

Title: Tripadvisor E-management

Team members:

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Project Overview :

This project is focused on integrating the TripAdvisor E-Management app with Salesforce, designed to address the challenge of providing a seamless, all-in-one travel management solution. The goal is to deliver a comprehensive platform by leveraging Salesforce's CRM capabilities, automation tools, and integration with TripAdvisor's API. Through this project, we aim to enhance user experience by offering centralized trip planning and booking, improve operational efficiency through automated workflows like flight reminders and discounts, and ensure data accuracy with real-time insights. This initiative supports the long-term goals of empowering travelers with informed decision-making, increasing customer satisfaction, and driving business efficiency.

Objectives:

- 1. Enhance customer experience by providing timely and relevant travel reminders and updates.***
- 2. Increase customer retention and satisfaction through automated loyalty discounts and personalized recommendations.***
- 3. Improve operational efficiency by streamlining booking, planning, and review sharing processes.***
- 4. Boost revenue through targeted upselling of travel packages, hotels, and food options based on customer preferences.***
- 5. Strengthen brand value by integrating real-time feedback loops for continuous improvement.***

Specific Outcomes:

1. Scheduled Apex for Flight Reminders:

Automate email notifications for flights departing within the next 24 hours.

Ensure 100% reliability in sending reminders to relevant customers.

2. Customer Discount Automation:

Automatically apply loyalty discounts for returning customers who meet defined criteria.

Track and report the success rate of discounts in driving repeat business.

3. Integrated Flow for Data Management:

Create Salesforce flows to handle and manage hotel, flight, and food option data seamlessly.

Ensure all flows are optimized to reduce manual intervention and maintain data accuracy.

4. Enhanced Reporting for Insights:

Provide actionable dashboards showing trends in bookings, cancellations, and customer feedback.

Enable business users to analyze and act on data in real time.

5. Apex Trigger and Handler for Reviews:

Implement triggers to process and categorize customer reviews into actionable insights.

Ensure all reviews are categorized within 5 minutes of submission.

6. Improved API Integration:

Enable seamless communication between Salesforce and the TripAdvisor E-Management app and ensure 99.9% uptime for API calls to support uninterrupted operations.

Salesforce Key Features and Concepts Utilized

Custom Objects:

Hotel:

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

Details

Description

API Name

Hotel__c

Custom

✓

Singular Label

Hotel

Plural Label

Hotels

Enable Reports

✓

Track Activities

Track Field History

Deployment Status

Deployed

Help Settings

Standard salesforce.com Help Window

Edit

Delete

Food Options:

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

Details

Description

API Name

Food_Option__c

Custom

✓

Singular Label

Food Option

Plural Label

Food Options

Enable Reports

✓

Track Activities

Track Field History

Deployment Status

Deployed

Help Settings

Standard salesforce.com Help Window

Edit

Delete

Customers:

SETUP > OBJECT MANAGER

Customer

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

Details

Description

API Name

Customer__c

Custom

✓

Singular Label

Customer

Plural Label

Customers

Enable Reports

✓

Track Activities

Track Field History

Deployment Status

Deployed

Help Settings

Standard salesforce.com Help Window

Edit

Delete

Flights:

SETUP > OBJECT MANAGER

Flight

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

Details

Description

API Name

Flight__c

Custom

✓

Singular Label

Flight

Plural Label

Flights

Enable Reports

✓

Track Activities

Track Field History

Deployment Status

Deployed

Help Settings

Standard salesforce.com Help Window

Edit

Delete

Automation Tools:

Flows for managing data updates and customer discounts.

Triggers for ensuring business logic consistency.

