



# TripAdvisor E-Management

College: 7177 - Government College of Technology Coimbatore

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## Project Overview

The Trip Advisor E-Management app integrates with Salesforce to create a comprehensive travel companion. The app enables users to plan, book, and optimize their travel experiences by managing information related to hotels, flights, and food options. The platform facilitates informed travel decisions, leveraging millions of reviews and insights to support the best choices in accommodations, dining, attractions, and deals.

- **Objectives**

- **Business Goals:**

- Enhance the efficiency and user experience of the travel management process.
    - Automate data management tasks, discount application, and email notifications for timely customer engagement.
    - Provide seamless tracking and updates to ensure accurate information on hotels, food options, and flight details.

## Specific Outcomes:

- Automated synchronization between food options and hotels to ensure accurate hotel data.
- A dynamic discount system for customers based on their spending, enhancing customer satisfaction.
- Scheduled email alerts for flight bookings to ensure timely notifications, improving customer travel experience.

## • Salesforce Key Features and Concepts Utilized

This project leverages key Salesforce functionalities and concepts to create a seamless and effective food distribution system:

- **Custom Objects and Fields**

- **Hotel:** Stores hotel details, including associated food options.
- **Food Option:** Tracks available food choices per hotel (Auto Number: FO-{0000}).
- **Flight:** Records customer flight details (Auto Number: FL-{0000}).
- **Customer:** Manages customer details for discount eligibility.

- **Flow for Discounts**

Created a Flow to apply automatic discounts based on customer spending:

- **Spending > 3000:** Apply higher discount rate.
- **Spending between 1500 and 3000:** Apply lower discount rate.

- **Apex Triggers for Data Synchronization**

- **Hotel-Food Option Synchronization:** Developed an Apex trigger that updates hotel information whenever a new food option is added or modified, ensuring accurate food count per hotel.

- **Apex Schedulable Class for Flight Reminders**

Created an **Apex Schedulable class** to automate email reminders for customers with booked flights.

- **Reminder Schedule:** Sends an email notification 24 hours before departure.
- **Confirmation:** System provides confirmation that the email was sent successfully.

These Salesforce features collectively ensure that the project operates with high efficiency, transparency, and data-driven decision-making to maximize food distribution effectiveness.

- **Detailed Steps to Solution Design**
- **Created objects**
  - In the salesforce developer platform, we created custom objects that were required for the project.
  - There were 4 main objects
  - They were Hotel, Flight, Food Option, Customer.
  - This was done by using the object manager

The screenshot shows the Salesforce Object Manager interface in a web browser. The browser tabs include 'Object Manager | Salesforce', 'Food Option | Salesforce', and 'Hotel | Salesforce'. The address bar shows the URL: 'psginstituteoftechology-b3-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/011Qy00...'. The page title is 'Hotel' under the 'Object Manager' section. The left sidebar contains a list of options: 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, Object Access, Triggers, and Flow Triggers. The main content area is titled 'Edit Custom Object Hotel' and contains the 'Custom Object Definition' form. The form includes sections for 'Custom Object Information' and 'Enter Record Name Label and Format'. In the 'Custom Object Information' section, the 'Label' is 'Hotel', the 'Plural Label' is 'Hotels', and the 'Object Name' is 'Hotel'. The 'Enter Record Name Label and Format' section shows the 'Record Name' as 'Hotel Name'. The 'Data Type' is set to 'Text'. A warning message at the bottom states: 'Warning: If you plan to insert a high volume of records in this object, via the API, you must use bulk insert methods.' The 'Context-Sensitive Help Setting' is set to 'Open the standard Salesforce.com Help & Training window'.

Object Manager | Salesforce x Food Option | Salesforce x Hotel | Salesforce x

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Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER

**Hotel**

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

Object Access

Triggers

Flow Triggers

Edit Custom Object  
**Hotel**

Custom Object Definition  
Edit

Save Save & New Cancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports. Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label  Example: Account

Plural Label  Example: Accounts

Starts with vowel sound ☐

The Object Name is used when referencing the object via the API.

