



TripAdvisor E-Management

College: 7150 - Suguna College of Engineering

Team Lead: Saranya (87C34F1DD66121E81BD4D465C3A45071)

Team Members:

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- 2.DEEPA C
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- 4.RAMYA

- **Project Overview**

The TripAdvisor 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

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

Help for this Page

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 Hotel Example: Account

Plural Label Hotels Example: Accounts

Starts with vowel sound ☐

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

Object Name Hotel Example: Account

Description

Context-Sensitive Help Setting ☒ Open the standard Salesforce.com Help & Training window ☐ Open a window using a Visualforce page

Content Name --None--

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 Hotel Name Example: Account Name

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

The screenshot shows the Salesforce Setup interface for a custom object named "Food Option". The browser tabs at the top indicate the user is in a development environment. The left sidebar contains a navigation menu with options like "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 "Food Option" and includes a "Custom Object Definition Edit" section. This section contains fields for "Label" (Food Option), "Plural Label" (Food Options), "Object Name" (Food_Option), and "Description". There are also checkboxes for "Starts with vowel sound" and "Context-Sensitive Help Setting". A "Data Type" dropdown is set to "Auto Number".

Object Manager | Salesforce x Food Option | Salesforce x Food Option | Salesforce x + - □ x

psginstituteoftechnology-b3-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy00...

HTML CSS Java tommy ML NM View Study Material DBMS Project - Cre... Trip_Estimation

Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER

Food Option

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

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Edit Custom Object

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Help for this Page

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 Food Option Example: Account

Plural Label Food Options Example: Accounts

Starts with vowel sound ☐

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

Object Name Food_Option Example: Account

Description

Context-Sensitive Help Setting ☒ Open the standard Salesforce.com Help & Training window ☐ Open a window using a Visualforce page

Content Name --None--

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 Food Option Name Example: Account Name

Data Type Auto Number 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 x

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Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER
Hotel

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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)		

17:32
14-10-2024

- **Create Fields for Food Option**

- Food Amount
- Hotel
- Name

Object Manager | Salesforce | Food Option | Salesforce

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HTML CSS Java tommy ML NM View Study Material DBMS Project - Cre... Trip_Estimation