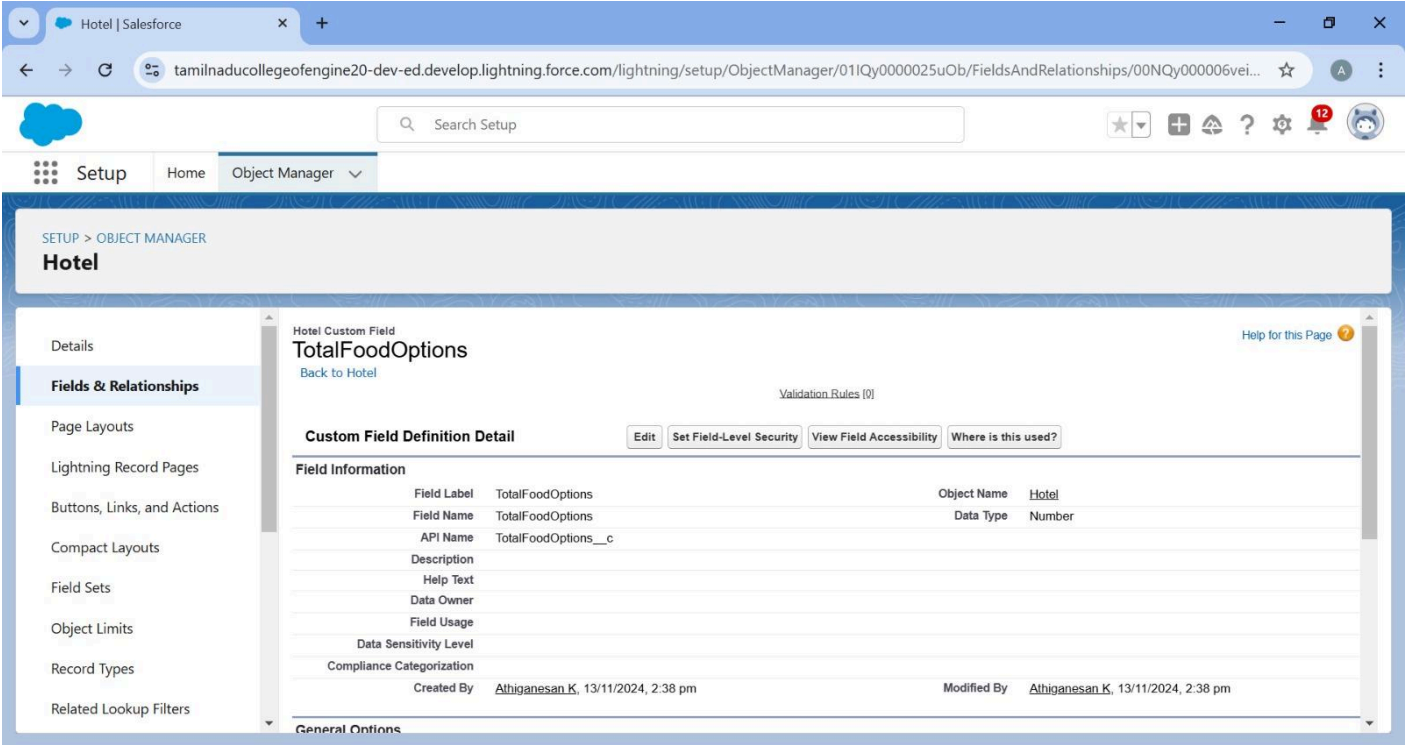
Scheduled Apex:

Apex Schedulable class for sending timely flight reminders via email alerts.

Detailed Steps to Solution Design

Data Model Design:

Hotel Fields Total Food Option:



Date:

Hotel | Salesforce

tamilnaducollegeofengine20-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy0000025uOb/FieldsAndRelationships/00NQy000006vc...

Search Setup

12

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

Hotel Custom Field

Date

Back to Hotel

Validation Rules [0]

Custom Field Definition Detail

Edit

Set Field-Level Security

View Field Accessibility

Where is this used?

Field Information

Field Label	Date	Object Name	Hotel
Field Name	Date	Data Type	Date
API Name	Date__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 13/11/2024, 2:40 pm	Modified By	Athiganesan K, 13/11/2024, 2:40 pm

General Options

Food Option Fields:

Name:

Food Option | Salesforce

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Search Setup

12

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

Food Option Custom Field

Name

Back to Food Option

Validation Rules [0]

Custom Field Definition Detail

Edit

Set Field-Level Security

View Field Accessibility

Where is this used?