Object Name  Example: Account

Description

Context-Sensitive Help Setting

☒ Open the standard Salesforce.com Help & Training window

☐ Open a window using a Visualforce page

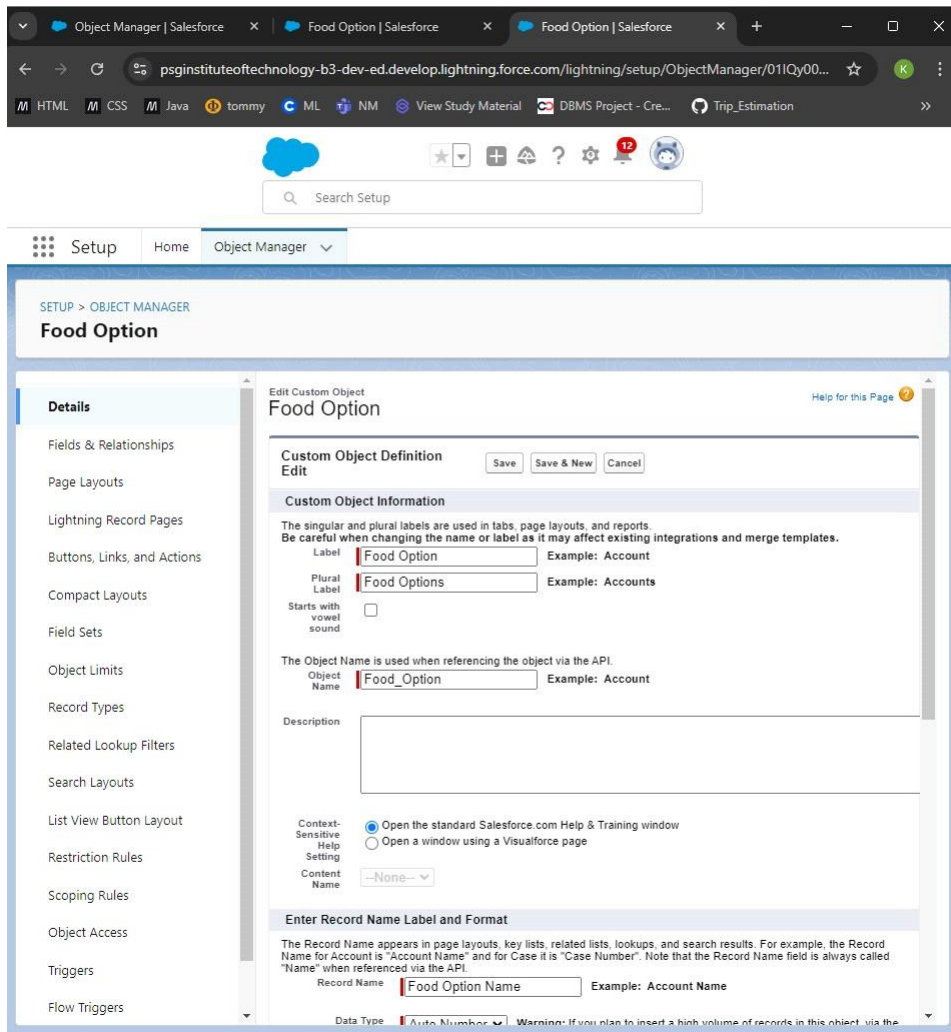
Content Name

Enter Record Name Label and Format

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  Example: Account Name

Data Type  Warning: If you plan to insert a high volume of records in this object, via the



- **Created fields for hotel object**
  - TotalFoodOptions with datatype as number
  - Date with datatype as date

Object Manager | Salesforce x Hotel | Salesforce

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Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER  
**Hotel**

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

Object Access

Triggers

Flow Triggers

Quick Find

New Deleted Fields Field Dependencies Set History Tracking

6 items, sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Date	Date__c	Date		
Hotel Name	Name	Text(80)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
TotalFoodOptions	TotalFoodOptions__c	Number(18, 0)		

- **Create Fields for Food Option**
  - Food Amount
  - Hotel
  - Name

Object Manager | Salesforce x Food Option | Salesforce x

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Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER

