

Project Report on
Build an Employee Travel Approval Application For Corporate
(Developer) – (Long Term)

Milestone – 01 : Create Salesforce Org

Go to developer.salesforce.com/Signup

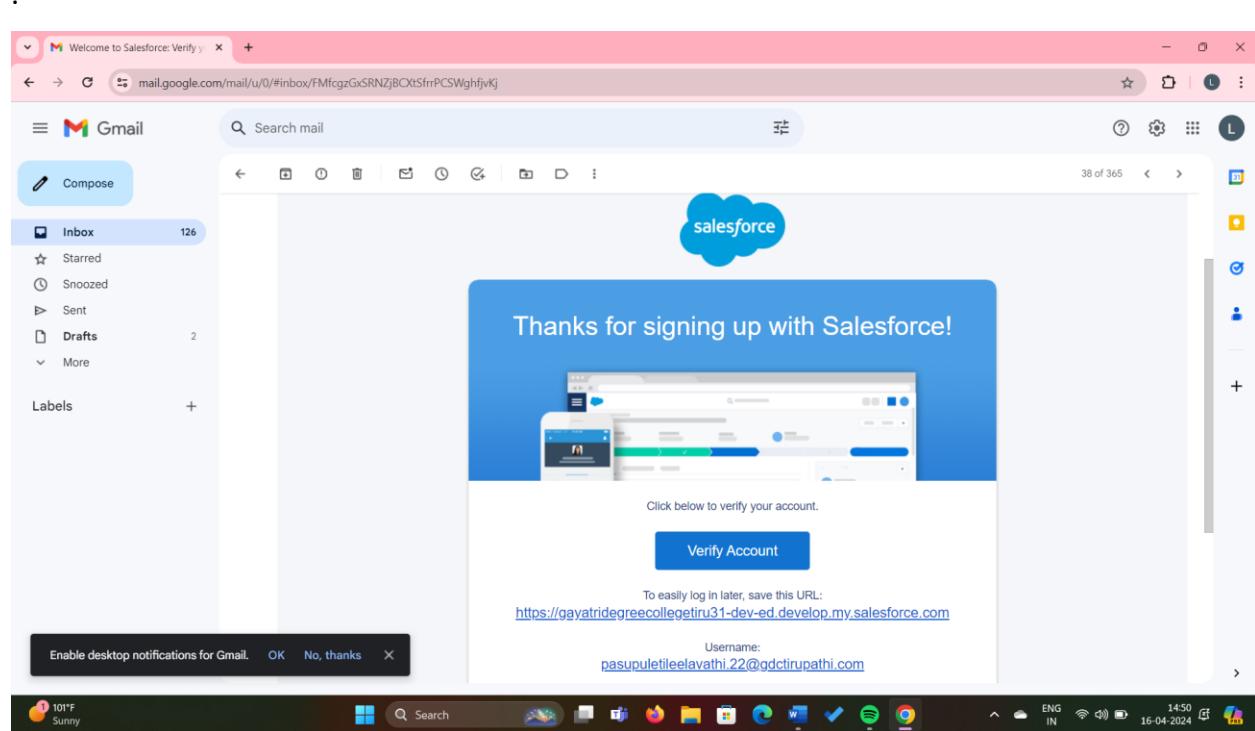
Click on Sign up.

On the sign-up form, enter the following details:

1. First Name & Last Name – P.Leelavathi
2. Email – pasupuletileelavathi.22@gmail.com
3. Role – Developer
4. Company – GAYATRI DEGREE COLLEGE – TIRUPATI
5. Country – India
6. Postal Code – 517501
7. Username - pasupuletileelavathi.22@gdctirupathi.com

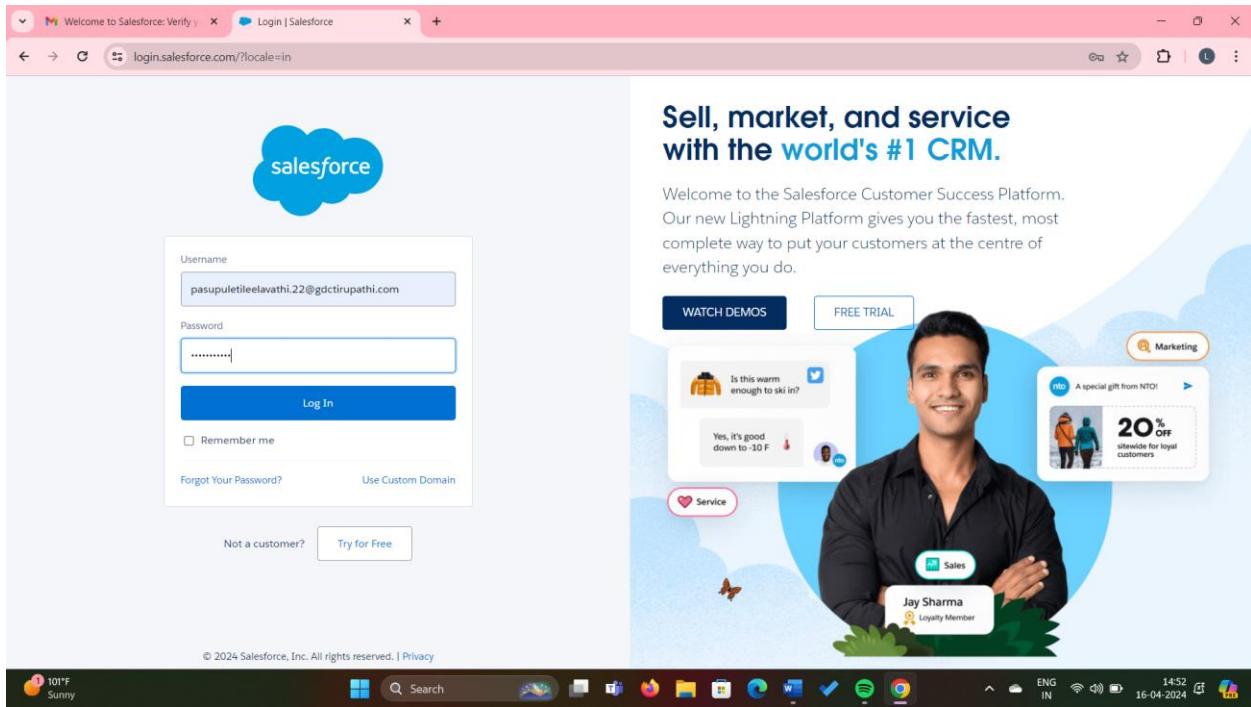
Account Activation

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



Log in 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.



Mildstone – 02 : Objects in Salesforce

Salesforce objects are database tables that permit you to store data that is specific to an organization. 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.

Salesforce objects are of two types:

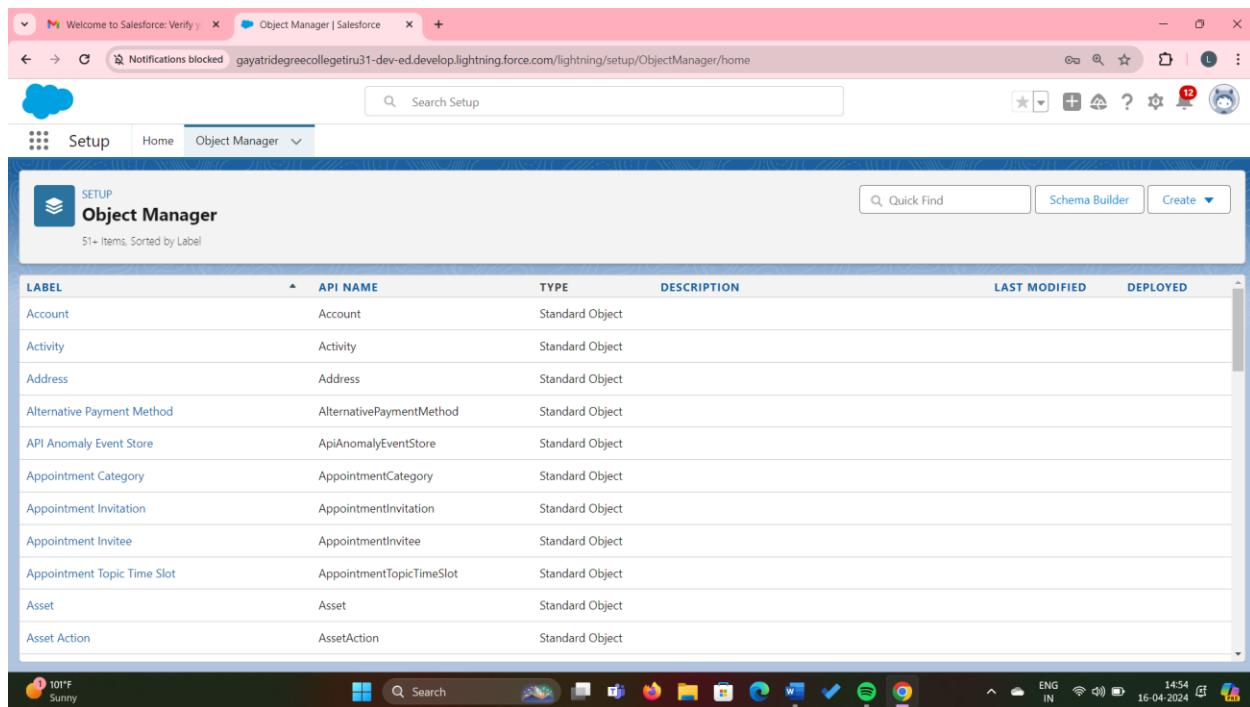
- 1. Standard Objects:** Standard objects are the kind of objects that are provided by salesforce.com such as users, contracts, reports, dashboards, etc.
- 2. Custom Objects:** Custom objects are those objects that are created by users. They supply information that is unique and essential to their organization. They are the heart of any application and provide a structure for sharing data.

Creation Of Department Object For Travel Approval App

For this Travel Approval we need to create 5 objects **Department, Employee Detail, Expense, Expense Items, and Travel Approval**. The below steps will assist you in creating those objects.