Field Information

Field Label	Name	Object Name	Food Option
Field Name	Name	Data Type	Text
API Name	Name__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 13/11/2024, 2:44 pm	Modified By	Athiganesan K, 13/11/2024, 2:44 pm

General Options

Hotel:

Food Option | Salesforce

tamilnaducollegeofengine20-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy0000025sHF/FieldsAndRelationships/00NQy000006vX...

Search Setup

SetupHomeObject 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

Food Option Custom Field

Hotel

Back to Food Option

Validation Rules [0]

Custom Field Definition Detail

EditSet Field-Level SecurityView Field AccessibilityWhere is this used?

Field Information

Field Label	Hotel	Object Name	Food Option
Field Name	Hotel	Data Type	Lookup
API Name	Hotel__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 13/11/2024, 2:49 pm	Modified By	Athiganesan K, 13/11/2024, 2:49 pm

Lookup Options

Food amount:

Food Option | Salesforce

tamilnaducollegeofengine20-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy0000025sHF/FieldsAndRelationships/00NQy000006vCfj...

Search Setup

SetupHomeObject 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

Food Option Custom Field

Food Amount

Back to Food Option

Validation Rules [0]

Custom Field Definition Detail

EditSet Field-Level SecurityView Field AccessibilityWhere is this used?

Field Information

Field Label	Food Amount	Object Name	Food Option
Field Name	Food_Amount	Data Type	Currency
API Name	Food_Amount__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 13/11/2024, 2:53 pm	Modified By	Athiganesan K, 13/11/2024, 2:53 pm

General Options

Flight Object Field:

Name:

Flight | Salesforce

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Search Setup

SetupHomeObject Manager

SETUP > OBJECT MANAGER

Flight

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Flight Custom Field

Name

Back to Flight

Validation Rules [0]

Custom Field Definition Detail

EditSet Field-Level SecurityView Field AccessibilityWhere is this used?

Field Information

Field Label	Name	Object Name	Flight
Field Name	Name	Data Type	Date/Time
API Name	Name__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 13/11/2024, 2:58 pm	Modified By	Athiganesan K, 13/11/2024, 2:58 pm

General Options

Departuredate time:

Flight | Salesforce

tamilnaducollegeofengine20-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy0000025uy5/FieldsAndRelationships/00NQy000006viX...

Search Setup

SetupHomeObject Manager

SETUP > OBJECT MANAGER

Flight

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Flight Custom Field

DepartureDateTime

Back to Flight

Validation Rules [0]

Custom Field Definition Detail

EditSet Field-Level SecurityView Field AccessibilityWhere is this used?

Field Information

Field Label	DepartureDateTime	Object Name	Flight
Field Name	DepartureDateTime	Data Type	Lookup
API Name	DepartureDateTime__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 13/11/2024, 3:00 pm	Modified By	Athiganesan K, 19/11/2024, 8:26 pm

Lookup Options

Customer Field:

Customer Name:

Customer | Salesforce

tamilnaducollegeofengine20-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy0000025wF7/FieldsAndRelationships/00NQy0000070R...

Search Setup

SetupHomeObject Manager

Customer

DetailsFields & RelationshipsPage LayoutsLightning Record PagesButtons, Links, and ActionsCompact LayoutsField SetsObject LimitsRecord TypesRelated Lookup Filters

Customer Custom Field

Customer Name

Back to Customer

Validation Rules [0]

Custom Field Definition Detail

Field Information

Field Label	Customer Name	Object Name	Customer
Field Name	Customer_Name	Data Type	Text
API Name	Customer_Name__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 15/11/2024, 2:31 pm	Modified By	Athiganesan K, 15/11/2024, 2:31 pm

General Options

Discount Amount:

Customer | Salesforce

tamilnaducollegeofengine20-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IQy0000025wF7/FieldsAndRelationships/00NQy0000070a4...

