



Build A Employee Travel Approval Application for corporate s

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.

Team Leader:

Renugopal .K

Members:

Ramesh . S
Sanjay . S
Sundar Rajan .S
Sundar .S

Milestone 1- Create Salesforce Org:

Activity-1:

Creating Developer Account

- Go to developers.salesforce.com/
- Click on sign up
- On the sign-up form, enter the following details
 - First name & Last name
 - Email
 - Role: Developer
 - Company: College Name
 - County: India
 - Postal Code: pin code
 - 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

Click on sign up after filling these.

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First Name*
Your first name

Last Name*
Your last name

Email*
Your email address

Role*
Your job role

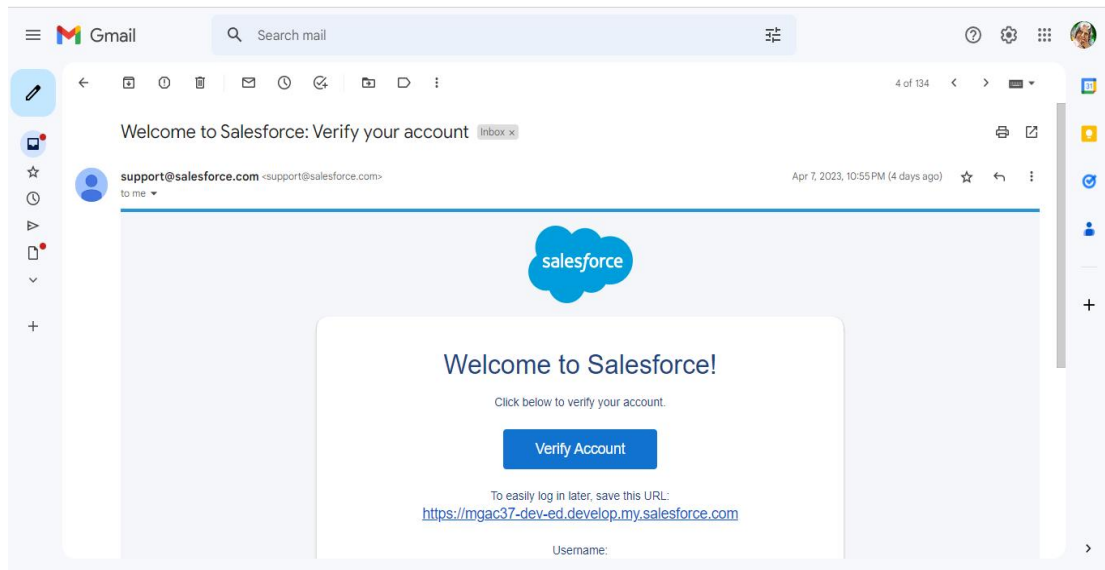
Company*
Company Name

Sign Up

Activity-2:

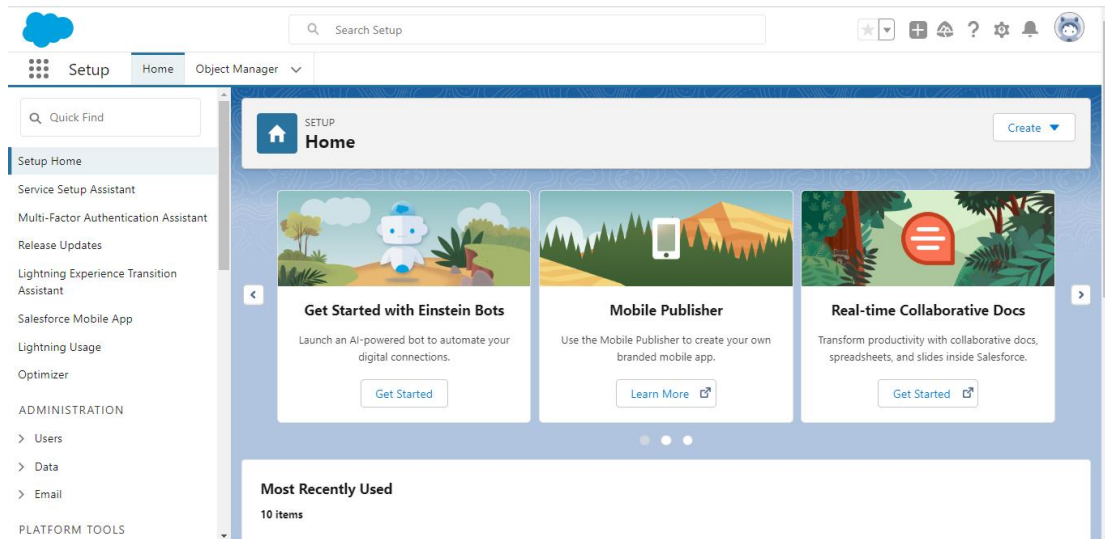
Account Activation

- Go to the inbox of the email that you used while signing up. Click on the verify account to activate your account. The email may take 5-10mins, as



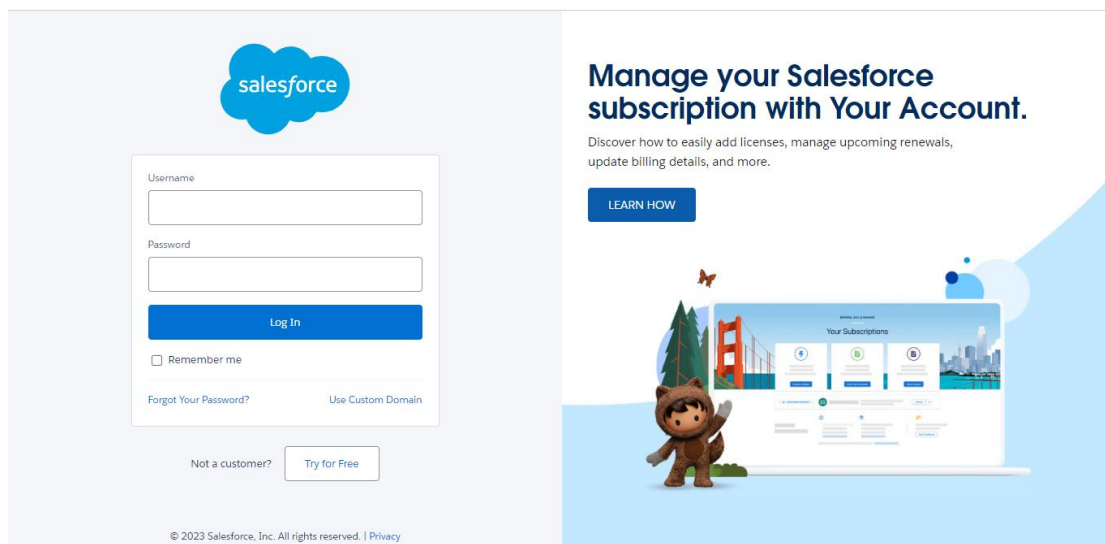
Login To Your Salesforce Account

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



Salesforce Login

<https://login.salesforce.com>



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. Use the lightning experience app manager to view all your 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>

