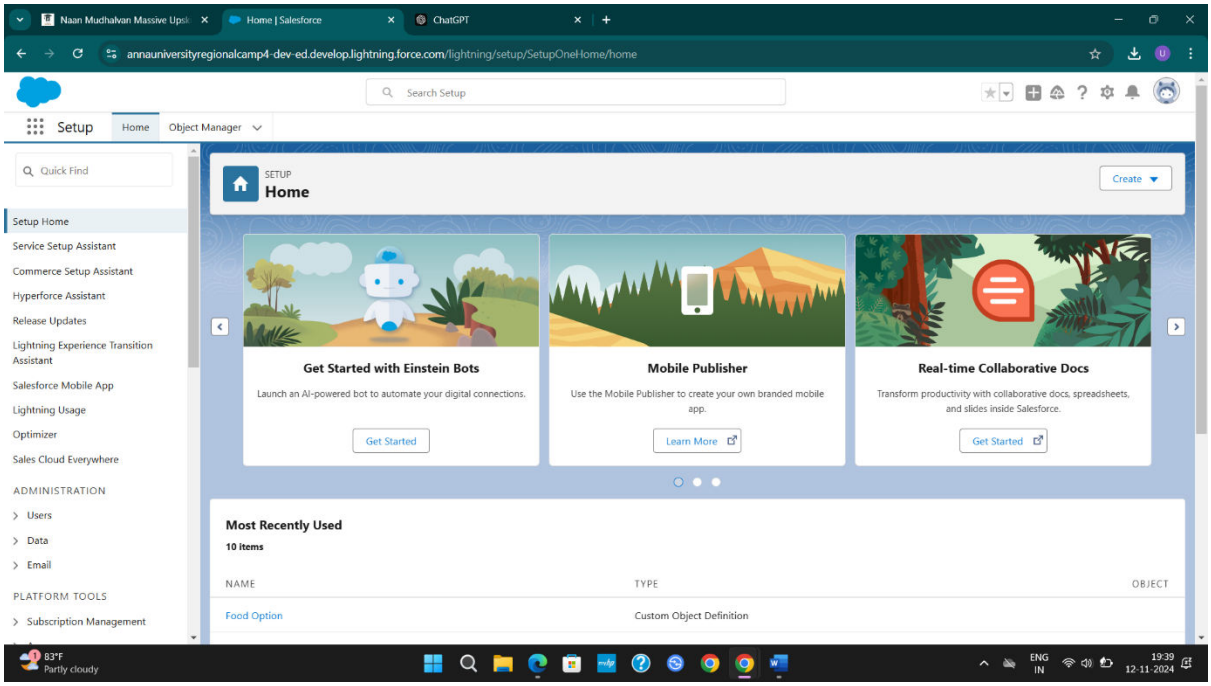
- Go to Salesforce Developer Sign-Up.
- Enter your **First and Last Name**, **Email**, and set **Role** as "Developer."
- Input your **Company** (College Name), **Country** (India), **Postal Code**, and **Username** (formatted as username@organization.com).

Click **Sign Me Up** after filling out the form



Account Activation

- Open the inbox of the email used for registration, locate the Salesforce verification email, and click **Verify Account**.
- Set a password, choose a security question, and log into your Salesforce account to access the setup page.



Milestone 2 - Objects in Salesforce

Salesforce objects function as database tables for storing and organizing data relevant to the organization.

- **Standard Objects**: Provided by Salesforce by default (e.g., Accounts, Contacts).
- **Custom Objects**: User-defined objects to store unique organizational data.

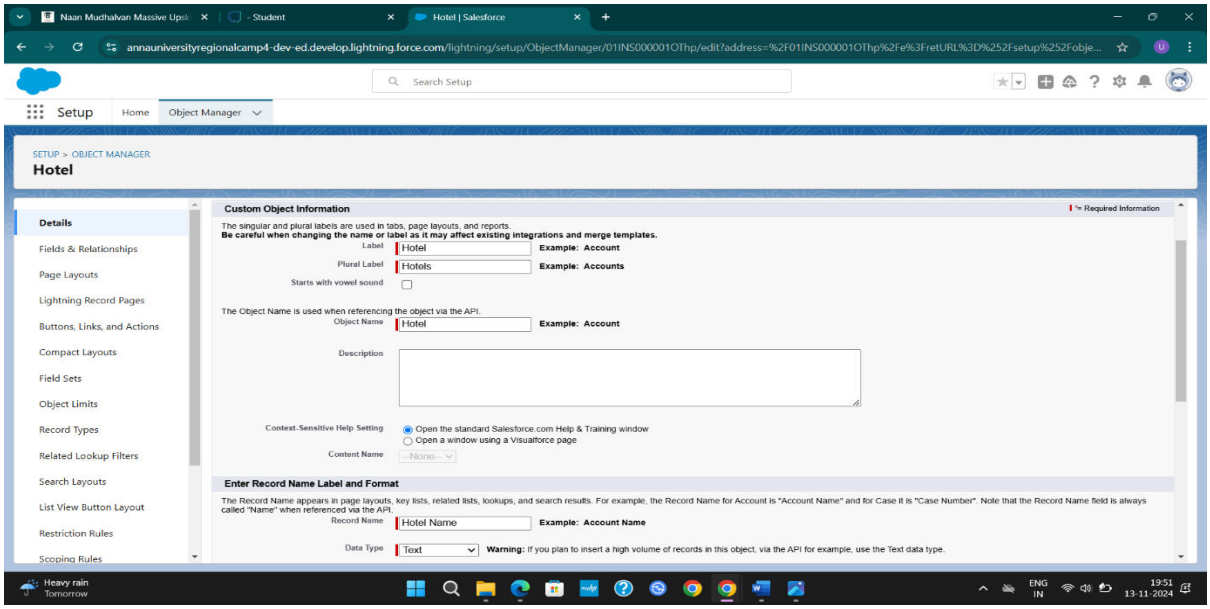
System Development: **Custom Objects**

Hotel Object:

Hotel Object is created to ensure that when a new Food Option is added or updated with the necessary information

1. Enter label : Hotel
2. Plural Name : Hotels
3. Data Type : (text)
4. Field Name : Hotel Name
5. Click Allow Reports
6. Allow Search ? Save

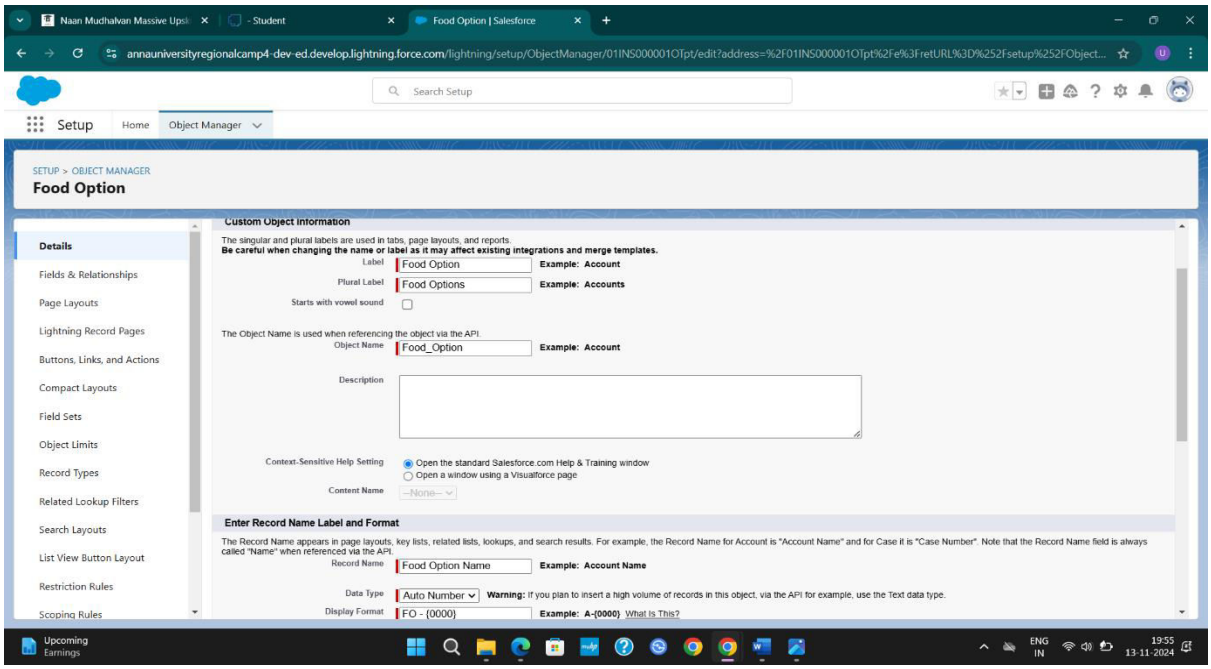
Purpose: Store data about hotels and update hotel information when new food options are added.



Food Option Object:

Food Option > Data Type > Auto Number > Format > FO - {0000}

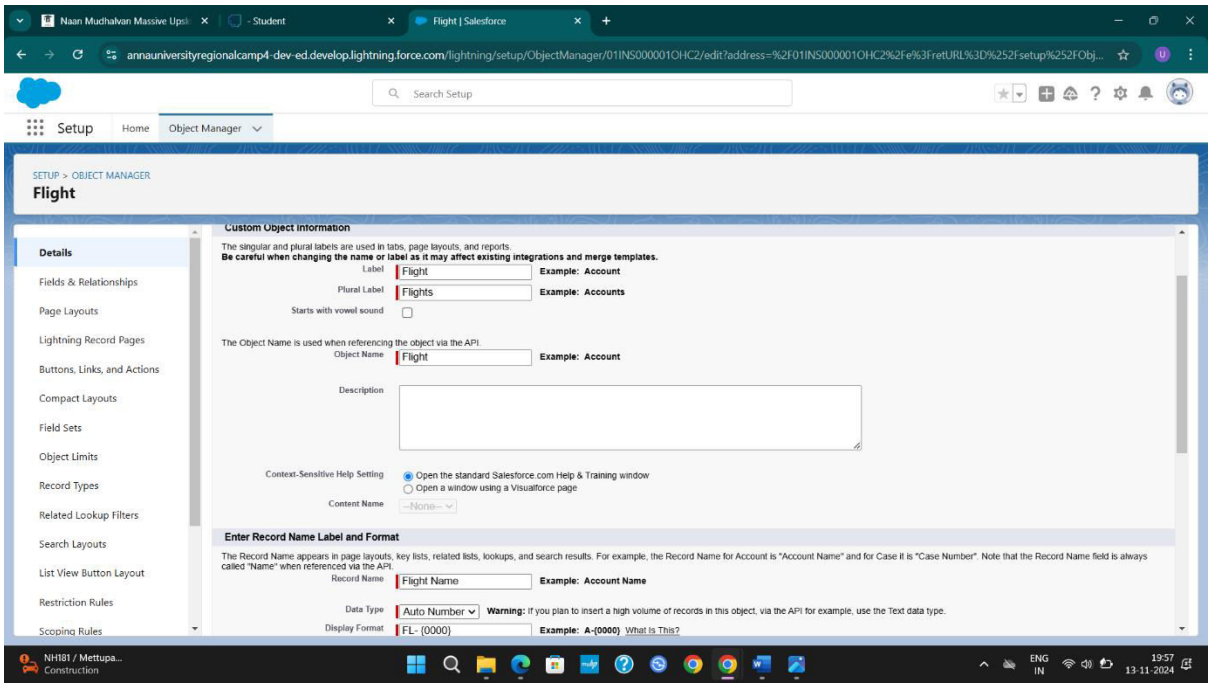
Purpose: Track food options associated with hotels.



Flight Object:

Flight > Data Type > Auto Number > Format > FL- {0000}

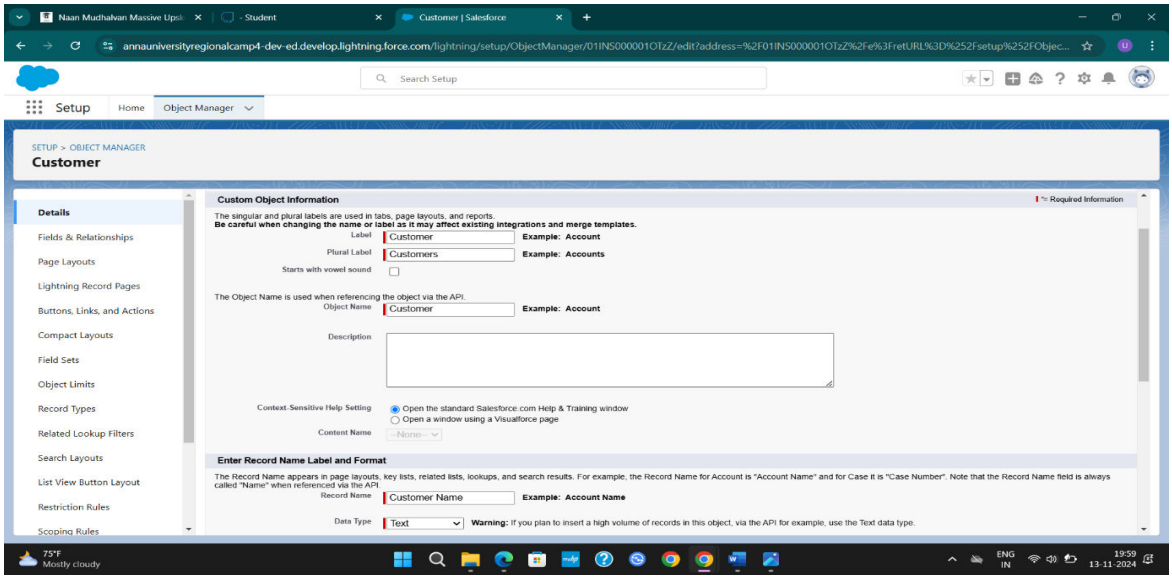
Purpose: Track flight bookings and manage customer notifications.



Customer Object:

Customer > Text > Field Name > Customer Name

Purpose: Manage customer information.