Search Setup

SetupHomeObject Manager

Customer

DetailsFields & RelationshipsPage LayoutsLightning Record PagesButtons, Links, and ActionsCompact LayoutsField SetsObject LimitsRecord TypesRelated Lookup Filters

Customer Custom Field

Discount Amount

Back to Customer

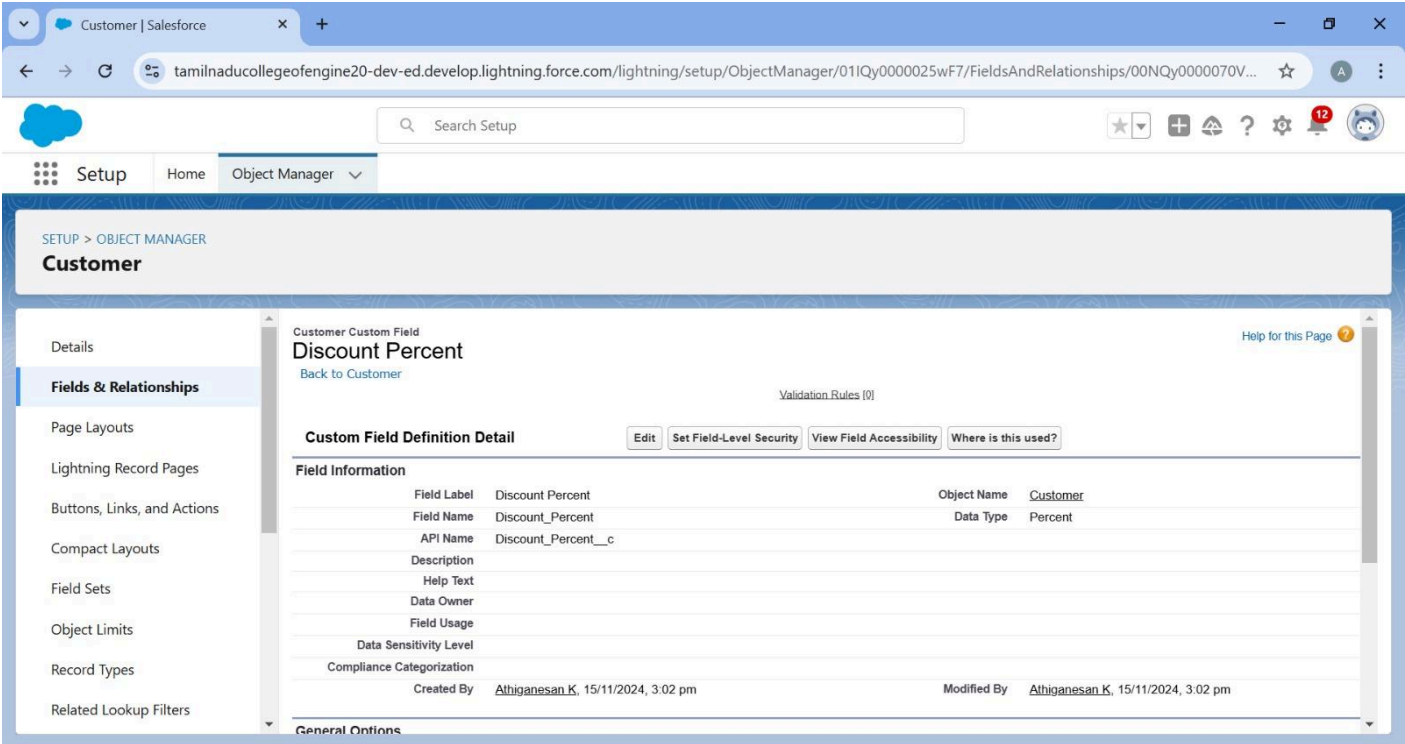
Custom Field Definition Detail

Field Information

Field Label	Discount Amount	Object Name	Customer
Field Name	Discount_Amount		
API Name	Discount_Amount__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	Athiganesan K, 15/11/2024, 3:55 pm	Modified By	Athiganesan K, 15/11/2024, 3:55 pm