Create Department Object:

1. Click on the gear icon and then select Setup.
2. Click on the object manager tab just beside the home tab.
3. After the above steps, have a look in the extreme right you will find a Create Dropdown. Click on that and select Custom Object.
4. On the Custom Object Definition page, create the object as follows:
5. Label : Department
6. Plural Label : Departments
7. Record Name : Department Name
8. Check the Allow Reports checkbox
9. Check the Allow Search checkbox
10. Click Save.



The screenshot shows the Salesforce Object Manager interface. At the top, there's a navigation bar with tabs for 'Setup', 'Home', and 'Object Manager'. The main area displays a table titled 'Object Manager' with 51+ items sorted by Label. The columns are labeled: LABEL, API NAME, TYPE, DESCRIPTION, LAST MODIFIED, and DEPLOYED. The table lists various standard objects like Account, Activity, Address, etc. At the bottom of the screen, there's a taskbar with icons for various applications like Microsoft Word, Excel, and File Explorer, along with system status indicators for battery level, signal strength, and date/time (16-04-2024).

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
Account	Account	Standard Object			
Activity	Activity	Standard Object			
Address	Address	Standard Object			
Alternative Payment Method	AlternativePaymentMethod	Standard Object			
API Anomaly Event Store	ApiAnomalyEventStore	Standard Object			
Appointment Category	AppointmentCategory	Standard Object			
Appointment Invitation	AppointmentInvitation	Standard Object			
Appointment Invitee	AppointmentInvitee	Standard Object			
Appointment Topic Time Slot	AppointmentTopicTimeSlot	Standard Object			
Asset	Asset	Standard Object			
Asset Action	AssetAction	Standard Object			

The screenshot shows the Salesforce Setup interface with the URL <https://gayatridegreetiru31-dev-ed.lightning.force.com/lightning/setup/ObjectManager/01lGA000003Fn1d/FieldsAndRelationships/view>. The page title is "Department | Salesforce". The main content area is titled "Fields & Relationships" and lists 8 items, sorted by Field Label. The table columns are FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Department Name	Name	Text(80)		✓
Department Code	Department_Code_c	Text(5)		▼
District	District_c	Text(40)		▼
Last Modified By	LastModifiedById	Lookup(User)		▼
Owner	OwnerId	Lookup(User,Group)		✓
School website	School_website_c	URL(255)		▼
State	State_c	Text(40)		▼

In the same way create 4 more objects Employee Detail, Expense , Expense Items, and Travel Approval

Note -

1. While making Expense Object select data type “Auto Number” in “Enter Record Name Label and Format” Section.
2. While making Employee Detail Object put “Employee Name” in “Enter Record Name Label and Format” section.

Object – Employee Detail

1. Click on the gear icon and then select Setup.
2. Click in the object manager tab just beside the home tab.
3. After the above steps, have a look in the extreme right you will find a Create Dropdown Click on that and selecet Custom Object.
4. On the Custom Object Definition page, create the object as follows:
5. Label : Employee Detail
6. Plural Label : Employee Details
7. Record Name : Employee Name
8. Check the Allow Reports checkbox
9. Check the Allow Search checkbox

10. Click Save.

The screenshot shows the Salesforce Setup interface with the following details:

- Header:** Welcome to Salesforce: Verify | Employee Detail | Salesforce
- Page Title:** gayatridegreecollegeiru31-dev-ed.lightning.force.com/lightning/setup/ObjectManager/01lGA000003Fn1/FieldsAndRelationships/view
- Top Bar:** Search Setup, various icons (refresh, search, etc.)
- Left Sidebar:** Details, Fields & Relationships (selected), 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.
- Main Content:** **Employee Detail** object's Fields & Relationships table.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Date of Birth	Date_of_Birth_c	Date		
Department	Department_c	Lookup(Department)	✓	▼
Employee Name	Name	Text(80)	✓	▼
Employee Id	Employee_Id_c	Text(12)		▼
Gender	Gender_c	Picklist		▼
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)	✓	
- Bottom Bar:** Weather (101°F, Sunny), Search, various system icons, system status (ENG IN, 15:03, 16-04-2024).

Object – Employee Detail

1. Click on the gear icon and then select Setup.
2. Click in the object manager tab just beside the home tab.
3. After the above steps, have a look in the extreme right you will find a Create Dropdown Click on that and select Custom Object.
4. On the Custom Object Definition page, create the object as follows:
 5. Label : Expense
 6. Plural Label : Expenses
 7. Record Name : Expense Name
 8. Date type : Select **Auto Number**.
 9. Display Format : A-{0000}
 10. Check the Allow Reports checkbox
 11. Check the Allow Search checkbox
12. Click Save.

The screenshot shows the Salesforce Object Manager interface. The left sidebar has a 'Fields & Relationships' section with links to Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, and Search Layouts. The main content area is titled 'Fields & Relationships' and displays a table with the following data:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Employee	Employee__c	Lookup(Employee Detail)		✓
Expense Name	Name	Auto Number		✓
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Total Expense	Total_Expense__c	Roll-Up Summary (SUM Expense Items)		
Total Item	Total_Item__c	Roll-Up Summary (COUNT Expense Items)		

Object – Expense Items

1. Click on the gear icon and then select Setup.
2. Click in the object manager tab just beside the home tab.
3. After the above steps, have a look in the extreme right you will find a Create Dropdown Click on that and select Custom Object.
4. On the Custom Object Definition page, create the object as follows:
5. Label : Expense Items
6. Plural Label : Expense Items
7. Record Name : Expense Items Name
8. Check the Allow Reports checkbox
9. Check the Allow Search checkbox
10. Click Save.

The screenshot shows the Salesforce Object Manager interface. The top navigation bar includes tabs for 'Setup', 'Home', and 'Object Manager'. The main content area is titled 'Expense Items' under 'SETUP > OBJECT MANAGER'. On the left, a sidebar lists various setup categories like Page Layouts, Lightning Record Pages, and Field Sets. The central panel is titled 'Fields & Relationships' and displays a table of fields. The table columns are: FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The listed fields are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(18, 0)		
Created By	CreatedById	Lookup(User)		
Expense	Expense__c	Master-Detail(Expense)	✓	
Expense Item Name	Name	Text(80)	✓	
Expense Type	Expense_Type__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		

Object – Travel Approval

1. Click on the gear icon and then select Setup.
2. Click in the object manager tab just beside the home tab.
3. After the above steps, have a look in the extreme right you will find a Create Dropdown Click on that and select Custom Object.
4. On the Custom Object Definition page, create the object as follows:
5. Label : Travel Approval
6. Plural Label : Travel Approvals
7. Record Name : Travel Approval Name
8. Check the Allow Reports checkbox
9. Check the Allow Search checkbox
10. Click Save.

The screenshot shows the Salesforce Setup interface with the following details:

- Tab Bar:** Welcome to Salesforce: Verify, Travel Approval | Salesforce.
- Page URL:** https://gayatridercollegeitru31-dev-ed.lightning.force.com/lightning/setup/ObjectManager/01lGA000003Fn1x/FieldsAndRelationships/view
- Header:** Search Setup, with icons for Home, Object Manager, and various setup tools.
- Left Sidebar:** Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, and List View Button Layout.
- Main Content:** **Fields & Relationships** table with 14 items, sorted by Field Label.

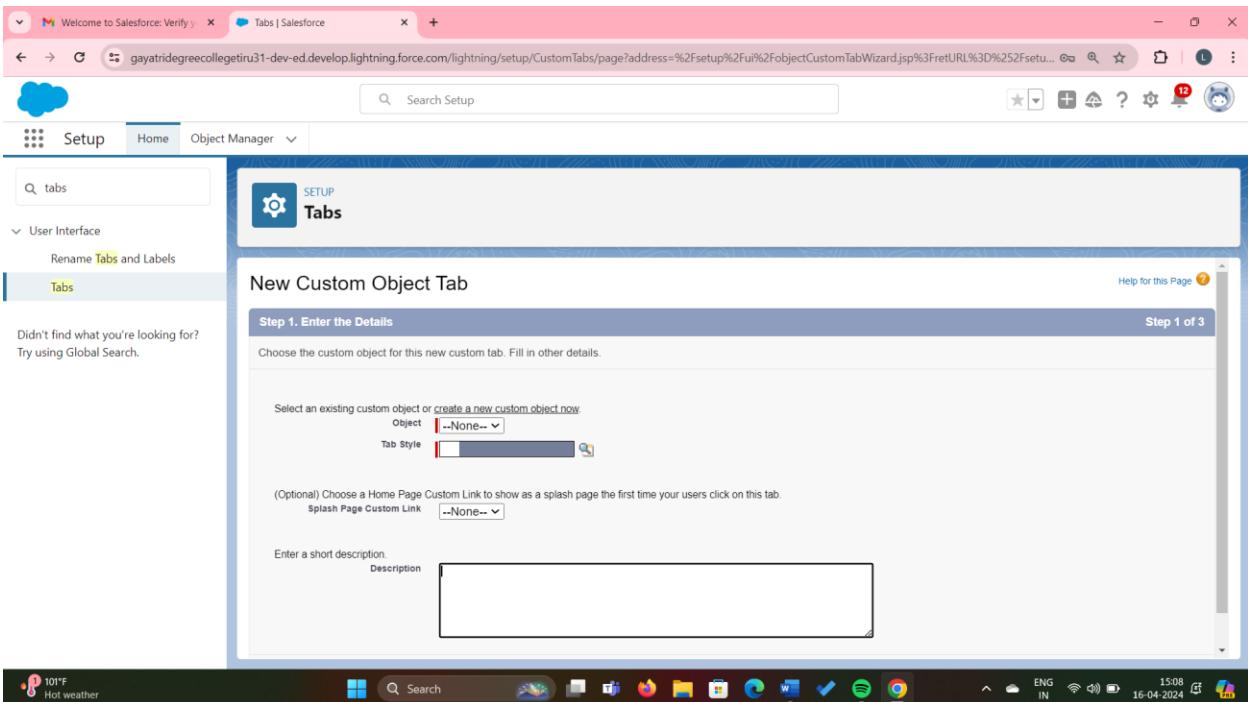
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Department	Department_c	Lookup(Department)		✓
Destination state	Destination_state_c	Text(40)		
Employee Name	Employee_Name_c	Lookup(Employee Detail)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Out of State	Out_of_State_c	Text(10)		
Owner	OwnerId	Lookup(User,Group)		✓
Purpose of trip	Purpose_of_trip_c	Text(255)		
- Bottom:** Browser status bar showing the URL, a weather icon (101°F Sunny), and system information (ENG IN, 15:06, 16-04-2024).