Search Setup

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Quick Find

New Deleted Fields Field Dependencies Set History Tracking

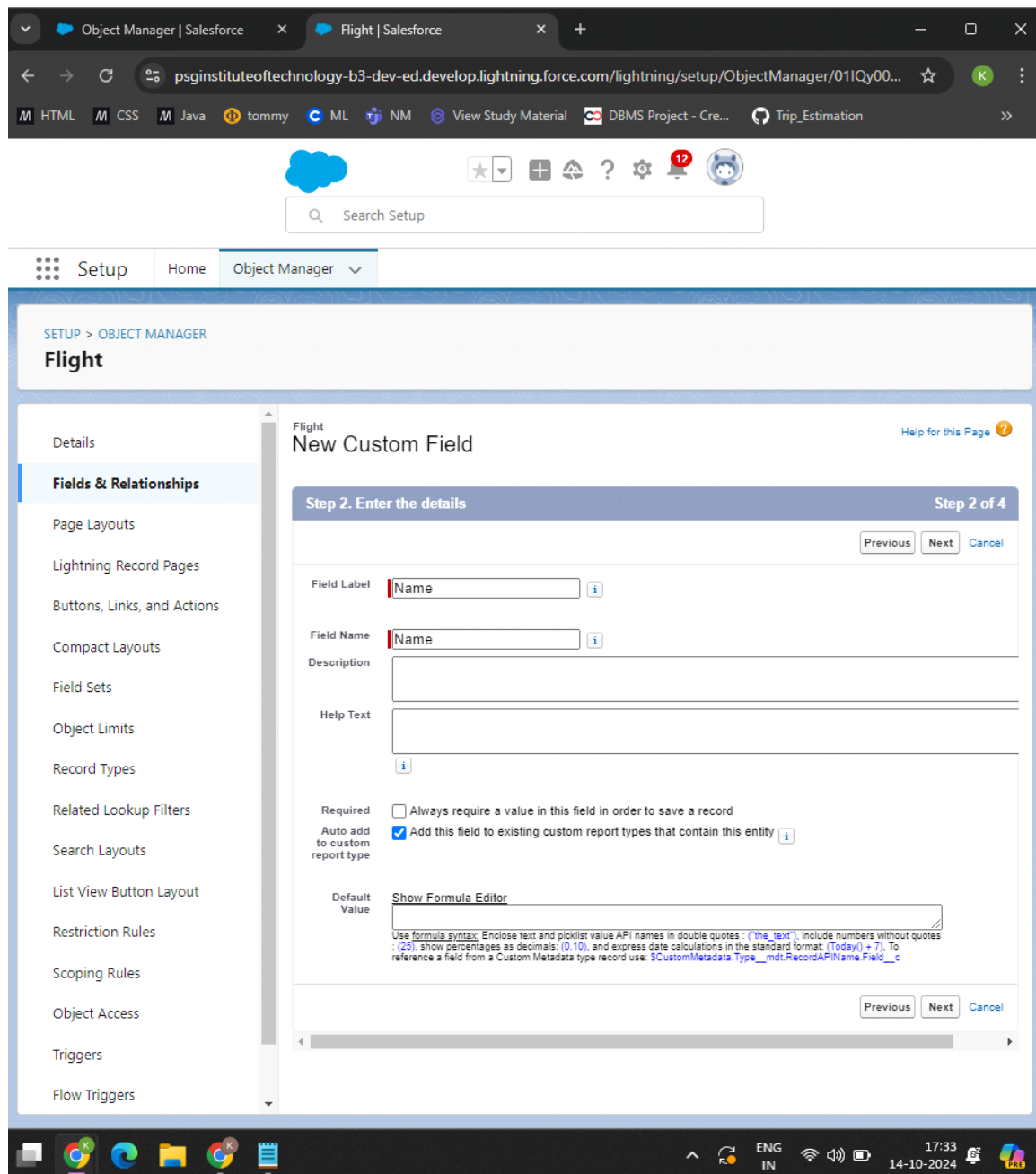