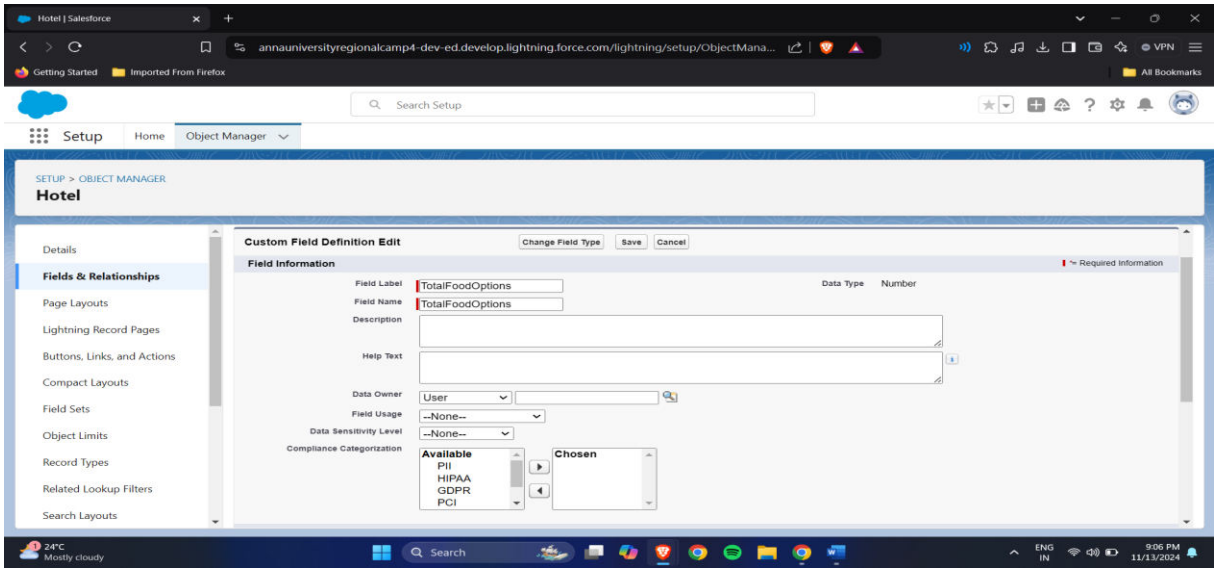


Milestone 3 - Fields

Create Fields for Hotel Object:

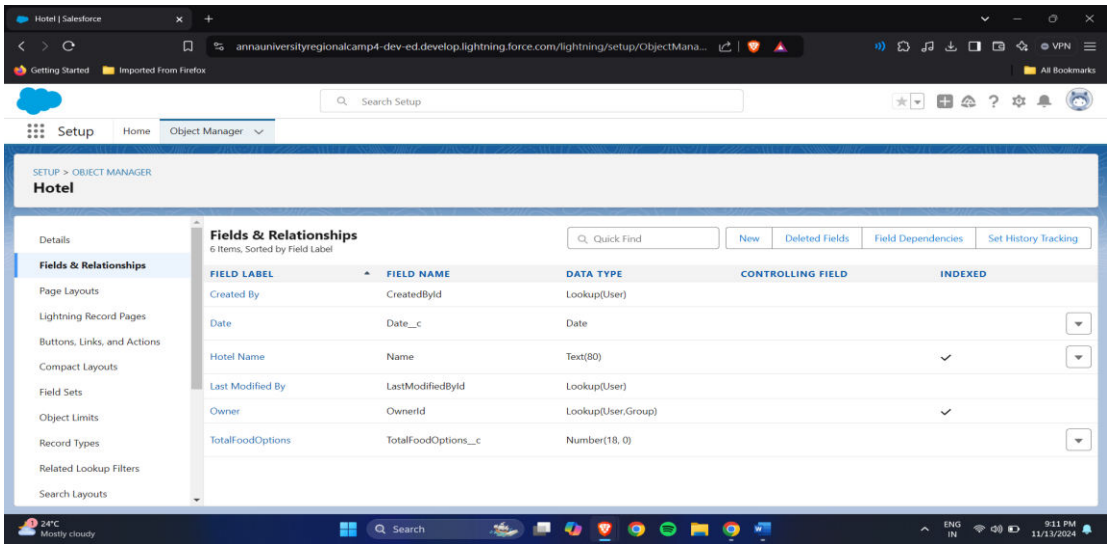
Creating fields for a "Hotel" object involves defining the data attributes that represent essential information about a hotel. These fields should capture the details needed to describe and manage the hotel within an application, database, or any system that tracks hotel information.

Sr. No.	Field Name	Data Type
1	TotalFoodOptions	Number
2	Date	Date



Fields & Relationships of all Hotel Fieldes:

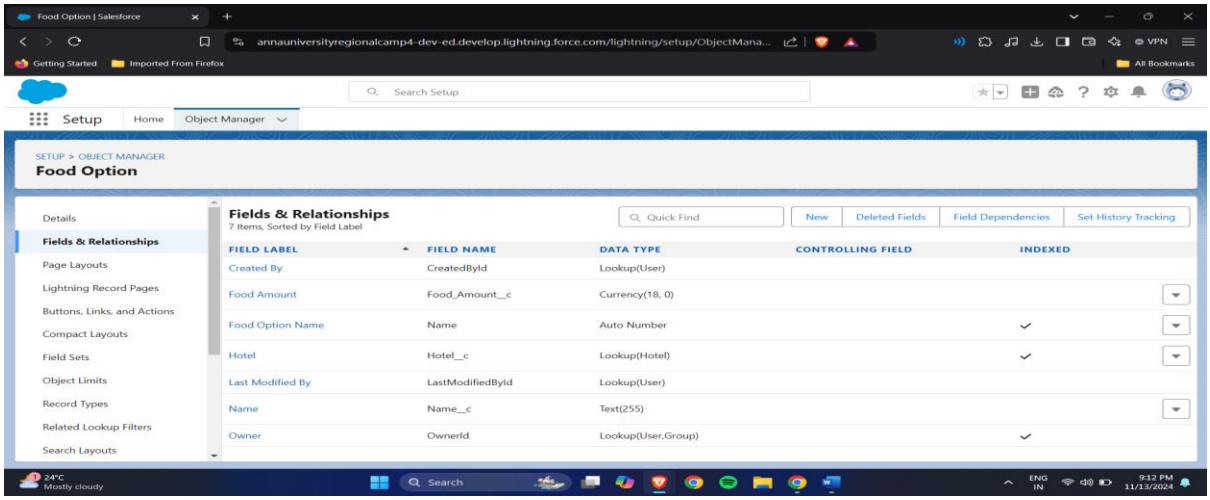
In a system where you manage hotel data, creating fields and defining relationships for the "Hotel" object is crucial for organizing and retrieving information efficiently. Here's a detailed overview of the fields and relationships typically associated with a "Hotel" object.



Create Fields For Food Option:

Creating fields for a "Food Option" object is essential when building a system to manage food items, such as a restaurant menu or a hotel's food service options. These fields should cover all the necessary details that define each food item and make it easy for users to search, categorize, and manage food options.

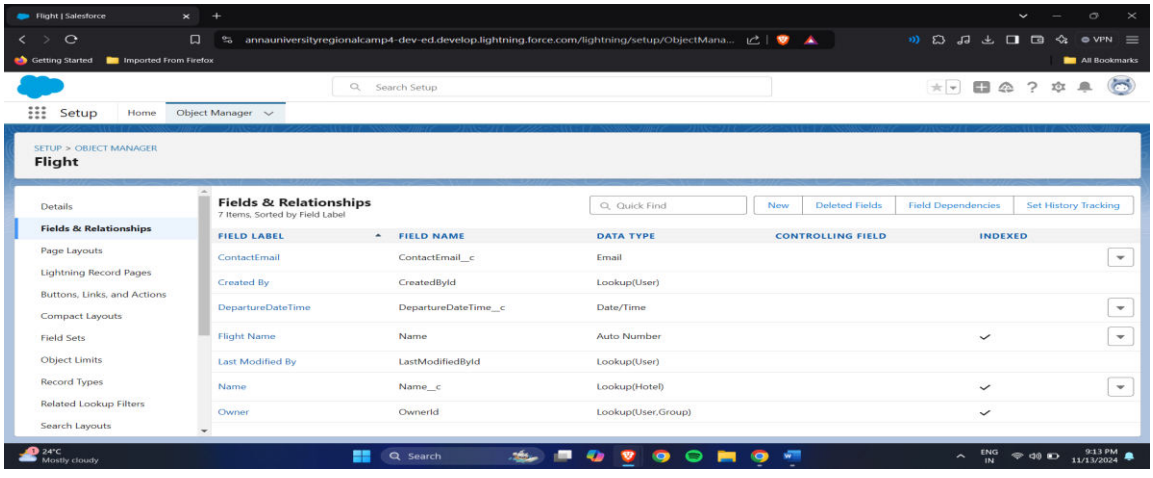
Sr. No.	Field Name	Data Type
1	Name	Text
2	Hotel	Hotel(Lookup)
3	Food Amount	Currency



Create Fields in the Flight Object:

Creating fields in a "Flight" object involves defining essential attributes that represent information about a flight. These fields help to manage and organize flight details within a system for booking, tracking, or scheduling flights. Here's an example of typical fields for a "Flight" object

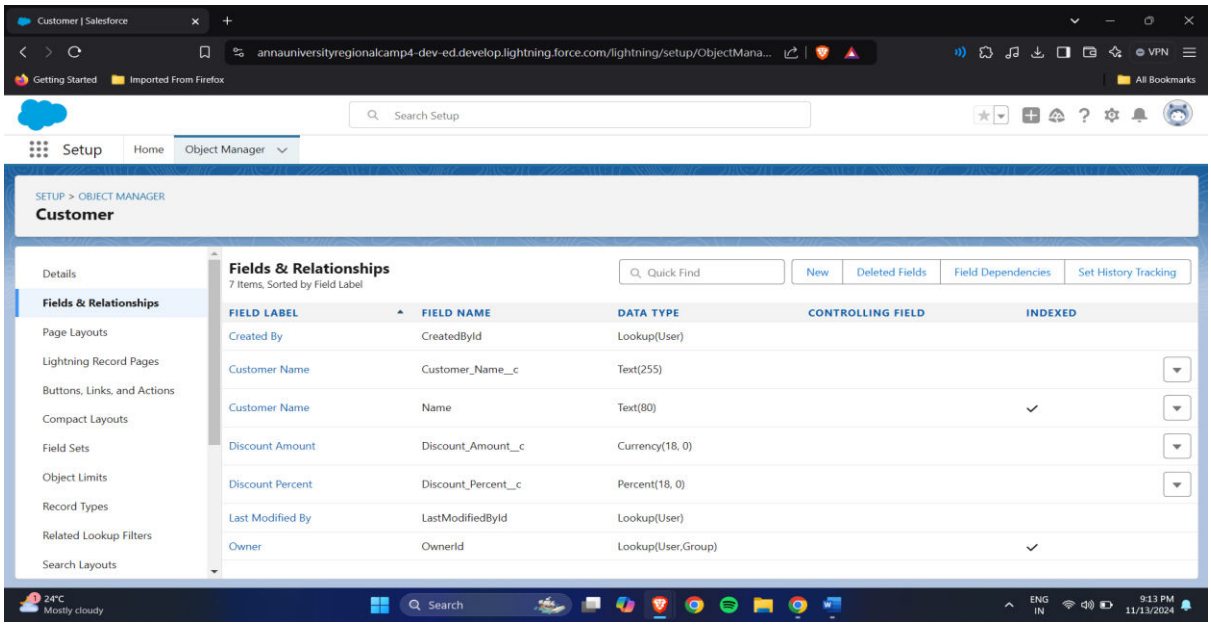
Sr. No.	Field Name	Data Type
1	Name	Date/Time
2	DepartureDateTime	Hotel(Lookup)



Create Fields in the Customer Object:

Creating fields for a "Customer" object involves defining essential details to identify and understand each customer in the system. Here are common fields typically included

Sr. No.	Field Name	Data Type
1	Customer Name	Name
2	Discount Amount	Formula (Currency)
3	Discount Percent	Percentage



Milestone 4 -Flow

Flow for Customer Discount Automation:

A Salesforce Flow was created to apply discounts based on the customer's purchase amount. Discounts are granted if the amount exceeds certain thresholds:

Create a new flow variable “TripAdviser”.

Flow Variables

Create 3 variable :

Variable > Api name > foId > text > Available for Input

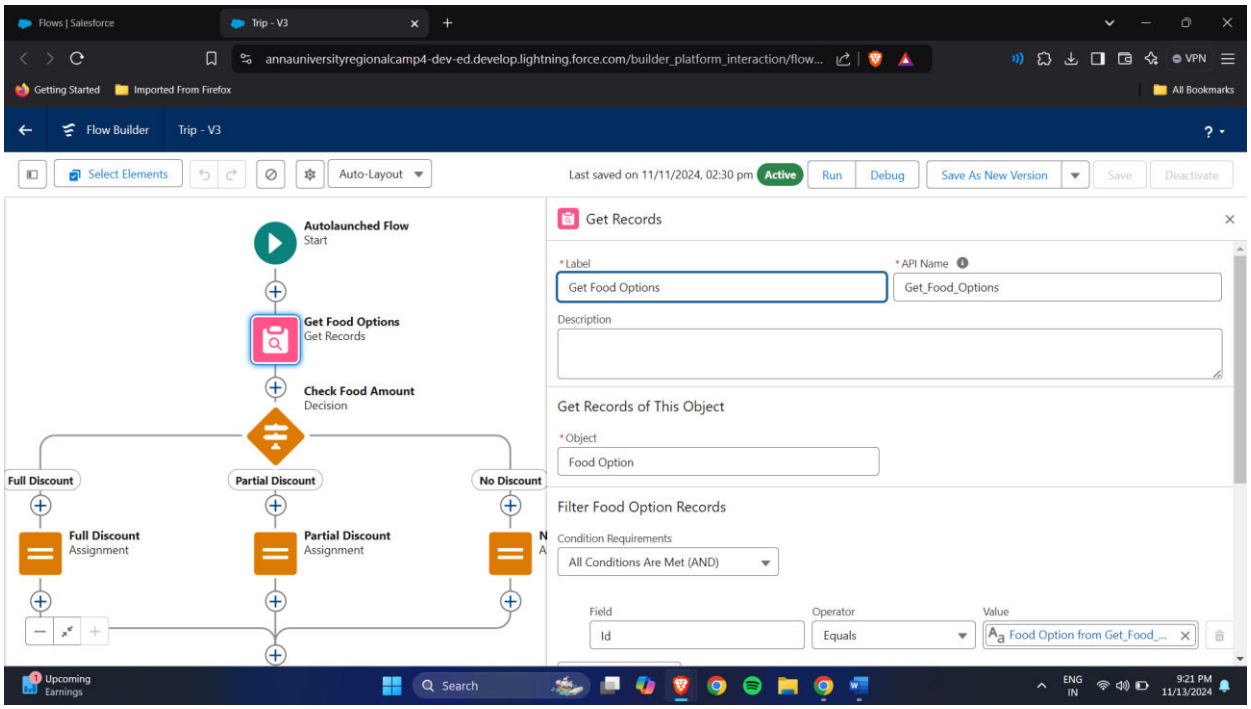
Variable > Api name > csId > text > Available for Input

Variable >Api name > discount > Number

Flow Logic:

Flow Variables are temporary placeholders used within a process or workflow to store and manipulate data as it moves through different stages of execution. These variables enable dynamic data handling, allowing information to be passed from one step to another within a flow.