Mildstone – 03 : What is A Tab?

Custom Tab Creation

Now create a custom tab. Click the Home tab,

1. Enter Tabs in Quick Find and select Tabs.
2. Under Custom Object Tabs, click New.
3. For Objects, select Departments.
4. For Tab Style, select any icon.
5. Leave all defaults as is. Click Next, Next, and Save.
6. In the same way create Tabs for all Custom Objects – Employee Detail, Expense, Expense Items, Travel Approval.



Mildstone – 04 :Lightning App

Create the Travel Approval App

1. From Setup, enter App Manager in the Quick Find and select App Manager.
2. Click New Lightning App.
3. Enter **Travel Approval** as the App Name, then click Next.
4. Under App Options, leave the default selections and click Next.
5. Under Utility Items, leave as is and click Next.
6. From Available Items, select **Department, Approval, Reports, and Dashboards** and move them to Selected Items. Click Next.
7. From Available Profiles, select System Administrator and move it to Selected Profiles. Click Save & Finish.

App Details & Branding

Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.

App Details

* App Name: Travel Approval

* Developer Name: Travel_Approval

Description: Enter a description...

App Branding

Image: Upload

Primary Color Hex Value: #0070D2

Org Theme Options: Use the app's image and color instead of the org's custom theme

App Launcher Preview

TA Travel Approval

App Settings

App Details & Branding

App Options

Utility Items (Desktop Only)

Navigation Items

User Profiles

Available Items

- Accounts
- All Sites
- Alternative Payment Methods
- Analytics
- App Launcher
- Appointment Categories
- Appointment Invitations
- Approval Requests

Selected Items

- Departments
- Employee Details
- Expenses
- Expense Items
- Travel Approvals
- Reports
- Dashboards

To Verify your changes, click the App Launcher, type **Travel Approval** and select the **Travel Approval** app.

Note :

App Launcher-Displays available apps.

App Name -Displays the current selected app.

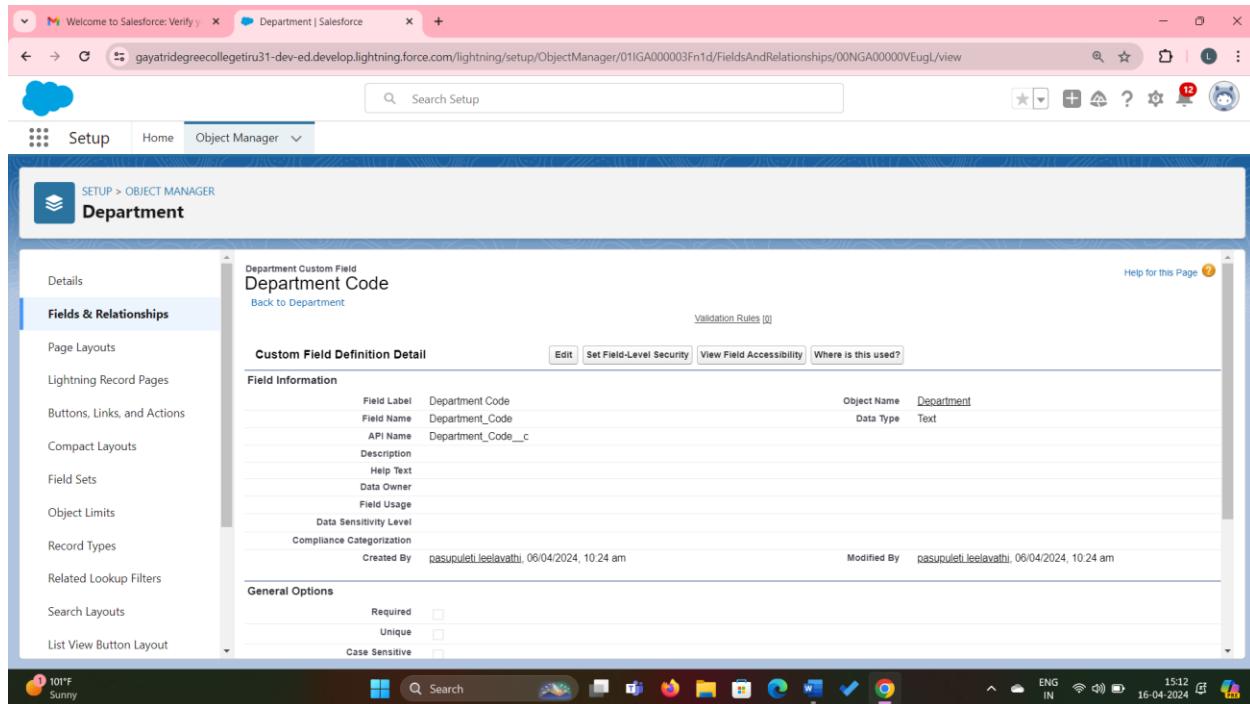
Mildstone – 05 : Fields and Relationship

Enrollment in local colleges, 2005

Object Name	Field Name	Data Type
Employee Details	Date of Birth	Date
	Gender	Picklist (Male, Female)
	Department	Lookup (Department)(See activity 2 to create lookup)
	Employee ID	Text (Length – 12)
Expense	Employee	Lookup (Employee Detail)
	Total Item	Rollup Summary (Expense Item)
Expense Item	Expense	Master Detail (Expense)
	Expense Type	Pick List (Values are – Transport, Hotel, Meal, Others)
	Amount	Currency
Travel Approval	Employee Name	Lookup (Employee Detail)
	Department	Lookup (Department)
	Destination State	Text (Length – 40)
	Purpose of Trip	Text (Length – 256)
	Trip Start Date	Date
	Trip End Date	Date
	Status	Picklist (values are – Approved Rejected)

Creation of Field for the Department Object :

1. click the gear icon and select setup in a new tab.
2. Click the Object Manager tab next to Home.
3. Select Department
4. Select Fields & Relationships from the left navigation
5. Click New.
6. Select the Text as the Data Type, click Next.
7. For Field Label , enter Department code and enter 5 in Length.
8. Click Next, Next, then Save & New.



Creation of Fields for the Department Object :

1. Click the gear icon and select setup. This launches Setup in a new tab.
2. Click the Object Manager tab next to home.
3. Select Department.
4. Select Fields & Relationships from the left navigation

5. Click new.

6. Select the text as the Data Type, click Next.

7. For Field Label, enter District and State code and enter 40 in Length.

8. Click Next, Next, then Save.

The screenshot shows the 'Custom Field Definition Detail' page for a 'Department Custom Field'. The field is named 'District' with an API name of 'District__c'. It is defined as a 'Text' type field with a length of 40. The 'Required' checkbox is checked. A validation rule is present. The field was created by 'pasupuleti_leelavathi' on 06/04/2024 at 10:25 am and modified by the same user on 06/04/2024 at 10:25 am.

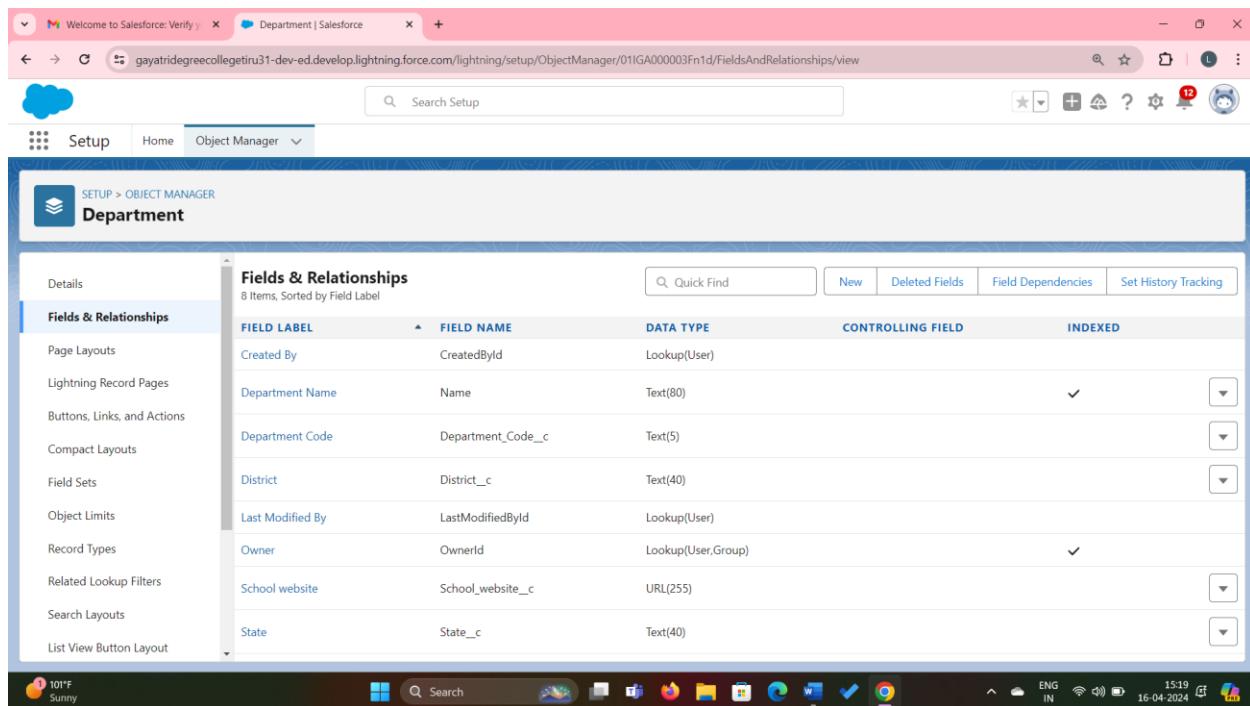
The screenshot shows the 'Custom Field Definition Detail' page for a 'Department Custom Field'. The field is named 'State' with an API name of 'State__c'. It is defined as a 'Text' type field with a length of 40. The 'Required' checkbox is checked. A validation rule is present. The field was created by 'pasupuleti_leelavathi' on 06/04/2024 at 10:26 am and modified by the same user on 06/04/2024 at 10:26 am.