Formula Options

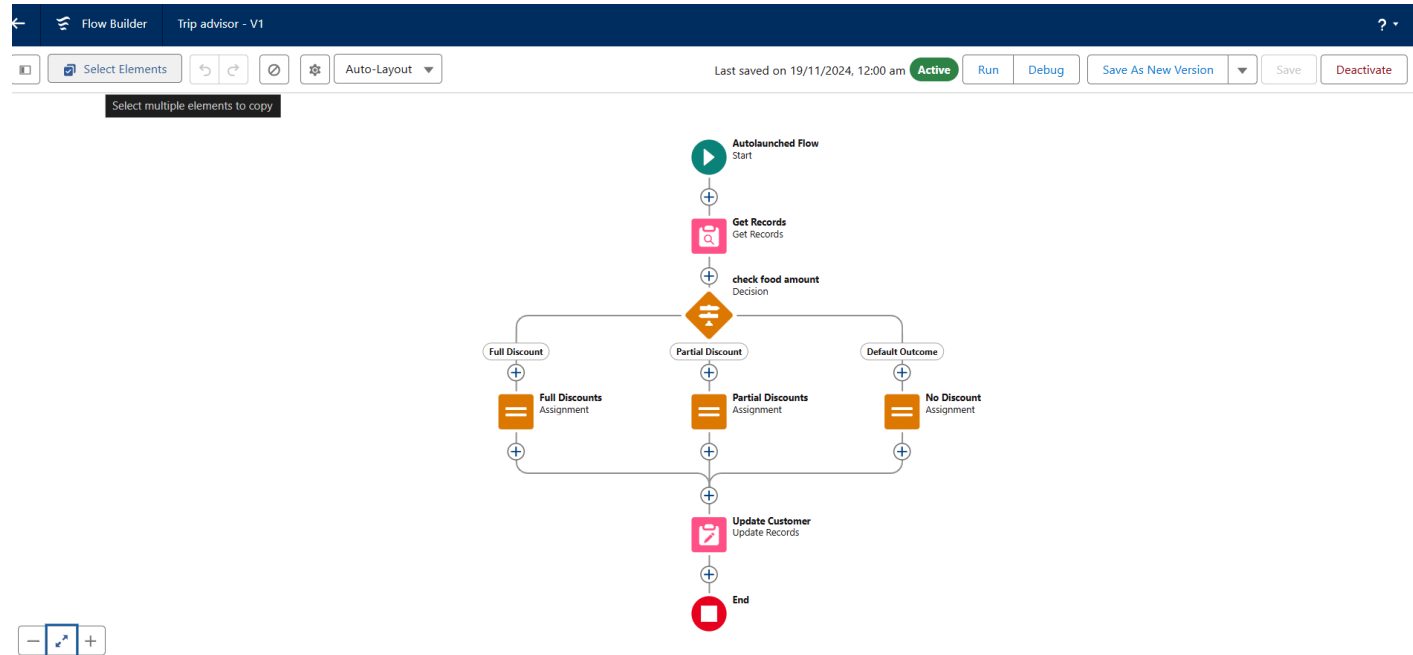
Discount Percentage:



Custom objects and relationships between Hotels, Food Options, Flights, and Customers.

Fields to track purchase amounts, discounts, food options count, and flight schedules.

Flow:



Variables:

Fold:

Edit Variable

* API Name ⓘ

fold

Description

* Data Type ⓘ

Text ▼

☐ Allow multiple values (collection) ⓘ

Default Value

Enter value or search resources... 🔍

Availability Outside the Flow

☒ Available for input

☐ Available for output

Cancel

Done

CsId:

Edit Variable

* API Name ⓘ

csId

Description

* Data Type ⓘ

Text ▼

☐ Allow multiple values (collection) ⓘ

Default Value

Enter value or search resources... 🔍

Availability Outside the Flow

☒ Available for input

☐ Available for output

Cancel

Done

Discount:

Edit Variable

* API Name ⓘ

discount

Description

* Data Type ⓘ

Number ▼

☐ Allow multiple values (collection) ⓘ

Decimal Places

2

Default Value

Enter value or search resources... 🔍

Availability Outside the Flow

☐ Available for input

☐ Available for output

Cancel

Done

Get Records:

Get Records

* Label

Get Food options

* API Name ⓘ

Get_Food_options

Description

Get Records of This Object

* Object

Food Option

Filter Food Option Records

Condition Requirements

All Conditions Are Met (AND) ▼

Field

Id

Operator

Equals ▼

Value

Aa csld ×

🗑

+ Add Condition

Decision Element:

Decision

* Label

Get Discount

* API Name

Get_Discount

Description

Outcomes

For each path the flow can take, create an outcome. For each outcome, specify the conditions that must be met for the flow to take that path.

OUTCOME ORDER

Full Discount

Partial Discount

No Discount

OUTCOME DETAILS

* Label

Full Discount

* Outcome API Name

Full_Discount

Condition Requirements to Execute Outcome

All Conditions Are Met (AND)

Delete Outcome

Default Outcome:

Full Discount

Assignment

* Label

Full Discounts

* API Name

Full_Discounts

Description

Set Variable Values

Each variable is modified by the operator and value combination.

Variable

discount

Operator

Equals

Value

30

+ Add Assignment

Partial Discount:

Assignment

* Label

Partial Discounts

* API Name ⓘ

Partial_Discounts

Description

Set Variable Values

Each variable is modified by the operator and value combination.

Variable

discount ×

Operator

Equals ▼

Value

15 🔍 🗑️

+ Add Assignment

No Discount:

Assignment

* Label

No Discounts

* API Name ⓘ

No_Discounts

Description

Set Variable Values

Each variable is modified by the operator and value combination.

Variable

discount ×

Operator

Equals ▼

Value

0 🔍 🗑️

+ Add Assignment

Update Records:

Update Records

×

* Label

Update Customer Record

* API Name ⓘ

Update_Customer_Record

Description

* How to Find Records to Update and Set Their Values

☐ Use the IDs and all field values from a record or record collection

☒ Specify conditions to identify records, and set fields individually

Update Records of This Object Type

* Object

Customer

Filter Customer Records

Condition Requirements to Update Records

All Conditions Are Met (AND) ▼

Handle automated updates for the food options count when changes occur.

Apply discount logic for customer purchases.

Apex Triggers:

Maintain business rules for related object updates.

Apex class:

```
public class FoodOptionTriggerHandler {
```

```
// Method to update hotel information based on food options
```

```
public static void updateHotelInformation(List  
newFoodOptions, List oldFoodOptions, TriggerOperation  
operation) {
```

```
Set hotelIdsToUpdate = new Set();
```

```
// Collect unique Hotel Ids affected by food options changes
```

```
for (Food__Option__c foodOption : newFoodOptions) {
```

```
hotelIdsToUpdate.add(foodOption.Hotel__c); }
```

```
// Update hotel information based on food options
```

```
List hotelsToUpdate = [SELECT Id, Name,  
TotalFoodOptions__c FROM Hotel__c WHERE Id IN  
:hotelIdsToUpdate];
```

```
for (Hotel__c hotel : hotelsToUpdate) {
```

```
// Recalculate total food options count
```

```
Integer totalFoodOptions = [SELECT COUNT() FROM  
Food__Option__c WHERE Hotel__c = :hotel.Id];
```

```
hotel.TotalFoodOptions__c = totalFoodOptions; }
```

```
// Update hotels with new total food options count
```

```
update hotelsToUpdate; }  
}
```

Apex Trigger:

trigger FoodOptionTrigger on Food__Option__c (after insert, after update, after delete) {