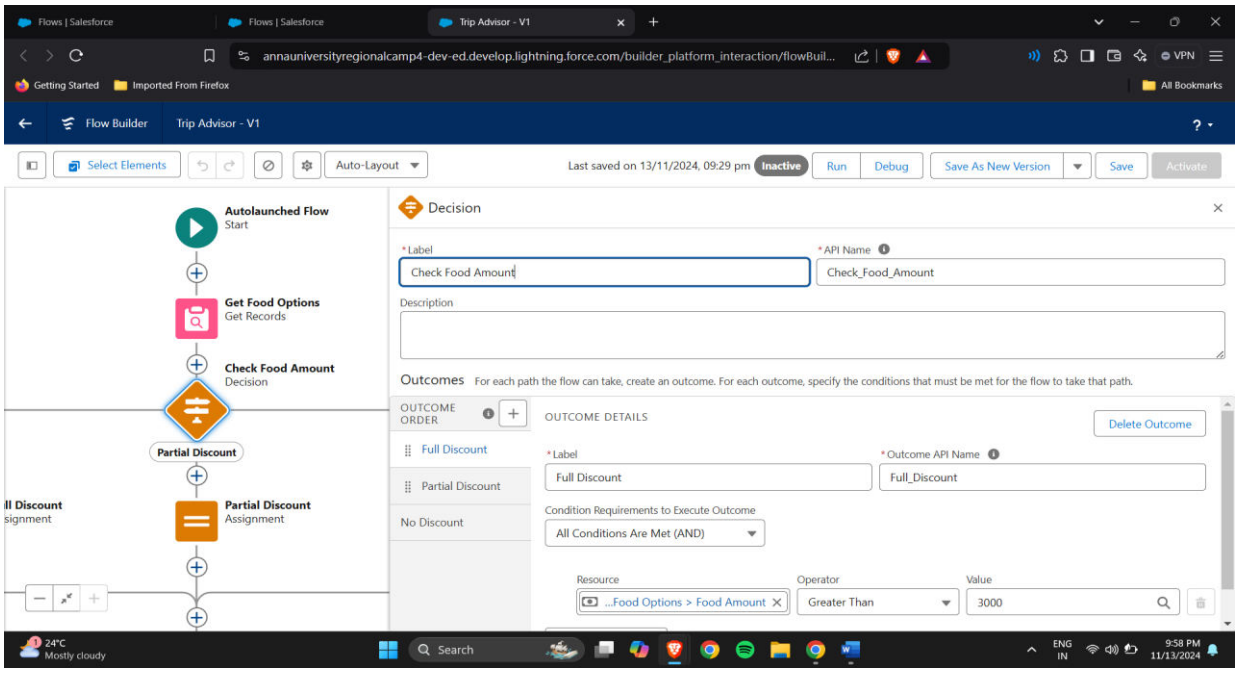
Get Records: Retrieve the necessary customer records.



Purpose:

The **"Get Records"** element in a flow (such as in Salesforce Flow or similar automation platforms) is to retrieve specific records from a database based on defined criteria. This action allows you to fetch data that can be used later in the flow for various purposes, such as updating records, making decisions, or displaying information

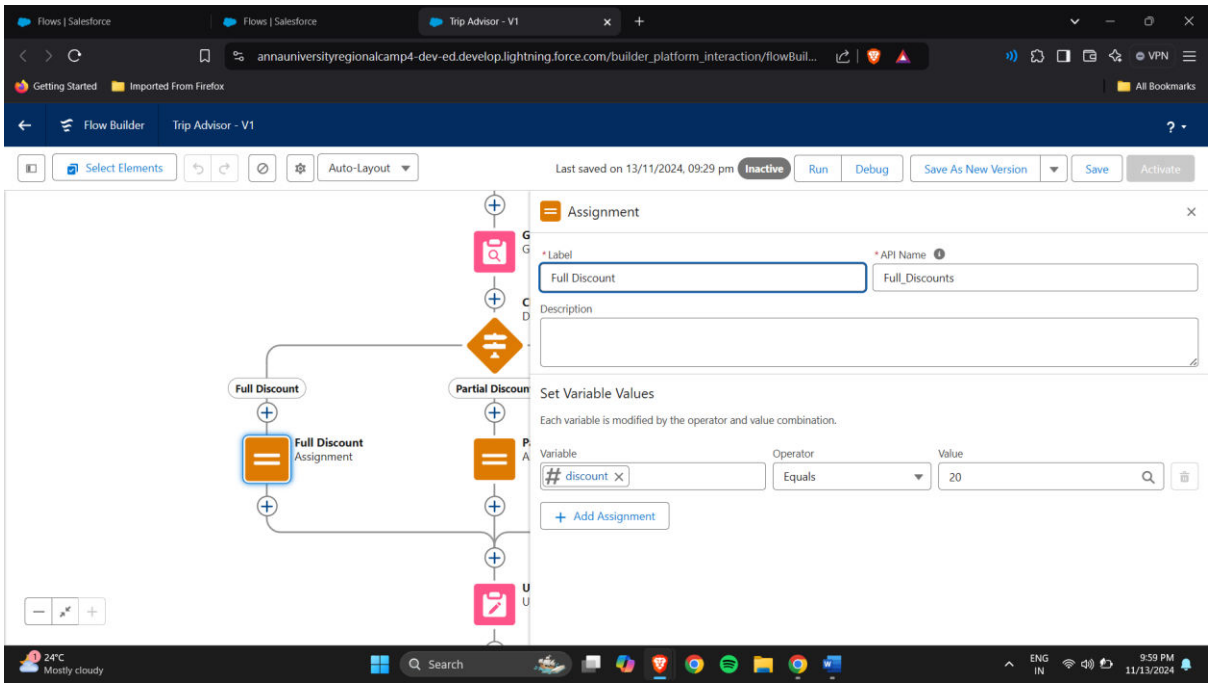
Decision Element: Determine the discount rate based on the purchase amount:



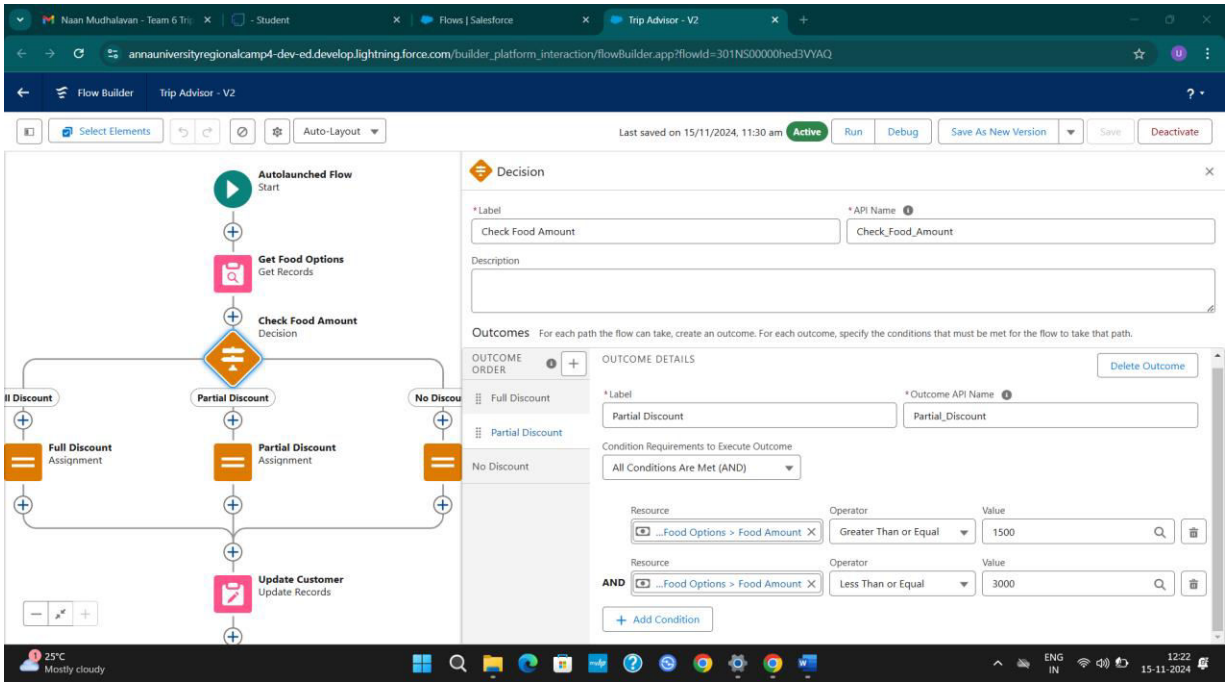
Purpose:

The Decision Element in a flow is used to control the flow's path based on specified conditions. This is particularly useful for creating dynamic, condition-based workflows

Full Discount: Amount exceeds 3000.



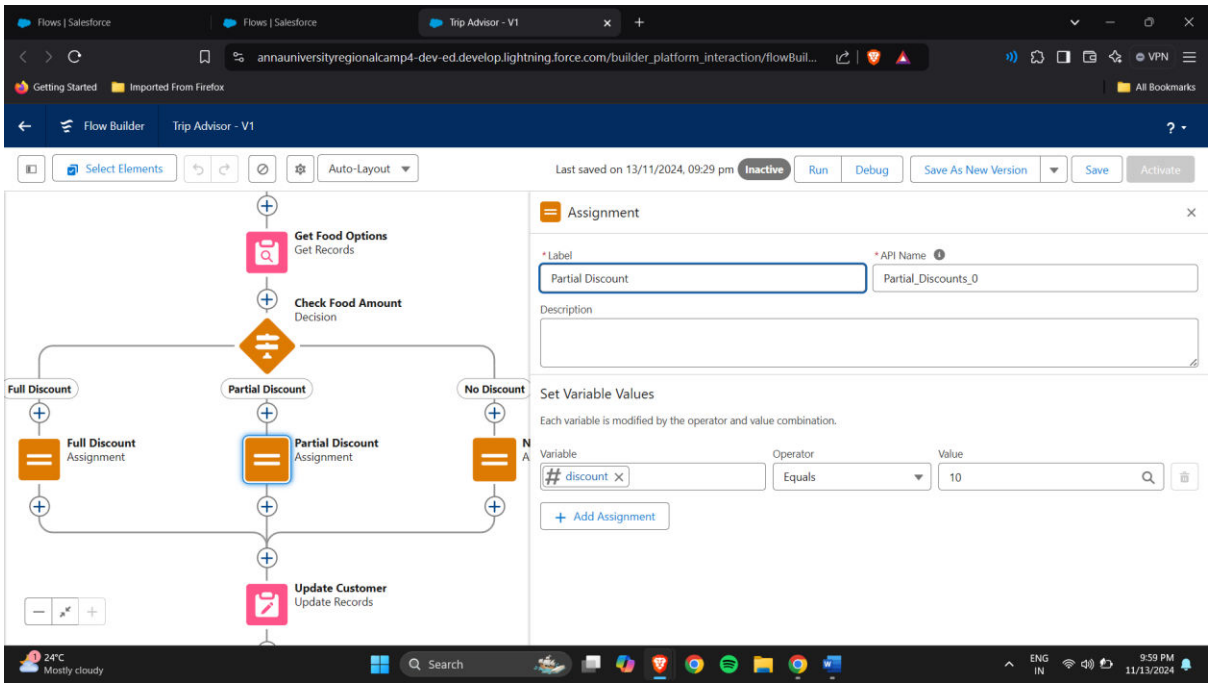
Partial Discount: Amount In-between 1500 to 3000.



Purpose:

The Full Discount in a flow (such as a sales or customer service process) is to Provide Complete Financial Relief, Streamline Issue Resolution, Enhance Customer Loyalty and Support Promotional Strategies.

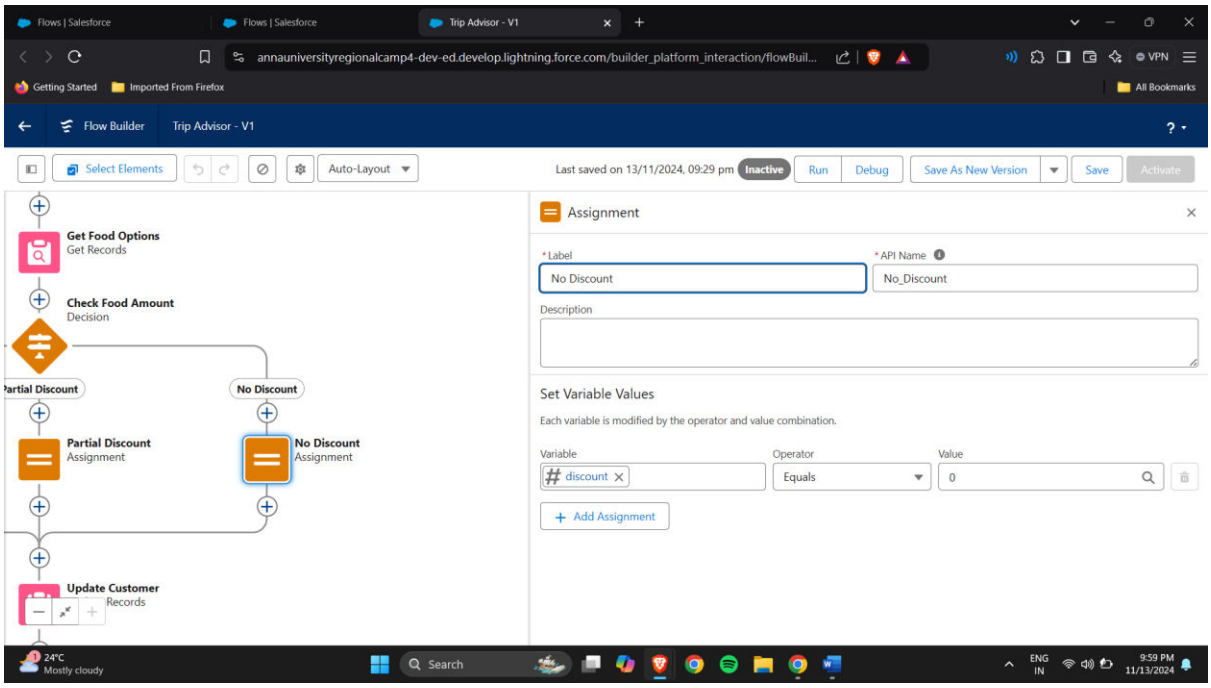
Partial Discount: Amount between 1500 and 3000.



Purpose:

A Partial Discount in a flow (such as an e-commerce or booking process) is to allow a reduction in the total price of a product or service by a specific percentage or amount, rather than a full discount. Partial discounts are often used to incentivize purchases while still maintaining profitability.

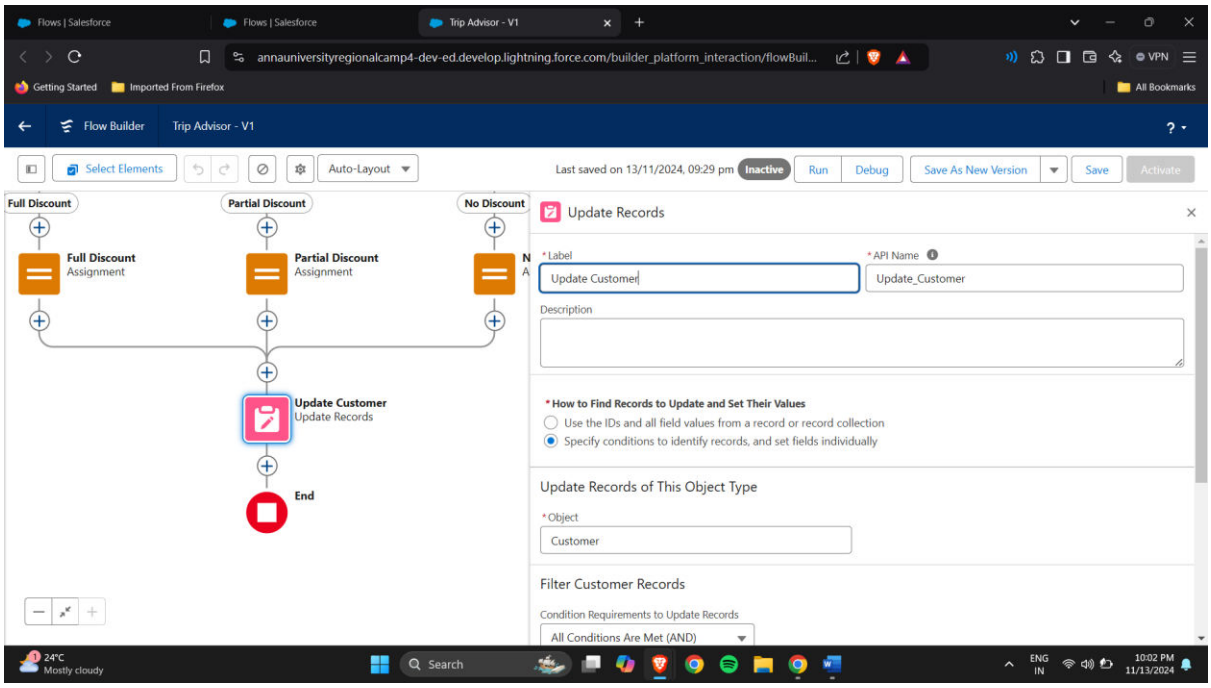
No Discount: Amount below 1500.