Lookup Relationship with Department

Let's create a Lookup relationships with Department object on Employee Detail onbject

1. Click the gear icon and select setup. This launches Setup in a new tab.

2. Click the Object Manager tab next to home.
3. Select Department.
4. Select Fields & Relationships from the left navigation
5. Click new.
6. Select look up Relationship as the Data type and click Next.
7. For Related to, enter Department .
8. Click Next.
9. For Field Label, enter Department.
10. Click Next, Next, Next and Save.



The screenshot shows the Salesforce Object Manager Fields & Relationships page for the Department object. The page has a header with tabs for Setup, Home, and Object Manager. The main content area is titled 'Fields & Relationships' and shows a table of fields. The table columns are FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The table data includes:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Department Name	Name	Text(80)		✓
Department Code	Department_Code__c	Text(5)		
District	District__c	Text(40)		
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
School website	School_website__c	URL(255)		
State	State__c	Text(40)		

Let's create a master-detail relationship on Expense Item object

1. Click the gear icon and select setup. This launches Setup in a new tab.
2. Click the Object Manager tab next to home.
3. Select Department.
4. Select Fields & Relationships from the left navigation
5. Click new.

6. Select Master-Details Relationship as the Data Type and click Next.

7. For Related to, enter Expense.

8. Click Next.

9. For Field Label, enter Expense.

10. Click Next, Next, Next and Save.

The screenshot shows the Salesforce Setup interface for creating a custom field. The main area displays the 'Expense Items Custom Field' configuration. Key details include:

- Field Label:** Expense
- Field Name:** Expense
- API Name:** Expense__c
- Data Type:** Master-Detail
- Object Name:** Expense Items
- Related To:** Expense
- Child Relationship Name:** Expense_Items

The sidebar on the left lists other setup categories such as Page Layouts, Lightning Record Pages, and Fields & Relationships.

Roll Up Summary Fields On Expense Object

Let's create Roll-up summary fields on Expense object to Calculate the expense

1. Click the gear icon Select Setup, This launches Setup in a new tab.

2. Click Object Maanger.

3. Select Expense.

4. Click Fields & Relationships

5. Click New.

6. Select the Roll-up summary field as the data type Enter the field label as Total Expense.

7. Click Next.

8. Then select the master object summarized as expense items.

9. Select Sum as roll-up and Field to aggregate Amount then click Next, Next and save.

The screenshot shows the Salesforce Object Manager interface. The top navigation bar includes tabs for 'Setup', 'Home', and 'Object Manager'. The main content area displays the 'Expense Custom Field Total Expense' configuration page. The left sidebar lists various setup options like 'Page Layouts', 'Lightning Record Pages', and 'Fields & Relationships'. The right panel shows the 'Custom Field Definition Detail' for 'Total Expense', with fields such as 'Field Label' (Total Expense), 'Field Name' (Total_Expense), 'API Name' (Total_Expense__c), and 'Object Name' (Expense). A 'Roll-Up Summary Options' section indicates a 'Data Type' of 'Roll-Up Summary' and a 'Summary Type' of 'SUM'. The status bar at the bottom shows system information including weather (Sunny), date (16-04-2024), and time (15:21).

Pick List Field

Let's create a Pick-List field:

1. From Setup, click Object Manager and select Expense Item.
2. Click Fields & Relationships, then New.
3. Select Picklist as the Data Type and Click Next.
4. For Field Label enter Expense Type
5. Select Enter values, with each value separated by a new line, and enter these values:
 - Transport
 - Hotel
 - Meal
 - Others
6. Click Next, Next, then Save & New.

The screenshot shows the Salesforce Setup interface with the following details:

- 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**

Expense Items Custom Field
Expense Type
Back to Expense Items

Custom Field Definition Detail

Field Information		Object Name	Expense Items
		Data Type	Picklist
Field Label	Expense Type	Object Name	Expense Items
Field Name	Expense_Type	Data Type	Picklist
API Name	Expense_Type_c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	pasupuleti leelavathi 06/04/2024, 2:41 pm	Modified By	pasupuleti leelavathi 06/04/2024, 2:41 pm
General Options			
Required	<input type="checkbox"/>		
Default Value	<input type="button" value="..."/>		

Milestone – 06 : Import Departments

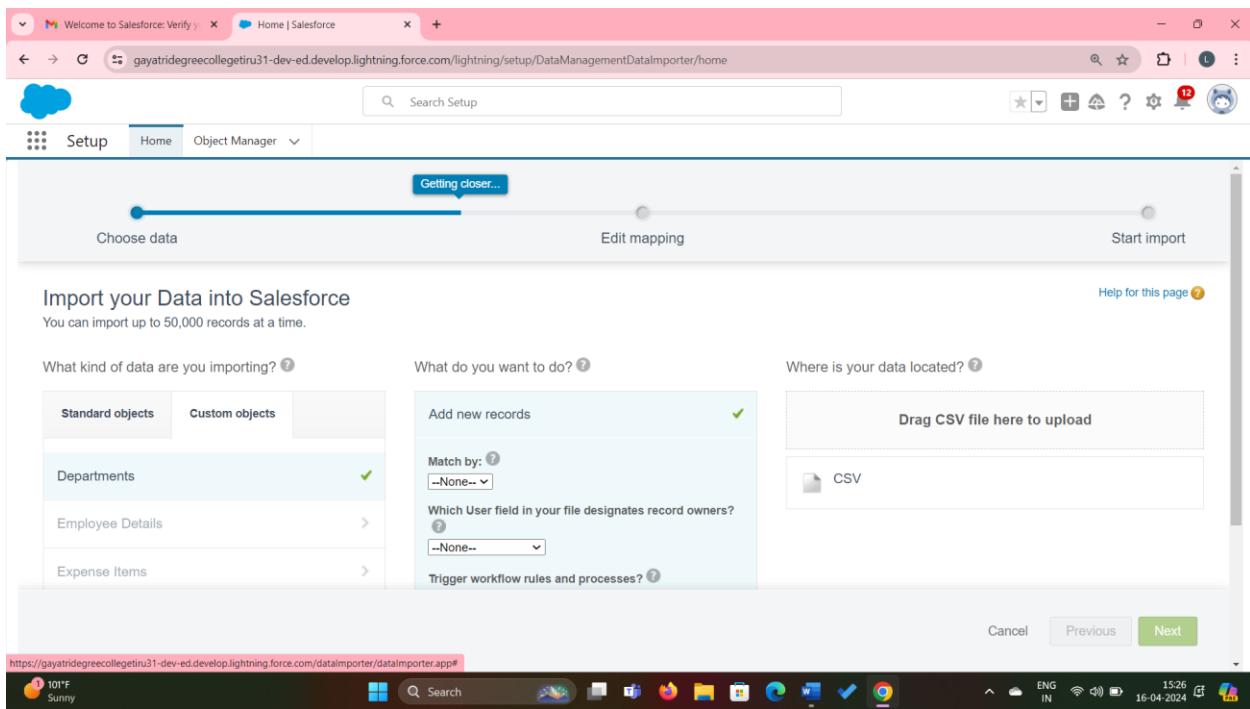
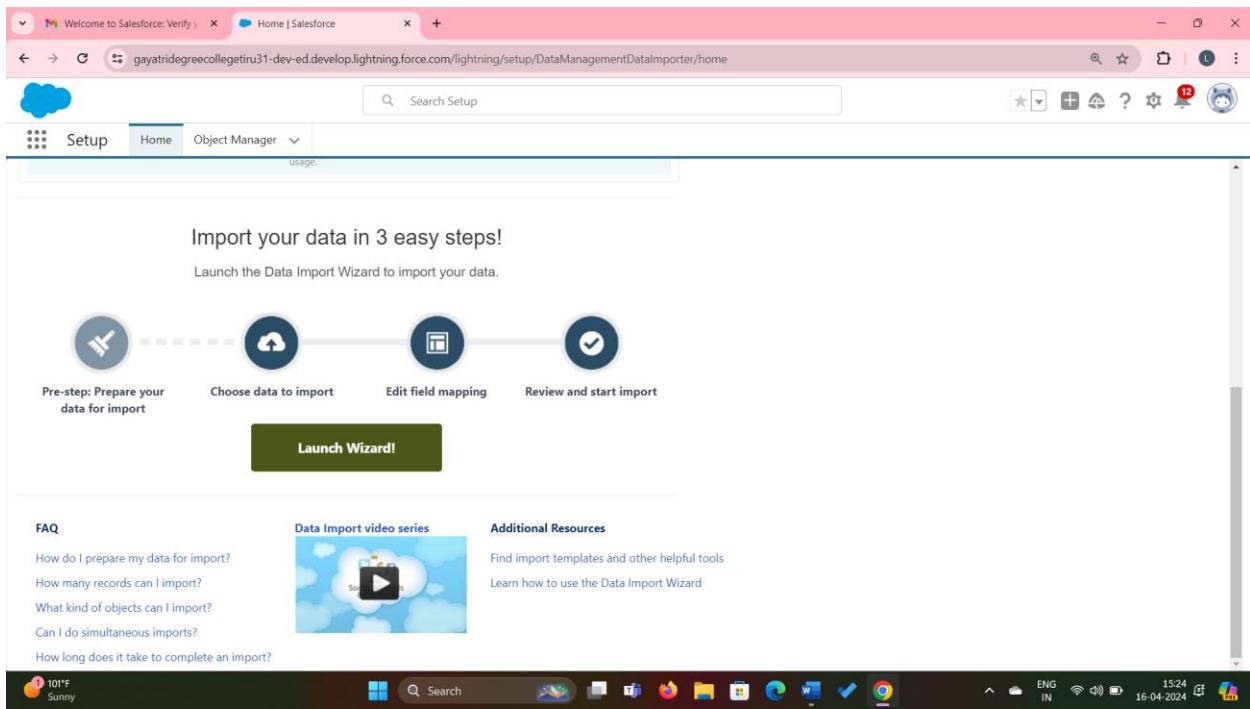
Data Import :

1. From Setup, click the Home Tab.
2. In the Quick Find box, enter Data Import and select Data Import Wizard.
3. Click Launch Wizard.
4. Click the Custom Objects tab and select the Departments object.
5. Select the Add new records.
6. Click CSV and choose file Department_CSV which we made earlier. Click Next.
7. 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.
8. The next screen gives you a summary of your data import.
9. Click Start Import.
10. Click Ok on the popup.