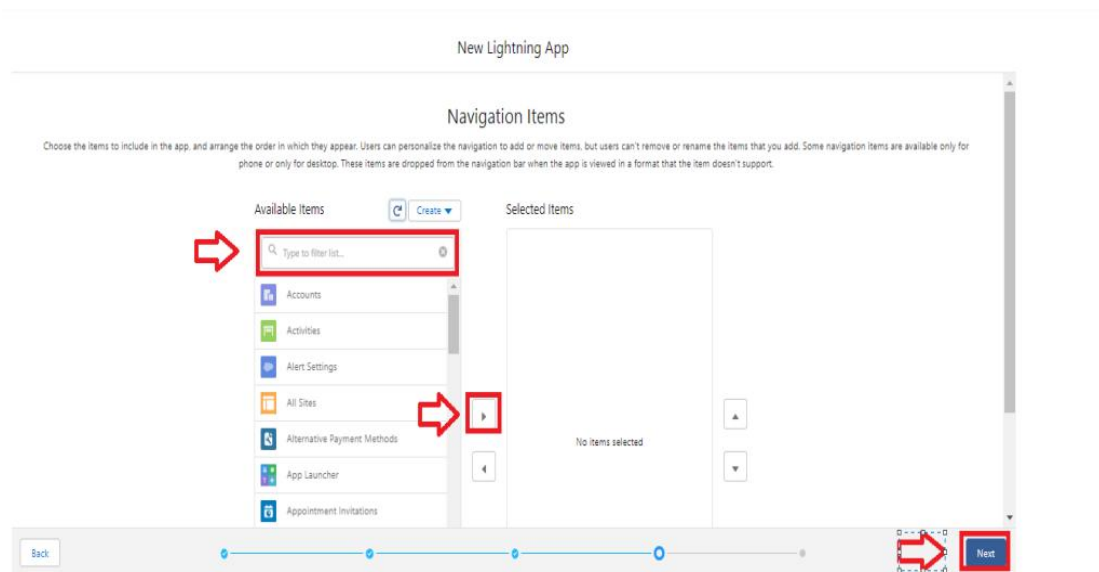
Steps

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

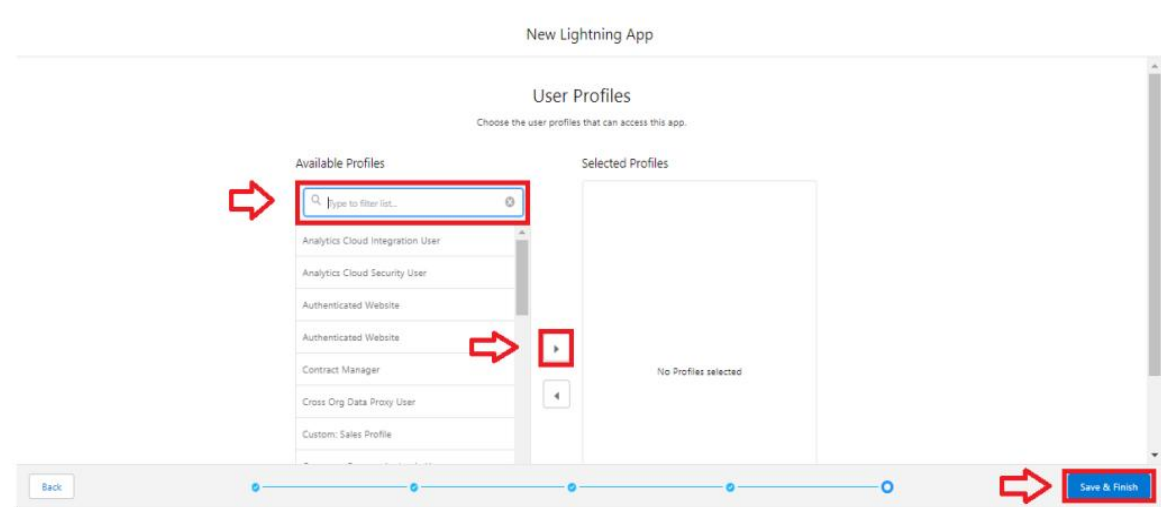
- Click New Lightning App. Enter Travel Approval as the App Name, then click Next

The screenshot shows the 'New Lightning App' setup interface. The title is 'New Lightning App'. Below it, the section is 'App Details & Branding'. A subtitle reads: 'Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.' The form is divided into two main columns: 'App Details' and 'App Branding'. Under 'App Details', there are three fields: 'App Name' (with a red asterisk and a help icon, placeholder text 'Name your app...'), 'Developer Name' (with a red asterisk and a help icon, placeholder text 'Enter a developer name...'), and 'Description' (with a help icon). Under 'App Branding', there is an 'Image' field (with a help icon, placeholder text 'Upload an image...', and an 'Upload' button with a cloud icon) and a 'Primary Color Hex' field (with a help icon, a color picker showing blue, and a text box containing '#0070D2'). At the bottom right, there is a blue 'Next' button.