7 Items, Sorted by Field Label

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)		✓

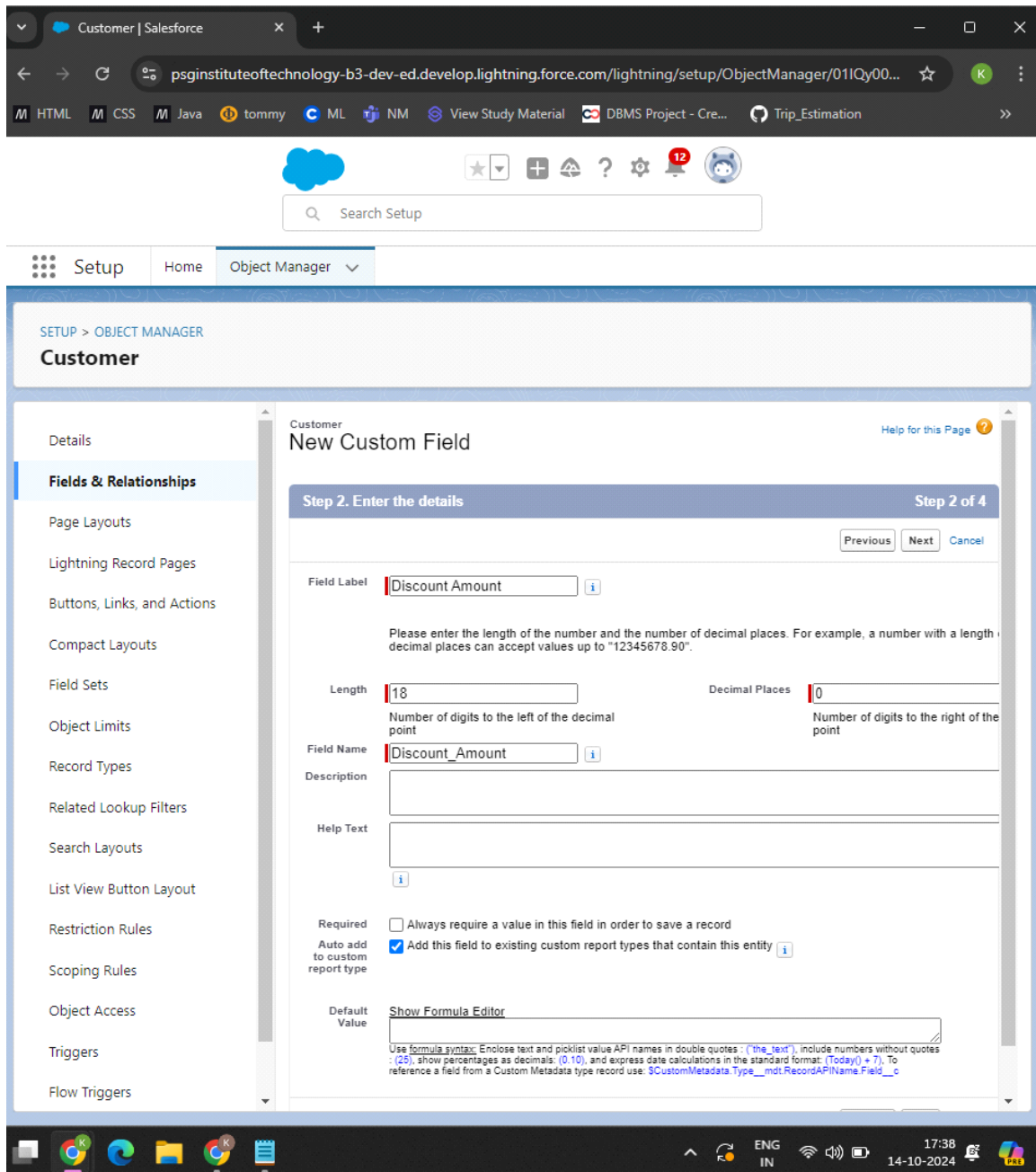
17:31 14-10-2024

- **Created Fields for Flight object**