Purpose:

A "No Discount" option in a flow is to provide flexibility in scenarios where certain products, services, or customers may not be eligible for any discount.

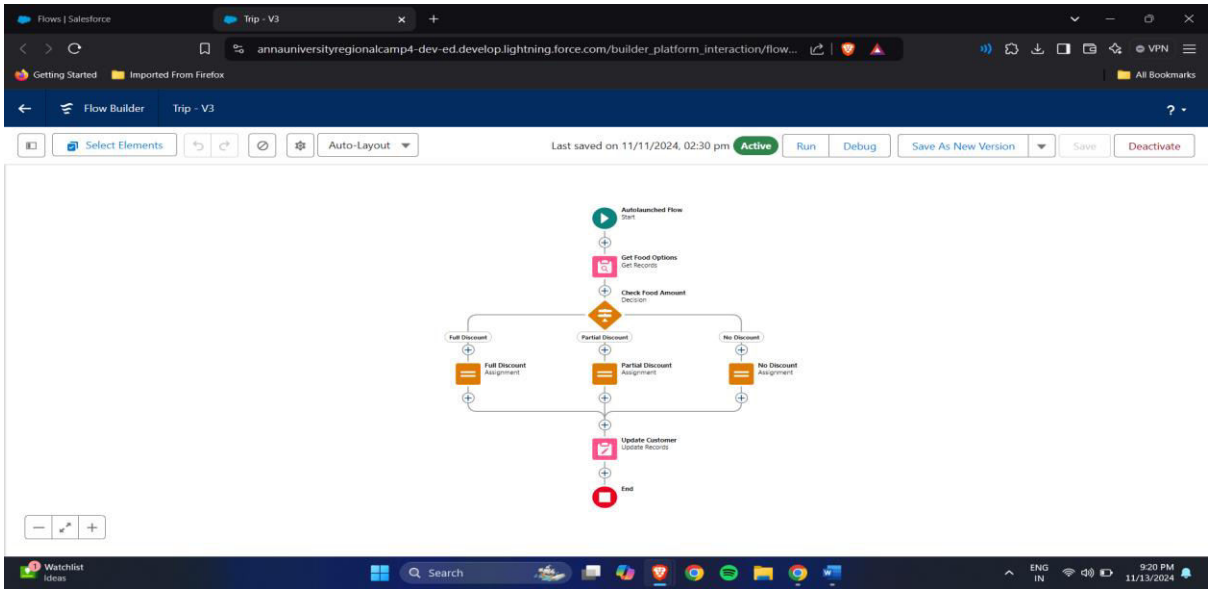
Update Record: Assign discount amounts and update records accordingly.



Purpose:

A "Update Record" element in a flow (commonly in CRM platforms like Salesforce) is to modify existing records in the database based on specified criteria and conditions. This element allows automation of record updates within workflows, saving time and ensuring data consistency.

Final Output of the Flow activate:



Milestone 5 - Tabs:

Tabs in Salesforce provide a user interface for managing and viewing records.

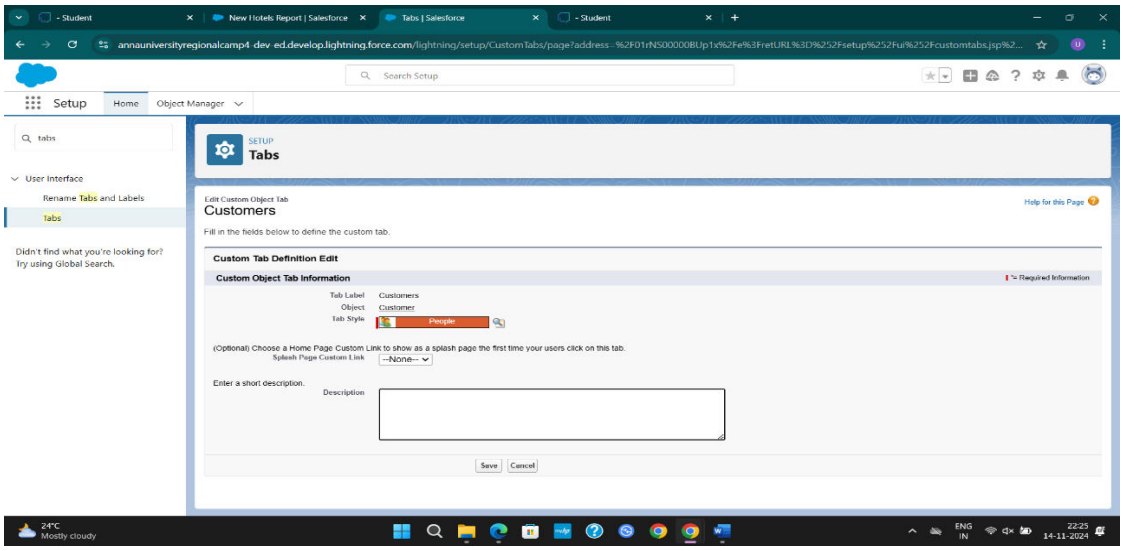
1.Types of Tabs:

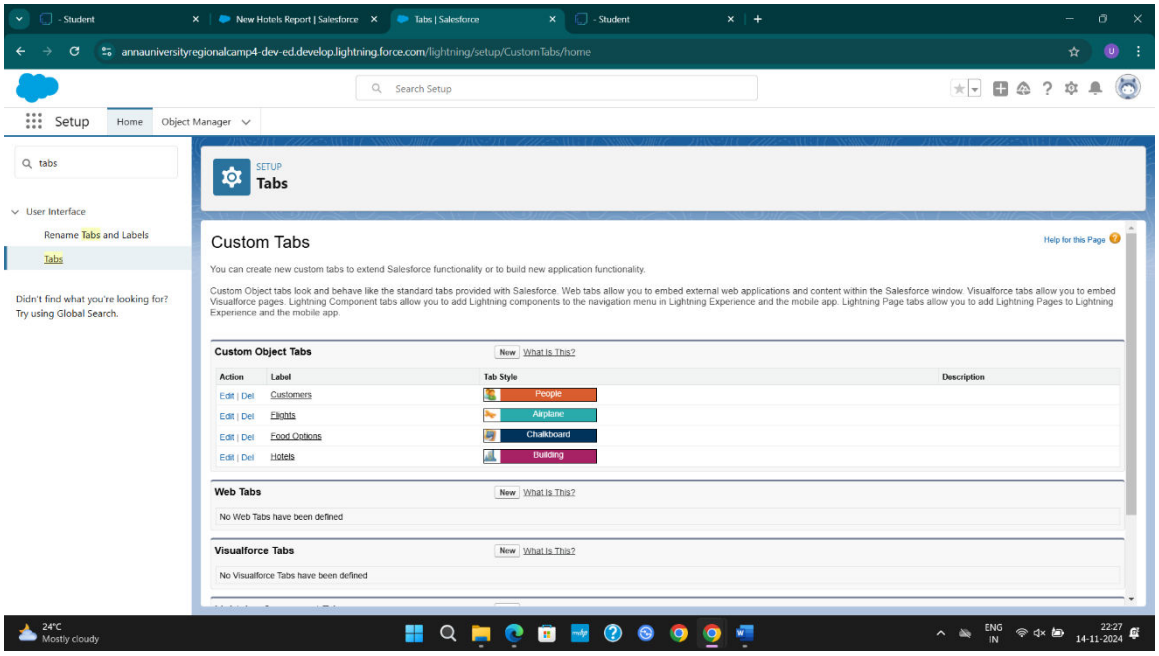
- Custom Tabs: Specific to custom objects.
- Web Tabs: Display web content.
- Visualforce Tabs: Display Visualforce pages.
- Lightning Component Tabs: Add Lightning components to the navigation.
- Lightning Page Tabs: Add Lightning Pages to mobile app navigation.

Use Case:

Creating objects and storing TripAdvisor E-management data is the first step to meet their requirements. To enable employees to access stored data efficiently, the admin needs to create dedicated tabs. By designing specific tabs, the organization can enhance the user experience, streamline navigation features. This approach helps employees find and manage data efficiently, supporting better service and operational effectiveness within TripAdvisor E-management

Creating a Custom Tab





- From Setup, search Tabs and select New (Custom Object Tab).
- Choose Opportunity Automobile and complete the setup.

Milestone 6 - Lightning App:

An app is a collection of items that work together to serve a particular function. In Lightning Experience, Lightning apps gives users access to sets of objects, tabs, and other items all in one convenient bundle in the navigation bar.

Lightning apps let you brand your apps with a custom color and logo. You can even include a utility bar and Lightning page tabs in your Lightning app. Members of your org can work more efficiently by easily switching between apps.

Use case:

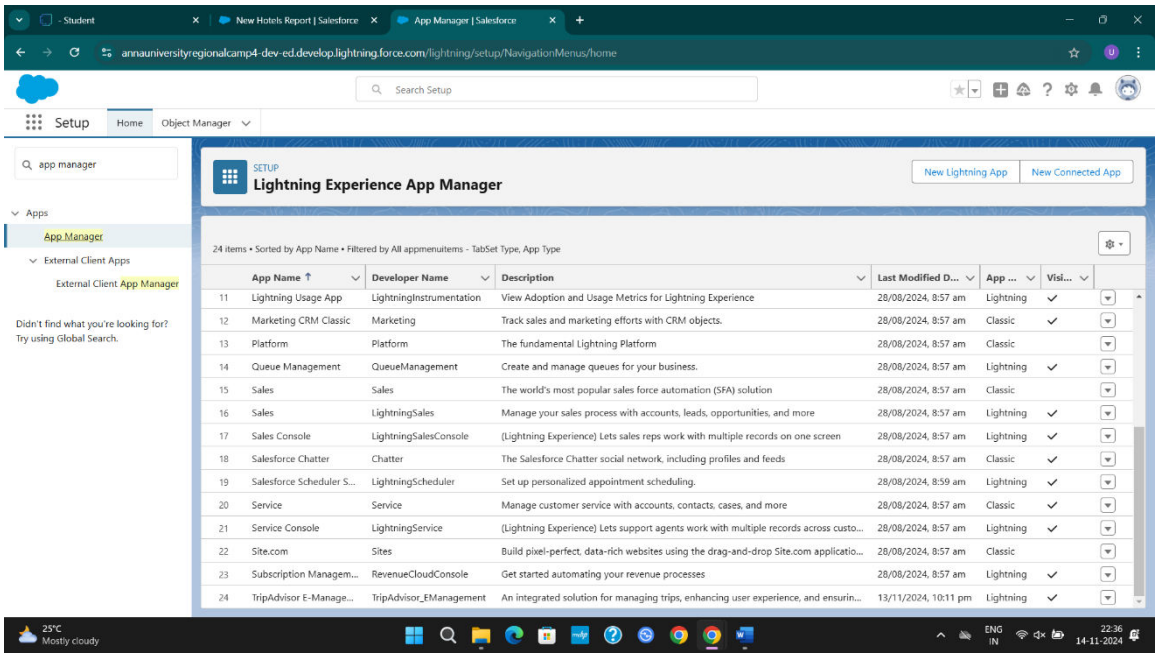
Well done! You're close to meeting the requirements of TripAdviser E-Management by creating objects to store the organization's data effectively. However, building a database alone is not enough to fully meet organizational needs. The real challenge lies in ensuring that users within TripAdviser E-Management can easily access and interact with the objects you've created for them.

As the Admin for TripAdviser E-Management, it's your responsibility to ensure that every user in the organization has appropriate access to the data modeling structure, enabling them to retrieve, update, and manage the data they need seamlessly. This will help TripAdviser E-Management operate efficiently and provide users with a smooth experience as they engage with the system.

Activity 1:

Create a Lightning App To create a lightning app page:

1. Go to setup page → search "app manager" in quick find → select "app manager" → click on New lightning App.



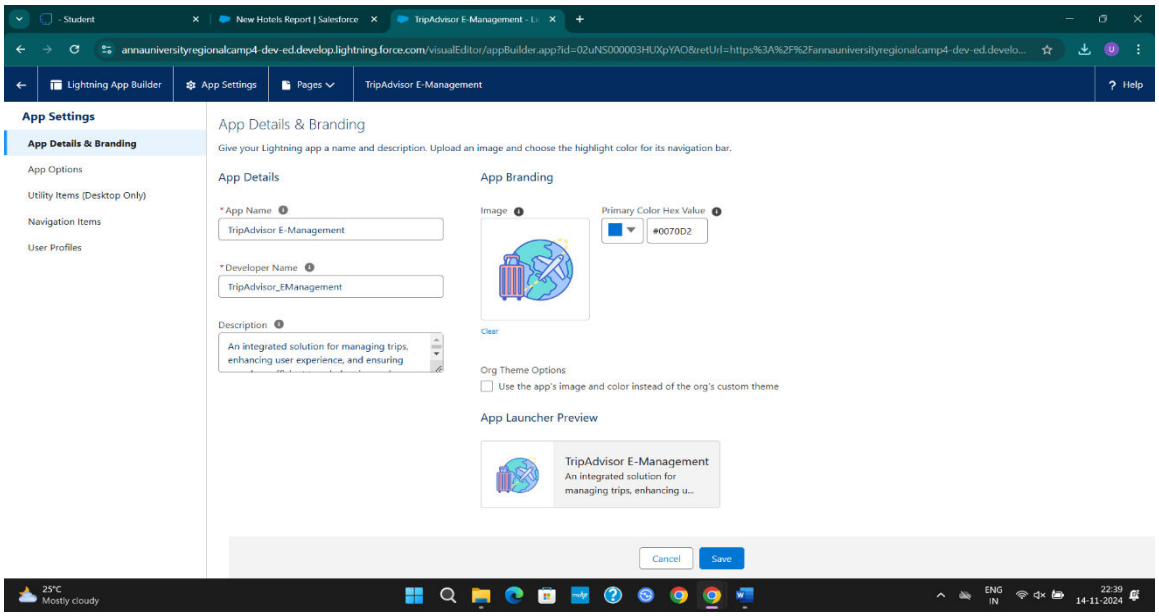
2.Fill the app name in app details and branding as follow

App Name : TripAdiser E-Management.

