GOVERNMENT OF TAMILNADU

Naan Muthalvan - Project-Based Experiential Learning

BUILD AN EMPLOYEE TRAVEL APPROVAL APPLICATION FOR CORPORATES

Submitted by

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M.V.MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN

(Affiliated To Mother Teresa Women's University, Kodaikanal)
Reaccredited with "A" Grade by NAAC
DINDIGUL-624001.

APRIL - 2023

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PG & RESEARCH DEPARTMENT OF MATHEMATICS

BONAFIDE CERTIFICATE

This is to certify that this is a bonafide record of the project entitled, **"BUILD AN EMPLOYEE TRAVEL APPROVAL APPLICATION FOR CORPORATES** done **by Ms. C.ASLIN ARUNA –(20321TR003) , Ms.C.ALAGUNATCHI ALAIS PANDIYAMMAL –(20321TR001), Ms.N.ANSHRINIYA –(20321TR002) , Ms.A.DEVA SURIYA –(20321TR005).** This is submitted in partial fulfillment for the award of the degree of **Bachelor of Science in Mathematics in M.V.MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN,DINDIGUL** during the period of December 2022 to April 2023.

Project Mentor(s) **Head of the Department**

Submitted for viva-voce Examination held on _________ .

BUILD A EMPLOYEE TRAVEL APPLICATION FOR CORPORATION

1.INTRODUCTION:

SALESFORCE - Division of a business responsible for selling products or services.
Salesforce is linking between companies and customer . Therefore , companies must be careful in designing and structuring salesforce

1.1Overview:

A good store manager helps customer leave the store with a smile. They also are responsible for:

1. Developing strategies to the customer pool
2. Growing store traffic
3. Motivating employees
   The project aim is to provide real-time knowledge for all the students who have basic knowledge of Salesforce and Looking for a real-time project. This project will also help to those professionals who are in cross-technology and wanted to switch to Salesforce with the help of this project they will gain knowledge and can include into their resume as well.

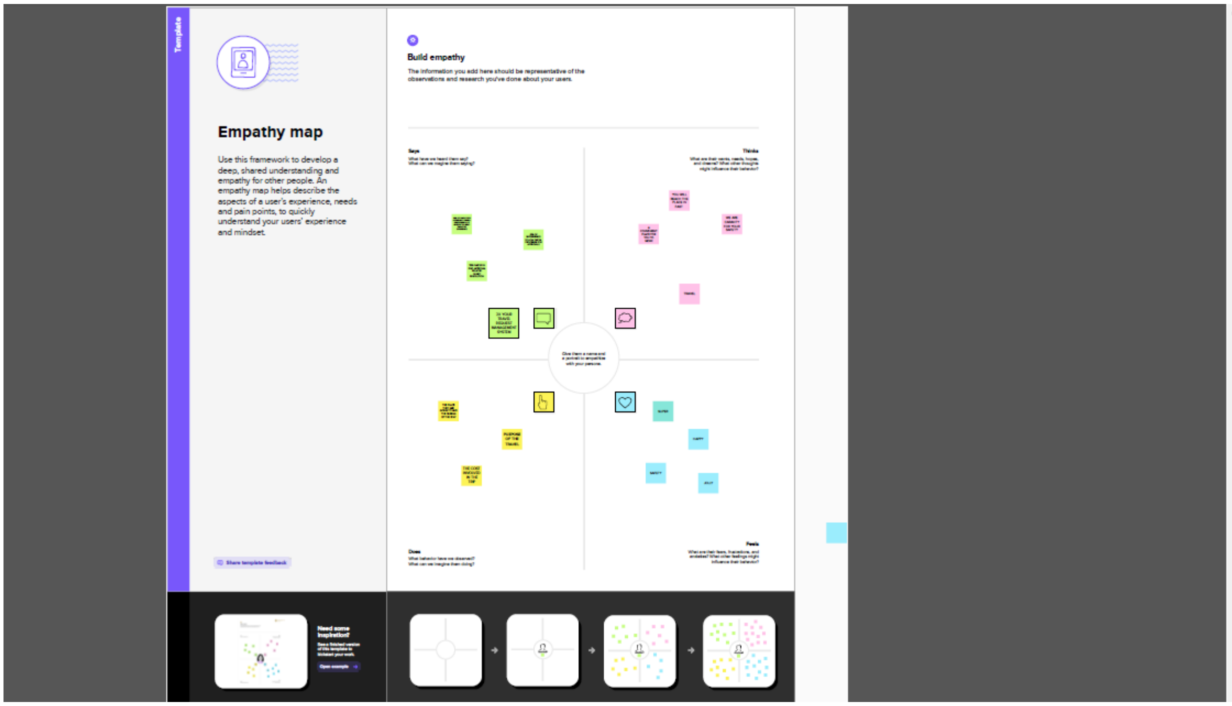
1.2 Purpose:

Business travel can be hellish to manage. With employees flying all over the world, there are flights to book, accommodation to arrange, and an endless list of miscellaneous costs and tasks to keep on top of .Work trips can be both highly productive and a pleasure for employees .They should be way to expand your network, increase your company's exposure, and create lasting experiences.

2.Problem definition & Design thinking:

2.1 Empathy Map:

An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like user persona, an empathy map can represent a group of users, such as a customer segment.



2.2 IDEATION & BRFAINSTORMING MAP:

3.RESULT:

3.1 Data Model:

<table>
<tr><th>Object Name</th><th>Field in the object</th></tr>
<tr><td>Department</td><td><table><tr><th>Field label</th><th>Data Type</th></tr><tr><td>Amount</td><td>Currency</td></tr></table></td></tr>
<tr><td>Expense Items</td><td><table><tr><th>Field label</th><th>Data Type</th></tr><tr><td>Amount</td><td>Picklist</td></tr></table></td></tr>
<tr><td>Travel Approval</td><td><table><tr><th>Field label</th><th>Data Type</th></tr><tr><td>Travel Approval</td><td>Master-Detail Relationship</td></tr><tr><td>Trip start Data</td><td>Date</td></tr><tr><td>Trip End Data</td><td>Date</td></tr><tr><td>Out of State</td><td>Checkbox</td></tr><tr><td>Destination State</td><td>Text</td></tr><tr><td>Department</td><td>Lock up Relationship</td></tr></table></td></tr>
</table>

3.2 ACTIVITY & SCREENSHOT :

Milestone 1- Create Salesforce Org:

Activity-1:

Creating Developer Account

Creating a developer org in salesforce.
1. Go to developers.salesforce.com/
2. Click on sign up.
3. On the sign-up form, enter the following details: 1. First name & Last name
2. Email
3. Role: Developer
4. Company: College Name
5. County: India
6. Postal Code: pin code
7. Username: should be a combination of your name and company

This need not be an actual email id, you can give anything in the format: username@organization.com

Account Activation

Go to the inbox of the email that you used while signing up. Click on the verify account to activate your account.

Login To Your Salesforce Account

1.Go to salesforce.com and click on login.
2.Enter the username and password that you just created.
3.After login this is the home page which you will see.