Note – Do Field mapping carefully.

Department CSV File

<https://developer.salesforce.com/files/TravelAppWorkshopFiles.zip>



Milestone – 07 : Users

Creating A User In Salesforce

1. From Setup, in the Quick Find Box, enter Users.
2. Select Users.
3. Click New User.

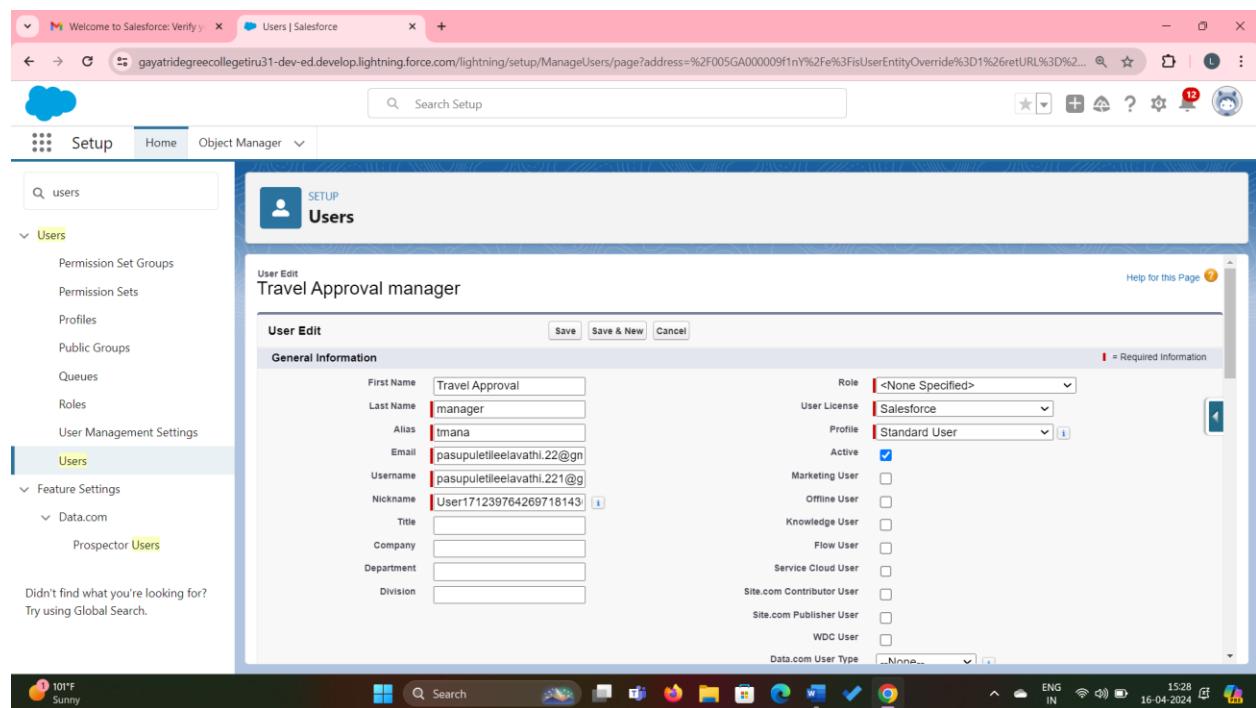
4. Enter the First Name Travel Approval and Last Name manager and (Your) email address and a unique username in the form of an email address. By default, the username is the same as the email address.

5. Select a User License as Salesforce.

Note – In the Developer edition Salesforce license can only be used by 2 users at a time in Dev Org, If you don't find Salesforce licence than deactivate a user who has Salesforce license Or change the license type from Salesforce to any other.

6. Select a profile as Standard User.

7. Check Generate new password and notify the user immediately to have the User's login name and a temporary password emailed to you email.



Milestone – 08 : Use Customization

Customize Travel Approval Object Page Layout

1. From the Object Manager, search for the Travel approval object.

2. Click on page layouts and click Travel Approval Layout.

3. Drag the Section from the top pane to the lower pane directly below the

Information section. When dragging over the page, you get a visual indicator

You can drop the new section.

4. Name the section Trip Info, leave the rest of the settings at their default

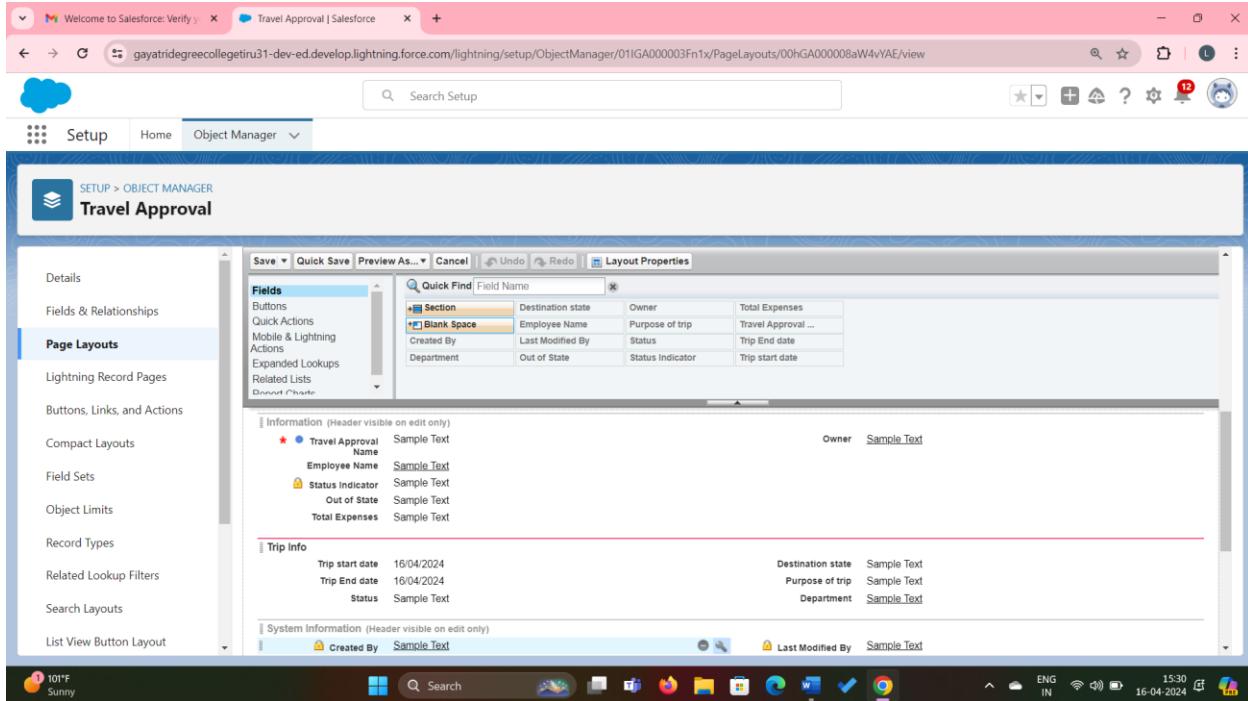
values, and

5. Then click on OK.

6. Drag Trip Start Date and Trip End Date, Status from the top pane into the left-hand column of the Trip Info section.

7. Drag the Destination State and Purpose of a trip from, department the top pane into the right-hand column of the Trip Info Section.

8. Click Save.



Milestone – 09 : App Business Logic To Travel App

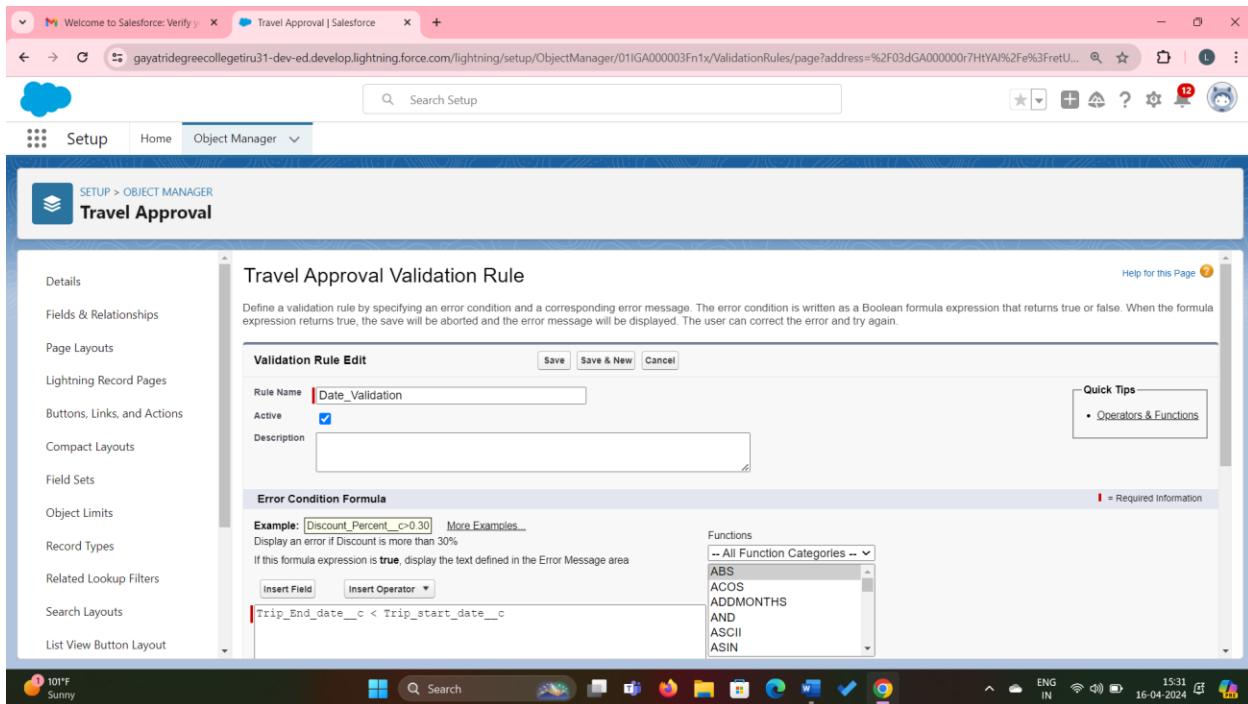
Create Validation Rule

Search for the travel approval object from the object manager and open the object.