### Food Option

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

Object Access

Triggers

Flow Triggers

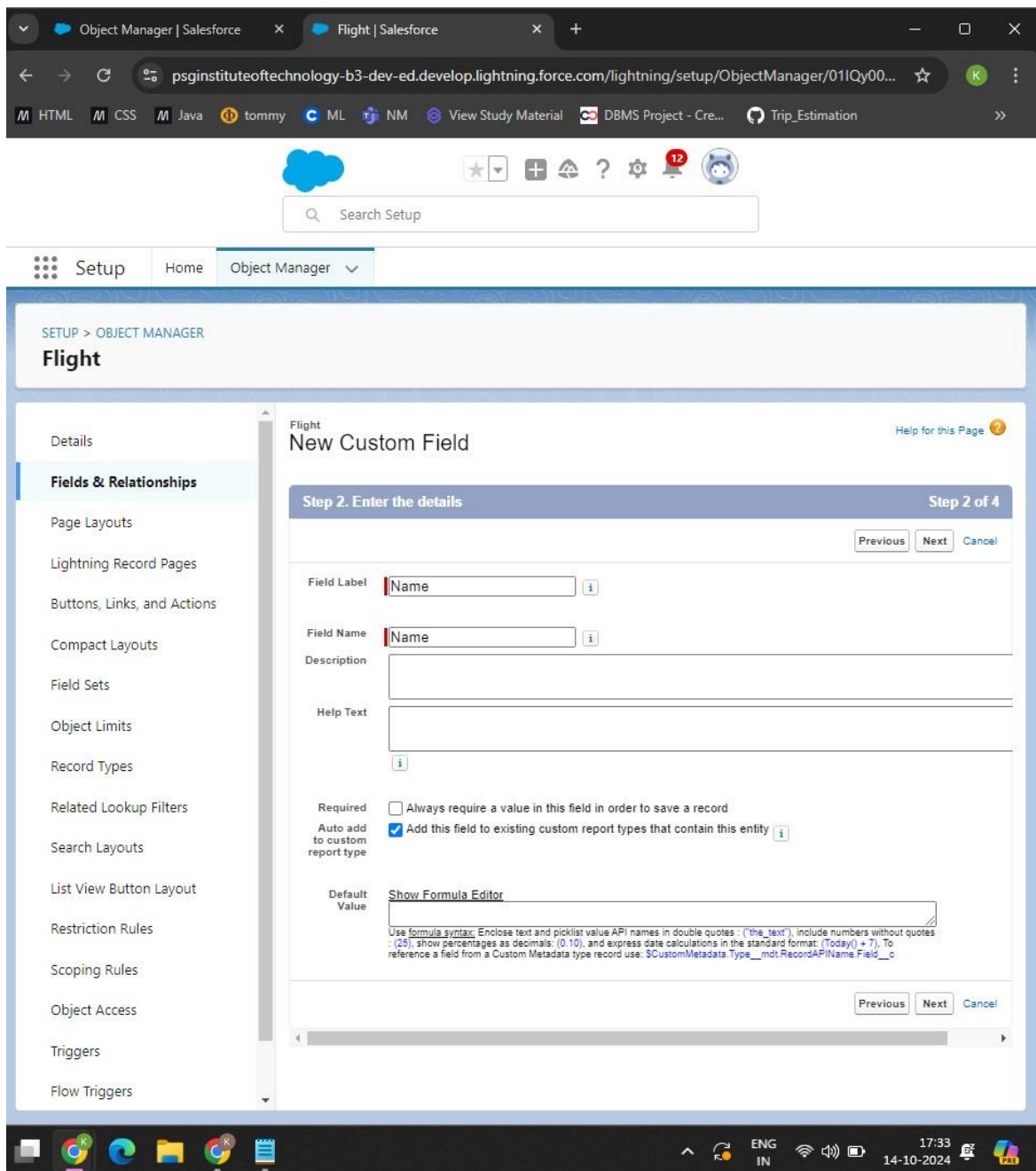
Quick Find

New Deleted Fields Field Dependencies Set History Tracking

7 Items, Sorted by Field Label

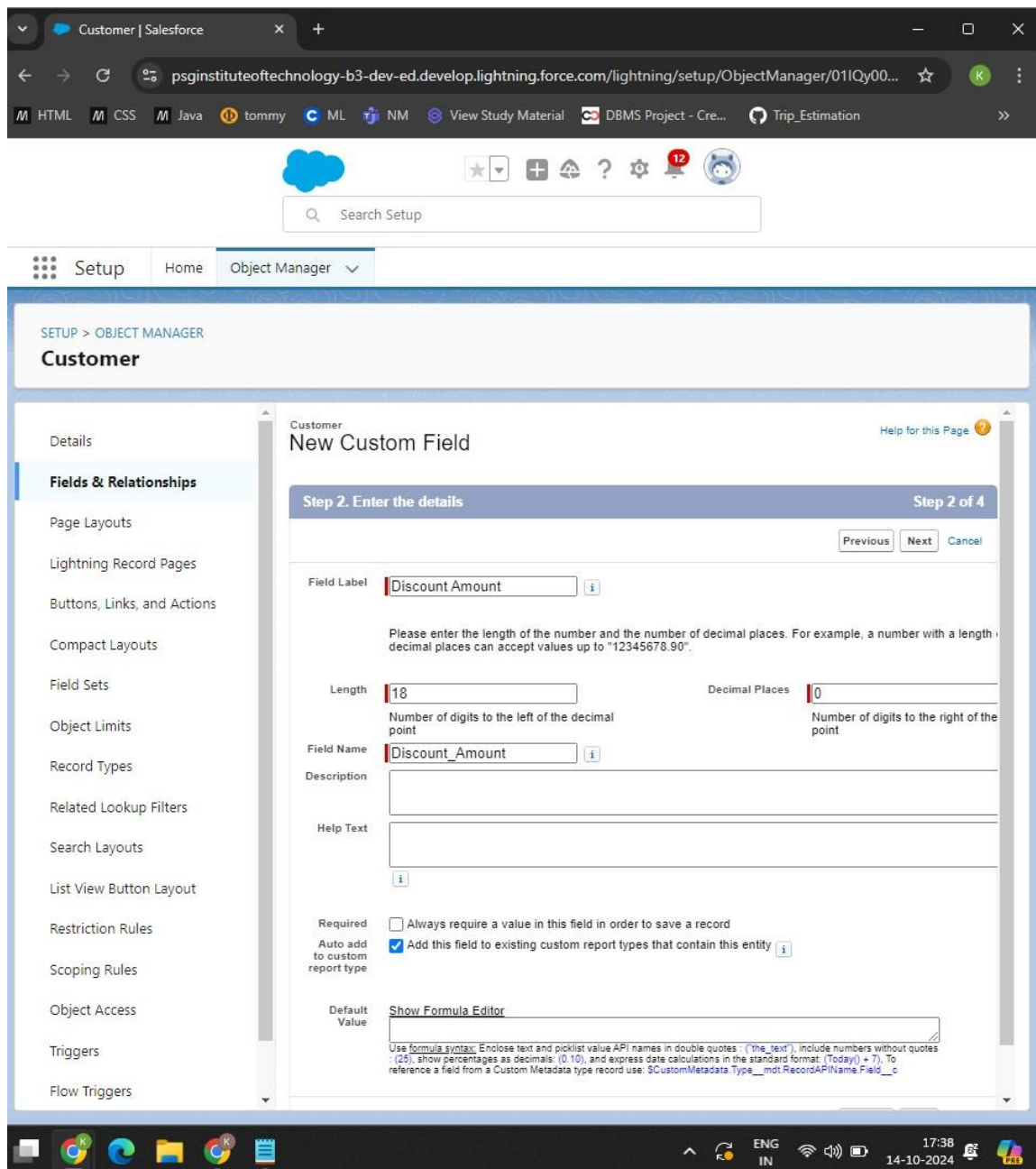
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Food Amount	Food_Amount__c	Currency(18, 0)		
Food Option Name	Name	Auto Number		✓
Hotel	Hotel__c	Lookup(Hotel)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Name	Name__c	Text(30)		
Owner	OwnerId	Lookup(User,Group)		✓

- **Created Fields for Flight object**
  - Name
  - DepartureDateTime



- **Created fields for customer object**
  - Customer name
  - Discount amount
  - Discount percentage