Milestone 2 Creating the Application:

The AppManager is your go to place for managing apps for lightning experience. It shows all your connected apps and salesforce apps.

Activity-1:
Create the Travel Application

Search AppManager in quick find box, click on new lightning app. Before creating the application download this zip file and extract it.https://developer.salesforce.com/files/TravelAppWorkshopFiles.zip

Steps:

- From Setup, enter App Manager in the Quick Find and select App Manager.

  Click New Lightning App. Enter Travel Approval as the App Name, then click Next
  .
- Under App Options, leave the default selections and click Next.
- Under Utility Items, leave as is and click Next.

- From Available Items, select Department, Travel Approval, Expense Item, Reports, and Dashboards and move them to Selected Items. Click Next.
- From Available Profiles, select System Administrator and move it to Selected Profiles. Click Save & Finish.
- To verify your changes, click the App Launcher, type Travel Approval and select the Travel Application app.

Milestone 3:

Salesforce objects are database tables that permit you to store data that is specific to an organization. It consists of fields (columns) and records (rows).
Salesforce objects are of two types:
• Standard Objects: Standard objects are the kind of objects that are provided by salesforce.com such as users, contracts, reports, dashboards, etc.

• Custom Objects: Custom objects are those objects that are created by users. They supply information that is unique and essential to their organization. They are the heart of any application and provide a structure for sharing data.
In this Travel Approval application we will be creating 3 objects:
Department
Travel approval and
Expense Item

Activity-1:
Custom Object Creation

1.After you Login to your org, click create on the right side of the page and select custom object.

To create an object:
From the setup page → Click on Object Manager → Click on Create → Click on Custom Object.

On Custom object defining page:
Enter the label name, plural label name, click on Allow reports, Allow search → Save.

Activity-2:
Create 3 custom objects and tabs

a) Department
b) Travel Approval
c) Expense Item

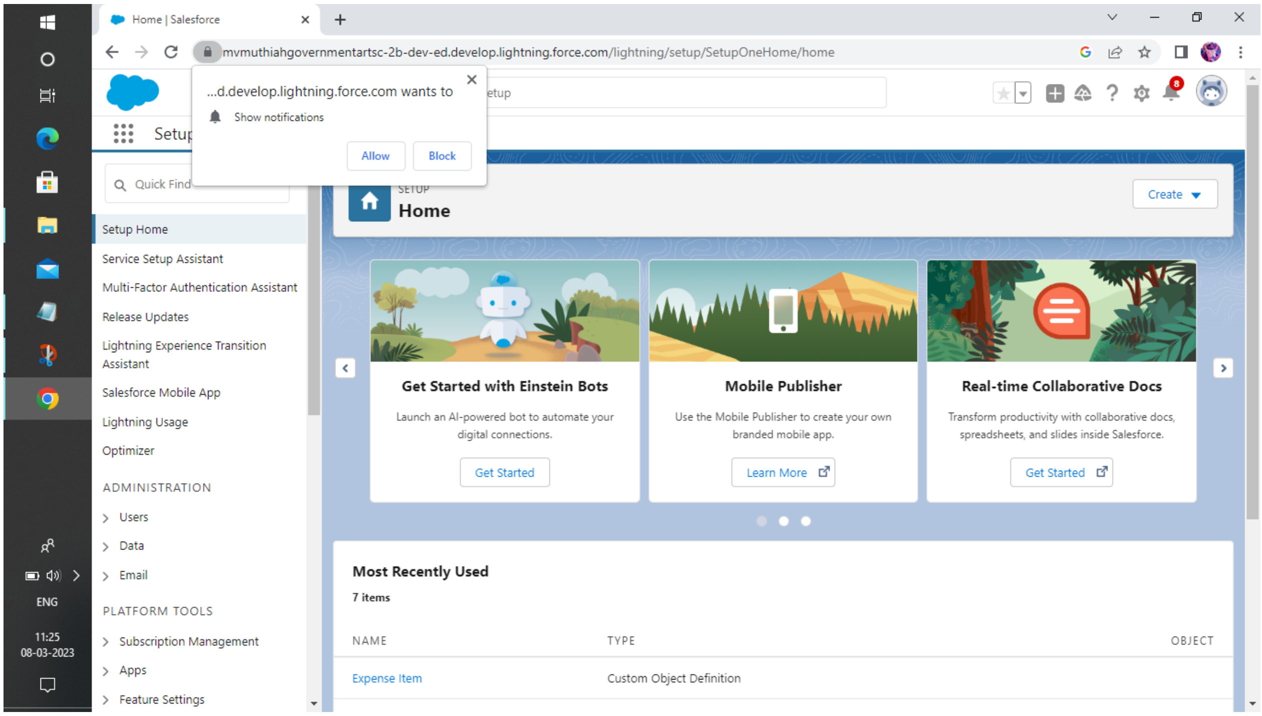
Create Department Object

1.From Setup, click Object Manager.
2.Click Create, then select Custom Object.

3.Give the name as Department
To Navigate to Setup page:
Click on gear icon → click setup.
To create an object:
From the setup page → Click on Object Manager → Click on Create → Click on Custom Object.
On Custom object defining page:
Enter the label name, plural label name, click on Allow reports, Allow search → Save.
4.Now the tabs section opens, add this tab to the travel app.
Create Travel Approval Object
1.Navigate back to Object Manager
2. Click Create then select Custom Object.

3.Enter these details Parameter	Value
Label	TravelApproval
Plural Label	TravelApprovals
Object Name	Travel_Approval (this field auto-populates)
Record Name	Travel Approval #
Datatype	Auto Number
DisplayFormat	TA-{00000}
Starting Number	1