1. Click on validation rules and click new on the left corner.

2. Give your rule name Date_Validation and make sure that the rule is set to Active.

3. In the error condition formula enter Trip_End_Date < Trip_Start_Date , Click Save .



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 setup
3. Click Static Resources in Quick Find & Click New.
4. Enter the following values for your static resource

Parameter	Value
Name	StatusImages
File	StatusImages.zip
Cache-Control	Private

Now select the travel approval object.

1. Select Fields & Relationships, Click New
2. Select Formula data type, and Click Next.
3. Enter the following values:
4. Field Label : Status Indicator

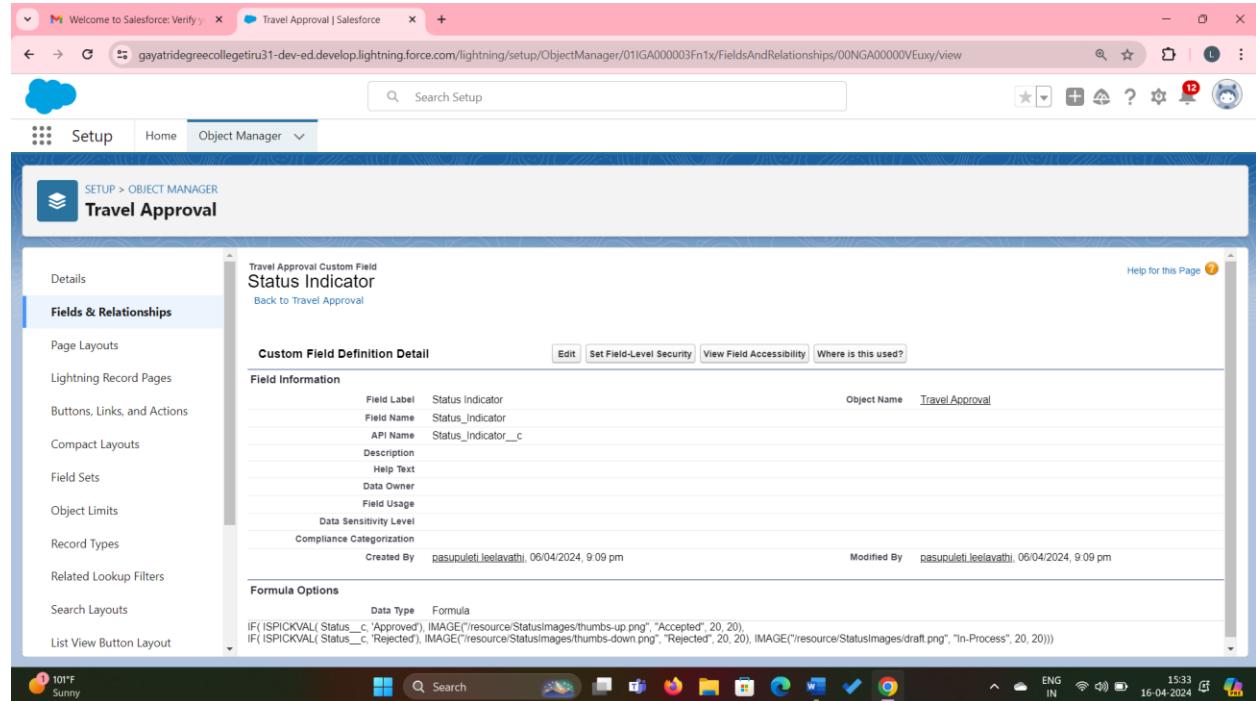
5. Field Name :Status_Indicator (This automatically gets send when you tab out of the Field Label field)