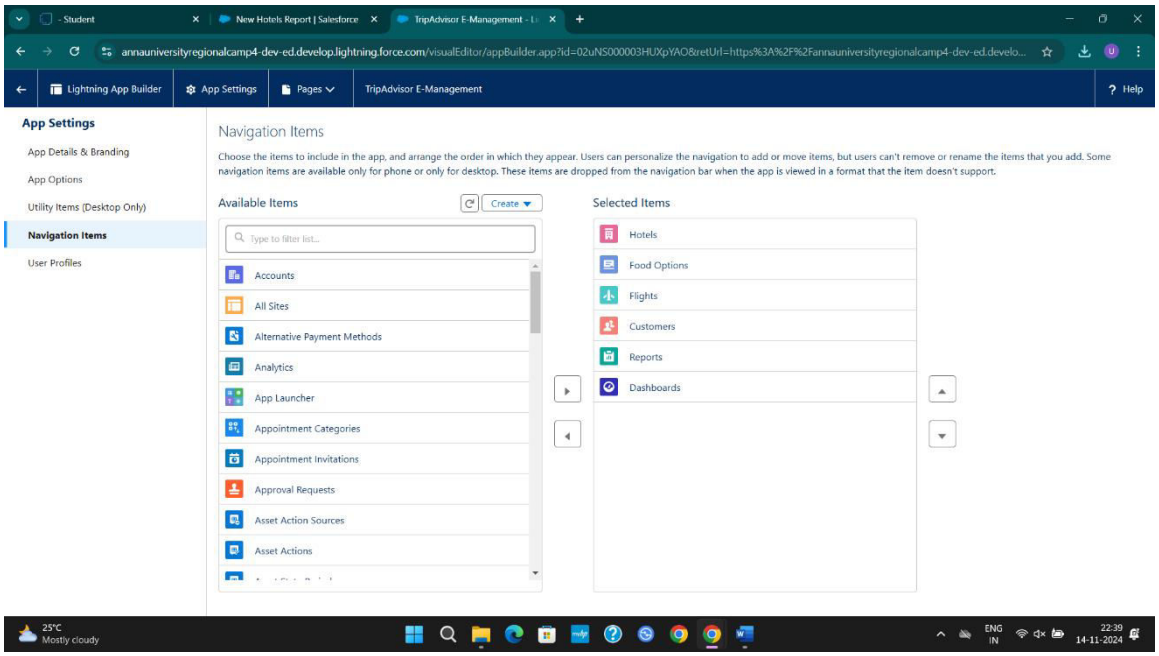
Developer Name : this will auto populated

Description : Give a meaningful description

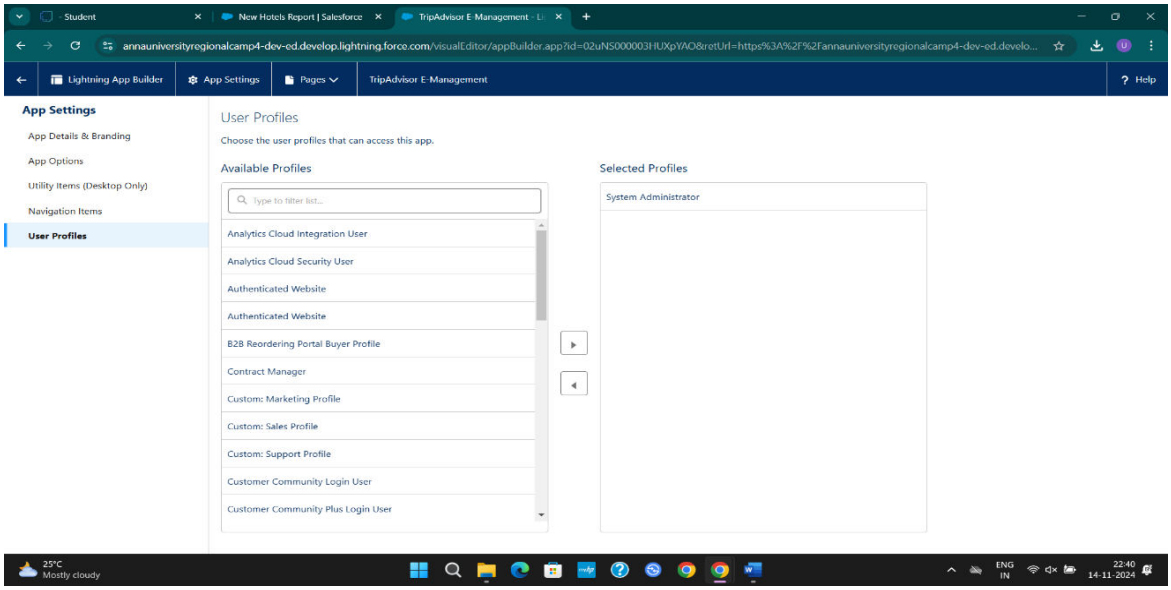
Image : optional (if you want to give any image you can otherwise not mandatory) Primary color hex value : keep this default



3.Then click Next → (App option page) keep it as default → Next → (Utility Items) keep it as default → Next.



4.To Add Navigation Items:



5.Search profiles (System administrator) in the search bar → click on the arrow button → save & finish.

Milestone 7 - OWD Setting:

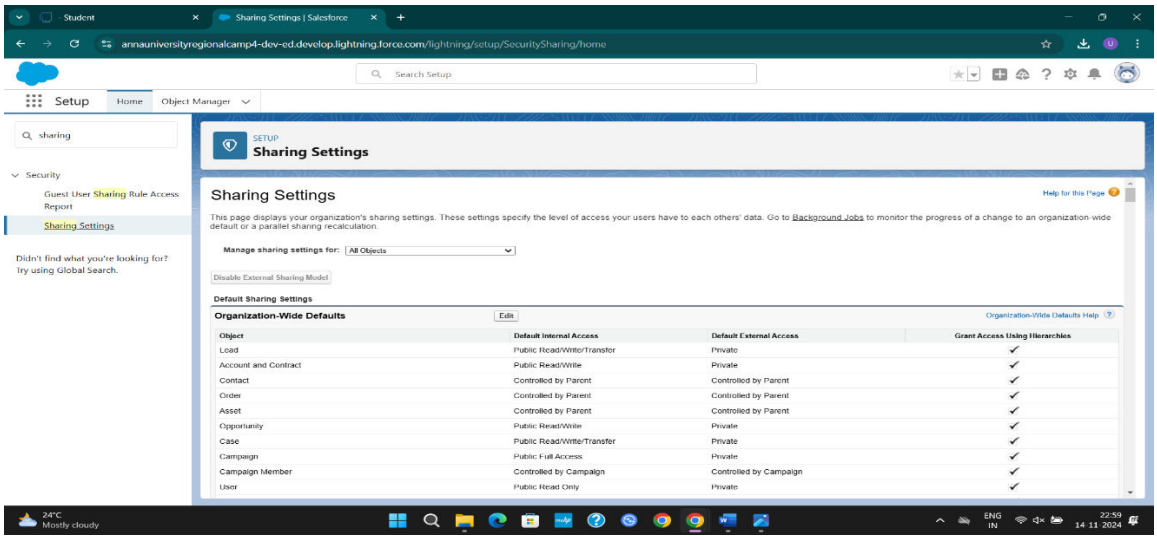
Use case:

TripAdviser E-Management, **Organization-Wide Defaults (OWDs)** are the foundational security settings that determine access to data across the system. OWDs are used to control who can access specific information within the platform. You can extend or restrict access through additional methods such as sharing rules, role hierarchies, team structures, and account groups, as well as manual sharing options.

Activity 1:

Create OWD Setting

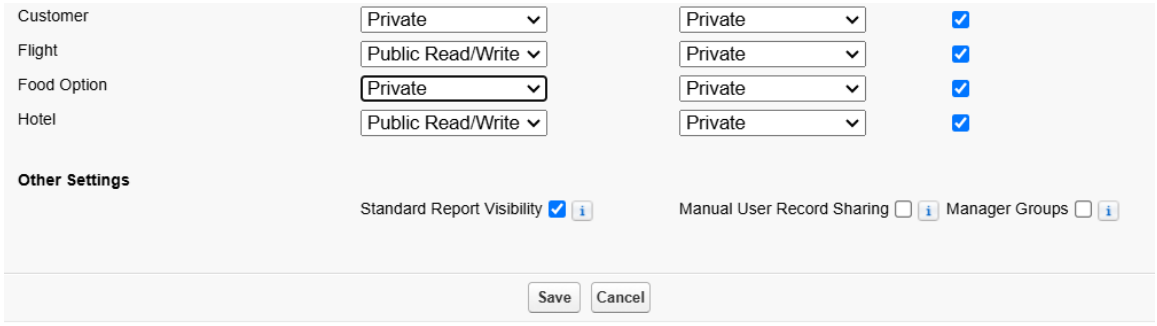
1. Go to Set Up→ in the Quick Find box type Sharing Settings → click on it.
2. Click Edit in the Organization-Wide Defaults area.



3.Search for the Employee object.

4.Under default internal access and default external access change the options to "Private" and under grant access using hierarchies select the check box.

5.Click on save.



6.This Setting is for all the Users Which have been Created.

Milestone 8 - User Adoption:

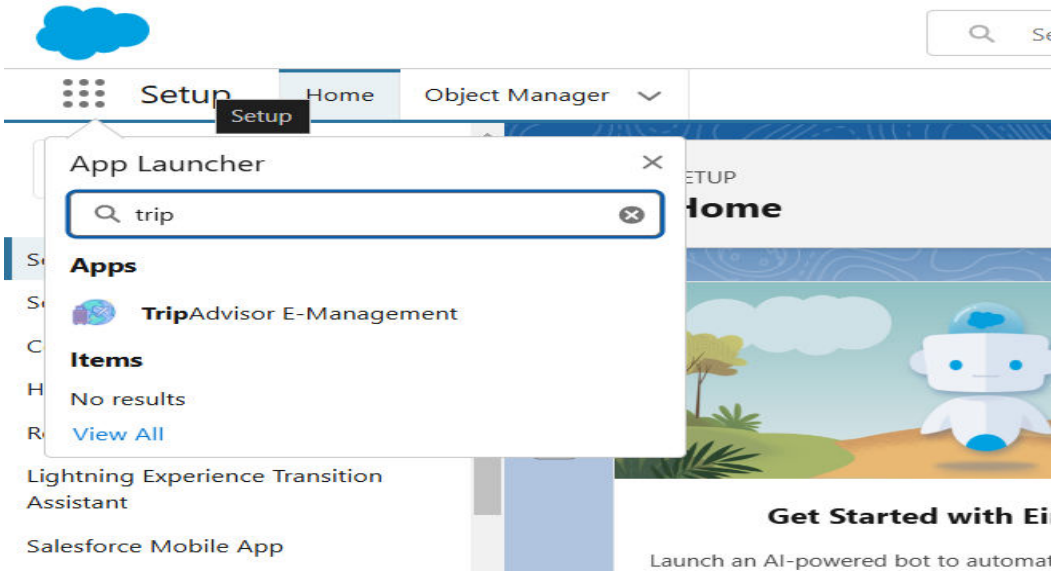
Use Case:

As a new Administrator in the TripAdvisor E-management system, you handle user management tasks such as creating and editing user accounts, resetting passwords, assigning permissions, configuring access to travel data, and more. In this unit, you will learn about managing users and adding them to your TripAdvisor E-management platform.

Activity 1:

Create a Record (Employee)

1. Click on App Launcher on the left side of the screen.
2. Search Employee Management System & click on it.



3.Click on the Employee tab.

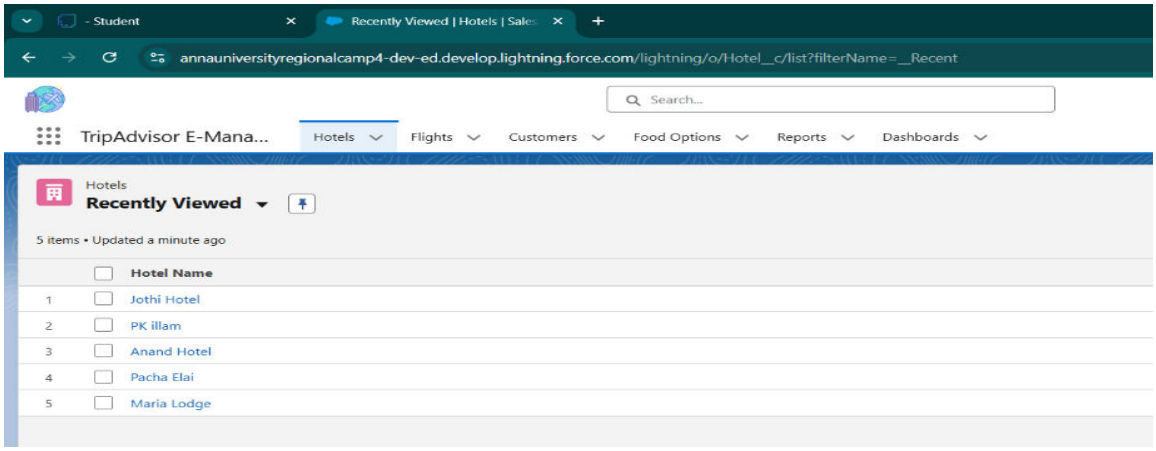
4.Click New.

5.Fill the Details and click on Save.

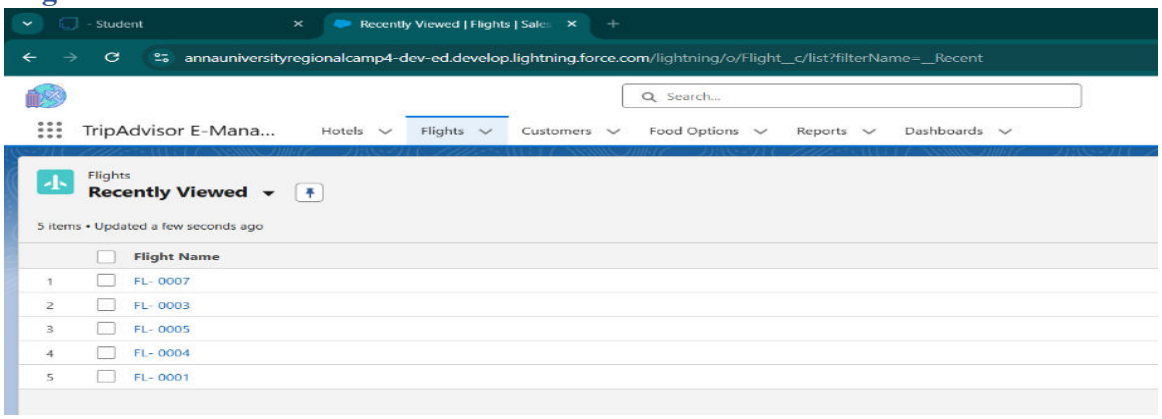
Activity 4:

Create at least 10 records for each of the objects: Hotel, Flight, Customers, Food Options.