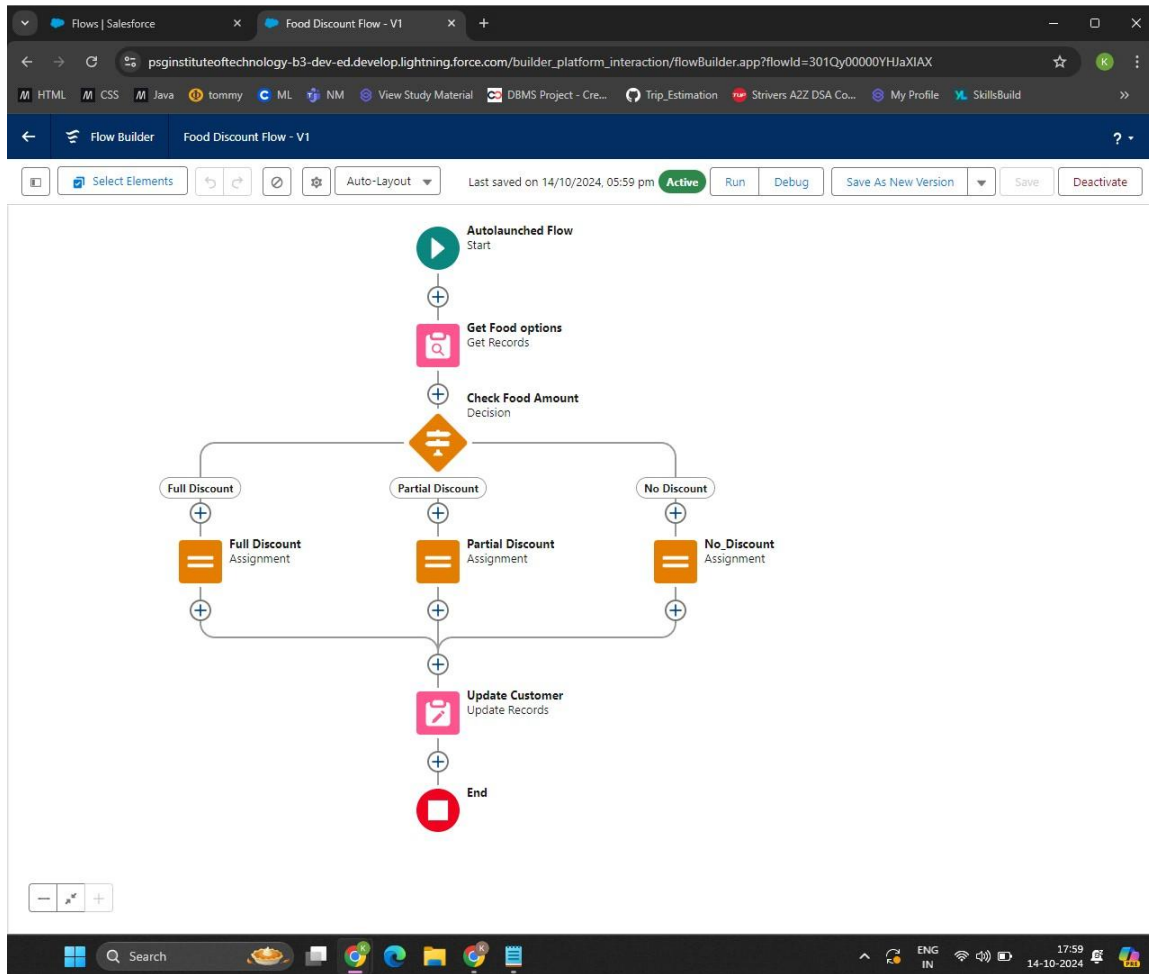


## • Created Flow

- Developed a **Discount Flow** to automatically apply discounts based on customer purchase amounts. This flow applies discounts in a step-by-step format to ensure ease of entry and accuracy.
- **Flow Conditions:** The flow is triggered when the customer purchase **Amount** meets specific thresholds:
  - For purchases greater than **3000**, a high discount rate is applied.



- For purchases between **1500 and 3000**, a medium discount rate is applied.



## • Created Apex Trigger for Food Option

- Developed an **Apex Trigger** to ensure synchronization between **Hotel** and **Food Option** records, maintaining clear and manageable records of food options available at each hotel.
- Trigger Conditions: The trigger is activated whenever a **Food Option** record is added or updated to reflect changes in the associated **Hotel** record.

Flows | Salesforce x Home | Salesforce x Developer Console x + - □ ×

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File Edit Debug Test Workspace Help < >