- Name
- DepartureDateTime



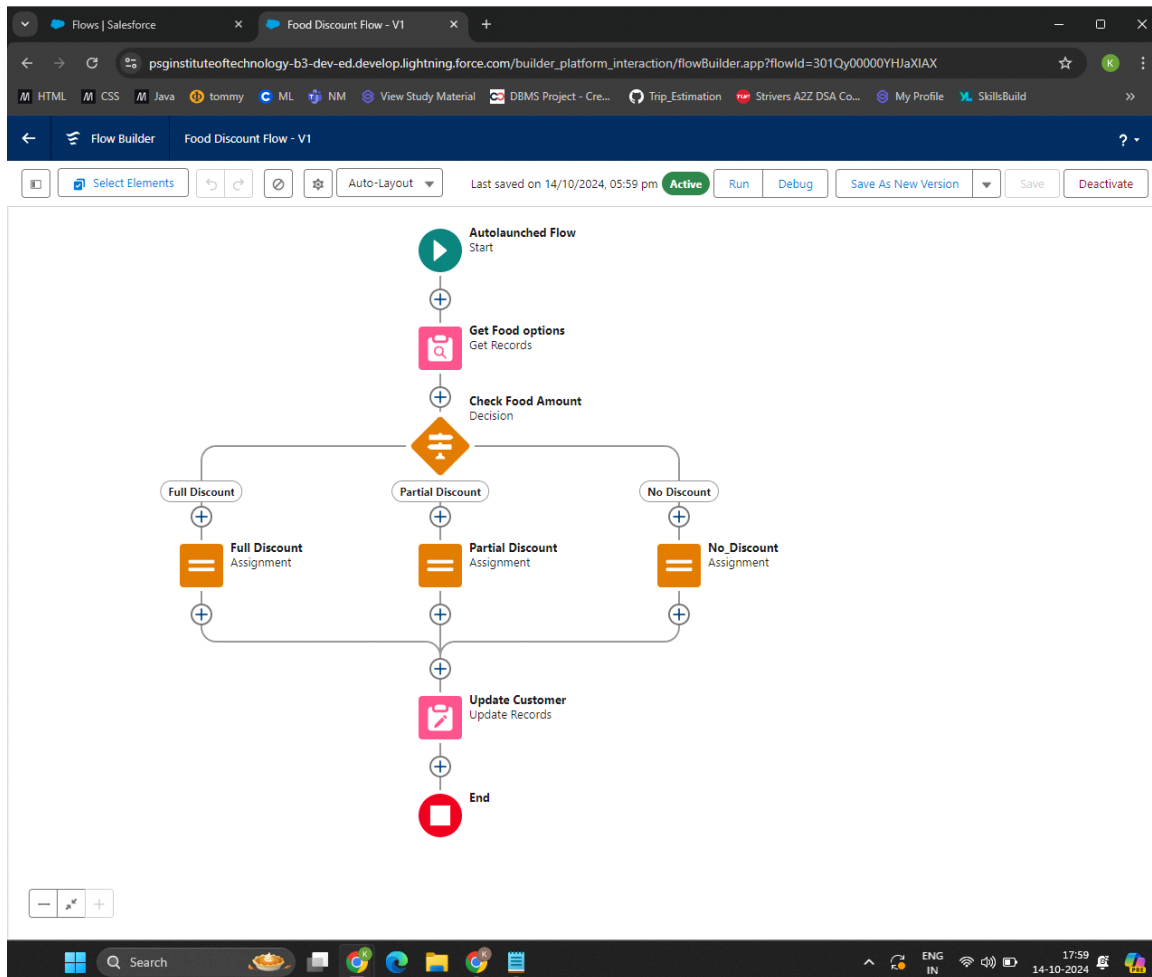
- **Created fields for customer object**
 - Customer name
 - Discount amount
 - Discount percentage