- 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 -What is an object?:

- 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

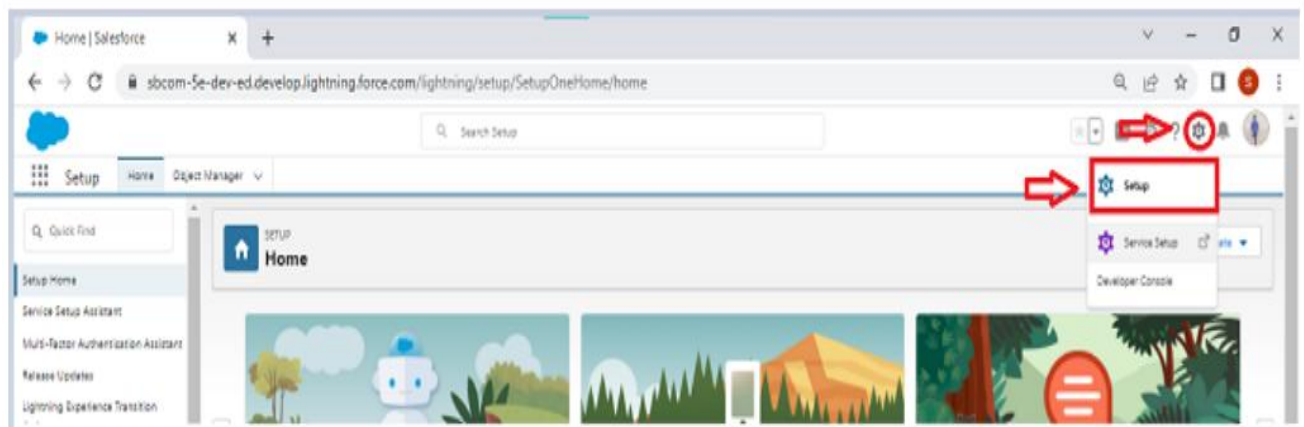
In this Travel Approval application we will be creating 3 objects:

- Department
- Travel approval and
- Expense Item

Activity-1:

Custom Object Creation

- 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

to record name, plural record name, click on Allow Reports, Allow Search, Save.

New Custom Object | Salesforce

sbcom-5e-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/new

Setup Home Object Manager

SETUP New Custom Object

Custom Object Definition Edit Save Save & New Cancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and layouts. Example: Account

Plural Label Example: Accounts

Starts with record name

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

Object Name

Description

Content-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, toolbars, 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

Date type

Optional Features

☒ Allow Reports ☐ Allow Activities ☐ Track Field History ☐ Allow in Chatter Groups ☐ Enable Linking

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☒ Allow Reports ☐ Allow Activities ☐ Track Field History ☐ Allow in Chatter Groups ☐ Enable Linking

Object Classification

When these settings are enabled, this object is classified as an Enterprise Application object. When these settings are disabled, this object is classified as a Light Application object. [Learn more](#)

☒ Allow Sharing ☒ Allow Bulk API Access ☒ Allow Streaming API Access

Deployment Status [What is this?](#)

☐ In Development ☒ Deployed

Search Status

When this setting is enabled, your users can find records of this object type when they search. [Learn more](#)

☒ Allow Search

Object Creation Options (Available only when custom object is first created)

☐ Add Notes and Attachments related list to default page layout ☐ Launch New Custom Tab Wizard after saving this custom object

Save Save & New Cancel

Activity-2:

Create 3 custom objects and tabs

- Department
- Travel Approval
- Expense Item

Create Department Object

- From Setup, click Object Manager.
- Click Create, then select Custom Object.
- Give the name as Departmen

To Navigate to Setup page:

Click on gear icon → click setup.

On Custom object defining page:

Enter the label name, plural label name, click on Allow reports, Allow search → Save

- Now the tabs section opens, add this tab to the travel app.

Create Travel Approval Object

- Navigate back to Object Manager
- Click Create then select Custom Object.

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

- Allow Reports, search, and launch a new tab and add this tab to the travel app

Milestone 4-What is a Tab?

- 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:

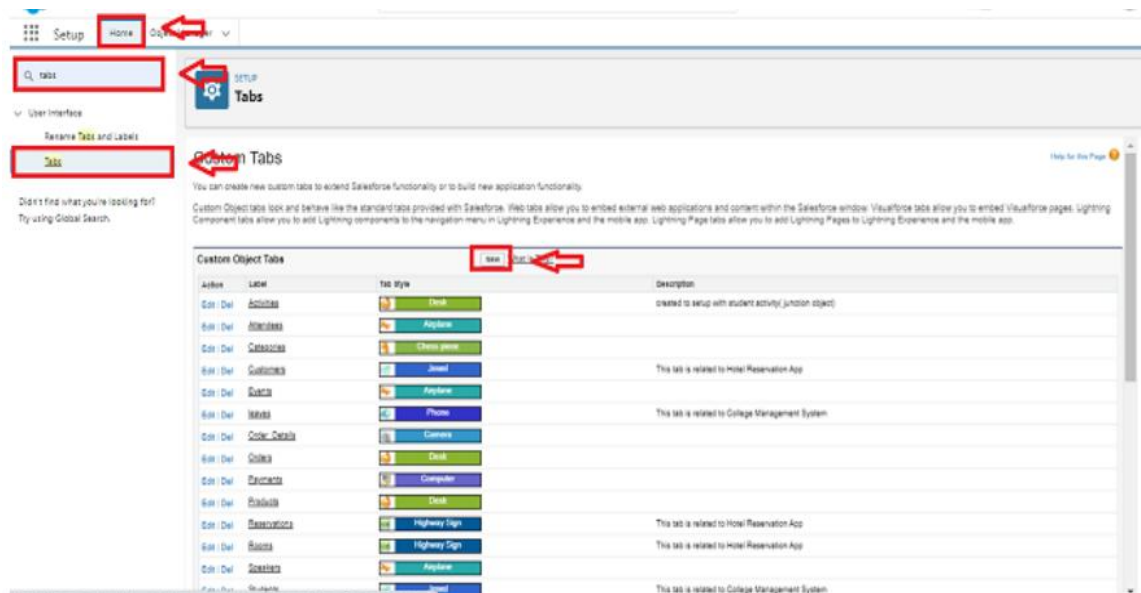
- Web Tabs display any external Web-based application or Web page in a Salesforce tab.