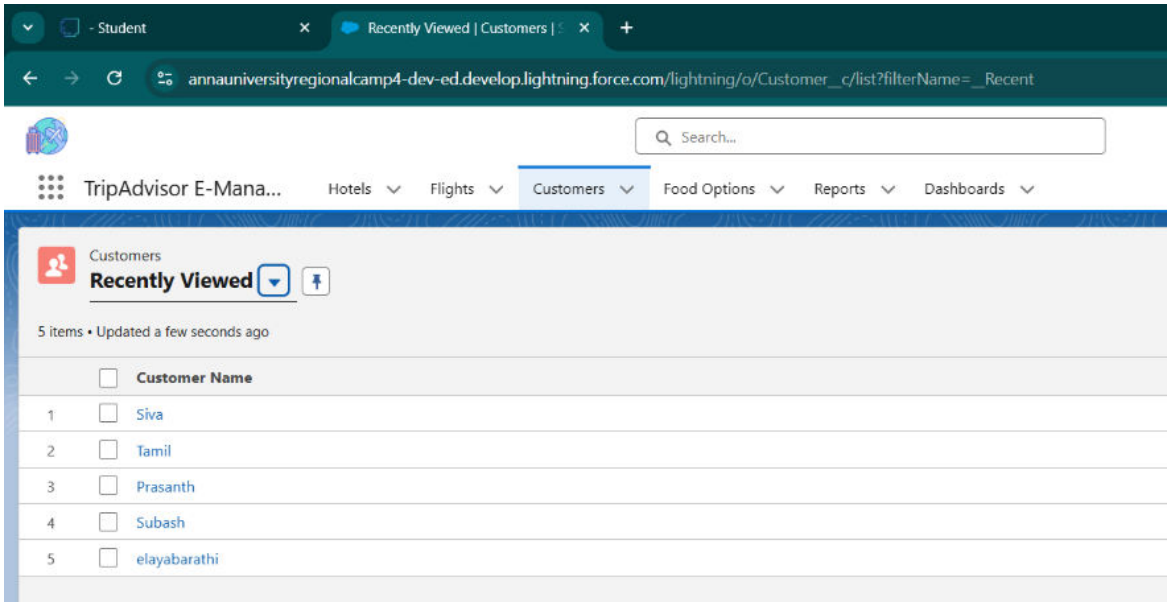
Hotel Name:



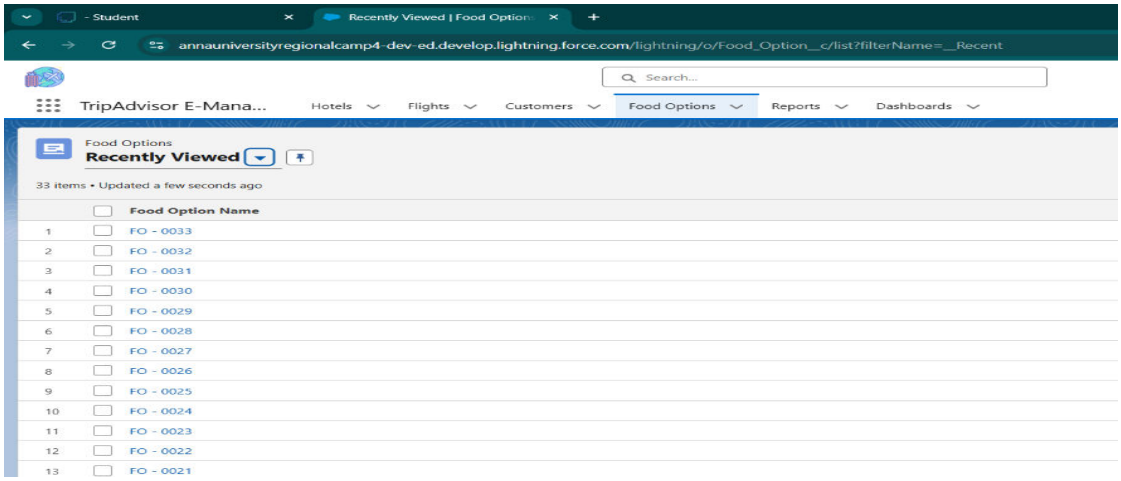
Flight Name:



Customer Name:



Food Options Name:

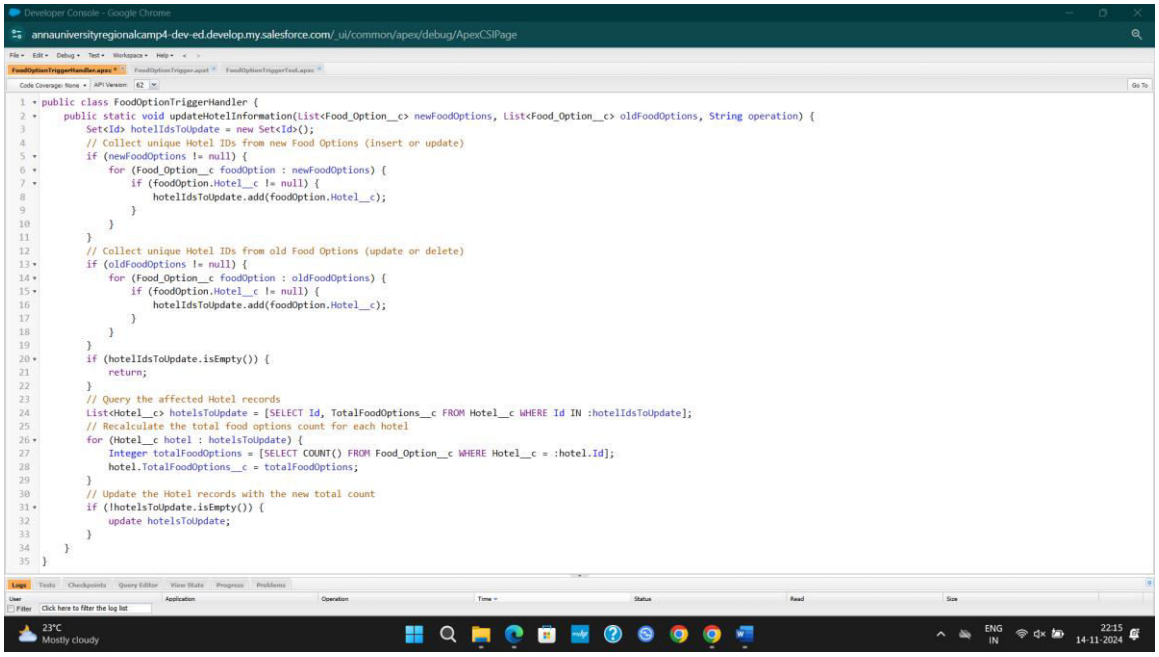


Milestone 8 - Apex Trigger

Apex Trigger for Food Options Management

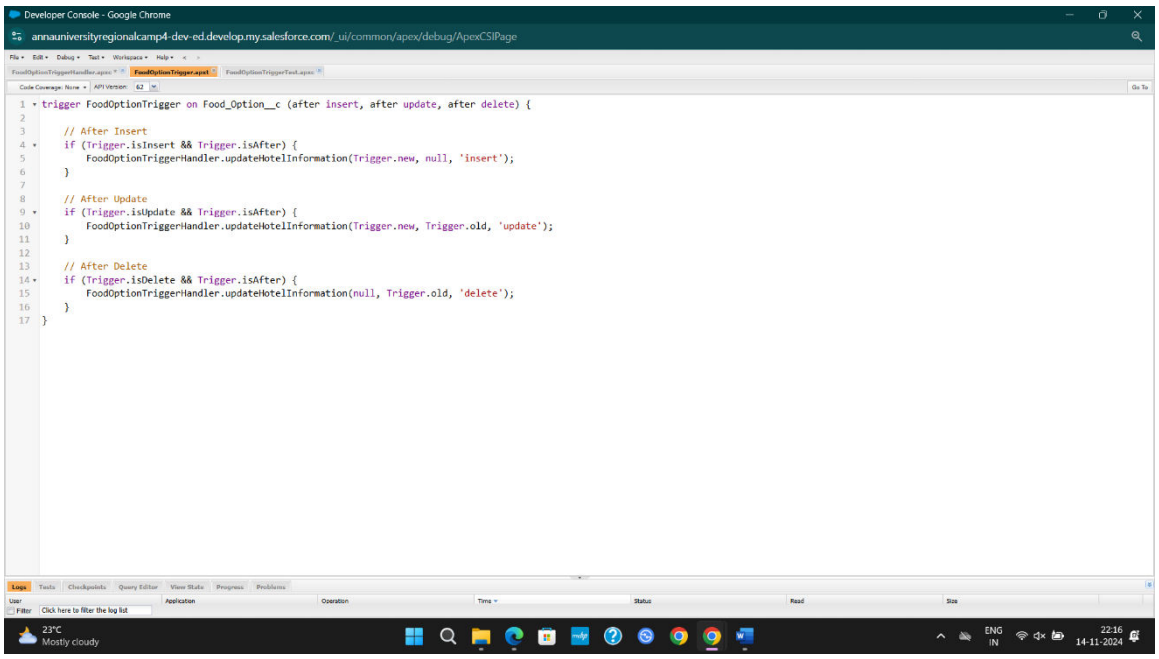
An Apex Trigger was implemented to update hotel information whenever a new food option is added or updated. This ensures the hotel's total food options count reflects all associated food options.

Apex Trigger Handler:



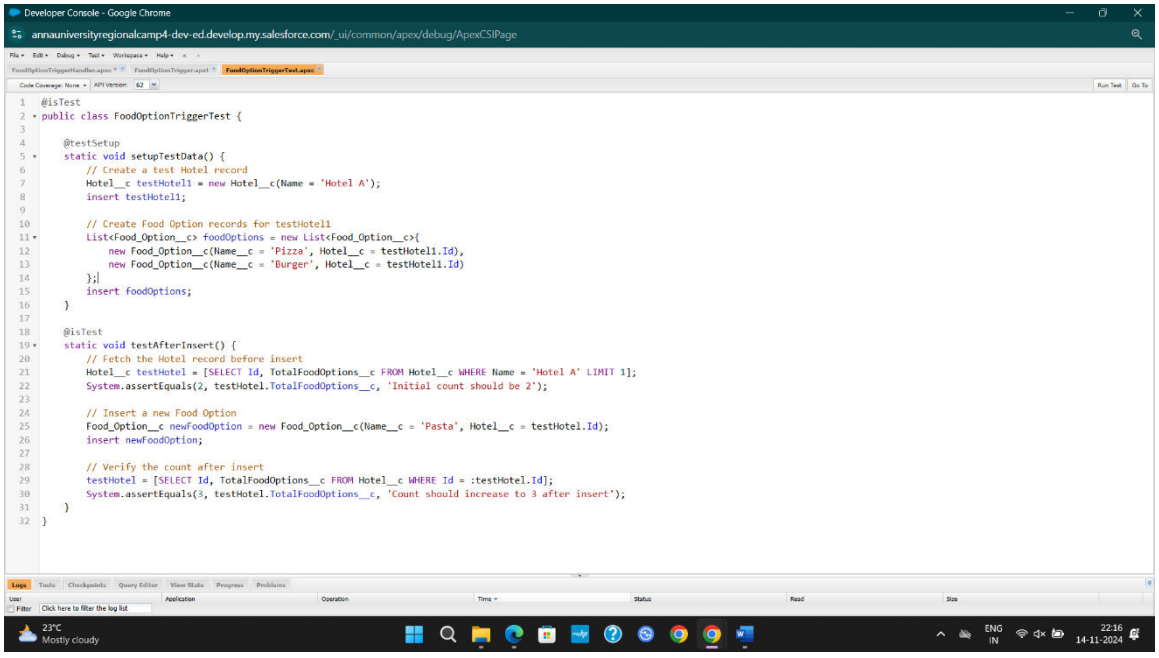
An **Apex Trigger Handler** is a design pattern used to organize and manage the logic of an Apex trigger. It helps in maintaining clean, reusable, and easily maintainable code. Instead of placing the logic directly within the trigger, it delegates it to a handler class

Trigger:



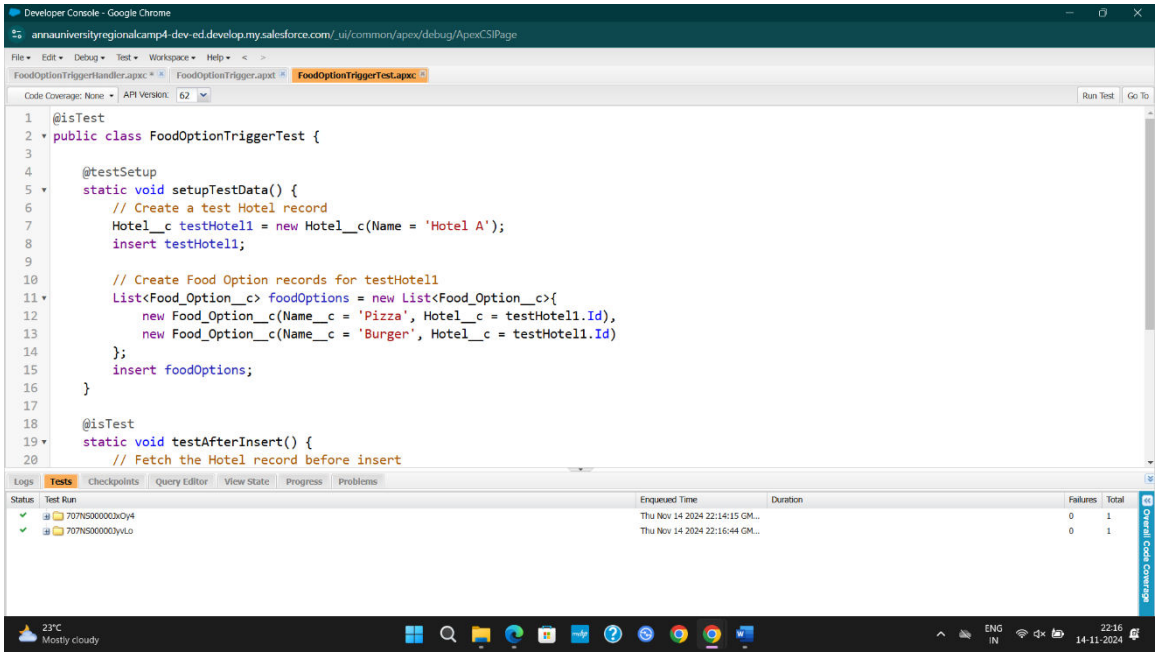
An **Trigger** in Salesforce is a piece of code that automatically executes (or "fires") when a specific event occurs on a record in Salesforce, such as creating, updating, or deleting a record. It allows developers to add custom logic to standard operations, providing more control over data and business processes.

Test Trigger:



A **Test Trigger** in Salesforce is used to validate that the trigger behaves as expected under different conditions. It is written using Apex test methods to simulate various scenarios, ensuring that triggers perform the correct operations, like inserting, updating, or deleting records

Test case Result:



A "Test Trigger case run successfully" means that a trigger (an automated process or function) was executed, and it completed without errors or failures.

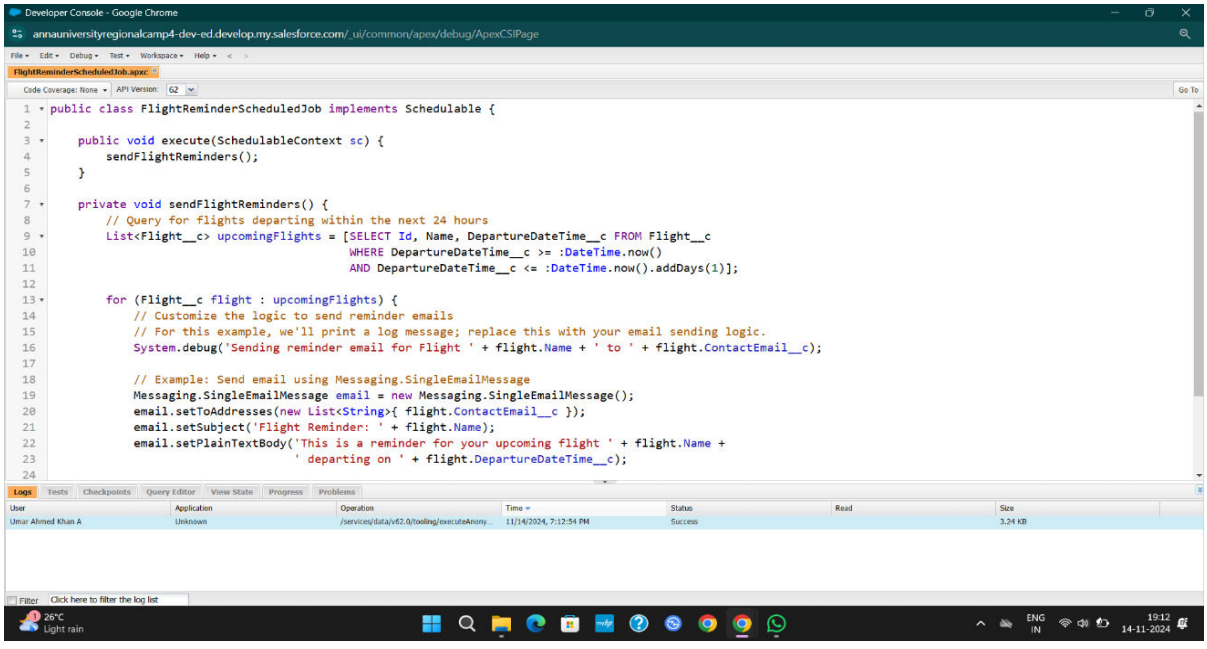
- **Trigger**: A piece of code that runs automatically in response to specific events (like creating, updating, or deleting a record).
- **Test Case**: A scenario designed to verify that the trigger works as expected under certain conditions.
- **Successful Run**: The trigger was executed correctly, and the desired results were achieved, with no issues encountered during testing (e.g., data was updated correctly, no errors occurred).