- **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 + - □ x

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File Edit Debug Test Workspace Help < >

FoodOptionTriggerHandler.apxc

Code Coverage: None API Version: 62 Go To

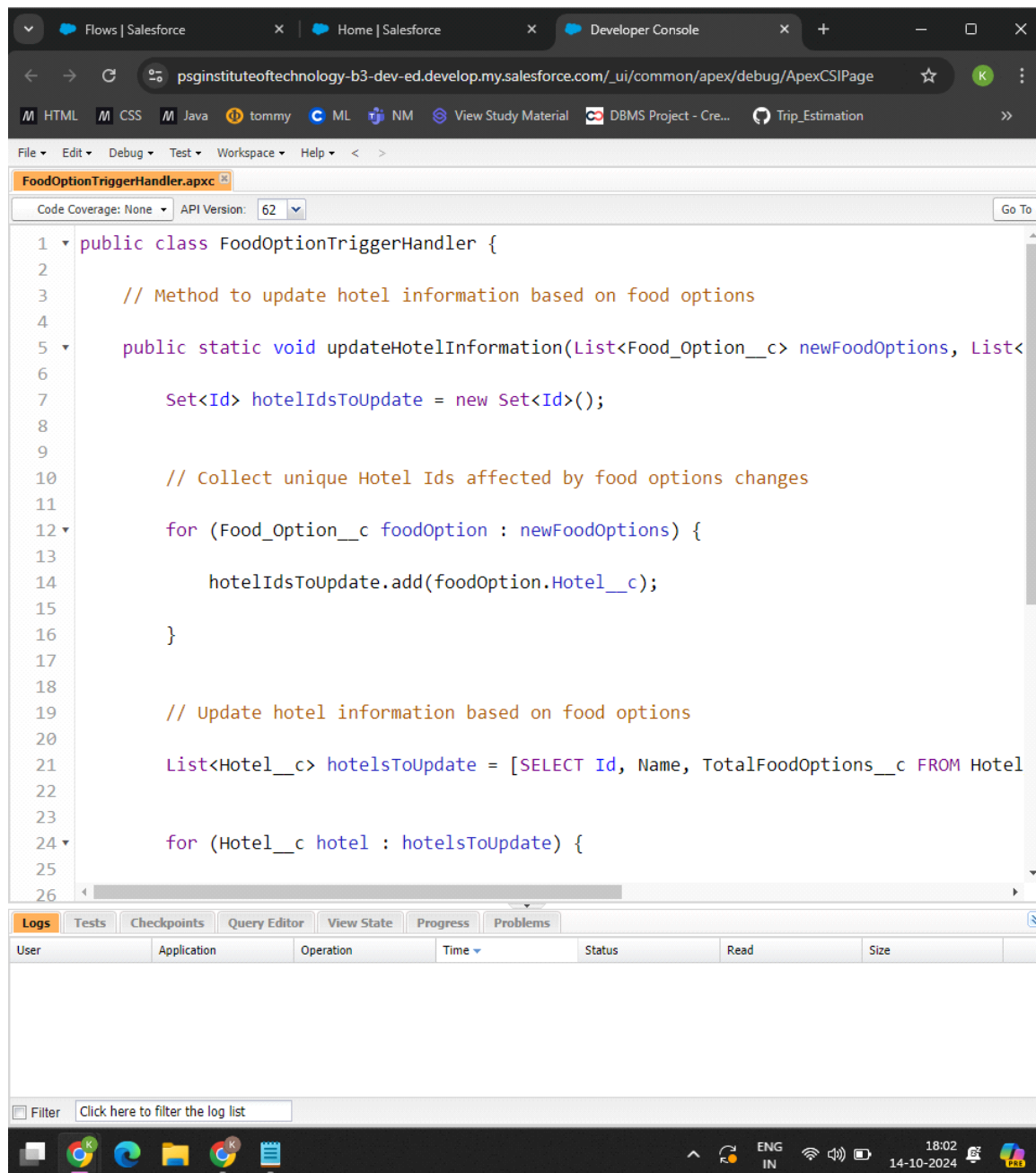
```
1 public class FoodOptionTriggerHandler {
2
3     // Method to update hotel information based on food options
4
5     public static void updateHotelInformation(List<Food_Option__c> newFoodOptions, List<
6
7         Set<Id> hotelIdsToUpdate = new Set<Id>();
8
9
10    // Collect unique Hotel Ids affected 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

ENG IN 18:02 14-10-2024



- **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.

The screenshot shows a Salesforce Developer Console window with the following details:

- Browser Tabs:** Apex Classes | Salesforce, Developer Console.
- Address Bar:** psginstituteoftechnology-b3-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage
- File Explorer:** FlightReminderScheduledJob.apxc
- Code Editor:**

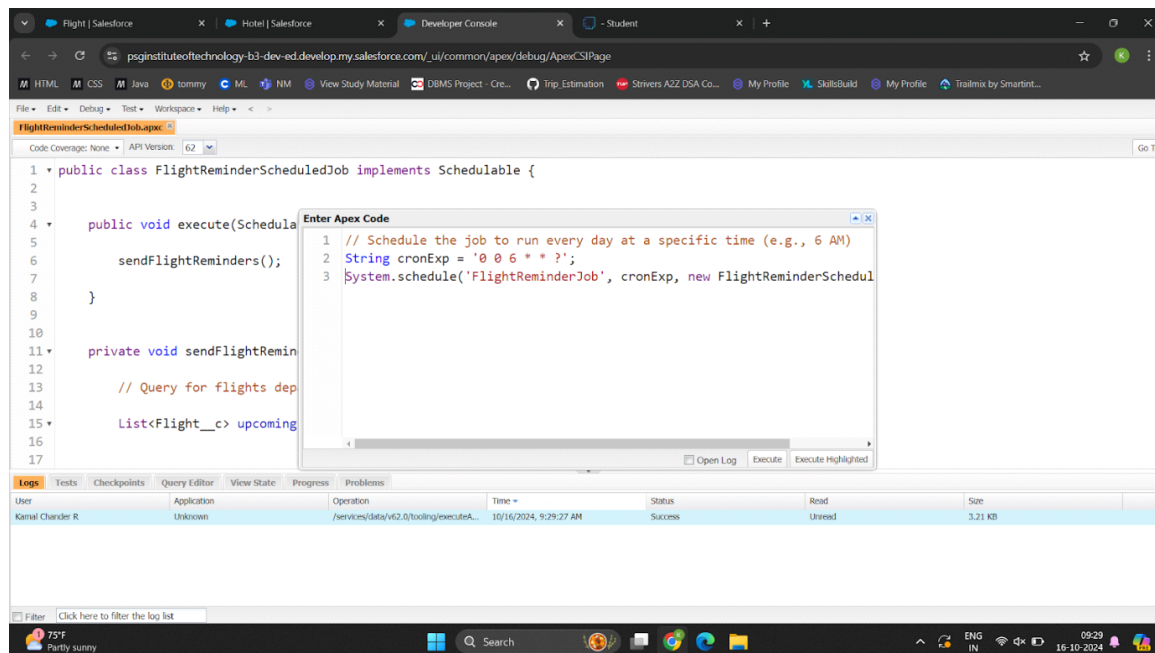
```