Visualforce Tabs:

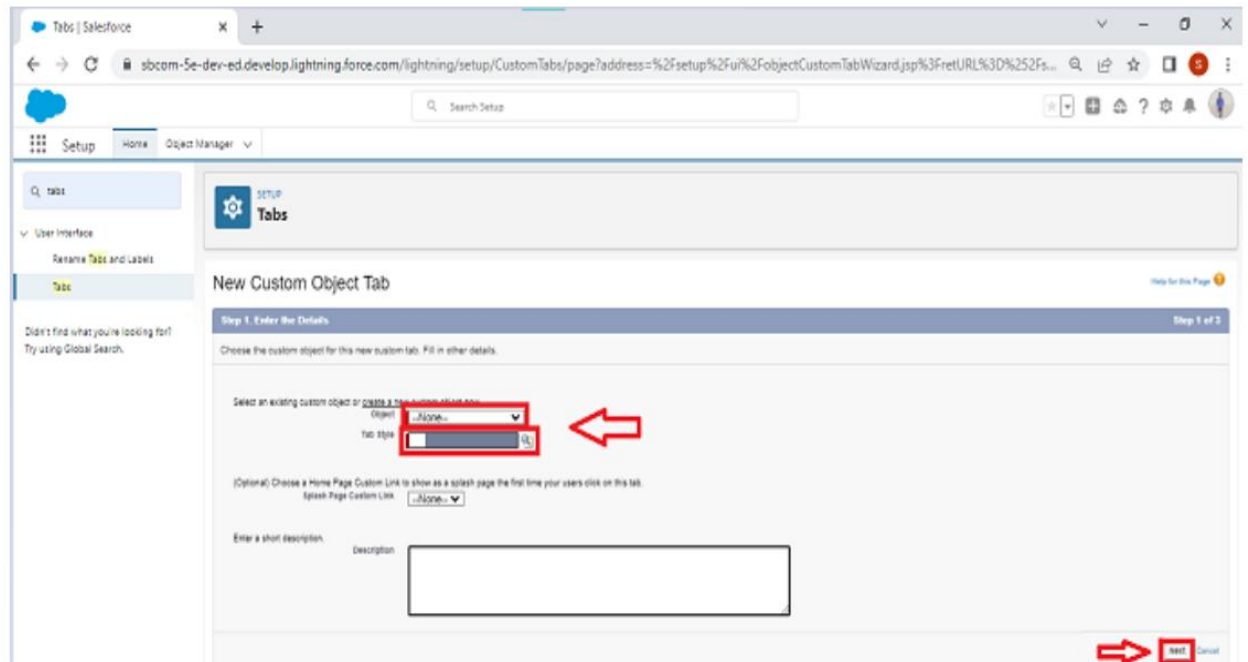
- Visualforce Tabs display data from a Visualforce Page

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



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



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

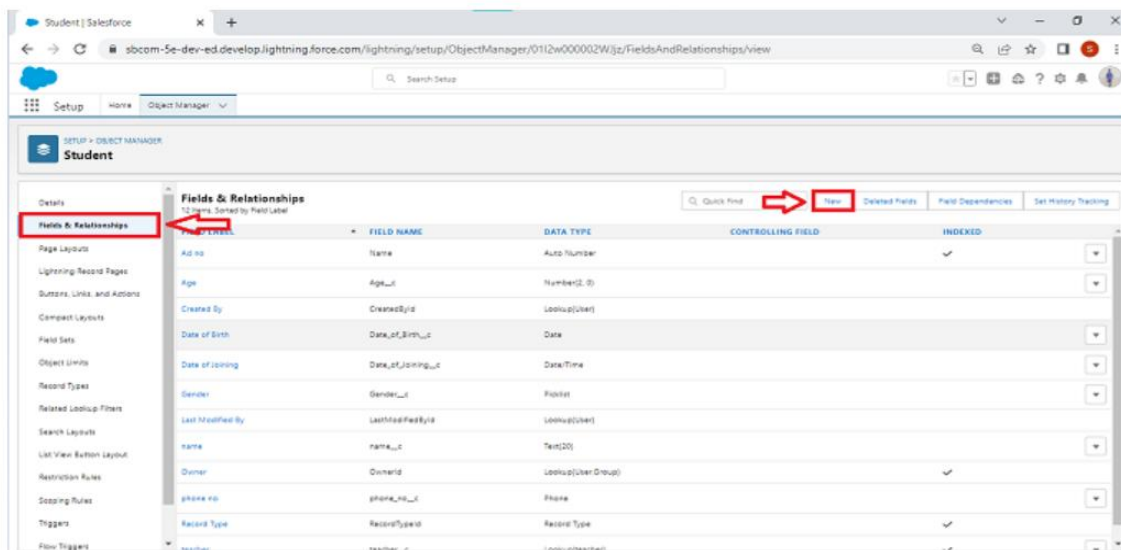
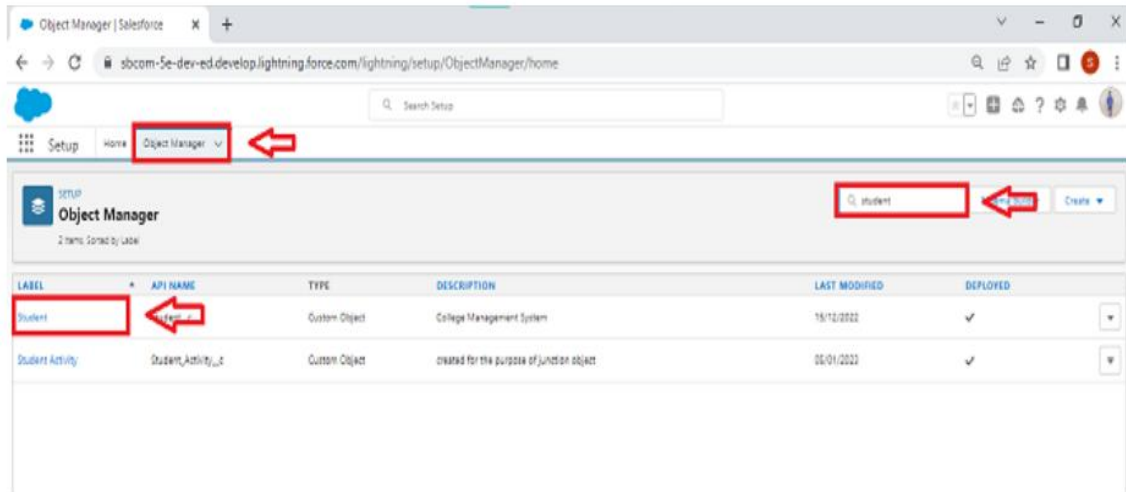
Milestone 4 Create- Fields& Relationships :

What are fields? 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:

- Click Fields & Relationships, and click New



For data type, select Currency.