4.Allow Reports, search, and launch a new tab and add this tab to the travel app.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Block
Setup
Quick Find
Setup Home
Service Setup Assistant
Multi-Factor Authentication Assistant
Release Updates
Lightning Experience Transition Assistant
Salesforce Mobile App
Lightning Usage
Optimizer
ADMINISTRATION
Users
Data
Email
PLATFORM TOOLS
Subscription Management
Apps
Feature Settings
SETUP
Home
Create
Get Started with Einstein Bots
Launch an AI-powered bot to automate your digital connections.
Get Started
Mobile Publisher
Use the Mobile Publisher to create your own branded mobile app.
Learn More
Real-time Collaborative Docs
Transform productivity with collaborative docs, spreadsheets, and slides inside Salesforce.
Get Started
Most Recently Used
7 items
NAME
TYPE
OBJECT
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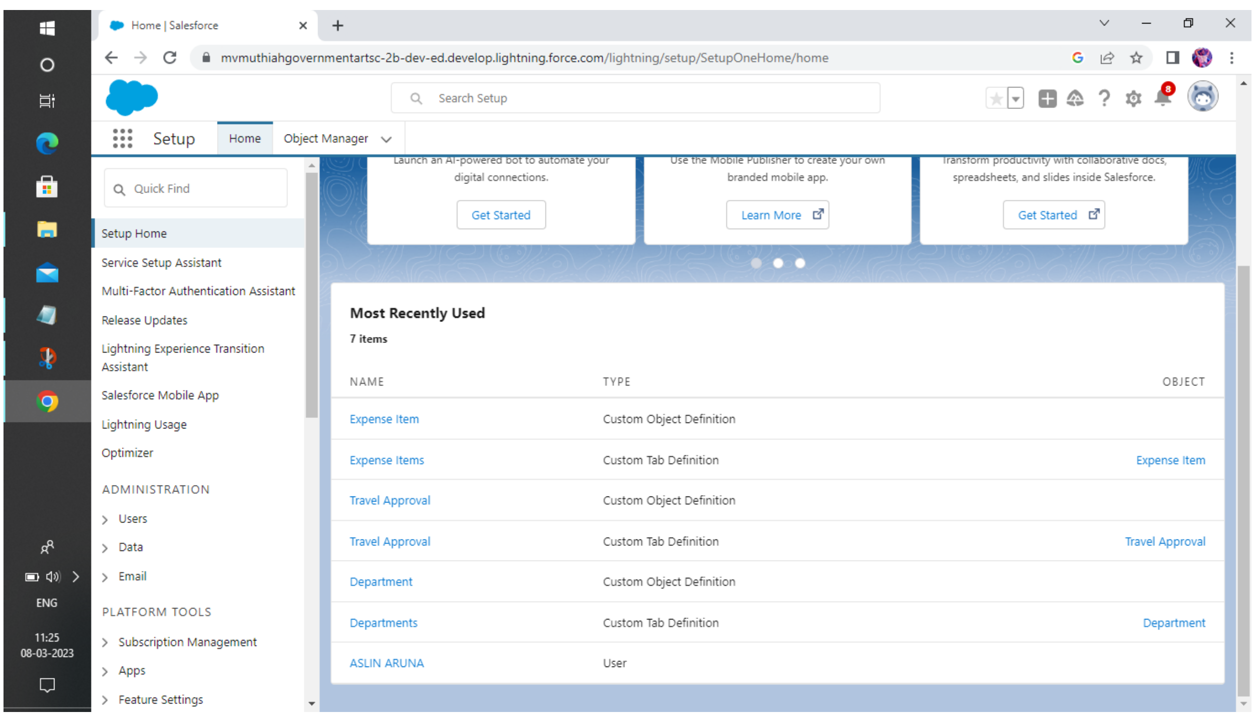
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Quick Find
Setup Home
Service Setup Assistant
Multi-Factor Authentication Assistant
Release Updates
Lightning Experience Transition Assistant
Salesforce Mobile App
Lightning Usage
Optimizer
ADMINISTRATION
Users
Data
Email
PLATFORM TOOLS
Subscription Management
Apps
Feature Settings
digital connections.
Get Started
branded mobile app.
Learn More
spreadsheets, and slides inside Salesforce.
Get Started
Most Recently Used
7 items
NAME
TYPE
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Expense Item
Custom Object Definition
Expense Items
Custom Tab Definition
Expense Item
Travel Approval
Custom Object Definition
Travel Approval
Custom Tab Definition
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Department
Custom Object Definition
Departments
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Department
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Milestone 4:

Tabs in Salesforce help users view the information at a glance. It displays the data of objects and other web content in the application.

There are mainly 4 types of tabs:

Standard Object Tabs:

Standard object tabs displays data related to standard objects.

Custom Object Tabs:

Custom object tabs displays data related to custom objects. These tabs look and function just like standard tabs.

Web Tabs:

Web Tabs display any external Web-based application or Web page in a Salesforce tab.

Visualforce Tabs:

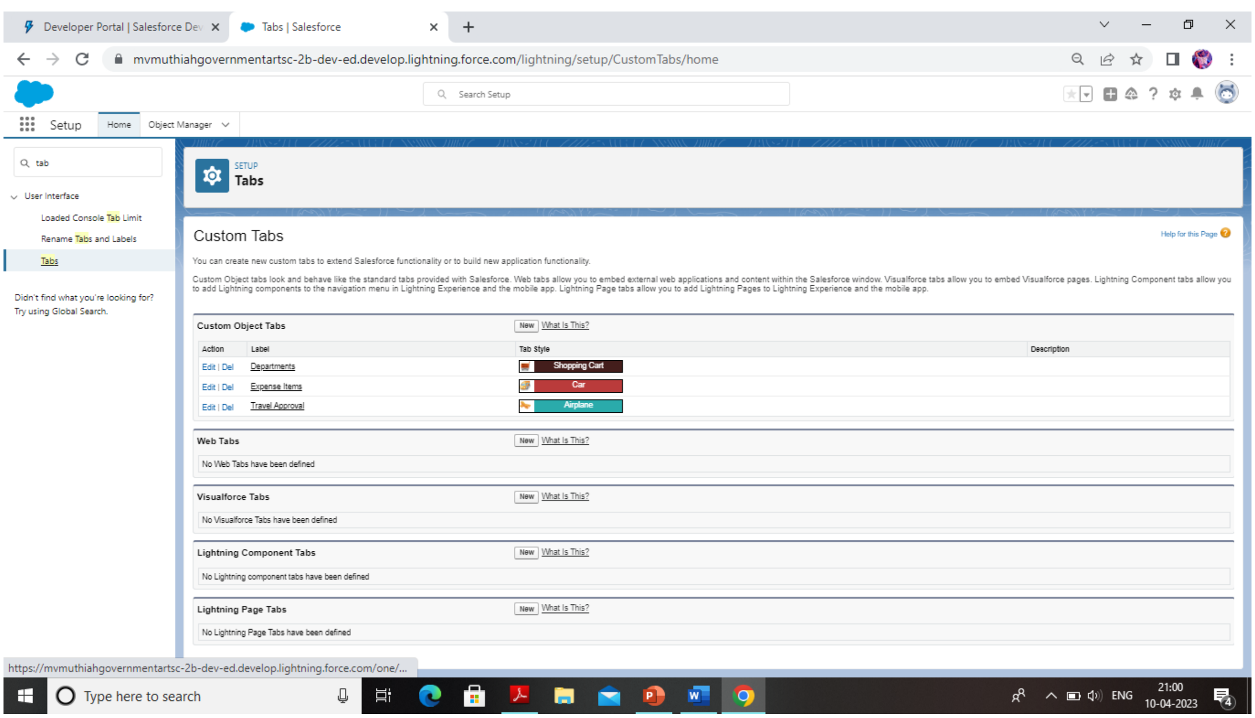
Visualforce Tabs display data from a Visualforce Page.

Activity-1:

Now create a custom tab. Click the Home tab, enter Tabs in Quick Find and select Tabs. Under Custom Object Tabs, click New.

1. For Object, select Event.
2. For Tab Style, select any icon.
3. Leave all defaults as is. Click Next, Next, and Save.

In the same way create other objects such as Attendees, Speaker and Vendor.