FoodOptionTriggerHandler.apxc

Code Coverage: None API Version: 62 Go To

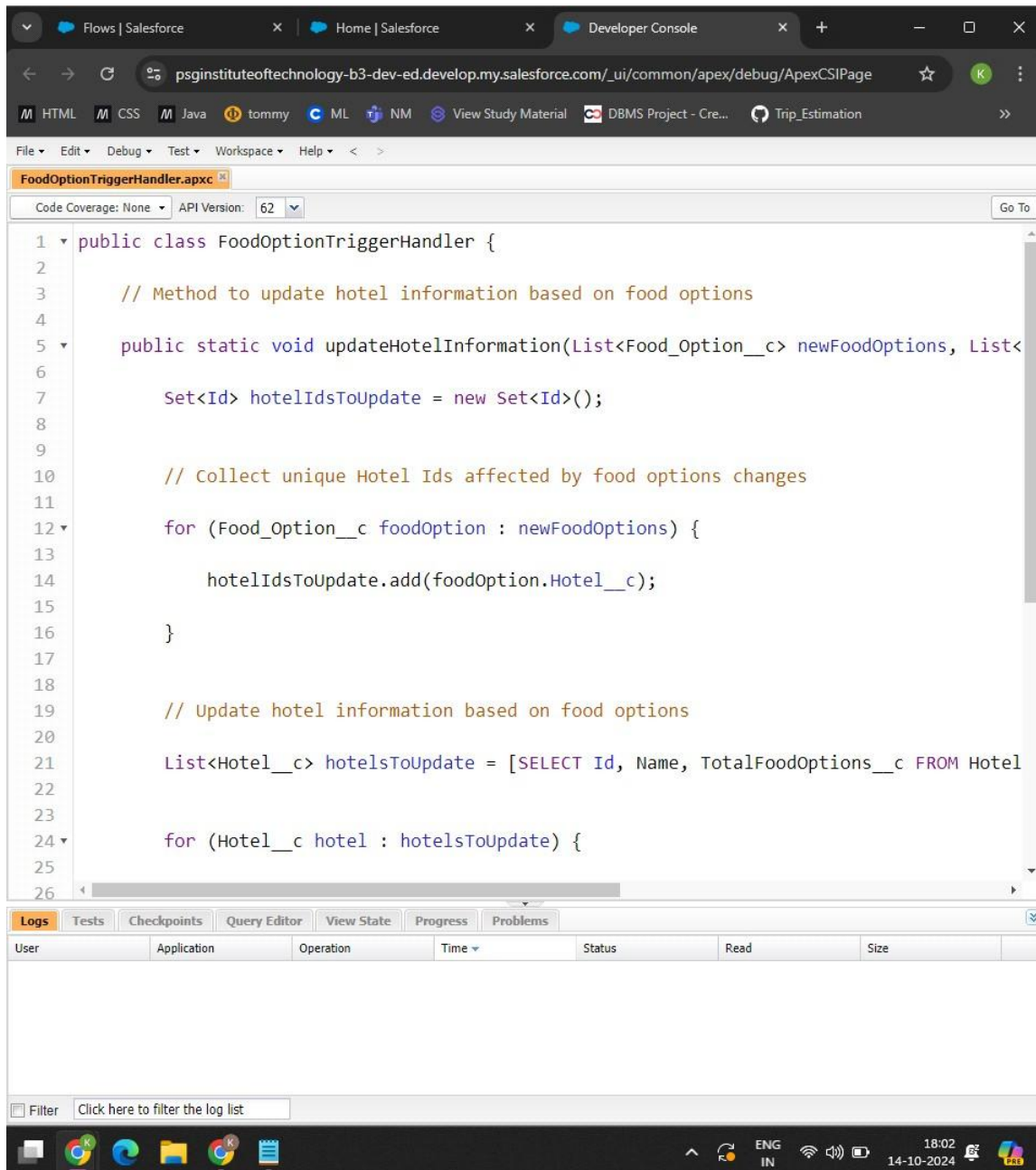
```
1 public class FoodOptionTriggerHandler {
2
3     // Method to update hotel information based on food options
4
5     public static void updateHotelInformation(List<Food_Option__c> newFoodOptions, List<
6
7         Set<Id> hotelIdsToUpdate = new Set<Id>();
8
9
10    // Collect unique Hotel Ids affected by food options changes
11
12    for (Food_Option__c foodOption : newFoodOptions) {
13
14        hotelIdsToUpdate.add(foodOption.Hotel__c);
15
16    }
17
18
19    // Update hotel information based on food options
20
21    List<Hotel__c> hotelsToUpdate = [SELECT Id, Name, TotalFoodOptions__c FROM Hotel
22
23
24    for (Hotel__c hotel : hotelsToUpdate) {
25
26
```

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
------	-------------	-----------	------	--------	------	------

Filter Click here to filter the log list

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## • Created Apex Schedule

- Developed an **Apex Schedule** to send reminder emails to customers who have booked flights, ensuring they receive a notification 24 hours before their scheduled flight.
- The **Apex Schedule** is set to run daily and check for flight bookings scheduled within the next 24 hours.
- If the booking is within 24 hours, an **email alert** is triggered to remind the customer of their upcoming flight.