Enter these details.

- For Field Label, enter Amount
- For Length, enter 16
- For Decimal places, enter 2
- Select Required

The screenshot shows the Salesforce 'New Custom Field' setup page. The page is titled 'New Custom Field' and shows 'Step 3. Enter the details'. The 'Field Label' field is highlighted with a red box and a red arrow pointing to it. The 'Field Name' field is also highlighted with a red box. The 'Required' checkbox is checked. The 'Default Value' field is empty. The 'Next' button is highlighted with a red box and a red arrow pointing to it.

- Click Next, Next, then Save & New.

Activit-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.

Activit-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.

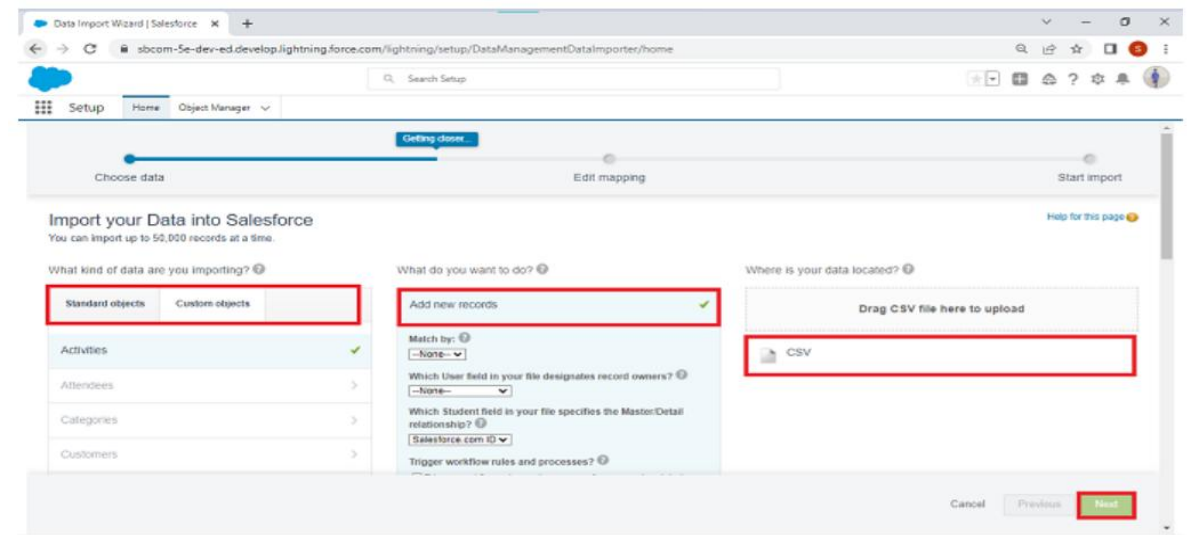
- In the Quick Find box, enter Data Import and select Data Import Wizard.

- Click Launch Wizard

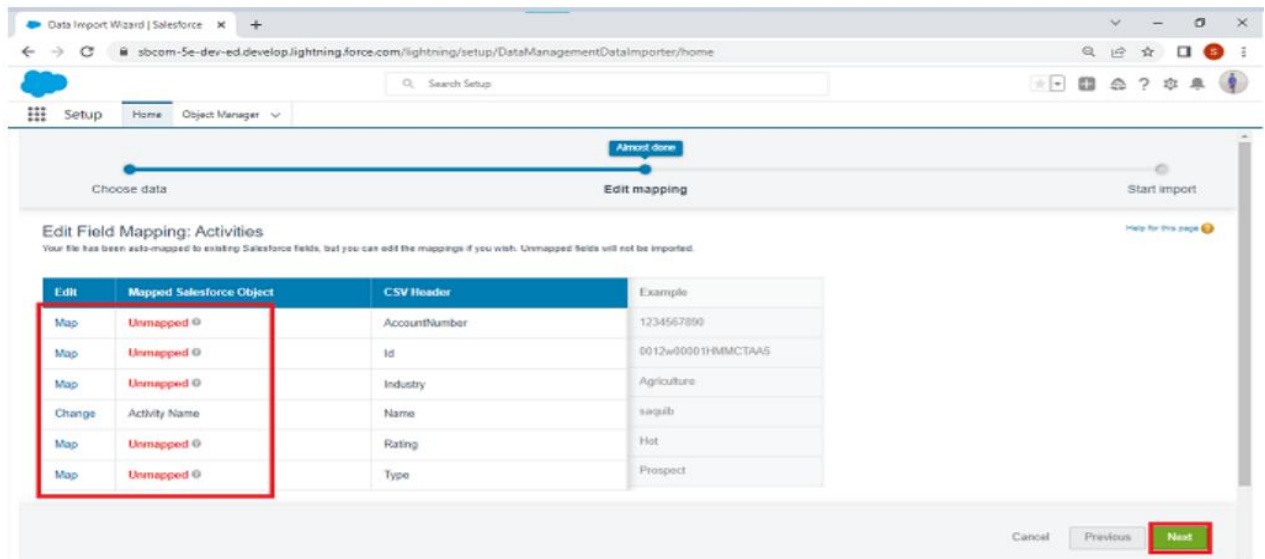


Click the Custom Objects tab and select the Departments object.

- Next, select Add new records.
- 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.



- 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.