Milestone 4:
Create- Fields& Relationships :

Fields in Salesforce represents what the columns represent in relational databases. It can store data values which are required for a particular object in a record. There are 2 types of fields in salesforce:

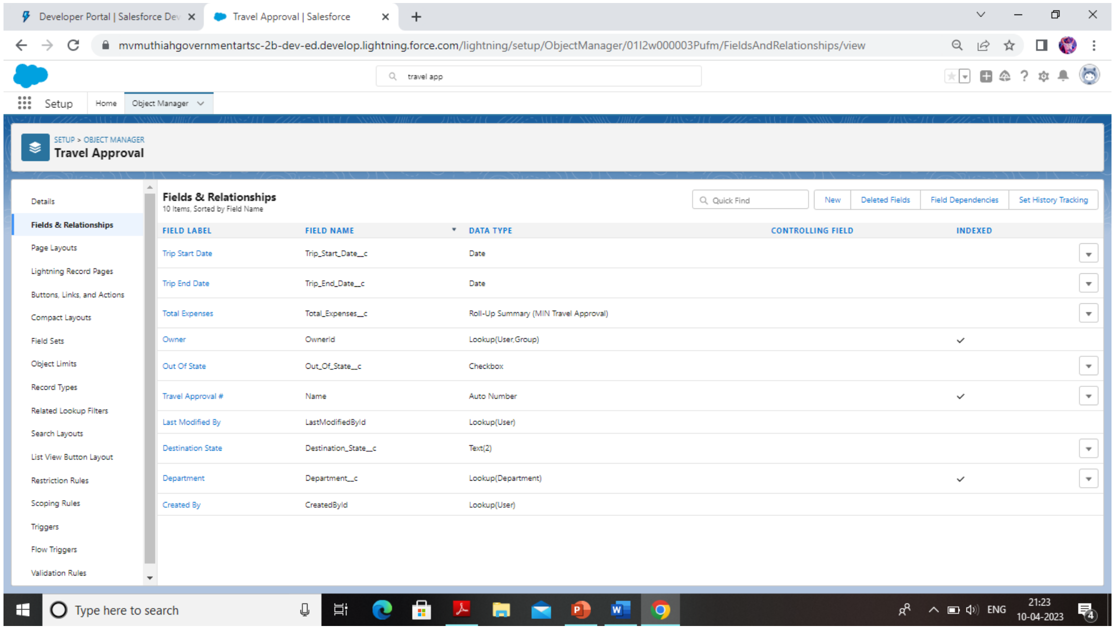
• Standard fields: There are four standard fields in every custom object that are Created By, Last Modified By, Owner, and the field created at the time of the creation of an object.

These fields cannot be deleted or edited and they are always required. For standard objects, the fields which are present by default in them and cannot be deleted from standard objects are standard fields.

• Custom fields: The Custom fields which are added by the administrator/developer to meet the business requirements of any organization. They may or may not be required.

Activity-1:

1. Click Fields & Relationships, and click New.
2. For data type, select Currency.
3. Enter these details:
    a. For Field Label, enter Amount
    b. For Length, enter 16
    c. For Decimal places, enter 2
    d. Select Required
4. Click Next, Next, then Save & New.



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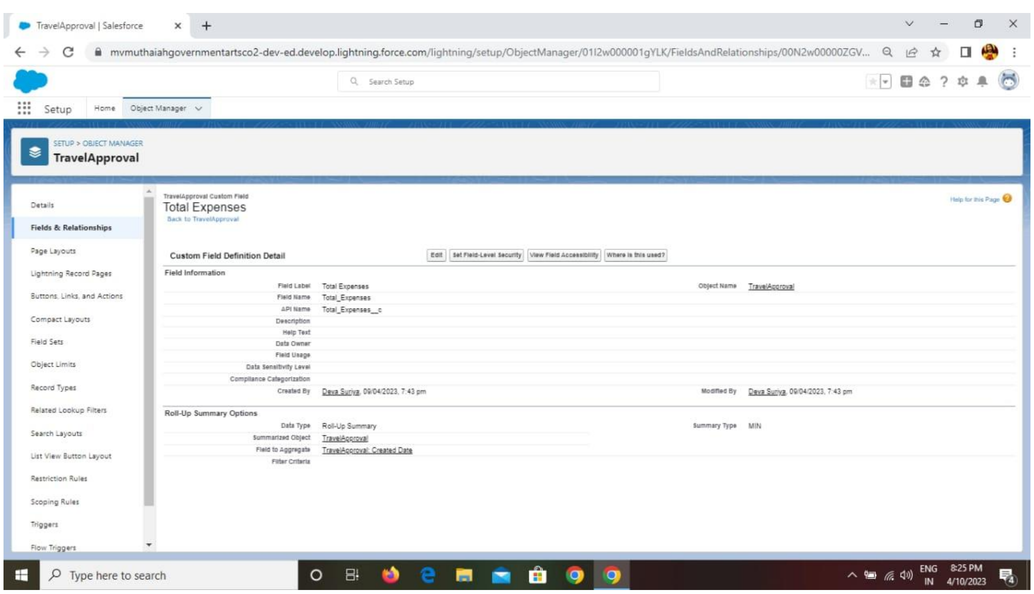
Activity-2:
Create the Expense Type field:

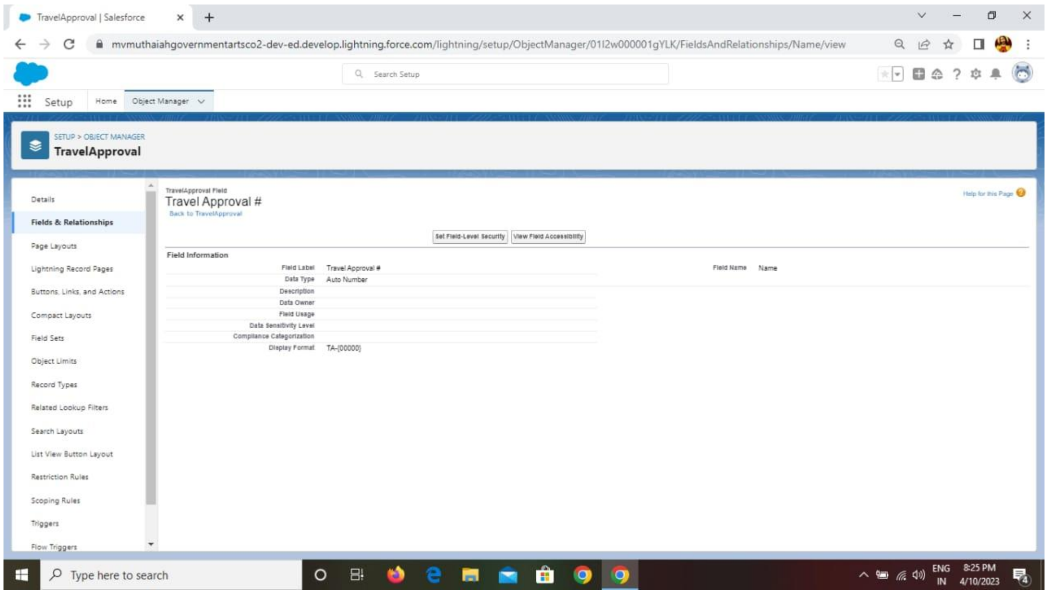
- Select Picklist as the data type.
- Select Enter values, with each value separated by a new line.
- Add these values:(Airfare, Hotel, RentalCars, Meals,Others)
- Select Required.
  - Click Next, Next, then Save & New



Activity-3:

Create the Travel Approval field.