Apex Classes | Salesforce x Developer Console

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File Edit Debug Test Workspace Help

FlightReminderScheduledJob.apxc

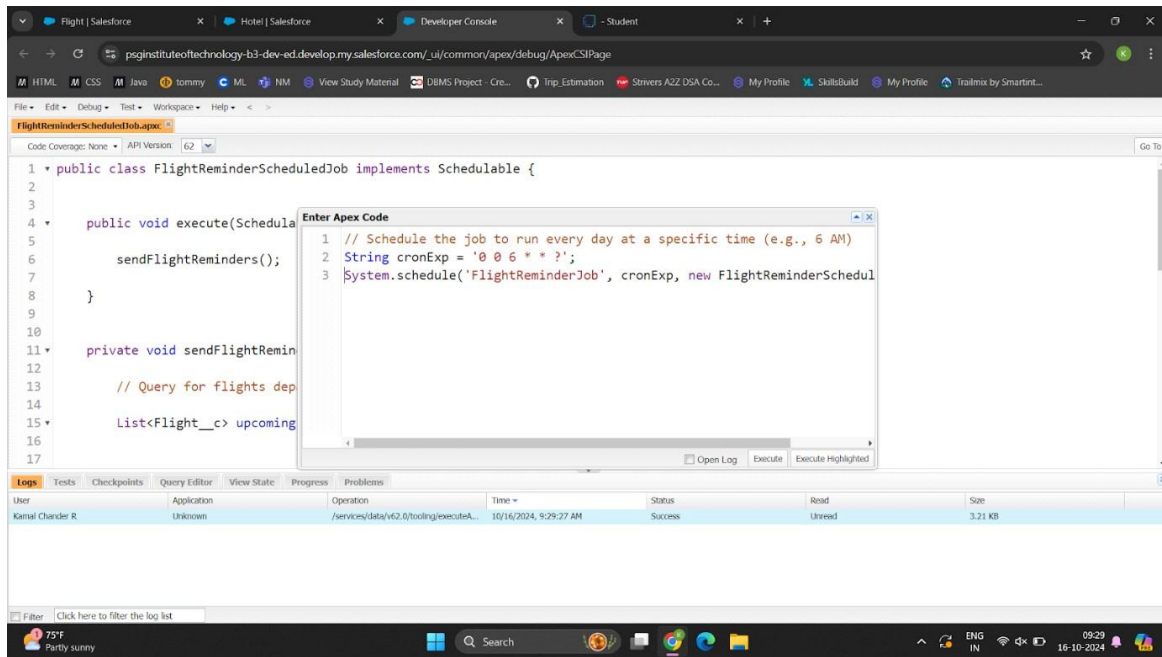
Code Coverage: None API Version: 62 Go To

```
1 public class FlightRemindersScheduledJob implements Schedulable {
2
3
4     public void execute(SchedulableContext sc) {
5
6         sendFlightReminders();
7
8     }
9
10
11     private void sendFlightReminders() {
12
13         // Query for flights departing within the next 24 hours
14
15         List<Flight__c> upcomingFlights = [SELECT Id, Name, DepartureDateTime__c FROM FL
16
17             WHERE DepartureDateTime__c >= :DateTime.now()
18
19             AND DepartureDateTime__c <= :DateTime.now().a
20
21
22         for (Flight__c flight : upcomingFlights) {
23
24             // Customize the logic to send reminder emails
25
26
```

Logs Tests Checkpoints Query Editor View State Progress Problems

Name	Line	Problem
FlightRemindersScheduledJob	15	Invalid bind expression type of Datetime for column of type Id
FlightRemindersScheduledJob	28	Variable does not exist: ContactEmail__c
FlightRemindersScheduledJob	35	Variable does not exist: ContactEmail__c

18:36 14-10-2024



## • Testing and Validation

### Apex Trigger:

trigger FoodOptionTrigger on Food\_\_Option\_\_c (after insert, after update, after delete) {

if (trigger.isInsert && trigger.isAfter)

{ FoodOptionTriggerHandler.updateHotelInformation(trigger.new);

}

}

### Test Class:

@isTest

private class TestFoodOptionTrigger {

@isTest static void testFoodOptionTrigger() {

// Create a Hotel record for reference

Hotel\_\_c hotel = new Hotel\_\_c(Name = 'Test Hotel');

insert hotel;