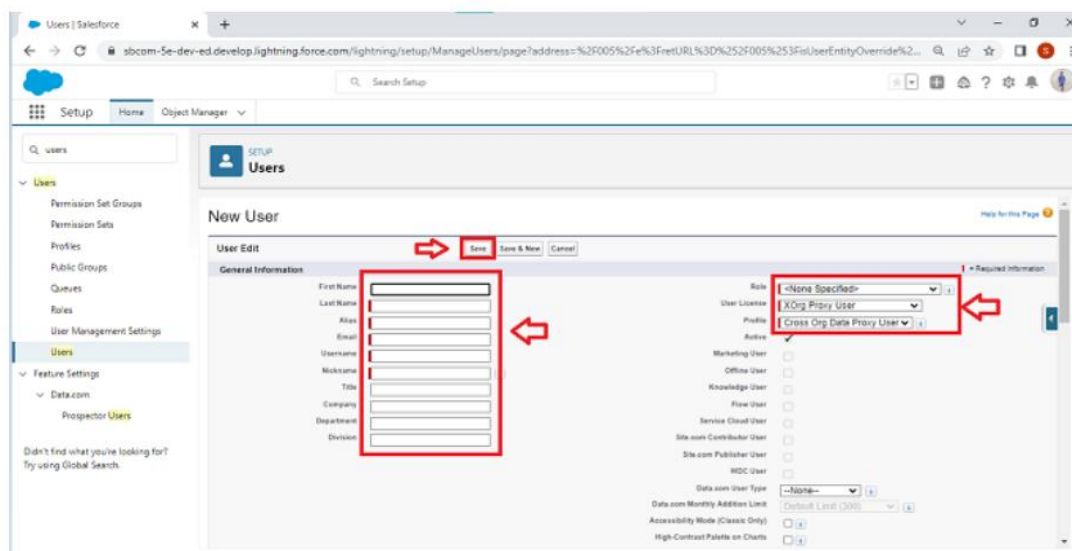
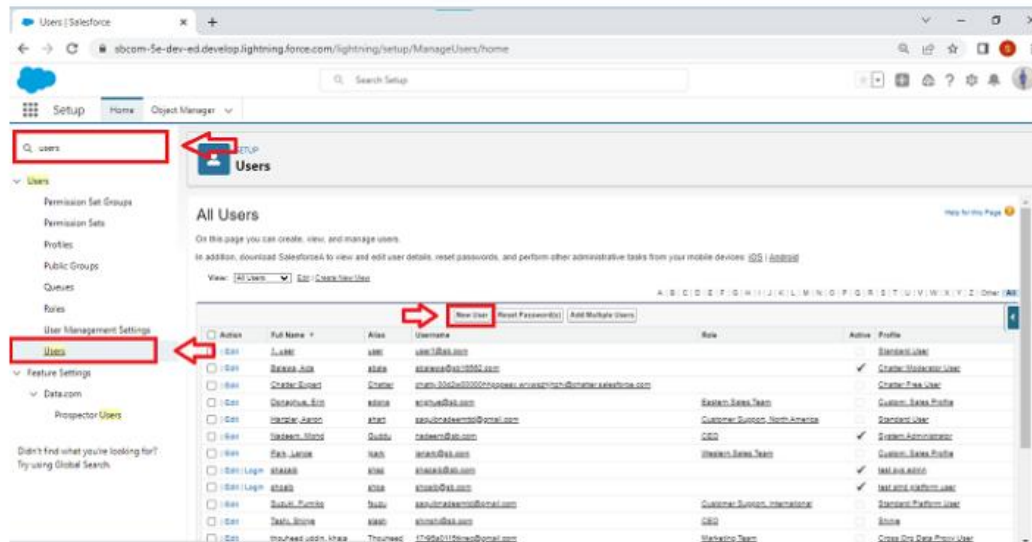
- The next screen gives you a summary of your data import. Click Start Import.
- Click OK on the popup.
- This takes you to the bulk import summary window that shows that the process has completed and 16 records have been successfully imported or processed. You'll also get an email notification confirming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

Milestone 6-Customize User Interfac

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

Activity-1:

Create User and Setup Approvals



- Enter users in the quickfind box and select users.
- Click new user .
- Now give the name as you wish but the email must be real email address.
- For username field follow the instructions
- Firstname.@.com
- ...or create a username of your choice that should be unique

- Give the role as CEO, Profile as System Administrator and license as Salesforce.
- From Setup, enter Users in the Quick Find box and select Users.
- Select your user account in the list provided. (Click on your name in the All Users list.)
- Click Edit.
- Scroll down to Approver Settings. Set your manager as the user you have created recently
- Click Save

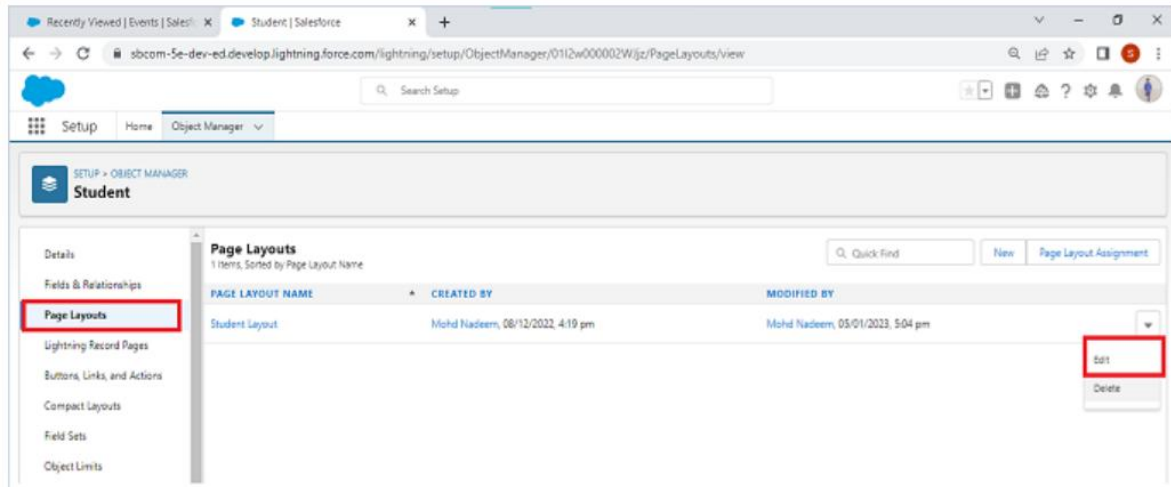
Milestone 7- Use customization

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.