- Select Master-Detail Relationship data type, click Next.
- Select Travel Approval from the Related To menu.
- Click Next four times, then click Save.



Milestone 5:

Import Departments:

In order to complete this milestone, you need to download the reference file https://developer.salesforce.com/files/TravelAppWorkshopFiles.zip?_ga=2.108173638.597564088.1674441525-733189446.1673935386

Activity-1:

From Setup, click the Home tab.

1. In the Quick Find box, enter Data Import and select Data Import Wizard.
2. Click Launch Wizard!

Click the Custom Objects tab and select the Departments object.

3. Next, select Add new records.
4. Drag and drop the Departments.csv file you downloaded using zip file or click the CSV icon and browse to select your file. Select Next.

5. Since the field names in the CSV file (CSV Header) are the same as the field names in your object (Mapped Salesforce Object), the fields are automatically mapped. Click Next.

6. The next screen gives you a summary of your data import. Click Start Import.
7. Click OK on the popup.
8. This takes you to the bulk import summary window that shows that the process has completed and 16 records have been successfully imported or processed. You'll also get an email notification confirming the import.

Milestone 6:

Customize User Interface :

In this Milestone we are going to setup the users, customizing the page layouts

Activity-1:

Create User and Setup Approvals

1.Enter users in the quickfind box and select users.

2.Click new user .

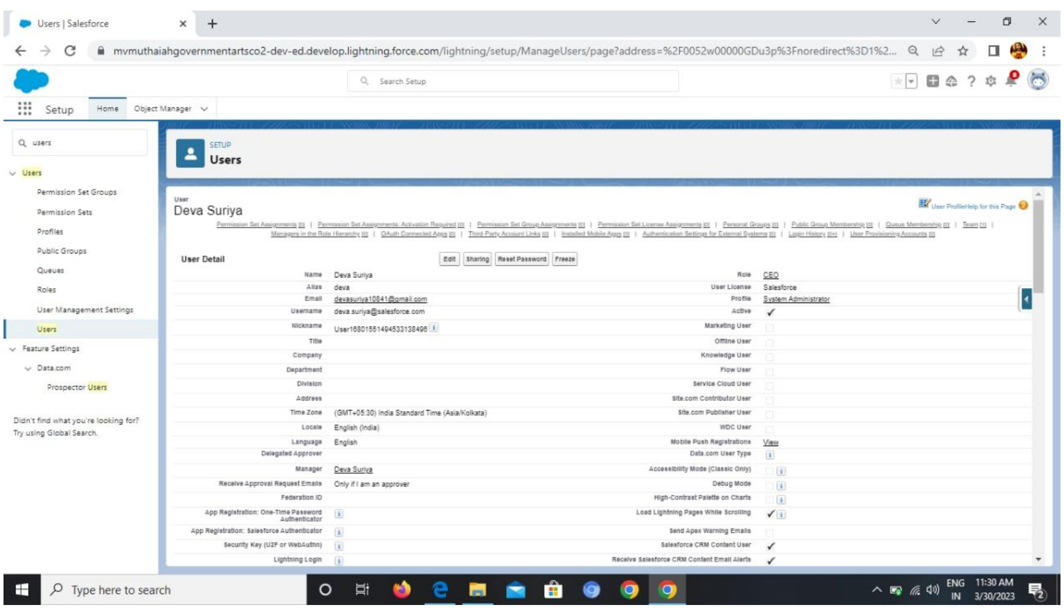
3.Now give the name as you wish but the email must be real email address.

4.For username field follow the insstructions

- Firstname.<yourlastname>@<yourcompany>.com
- …or create a username of your choice that should be unique

5.Give the role as CEO, Profile as System Administrator and license as Salesforce.

6.From Setup, enter Users in the Quick Find box and select Users.



7.Select your user account in the list provided. (Click on your name in the All Users list.)

8.Click Edit.

9.Scroll down to Approver Settings. Set your manager as the user you have created recently.
10.Click Save

Milestone 7:

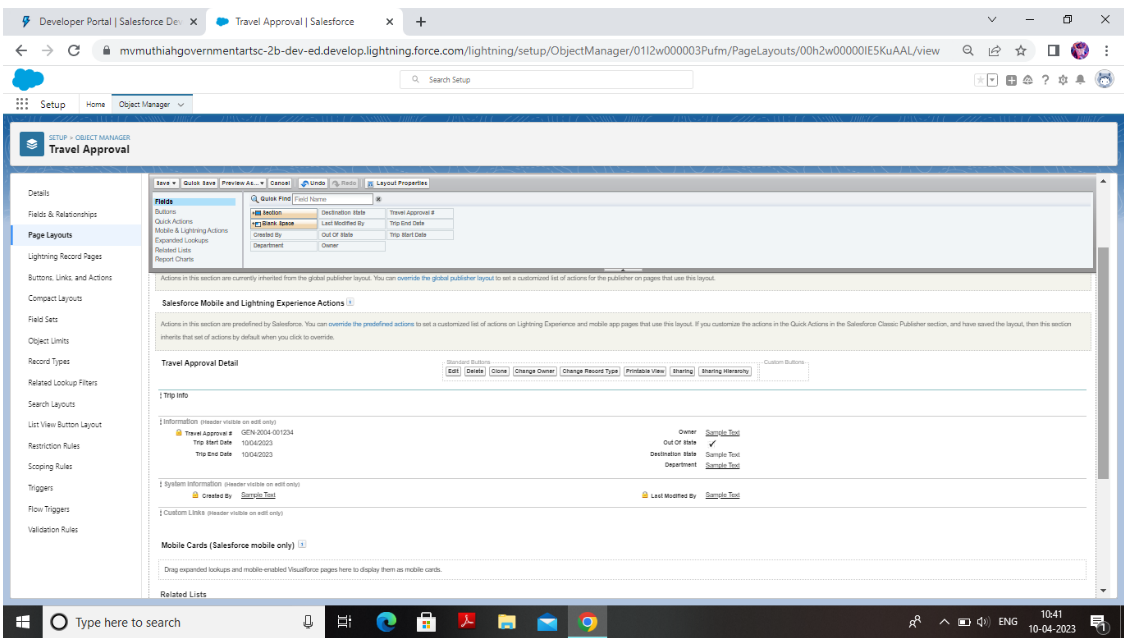
Use customization

Customization refers to custom software development and coding to add robust features to your CRM platform. These features can be integrated with your business to have a scalable impact.