// Create a Food Option record linked to the Hotel

Food\_\_Option\_\_c foodOption1 = new Food\_\_Option\_\_c(Hotel\_\_c = hotel.Id);

insert foodOption1;

```

// Verify if Hotel's TotalFoodOptions__c is updated correctly
Hotel__c updatedHotel = [SELECT TotalFoodOptions__c FROM Hotel__c WHERE
Id = :hotel.Id];
System.assertEquals(1, updatedHotel.TotalFoodOptions__c,
'TotalFoodOptions__c should be updated to 1');

// Create another Food Option and check the count again
Food_Option__c foodOption2 = new Food_Option__c(Hotel__c = hotel.Id);
insert foodOption2;

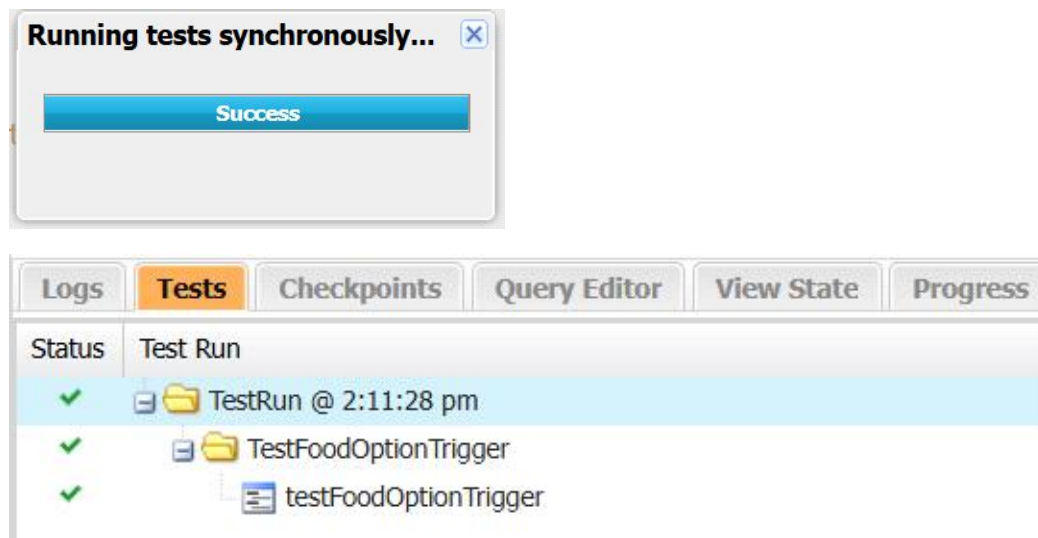
updatedHotel = [SELECT TotalFoodOptions__c FROM Hotel__c WHERE Id =
:hotel.Id];
System.assertEquals(2, updatedHotel.TotalFoodOptions__c,
'TotalFoodOptions__c should be updated to 2');
}
}

```

## STEPS:

- Step 1: Creates a Hotel\_\_c record with TotalFoodOptions\_\_c initialized to 0.
- Step 2: Inserts a Food\_Option\_\_c record associated with the hotel.
- Step 3: Verifies that TotalFoodOptions\_\_c on the hotel is updated to 1 after adding the first food option.
- Step 4: Adds another Food\_Option\_\_c to check if TotalFoodOptions\_\_c increments to 2.
- Step 5: Updates a food option record to confirm that updates do not affect the count.
- Step 6: Deletes one Food\_Option\_\_c and verifies that TotalFoodOptions\_\_c decrements accordingly.

Select Tests		
Test Classes	TestFoodOptionTrigger Tests	Selected Tests
Name ▾	Name ▲ <input checked="" type="checkbox"/>	Name
TestFoodOptionTrigger	testFoodOptionTrigger <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> TestFoodOptionTrigger
		All Methods Selected
Add Selected		Remove Selected
Filter test classes (* = any) [My Namespace] ▾		Settings Run



## • Conclusion

### Summary of Achievements:

The **TripAdvisor E-Management** project successfully established an all-in-one travel management platform on Salesforce. Key achievements include:

- **Comprehensive Data Management:** Created custom objects and fields to manage essential travel data, supporting organized and accessible records.
- **Automated Processes:** Used flows and Apex triggers to enhance operational efficiency, reducing manual input and improving data accuracy.
- **Enhanced Collaboration:** Configured profiles and public groups to allow secure collaboration, protecting data privacy.
- **Real-Time Monitoring:** Developed custom reports and a centralized dashboard for real-time insights into booking trends and customer preferences.
- **Improved Decision-Making:** Created a streamlined, user-friendly system that supports seamless travel planning and booking, enabling quick, informed decision-making for users.

This project demonstrates the effective use of Salesforce to support a dynamic, user-centered travel management solution, making TripAdvisor an invaluable resource for travelers.

Thank You....