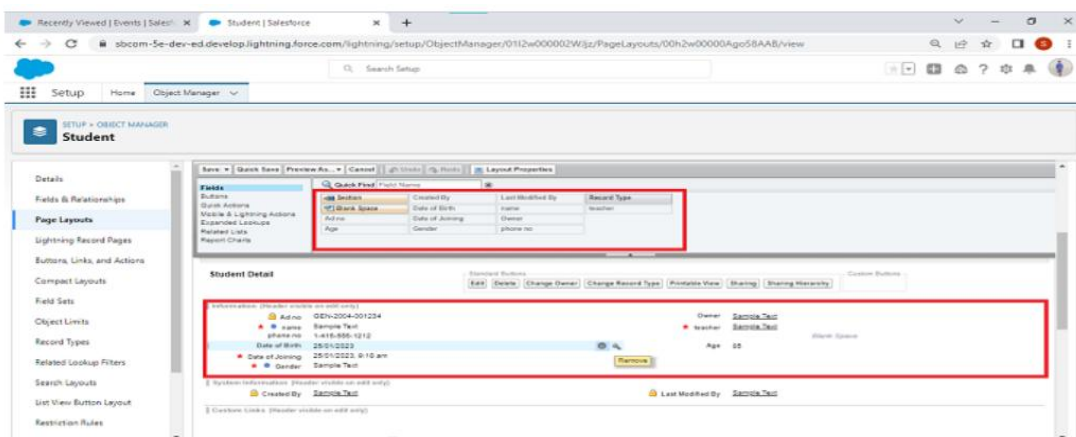
Activity -1:

Customize Travel Approval Object Page layout

- From the Object Manager, search for the travel approval object and click on page layouts and click edit.



- 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.



- 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
- Note: You may need to refresh your browser screen for the changes to show up

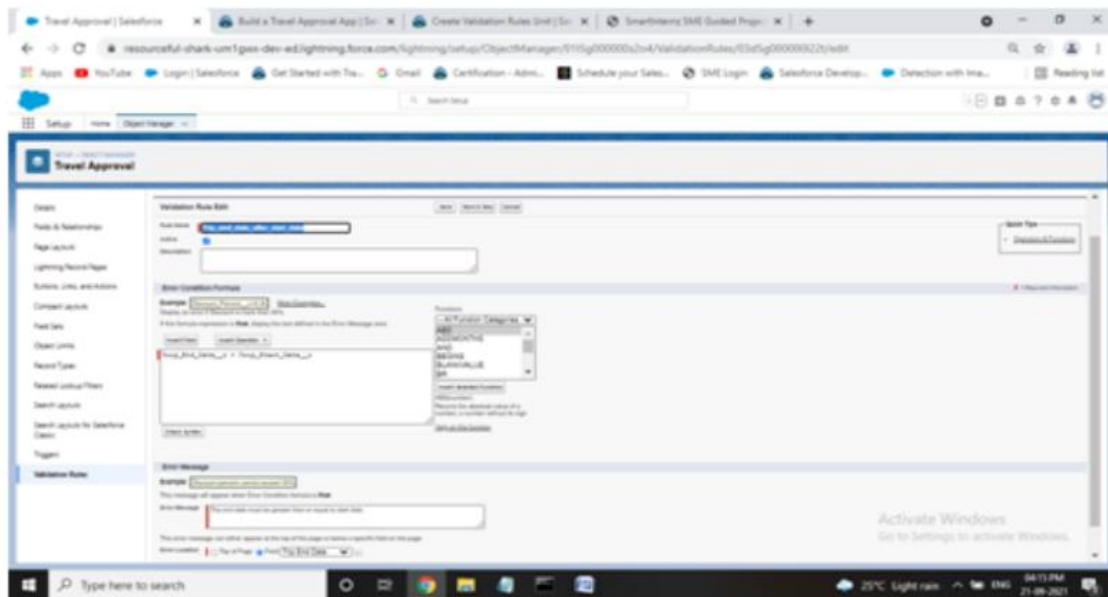
Milestone 8-Add Business Logic to Travel App

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

Activity-1:

Create Validation Rule

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



Activity-2:

Create RollUp Summary Fields

- From the Travel Approval object, select Fields & Relationships.
- Click New.
- Select the Roll-Up Summary data type
- Click Next. 5. Enter the following values for the field details
- Field Label: Total Expenses
- Field Name: Total_Expenses (this automatically gets set when you tab out of the Field Label field)
- Click Next

Configure the roll-up calculation.

- Summarized Object: Expense Items
- Roll-Up Type: SUM
- Field to Aggregate: Amount
- Filter Criteria: All records should be included in the calculation

The screenshot shows the 'New Custom Field' setup page in Salesforce, specifically Step 3: Define the summary calculation. The page is titled 'Travel Approval' and 'New Custom Field'. It has a progress bar at the top indicating 'Step 3 of 5'. Below the progress bar, there are tabs for 'Previous', 'Next', and 'Cancel'. The main content area is divided into three sections: 'Select Object to Summarize', 'Select Roll-Up Type', and 'Filter Criteria'. In the 'Select Object to Summarize' section, 'Expense Items' is selected under the 'Travel Approval' object. In the 'Select Roll-Up Type' section, 'SUM' is selected, and 'Amount' is entered in the 'Field to Aggregate' field. In the 'Filter Criteria' section, the option 'All records should be included in the calculation' is selected. At the bottom right, there are 'Previous', 'Next', and 'Cancel' buttons.

- Click Next, Next, Save

Activity-3:

Create Formula Fields

- 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
- . Click the Home tab to navigate back to the main setup page.
- Click Custom Code | Static Resources (or enter Static in the Quick Find to filter down the options).

- Click New.
- Enter the following values for your static resource

Parameter	Value
Name	StatusImages
File	StatusImages.zip
Cache Control	Private

- Now select the travel approval object.
- Select Fields & Relationships.
- Click New
- 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
- Click Next.
- 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)))
- 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 in 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

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

3. 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.

4. 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.