6. Formula Return Type : Tex

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))
```



Milestone – 10 : User Adoption – Create Record

Create Record

1. Click App Launcher and select Travel Approval App
2. Click New Report.
3. Click the report type as Travel approval with Departments Click Start report.
4. Customize your report, in group rows select – Department Name
5. Click refresh
6. Click save and run
7. Give report name – Travel Approval Report

8. Click Save.

The screenshot shows the Salesforce Setup interface. A search bar at the top right contains the text 'Search Setup'. On the left, a sidebar lists various setup categories like 'Lightning Record Pages', 'Buttons, Links, and Actions', and 'Object Limits'. The main content area displays a 'Custom Field Definition Detail' for a field named 'Status Indicator'. The 'Field Label' is 'Status Indicator', 'Field Name' is 'Status_Indicator', and 'API Name' is 'Status_Indicator__c'. The 'Data Type' is 'Formula', and the formula is defined as:
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)))

The screenshot shows the Salesforce Reports page. The top navigation bar includes tabs for 'Departments', 'Employee Details', 'Expenses', 'Expense Items', 'Travel Approvals', 'Reports', and 'Dashboards'. The 'Reports' tab is currently selected. On the left, a sidebar lists 'Recent' reports, 'Created by Me', 'Private Reports', 'Public Reports', and 'All Reports'. The main content area shows a table of recent reports. One report is listed: 'Travel Approval Report' under 'Private Reports', created by 'pasupuleti leelavathi' on '7/4/2024, 11:21 am'. The bottom of the screen shows a taskbar with various application icons and system status indicators.

View Record :

View Record (Department) :

1. Click on App Launcher on left side of screen.
2. Click on Department Tab.
3. Click on Department Tab.

4. Click on any record name. You can see the details of the Department.

The screenshot shows a Salesforce Lightning interface with a pink header bar. The URL in the address bar is gatyatrigreecollegetur31-dev-ed.lightning.force.com/lightning/r/Report/00OGA00000BOKTE2A5/view?queryScope=userFolders. The page title is "Travel Approval Report | Salesforce". The main content is a report titled "Report: Travel Approvals with Department" with the sub-title "Travel Approval Report". The report displays 6 total records. The data is grouped by "Department: Department Name" and "Travel Approval: Travel Approval Name". The records are:

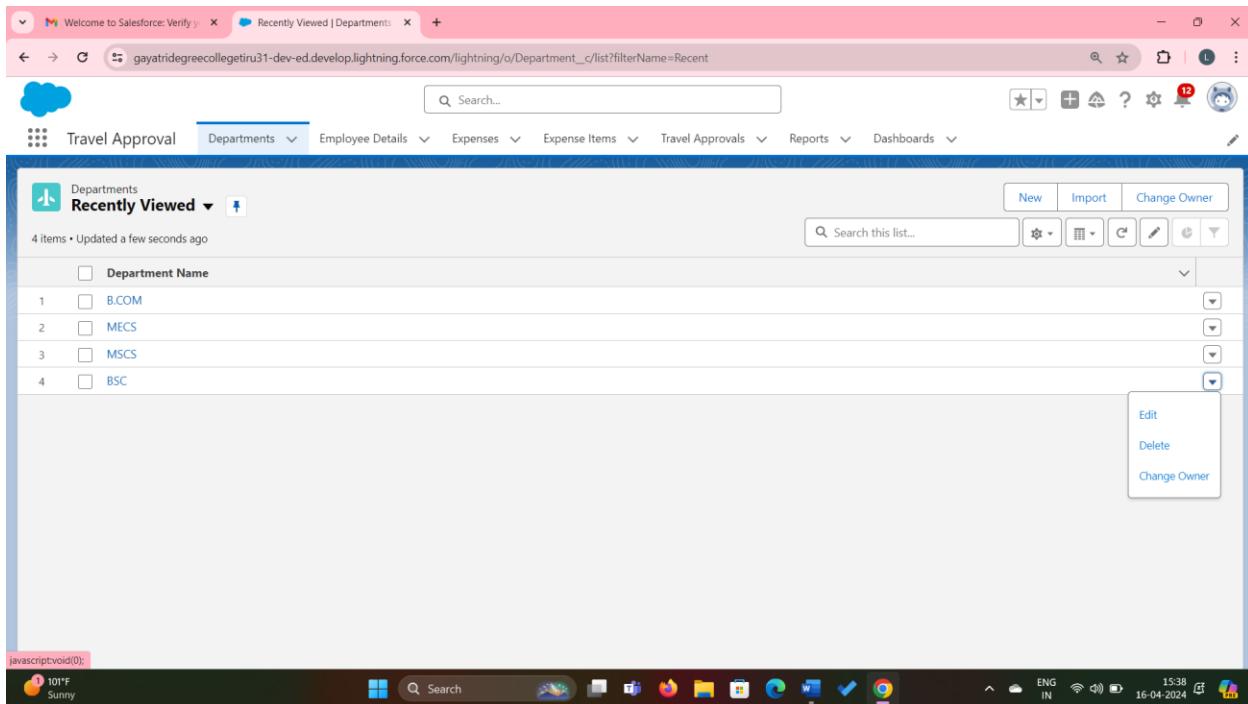
Department: Department Name	Travel Approval: Travel Approval Name
B.COM (2)	PRABHU MOUNIKA V.NITHAYA
Subtotal	
BSC (1)	P.LEELAVATHI
Subtotal	
MECS (1)	B.PALLAVI
Subtotal	
MSCS (2)	J.S NEHA G.JYOTHIKA
Subtotal	
Total (6)	

At the bottom of the report, there are checkboxes for "Row Counts", "Detail Rows", "Subtotals", and "Grand Total". The status bar at the bottom of the screen shows "101°F Sunny", the date "16-04-2024", and the time "15:37".

Delete Record :

Delete Record (Department):

1. Click on App Launcher on the left side of the screen.
2. Search Travel Approval & click on it.
3. Click on Department Tab.
4. Click on Arrow at the right-hand on that particular record.
5. Click delete and delete again.



Milestone – 11 : 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 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 :

This 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 supreport 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 :

Reports types determines which set of records will be available in 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 reports 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 type 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.

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 reports 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 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.

Create Report :

1. Click App Launcher and select Travel Approval App
2. Click reports tab
3. Click New Report.
4. Click the report type as Travel Approval with Departments Click Start Report.

5. Customize your report, in group rows select – Department Name
6. Click Refresh
7. Click Save and Run
8. Give report name – Travel Approval Report
9. Click Save.

Welcome to Salesforce: Verify | Reports | Salesforce

gayatridegreecollegeiru31-dev-ed.lightning.force.com/lightning/o/Report/home?queryScope=mru

Travel Approval

Reports

Recent

1 item

REPORTS	Report Name	Description	Folder	Created By	Created On	Subscribed
Recent	Travel Approval Report		Private Reports	pasupuleti leelavathi	7/4/2024, 11:21 am	

Created by Me
Private Reports
Public Reports
All Reports
Folders
All Folders
Created by Me
Shared with Me
Favorites
All Favorites

101°F Sunny

Search

Windows Taskbar: Search, File Explorer, Edge, Firefox, Chrome, etc.

System tray: ENG IN, 16-04-2024, 15:40

View Report :

1. Click on App Launcher on left side of screen.
2. Search Travel Approval App & Click on it.
3. Click on Reports Tab.
4. Click on Travel Approval Report and see records.

Welcome to Salesforce: Verify | Travel Approval Report | Salesforce

gayatridegreecollegeiru31-dev-ed.lightning.force.com/lightning/r/Report/00OGA00000BOKTE2A5/view?queryScope=userFolders

Travel Approval

Report: Travel Approvals with Department

Travel Approval Report

Total Records	6
Department: Department Name	Travel Approval: Travel Approval Name
B.COM (2)	PRABHU MOUNIKA V.NITHAYA
Subtotal	
BSC (1)	P.LEELAVATHI
Subtotal	
MECS (1)	B.PALLAVI
Subtotal	
MSCS (2)	J.S NEHA G.JYOTHIKA
Subtotal	
Total (6)	

Row Counts Detail Rows Subtotals Grand Total

101°F Sunny

Search

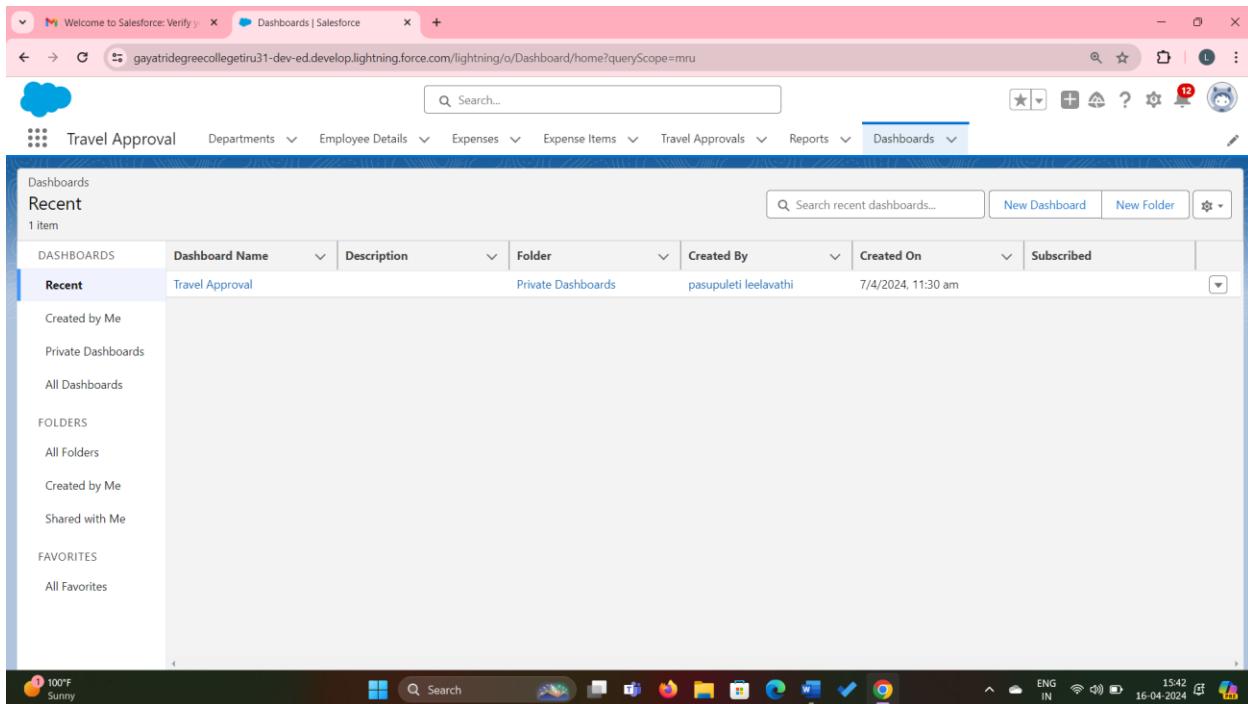
Windows Taskbar: Search, File Explorer, Edge, Firefox, Chrome, etc.

System tray: ENG IN, 16-04-2024, 15:41

Milestone – 12 : Dashboards

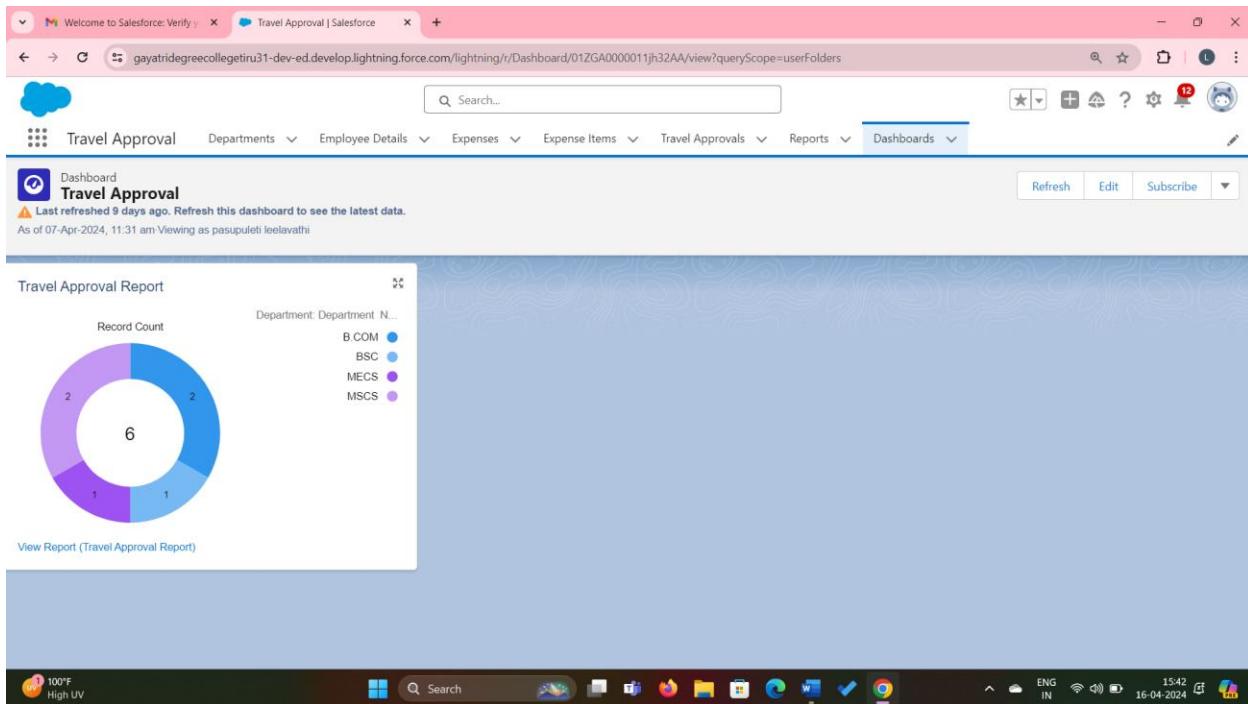
Create Dashboard

1. Click on the Dashboards tab from the Travel Approval application
2. Click on a new dashboard
3. Give name – Travel Approval
4. Click Create
5. Give your dashboard a name and click on +component, select the Travel Approval Report that you created.
6. For the data visualization select any of the chart, table etc as your wish.
7. Click add.
8. Click Save.



View Dashboard :

1. Click on App Launcher on left side of screen.
2. Search Travel Approval App & click on it.
3. Click on Dashboard Tab.
4. Click on Travel Approval and see graph view of records.



Milestone – 13 : Flows

Create a Flow

Now create a flow that uses the update record node to set the out-of-state flag.

1. From Setup, click the Home tab.
2. Select Process Automation | Flows (or use the Quick Find and search for flows)

The screenshot shows the Salesforce Flows home page. The left sidebar includes links for Setup, Home, Object Manager, and a search bar. The main area displays a table titled 'Flow Definitions' with a 'All Flows' dropdown. The table has columns for Flow Label, Process Type, Package State, Last Modified By, and Last Modified Date. The data shows various flows like 'Out of State Travel Flag', 'Basic Approval Request', and 'CMS: Check Whether Any Step is Complet...'. The bottom status bar shows system information including weather (100°F Hot weather), battery level (ENG IN), and system time (15:43 16-04-2024).

3. Click New Flow

4. Select Record-Triggered Flow then click Create.

5. Enter these values :

Parameter	Value
Object	Travel Approval