***if (Trigger.isAfter) {
 if (Trigger.isInsert) {***

***FoodOptionTriggerHandler.updateHotelInformation
(Trigger.new, null, 'INSERT'); }
 else if (Trigger.isUpdate) {***

***FoodOptionTriggerHandler.updateHotelInformation
(Trigger.new, Trigger.old, 'UPDATE'); }
 else if (Trigger.isDelete) {
 FoodOptionTriggerHandler.updateHotelInformation(null,
Trigger.old, 'DELETE');
 }
}
}***

Flight Reminder System:

Class solution:

public class FlightReminderScheduledJob implements Schedulable {

***public void execute(SchedulableContext sc) {
sendFlightReminders();
 }***

private void sendFlightReminders() {

// Query for flights departing within the next 24 hours

***List upcomingFlights = [SELECT Id, Name, DepartureDateTime__c,
ContactEmail__c FROM Flight__c
WHERE DepartureDateTime__c >= :DateTime.now()
AND DepartureDateTime__c <= :DateTime.now().addDays(1)];***

```

for (Flight__c flight : upcomingFlights) {

    // Send email reminder
    if (flight.ContactEmail__c != null) {

        Messaging.SingleEmailMessage email = new
Messaging.SingleEmailMessage();
        email.setToAddresses(new List{ flight.ContactEmail__c });
        email.setSubject('Flight Reminder: ' + flight.Name);
        email.setPlainTextBody('This is a reminder for your upcoming
flight ' + flight.Name + ' departing on ' +
flight.DepartureDateTime__c);
        Messaging.sendEmail(new List{ email });

    }

}
}
}
}

```

Apex Code:

//Define the cron expression for 6 AM daily

```
String cronExp = '0 0 6 * * ?';
```

//Schedule the job

```
System.schedule('FlightReminderJob' , cronExp, new
FlightReminderScheduledJob());
```

Create a Schedulable Apex class to identify flights departing within 24 hours.

Send email alerts to customers and log success notifications.

User Interface Design:

Ensure clear and intuitive layouts for managing Hotels, Flights, and Food Options.

Outcome:

View:

All Scheduled Jobs

[Create New View](#)

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other **All**

Schedule Apex

Action	Job Name ↑	Submitted By	Submitted	Started	Next Scheduled Run	Type	Cron Trigger ID
Manage Del Pause Job	FlightReminderJob	P. Sri Parthasarathi	21/11/2024, 3:03 pm		22/11/2024, 6:00 am	Scheduled Apex	08edL000008bCqP
Del	Metalytics Data Loader Job for Org : 00DdL00000ApNin	User, Integration	21/08/2024, 11:19 am	21/11/2024, 8:11 am	22/11/2024, 8:11 am	Autonomous Data Loader Job	08edL0000045uc1
	Program Milestone Computation Cron Job	Process, Automated	21/08/2024, 11:19 am	21/11/2024, 11:59 am	21/11/2024, 4:59 pm	Program Milestone Computation Cron Job	08edL0000045ubz
	Program Status Update Cron Job	Process, Automated	21/08/2024, 11:19 am	21/11/2024, 5:00 am	21/11/2024, 8:00 pm	Program Status Update Cron Job	08edL0000045uc0

Testing and Validation

Testing Approach:

Unit Testing:

Apex classes and triggers tested to ensure 100% code coverage.

User Interface Testing:

Verify the accuracy and usability of flows and custom object layouts.

Validation Steps:

Check automated updates for the food options count.

Validate discount calculations based on customer purchases.

Confirm timely email reminders and success notifications for flight schedules.

Key Scenarios Addressed by Salesforce in the Implementation Project

Hotel Data Management:

Automatically update hotel records when food options are modified.

Customer Benefits Automation:

Ensure customers receive appropriate discounts based on their purchase amounts.

Flight Reminder Notifications:

Provide timely email alerts for upcoming flights with confirmation notifications.

Conclusion

Summary of Achievements:

Automated processes for food options and hotel data management. Implemented customer discount logic based on purchase thresholds.

Scheduled Apex for reliable flight reminders with success notifications.

Leveraged Salesforce capabilities to enhance operational efficiency and customer satisfaction