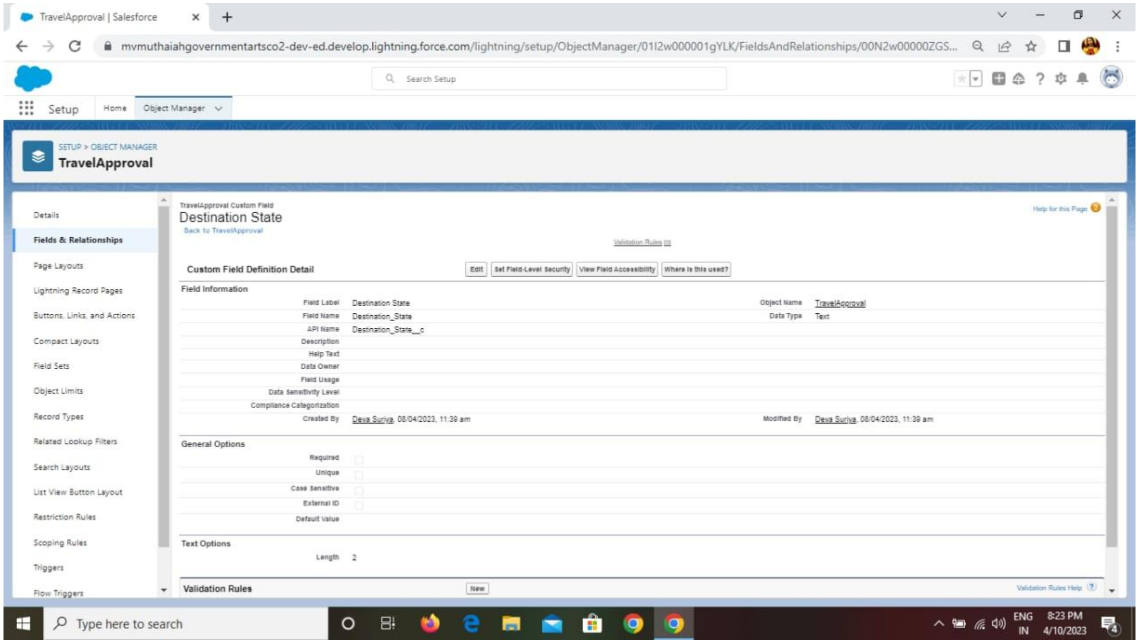
Activity -1:

Customize Travel Approval Object Page layout

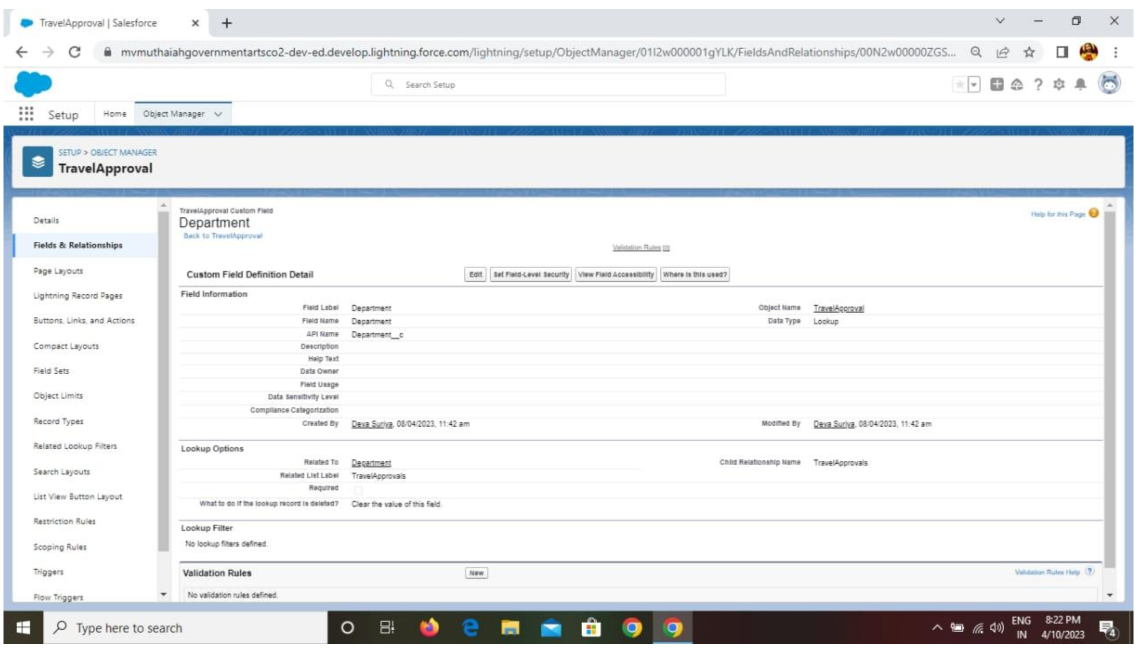
1.From the Object Manager, search for the travel approval object and click on page layouts and click edit.
2.Drag Section from the top pane to the lower pane directly below the Information section. When dragging over the page, you get a visual indicator of where you can drop the new section.



3.Name the section Trip Info, leave the rest of the settings at their default values, then click OK.
4. Drag the Purpose of Trip field from the Information section to the Trip Info section..
5.Drag Trip Start Date and Trip End Date from the top pane into the left-hand column of the Trip Info section.
6.Drag Out-of-State and Destination State from the top pane into the right-hand column of the Trip Info section.



7.Drag the Department field from the left-hand column of the Trip Info section to the right-hand column.



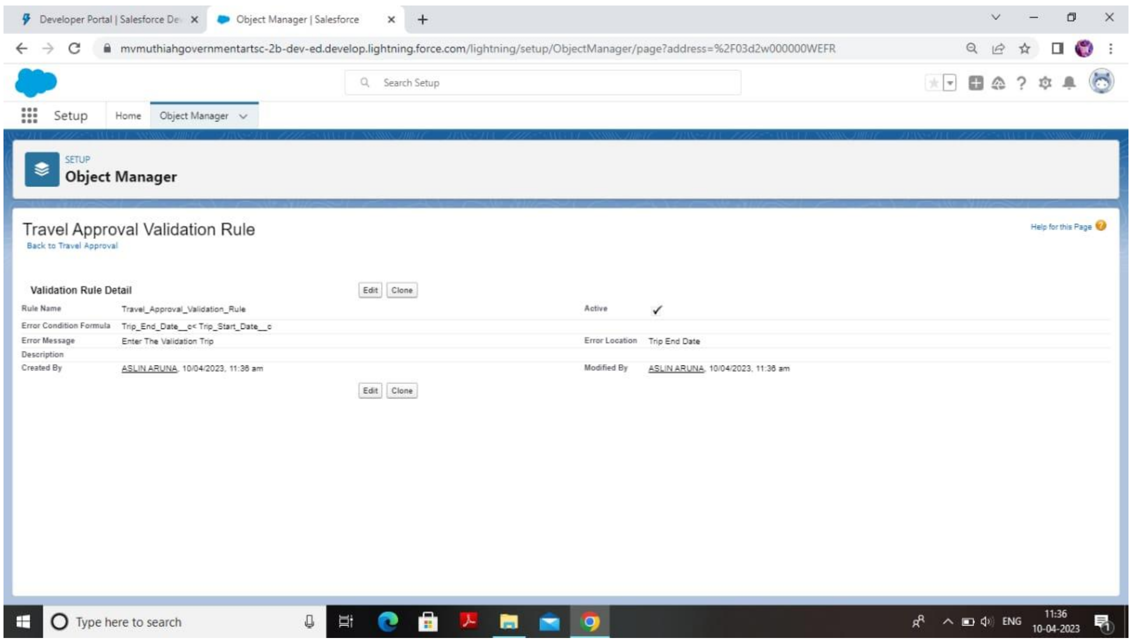
8.Click Save

Milestone 8:
Add Business Logic to Travel App

From this milestone we are going to create validation rules, rollup summary fields, formula fields, workflows and approval process.