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

```
- Problems Panel:**

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

The Windows taskbar at the bottom shows the time as 18:36 on 14-10-2024.



• Testing and Validation

Apex Trigger:

```
trigger FoodOptionTrigger on Food__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.

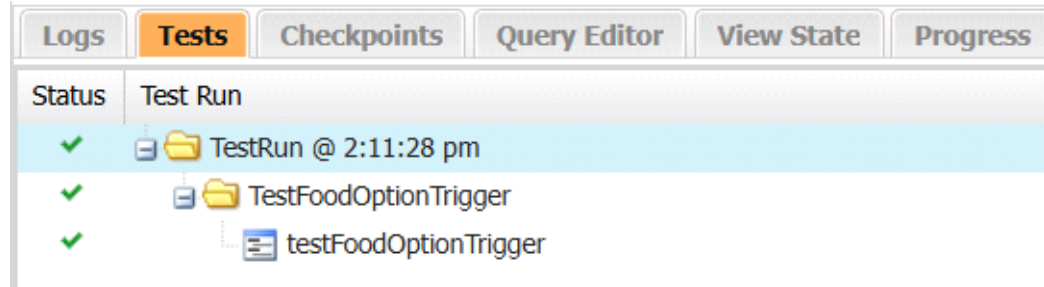
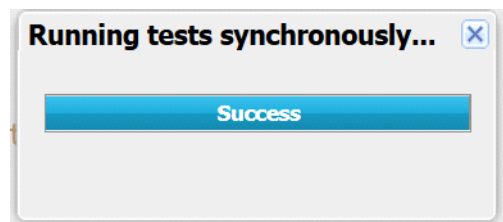
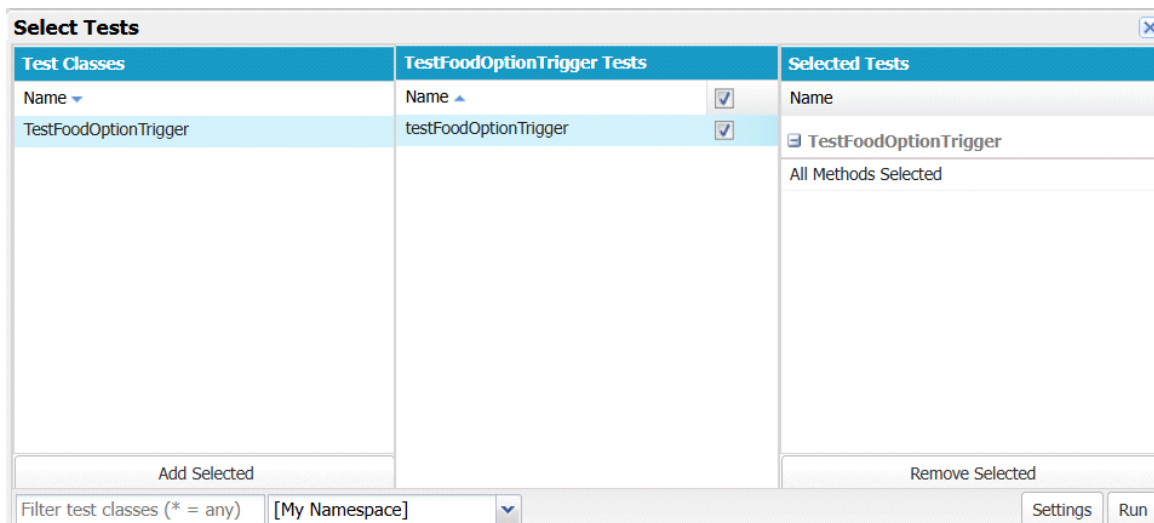
Step 2: Inserts a Food_Option__c record associated with the hotel.

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.



• 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.