Milestone 10 - Apex Scheduled

Apex Scheduled Class for Flight Reminders

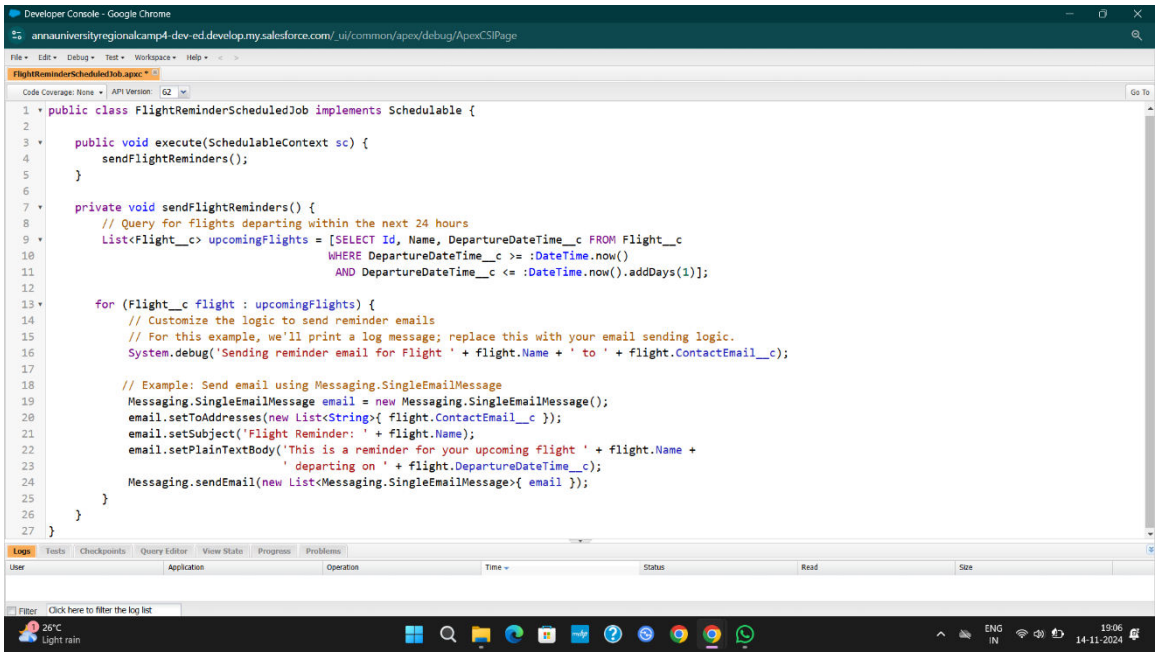
The Apex Schedulable class, FlightReminderScheduledJob, was created to send reminder emails to customers who have booked flights, 24 hours prior to departure.

Scheduled Class Code



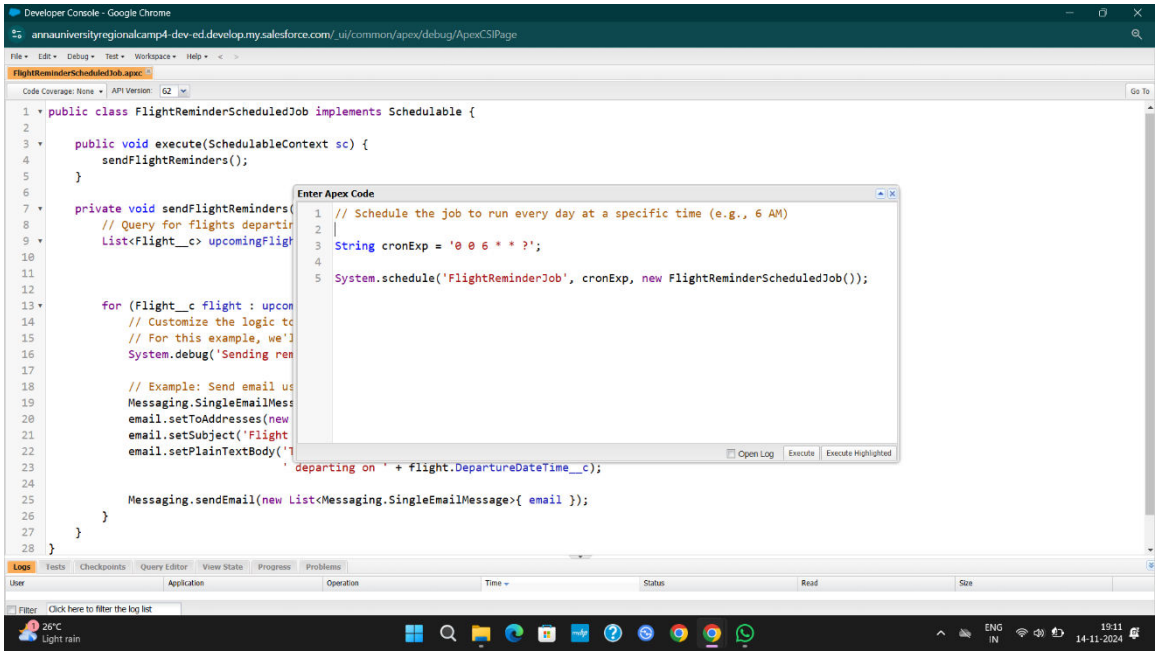
A **Scheduled Class** in platforms like Salesforce allows you to automate and schedule the execution of Apex classes at specified times or intervals. It is particularly useful for recurring tasks, such as sending emails, updating records, or integrating external systems, without manual intervention.

Scheduling the Job



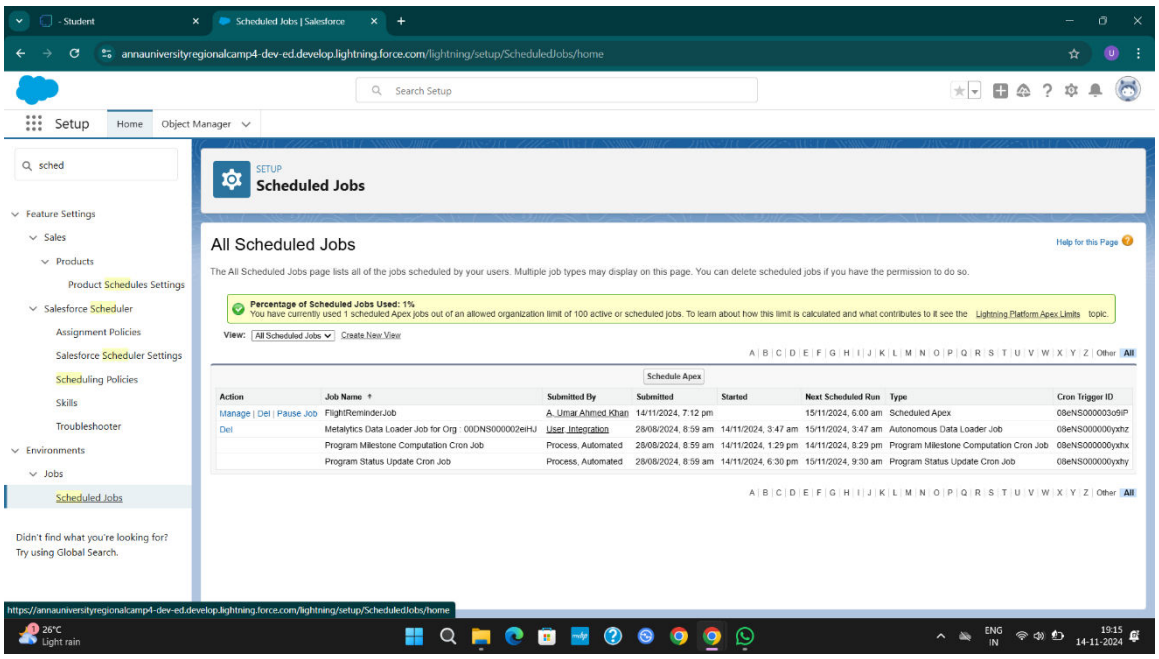
Scheduling a Job Code refers to setting up an automated process to run at a specific time or interval without manual intervention. This is commonly used in systems like CRM platforms, databases, or job scheduling tools. The purpose is to perform repetitive tasks (e.g., data updates, reports generation) at predefined times.

Output of the job Scheduling:



A Scheduled Job Code is a task or process that runs automatically at predefined times or intervals. When it runs successfully, it means the scheduled job has executed without errors, completing the intended task as per the schedule.

All job scheduled has been updated:



"All jobs scheduled have been updated" means that the tasks or processes that were planned or set to run at specific times have been modified or refreshed. This could involve changing the timing, parameters, or details of the scheduled jobs to ensure they align with new requirements, improve efficiency, or reflect updated information.

Milestone 11 - 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.

Types of Reports in Salesforce

1. Tabular
2. Summary
3. Matrix
4. Joined Reports

Use Case:

The CEO of TripAdvisor wants a concise overview of employee activities, current projects, project progress, and assigned assets, along with the condition of these assets. This data will provide a clear snapshot of the organization's status, enabling informed decision-making. The CEO has tasked you with presenting this information in an organized, easily interpretable format.

Let's create a Report.

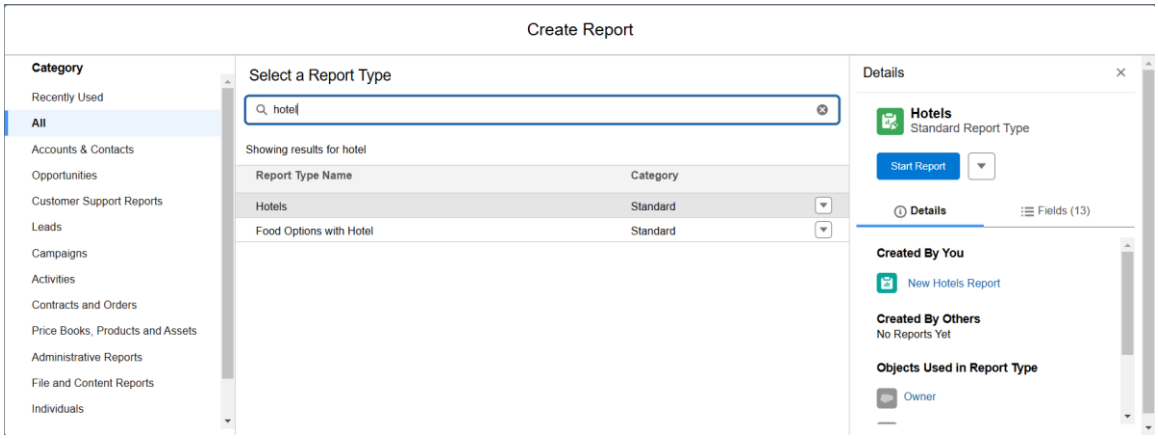
Activity 1:

Create Report

1. Go to the app → click on the reports tab 2. Click New Report

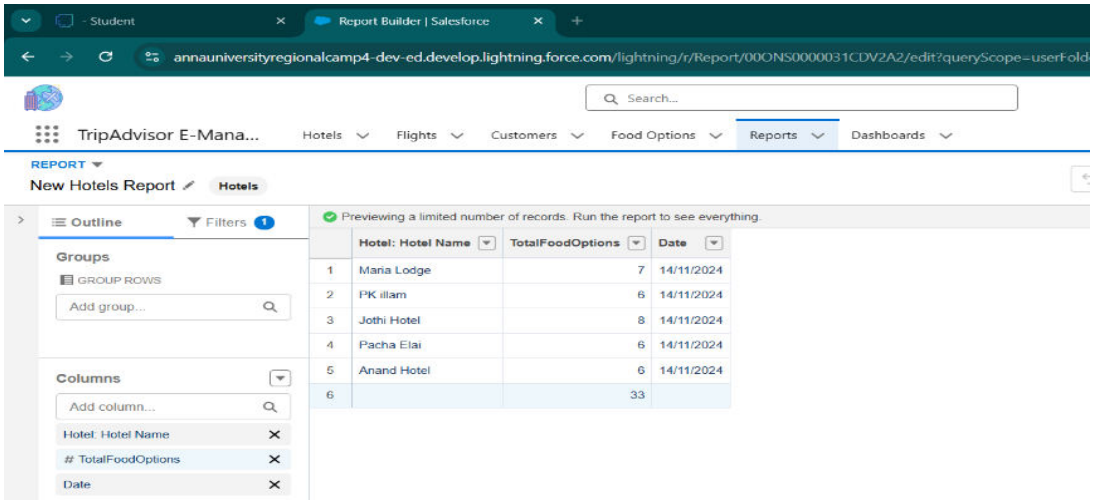
2.Select report type from category or from report type panel or from search panel → click on start

report.



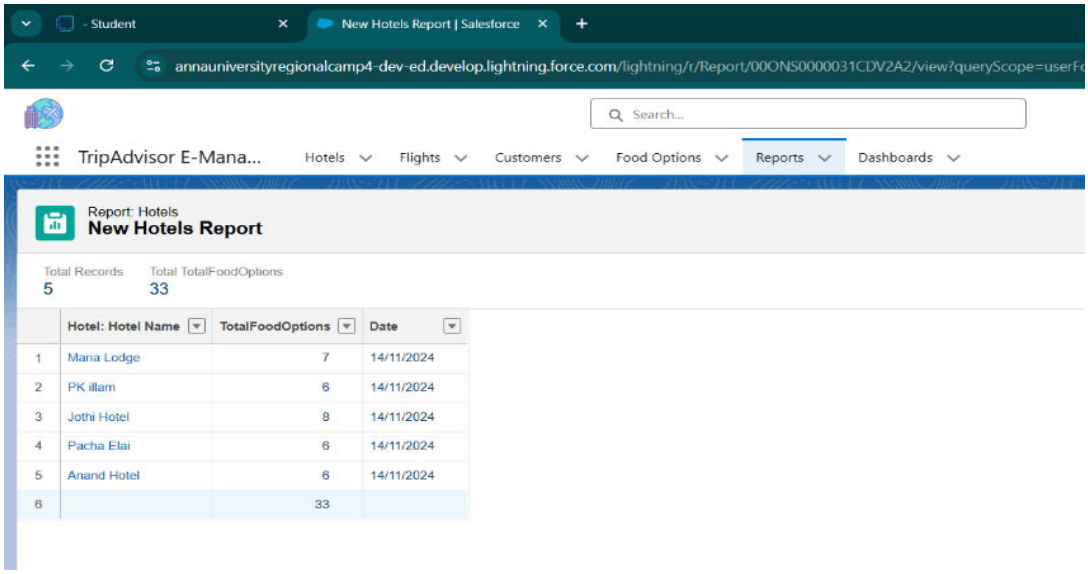
4.Customize your report and add fields from left pane as shown below

5.Save or run it.