Activity-1:
Create Validation Rule

1.Search for the travel approval object from the object manager and open the object.
2.Click on validation rules and give your rule a name and make sure that the rule is set to active.
3.In the error condition formula enter Trip_End_Date__c < Trip_Start_Date__c.
4.For error location select field and pick trip end date as the location for error.



Activity-2:
Create RollUp Summary Fields

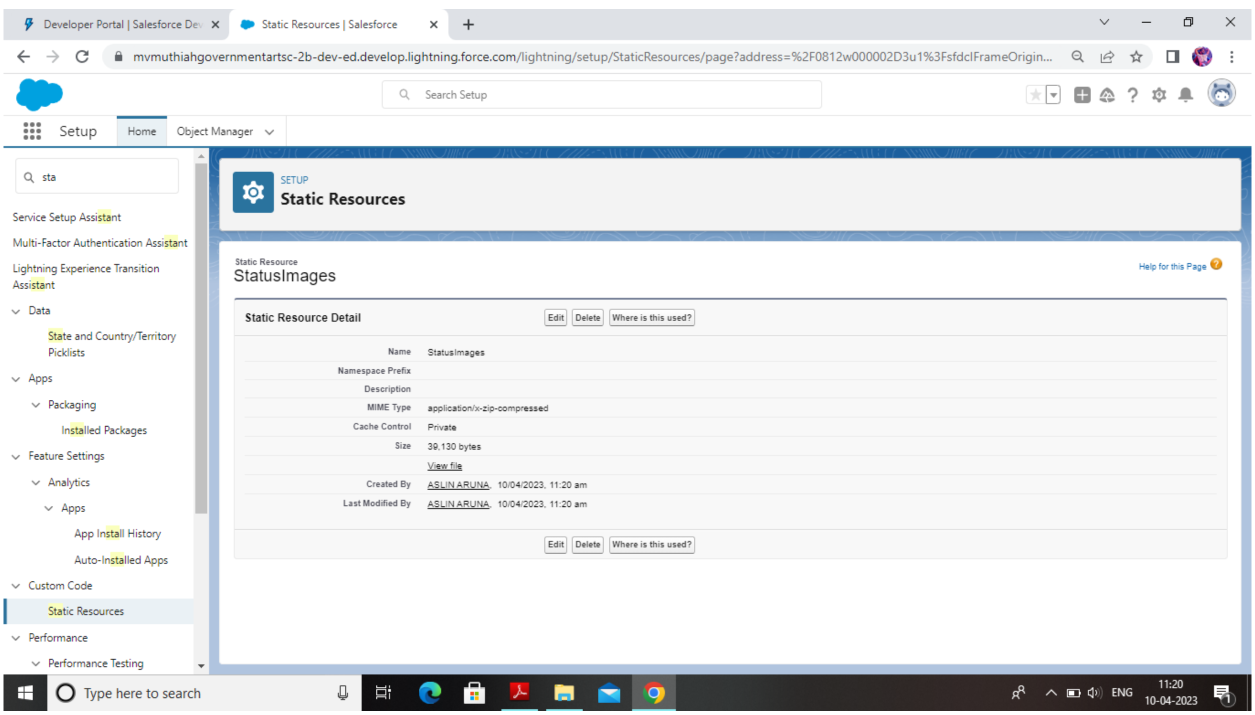
1. From the Travel Approval object, select Fields & Relationships.
2. Click New.
3. Select the Roll-Up Summary data type.
4. Click Next.
5. Enter the following values for the field details
    o Field Label: Total Expenses
    o Field Name: Total_Expenses (this automatically gets set when you tab out of the Field Label field
6. Click Next.
7. Configure the roll-up calculation.
    o Summarized Object: Expense Items
    o Roll-Up Type: SUM
    o Field to Aggregate: Amount

8. Click Next, Next, Save

Activity-3:
Create Formula Fields

1. First, we need to upload a zip file to your Salesforce environment that contains all the images we use. You should have a file titled StatusImages.zip .
2. Click the Home tab to navigate back to the main setup page.
3. Click Custom Code | Static Resources (or enter Static in the Quick Find to filter down the options).
4. Click New.

5. Enter the following values for your static resource **Parameter**	**Value**
Name	StatusImages
File	StatusImages.zip
Cache Control	Private



6. Now select the travel approval object.
7. Select Fields & Relationships.
8. Click New
9. Select Formula data type.

10. Click Next.
11. Enter the following values:
Field Label: Status Indicator
Field Name: Status_Indicator (This automatically gets sent when you tab out of the Field Label field)
Formula Return Type: Text
12. Click Next.
13. Copy and paste the following formula into the formula editor.
IF(ISPICKVAL(Status__c , 'Approved'), IMAGE("/resource/StatusImages/thumbs-up.png", "Accepted", 20, 20),
IF (ISPICKVAL(Status__c , 'Rejected'), IMAGE("/resource/StatusImages/thumbs-down.png", "Rejected", 20, 20),IMAGE("/resource/StatusImages/draft.png", "In-Process", 20, 20)))
14.Click Next, Next, Save.

Milestone 10:-

What are Reports:

Reports in Salesforce is a list of records that meet a particular criterion which gives an answer to a particular question. These records are displayed as a table that can be filtered or grouped based on any field.

There are 4 types of report formats in Salesforce:

1. Tabular Reports:

This is the most basic report format. It just displays the row of records in a table with a grand total. While easy to set up they can’t be used to create groups of data or charts and also cannot be used in Dashboards. They are mainly used to generate a simple list or a list with a grand total.

2. Summary Reports:

It is the most commonly used type of report. It allows grouping of rows of data, view subtotal, and create charts.

3. Matrix Report:

It is the most complex report format. Matrix report summarizes information in a grid format. It allows records to be grouped by both columns and rows. It can also be used to generate dashboards. Charts can be added to this type of report.

4. Joined Reports:

These types of reports let us create different views of data from multiple report types. The data is joined reports are organized in blocks. Each block acts as a subreport with its own fields, columns, sorting, and filtering. They are used to group and show data from multiple report types in different views.

Report types:

Report type determines which set of records will be available in a report. Every report is based on a particular report type. The report type is selected first when we create a report. Every report type has a primary object and one or more related objects. All these objects must be linked together either directly or indirectly.