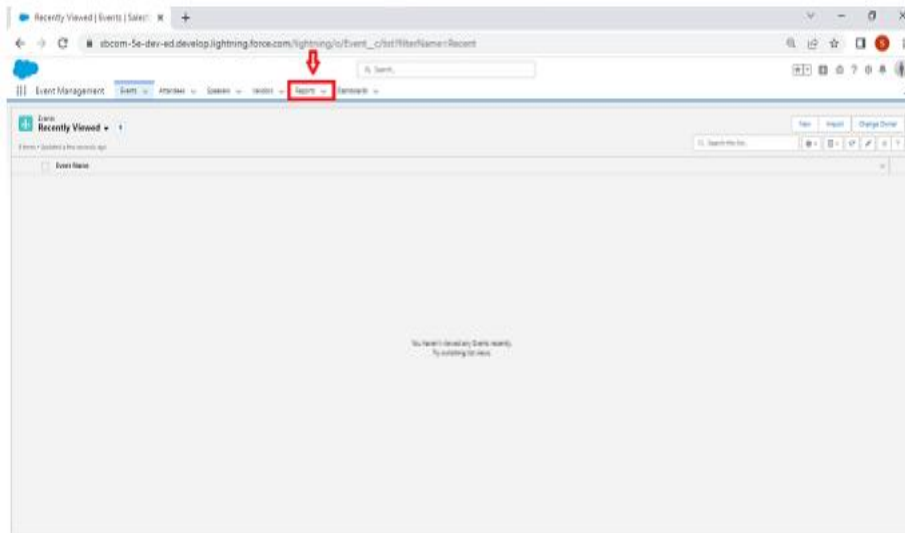
From this milestone we are going to import the data and create the reports and dashboards for data visualization in the application

Activity

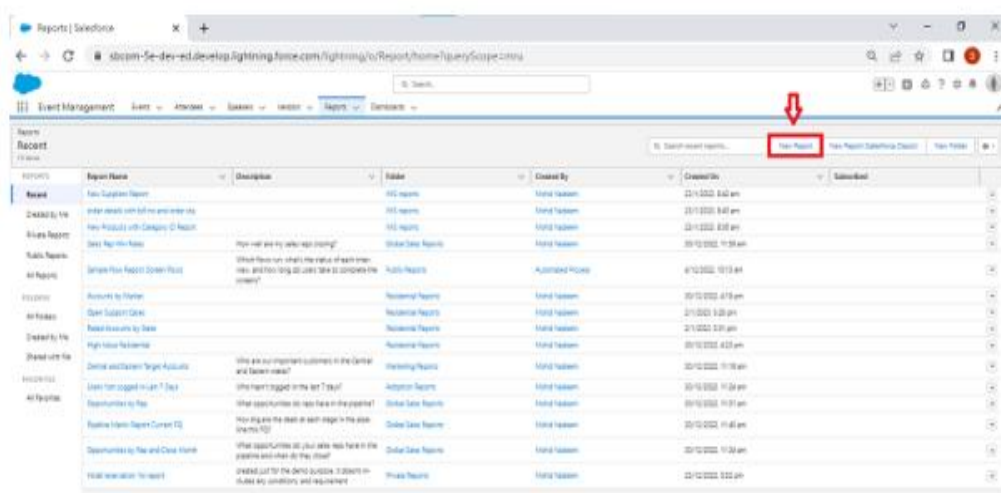
Add Report

To create a report:

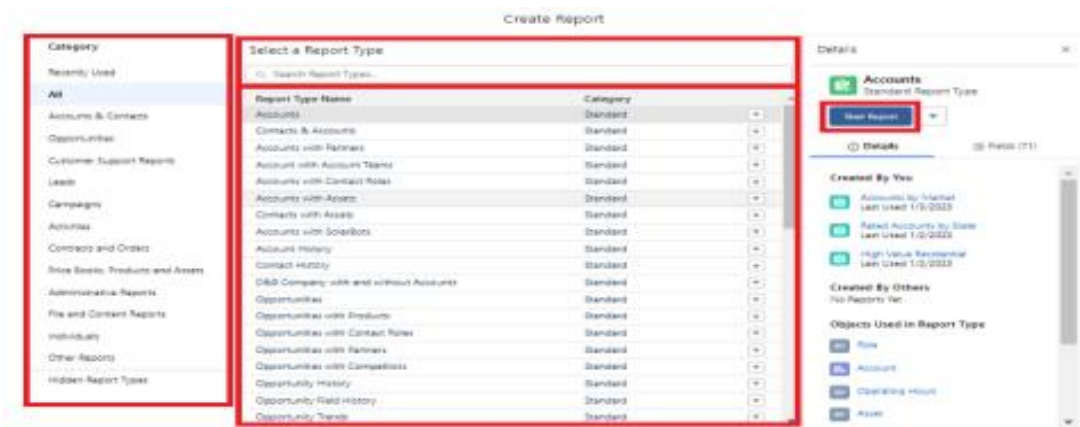
Go to the app → click on the reports tab



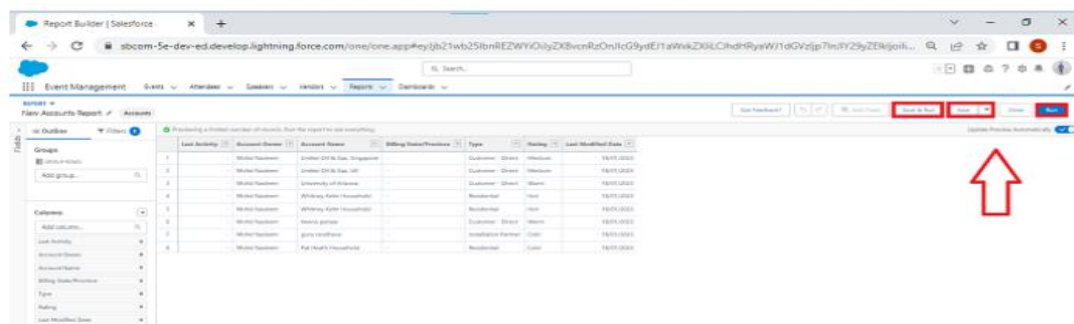
Click New Report



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

- Click on Dashboards tab from the travel approval application, click on new dashboard
- Give your dashboard a name and click on +component , select the report which you created .
- For the data visualization select any of the chart, table etc as your wish



Thank you . . .