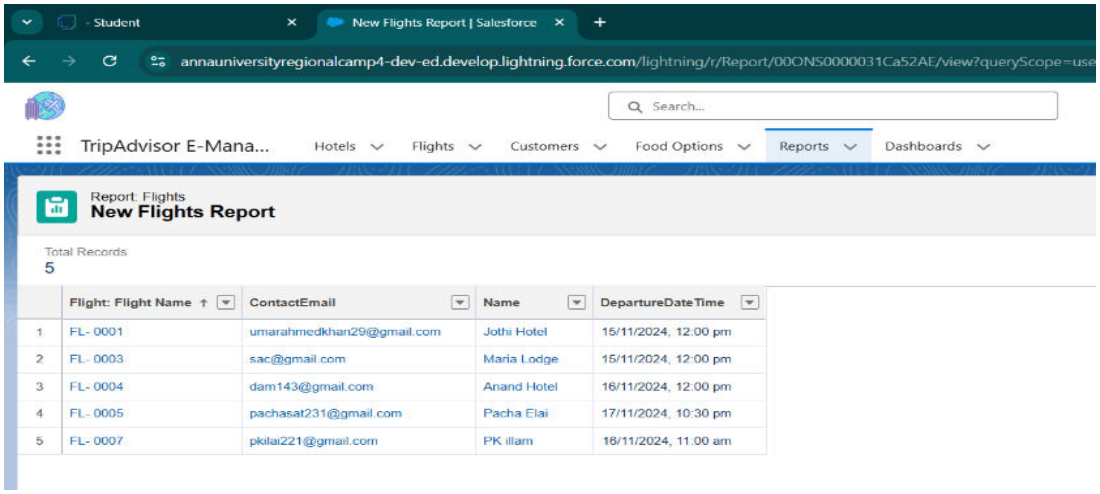
Reports for Hotel, Flight, Customer, and Food Option have been created using a standardized method, streamlining data management and analysis for improved decision-making and business operations.

New Hotel Report:



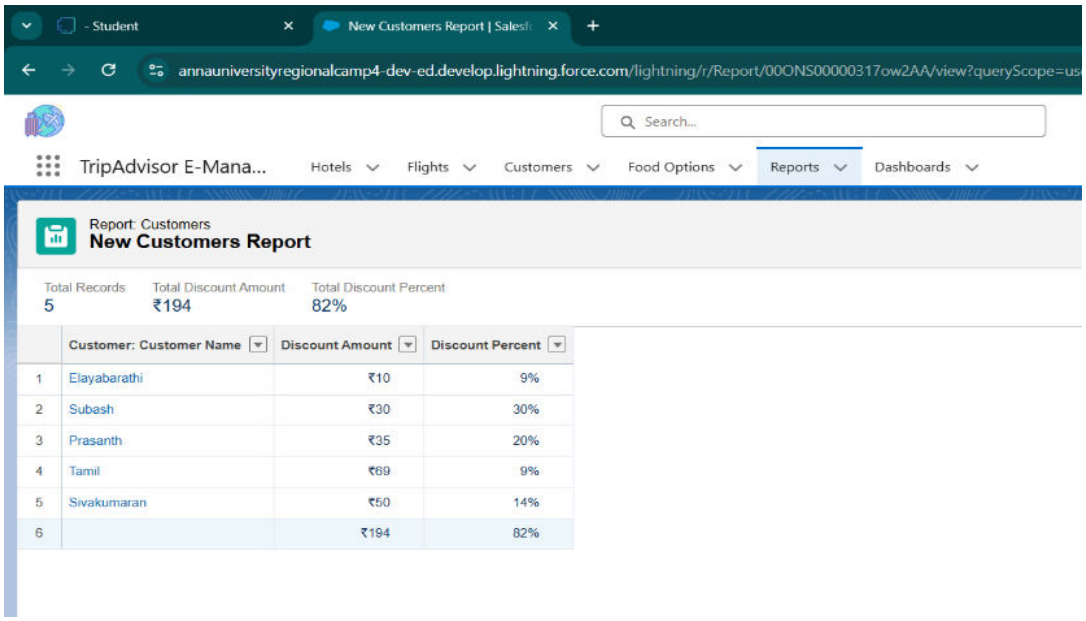
A new hotel report has been created, streamlining data management and providing valuable insights for decision-making.

New Flight Report:



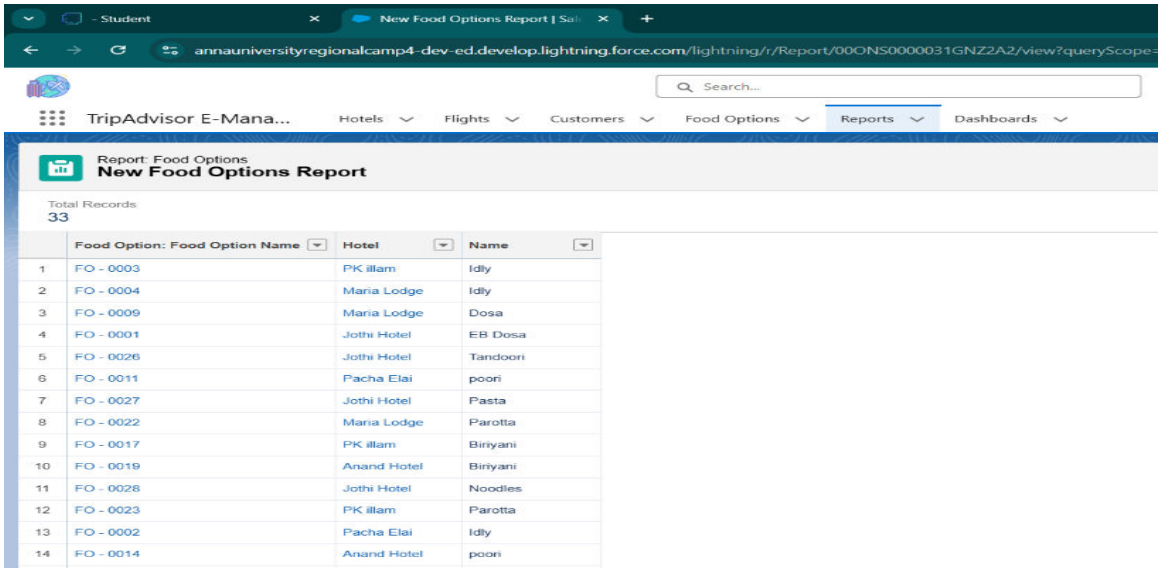
A new flight report has been created, providing updated and relevant data for better analysis and decision-making.

New Customers Report:



A new customer report has been created to manage and analyze customer data efficiently.

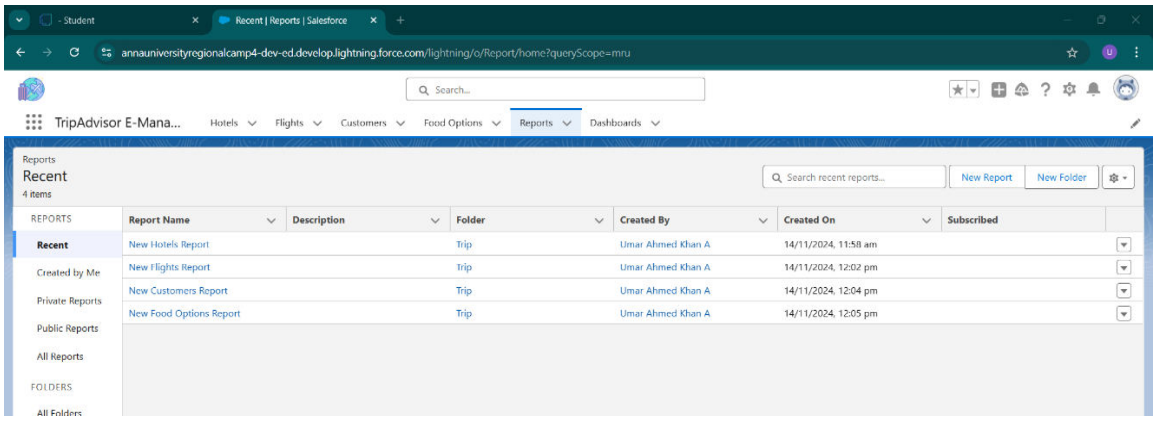
New Food Options Report:



A new FoodOption report has been created to streamline the management and analysis of food-related data.

Activity 2:

1. Create a report with report type: “TripAdviser E-Management and Projects”.



Milestone 12 - Dashboards:

Dashboards provide a visual summary of real-time data, enabling users to quickly understand business trends, monitor performance, and make informed decisions. They allow easy access to report data through visual components.

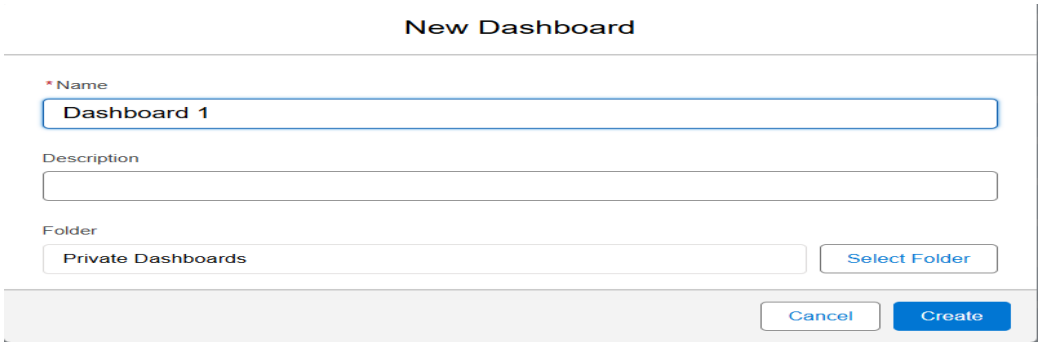
UseCase:

As an Admin for TripAdvisor E-Management, you continually strive to meet business requirements, driving the organization toward peak performance. Your dedication and effective data visualization in reports have greatly impressed your superiors, making it effortless for the CEO to access and view essential data during meetings without having to search.

Activity 1:

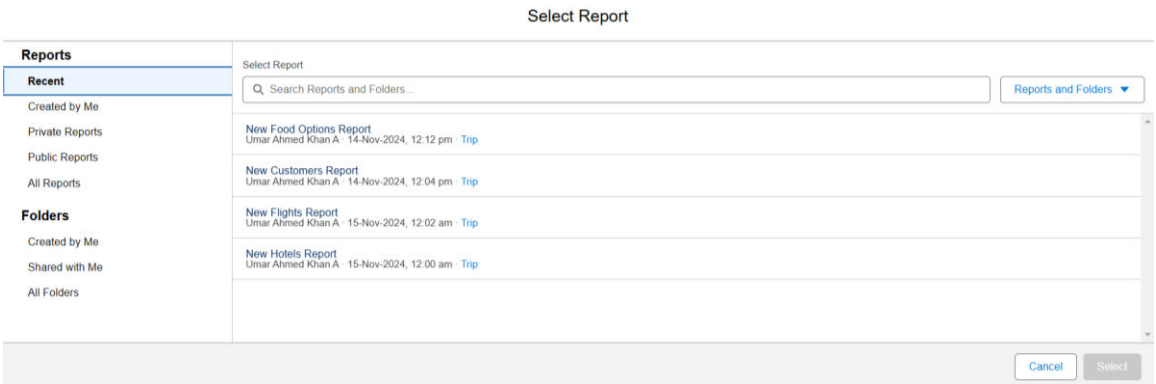
Create Dashboard

1.Go to the app → click on the Dashboards tabs.

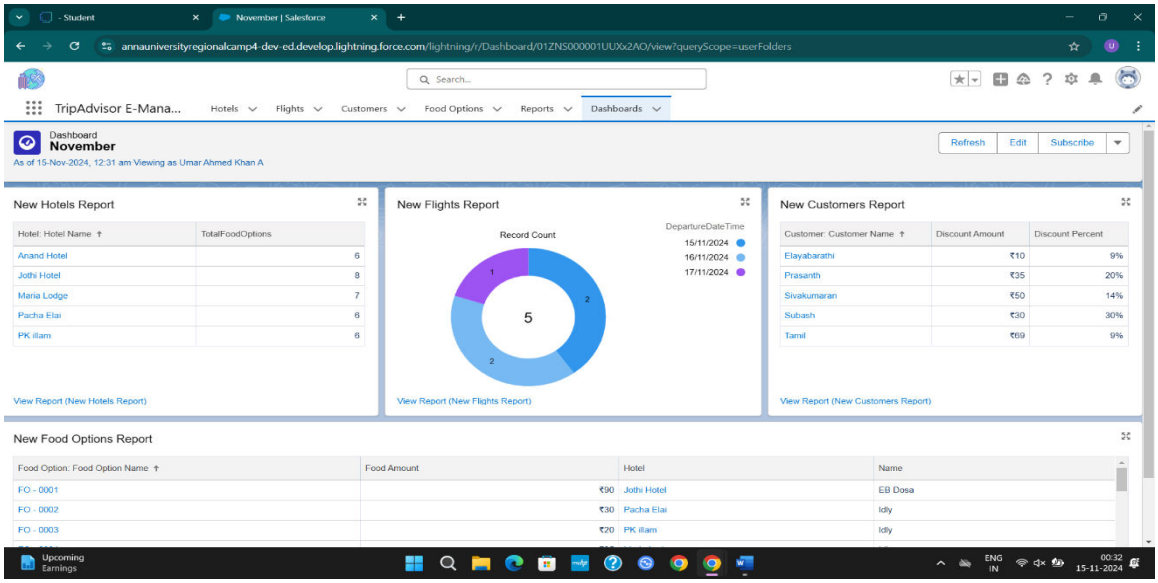


2.Give a Name and click on Create.

3.Select add component.



4.Select a Report and click on select.



Key Scenarios Addressed by Salesforce in the Implementation Project

1.Automating Hotel Data Updates:

Triggers handle changes to food options without manual intervention.

2.Customer Discount Management:

Flows automate discount calculation and application, enhancing customer satisfaction.

3.Flight Reminder Notifications:

Schedulable Apex ensures timely communication, reducing customer queries.

Conclusion

Summary of Achievements

The *TripAdvisor E-Management* Salesforce project successfully streamlined the management of travel-related services by implementing a comprehensive solution that integrates automation, custom user interfaces, and real-time notifications. Key achievements include:

- Developed a user-friendly CRM tailored to manage hotel, flight, and food option data efficiently.
- Automated discount calculations and flight reminder notifications, significantly reducing manual processes and improving customer satisfaction.
- Provided actionable insights into hotel occupancy, food option availability, and flight booking trends, supporting better business decisions.

This solution is scalable and adaptable, providing a robust foundation for future enhancements, such as advanced customer personalization or integration with third-party travel platforms.