- • A report type cannot include more than 4 objects.
- • Once a report is created its report type cannot be changed.

There are 2 types of report types:

1. Standard Report Types:

Standard Report Types are automatically included with standard objects and also with custom objects where “Allow Reports” is checked.

Standard report types cannot be customized and automatically include standard and custom fields for each object within the report type. Standard report types get created when an object is created, also when a relationship is created.

Note: *Standard report types always have inner joins.*

2. Custom Report Types:

Custom report types are reporting templates created to streamline the reporting process. Custom Reports are created by an administrator or User with “Manage Custom Report Types” permission. Custom report types are created when standard report types cannot specify which records will be available on reports.

In custom report types we can specify objects which will be available in a particular report. The primary object must have a relationship with other objects present in a report type either directly or indirectly.

There are 3 types of access levels of folders:

1. Viewer:

With this access level, users can see the data in a report but cannot make any changes except cloning it into a new report.

2. Editor:

With this access level, users can view and modify the reports it contains and can also move them to/from any other folders they have access level as Editor or Manager.

3. Manager:

With this access level, users can do everything Viewers & Editors can do, plus they can also control other user’s access levels to this folder. Also, users with Manager Access levels can delete the report.

From this milestone we are going to import the data and create the reports and dashboards for data visualization in the application

Activity :

Add Report :

To create a report:

Go to the app → click on the reports tab

Click New Report

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

Customize your report, then save or run it.

Milestone 11:-

Dashboards:

Dashboards **let you curate data from reports using charts, tables, and metrics**. If your colleagues need more information, then they're able to view your dashboard's data-supplying reports. Dashboard filters make it easy for users to apply different data perspectives to a single dashboard.

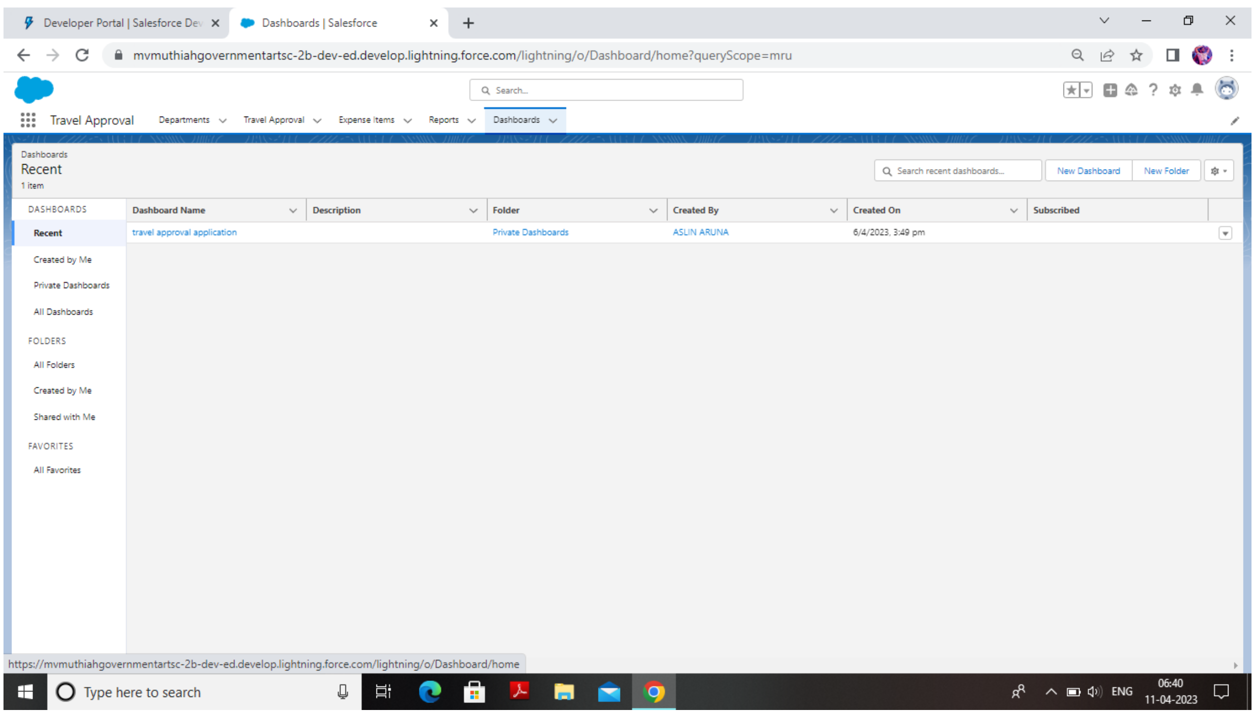
Activity:

Create Travel Approvals Dashboard

1.Click on Dashboards tab from the travel approval application,click on new dashboard

2.Give your dashboard a name and click on +component , select the report which you created .

3.For the data visualization select any of the chart, table etc as your wish.



4.TRAILHEAD PROFLIE PUBLIC URL:

Team Lead – C. Aslin Aruna - https://trailblazer.me/id/aarunatr003

Team Member 1 – C. Alagunatchi Alais Pandiyammal

Team Member 2 -N. Anshriniya

Team Member 3 -A. Deva Suriya

5.ADVANTAGES & DISADVANTAGE:

Lets kick of with the many advantages – and I'll give you a spoiler now, the travelling advantages far outweigh the disadvantages.

We all learn something from travelling, regardless of whether it's about culture, life or people in general. If nothing else, hearing others speak another language and seeing different cultures helps us realize how similar we all are in so many ways.

It is also good for self-development as we generally become more open minded and appreciate other people more when we travel.

Advantages Of Traveling

- Adventures And New Experiences. Without a doubt, the biggest plus to traveling is all of the new experiences you will get across the world. ...
- Experience New Cultures. ...
- Personal Growth. ...
- Lower Cost Of Living. ...
- Make New Friends. ...
- It Can Be Expensive. ...
- Sickness. ...
- It Can Be Lonely.

Disadvantages can help propel you to see your situation from different perspectives and find approaches to succeed that you might not otherwise have found. Advantages can blind you from the necessity to keep searching for better ways to pursue success.

6.APPLICATION:

The Travel Support System (this is the name that you can see on the screen when executing the application) is a small sample application for Natural ONE. As a sample application, its focus is to show Natural ONE functionality rather than being a full-fledged travel support application.

The Travel Support System (TSS) allows you to request and approve business trips. Flights, hotels and even more external information such as cell phone expenses or car rentals can be entered with the trip request. For the destination, weather information can be queried. A been manager can do both, request own trips as well as approve trips that have requested by employees.

7.CONCLUSION:

Here we've presented the look of a travel Approval Application on the Salesforce Platform which might provide the users with the specified travel assistant and also for the upper authorities to require care of the expenses at any point of your time through multilevel approvals of the travel request. Here the user can upload the bills to the cloud any time which is more efficient and productive. Travel Approval Application allows us to arrange and monitor travel plans and expense reports for our organization using Salesforce Platform.