Configure Trigger	Trigger the flow when: A record is Created or Updated
Conditional Requirements	None
Optimize the Flow For	Fast Field Updates

6. Click Done.

7. In this Layout dropdown, select Freeform.

Add a Decision Element

1. From the left-hand toolbox column, drag a Decision element onto the flow builder screen.

2. Set the following parameters:

Parameter	Values
Label	Is Travel Out of State
API Name	Is_Travel_Out_of_State (This automatically gets set when you tab out of the Label field)
Description	Leave blank

3. Set the Outcomes.

4. For the first outcomes, set these parameters :

Parameter	Value
Label	Yes Out of State
Outcome API Name	Yes_Out_of_State (This automatically gets set when you tab out of the label filed)
Condition Requirement to Execute Outcome	All Conditions Are Met(AND)
Resource	\$Record > Destination State
Operator	Does Not Equal
Value	TX
When to Execute the Outcomes	Only if the record that triggered the flow to run is updated to meet the condition requirements

5. Next to Outcomes Order click the +button to add another outcome.

6. Set these parameters :

Parameter	Value
Label	In State
Outcome API Name	In_State(This automatically gets set when you tab out of the label filed)
Condition Requirement to Execute Outcome	All conditions Are Met (AND)
Resource	\$Record > Destination State
Operator	Does Not Equal
Value	TX
When to Execute the Outcomes	Only if the record that triggered the flow to run is updated to meet the condition requirements

7. Click Done.

8. Drag the white circle from the start Flow element to the Decision element you

just created to link the direction of the arrow.

Create an Action for the Flow Using Update Records Elements

1. From the left-hand column, the flow toolbox, drag an Update Records element onto the flow screen.

2. Set the parameters for the element :

Parameter	Values
Label	Update Travel Approval Record
Ourcome Api Name	Update_Travel_Approval_Record(This automatically gets set when you tab out of the Label field)
How to find Records to Update and set their values	Use the travel approval record that triggered the flow
Conditions Requirements to Update the Records	None-Always Update the Record
Field	Out_of_State__c
Value	\$GlobalConstant.True (start typing True and the value will be come up).

3. Click Done.

4. Drag the white circle from the Decision Node to the Update Records you just created, and select the decision Yes Out of State | Done.

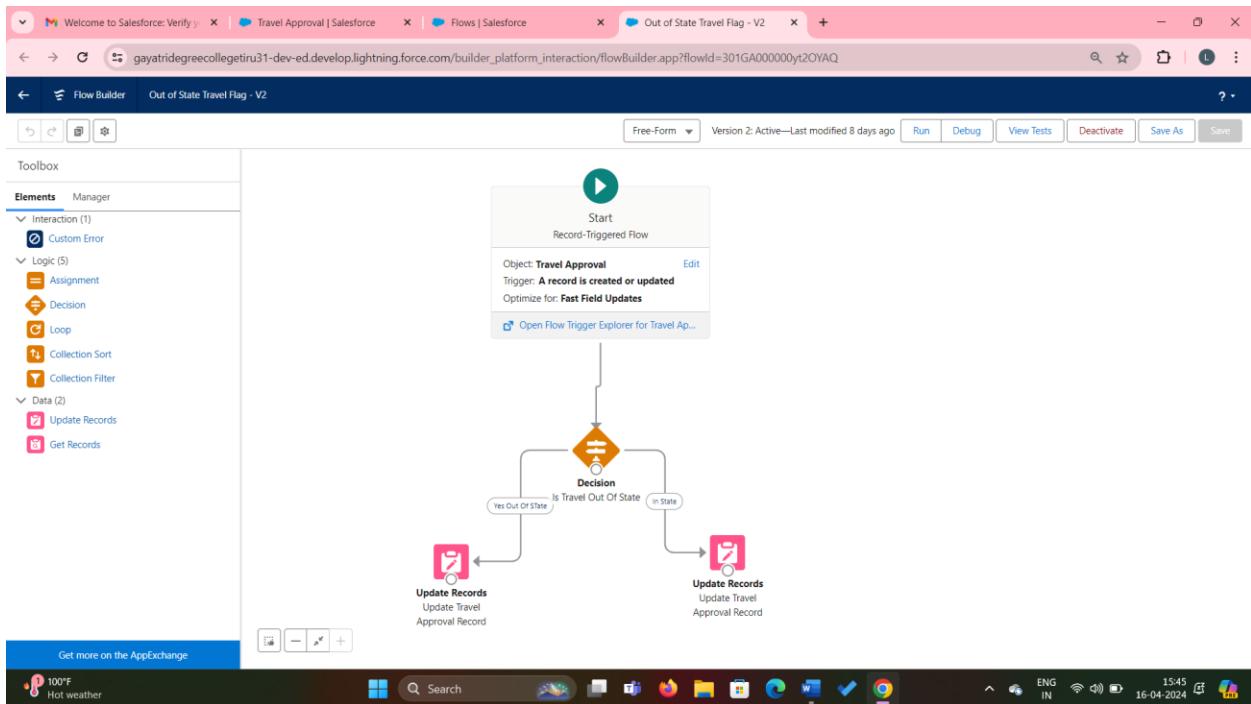
5. Click the Update Records node and make sure it is highlighted in blue. In the top-left corner of the Flow Builder screen, find the and click the duplicate button Duplicate button. Double-click in the new update Records element just created. Note the API name has been automatically updated to Update_Travel_Approval_Record_0.

6. Then update the value of the Out_of_State__c field to FALSE.

7. Delete the True Value and enter False. Selecet \$GlobalConstant.False.

8. Click Done.

9. Drag the white circle form the Decision Node to the second Update Records you just created and select the decision In State.



Congratulations!! You've completed your first Record Triggered Automation Flow! Last but not least, make sure to save and activate the flow.

1. Click Save.
2. Flow Label : Out of State Travel Flag. Flow API Name will auto populate to Out_of_State_Travel_Flag. Leave Description blank and advanced settings as is.
3. Click Save.
4. Click Active.

Milestone – 14 : Approval Process

Create a Approval Process :

Let's get started.

1. Click and select Setup.
2. Select Process Automation | Approval Process (or use the Quick Find and search for Approval Process).
3. In the Manage Approval Processes For list, select Travel Approval.
4. Click Create New Approval Process and select Use Jump Start Wizard.
5. Enter the following parameter

Parameter	Values
Name	Travel Approval Request
Unique Name	Travel_Approval_Request(This automatically gets sent when you tab out of the name)

	field.)
Approval Assignment Email Template	Leave Blank
Add the submit for Approval button and approval history related list to all travel approval page layouts.	Leave this selected/checked.
Use Approval Field of Travel Approval Owner	Leave Unselected/Unchecked
Specify entry criteria	Use this Approval Process : criteria are met
Field	Travel Approval:Total Expenses
Operator	Greater than
Value	0
Select Approval	<ul style="list-style-type: none"> • Automatically assign and approval using a standard or custom hierarchy field. • Select manager from the option list

6. Click Save.

7. Click View Approval Process Detail Page.

Create an Approval Step for Out-of-State Travel

1. Click New Approval Step.

2. Enter the following details

Parameter	Value
Name	Travel Coordinator Approval
Unique Name	Travel_Coordinator_Approval (This automatically gets set when you tab out of the Name field)
Step Number	2

3. Click Next.

4. Ensure Enter this step if the following is selected and the criteria are met option is selected.

5. Enter the following formula criteria

Field : Travel Approval:Out-of-State

Operator : equals

Value : True

6. Click Next.

7. Select the Automatically assign to the approver(s) option.

8. Select user form the dropdown and select your name as the travel coordinator.

9. Click Save.

10. Select No,I'll do this later. Take me to the approval process detail page to review what I've created and then click Go!

Add Logic

Next, add logic to set the status of the approval request based on if it was approved or rejected.

Let's start by creating an action if the request was approved by all approvers.

1. Click Add New in the Final Approval Actions area of the approval process form.
2. Select Field Update from the dropdown list.
3. Enter the following values.

Parameter	Values
Name	Set Status to Approved
Unique Name	Set_Status_to_Approved(This automatically gets set when you tab out of the Name field)
Field to Update	Status
Re-evaluated Workflow Rules after Field Change	Leave unchecked
Picklist Options	Select A specific value and select Approved from the dropdown list.

4. Click Save.

Next, let's set the status value of Rejected if any approver rejects the travel approval request.

1. Click Add New in the Final Rejection Actions area of the approval process form.
2. Select Field Update from the dropdown list.
3. Enter the following values.
4. Click Save.
5. Click Activate.
6. Select OK in the popup window to confirm activation. Your approval process should now have the Active flag checked.

Next, you enable email approval responses.

1. Click and select Setup.
2. From setup, enter process automation settings in the quick find box and select it.
3. Click the Process Automation Settings link.
4. Make sure Enable Email Approval Response is selected.
5. Set the Default Workflow User to your name.
6. Click Save.

The screenshot shows the Salesforce Setup interface with the following details:

- Page Header:** Welcome to Salesforce: Verify | Travel Approval | Salesforce | Flows | Salesforce | Approval Processes | Salesforce
- Search Bar:** Search Setup
- Left Sidebar:** Setup, Home, Object Manager, Data (Mass Transfer Approval Requests, Process Automation, Approval Processes). A search bar shows "approval".
- Central Content:**
 - Section:** Approval Processes
 - Page Title:** Travel Approval: Travel Approval Request
 - Process Definition Detail:**
 - Process Name: Travel Approval Request
 - Unique Name: Travel_Approval_Request
 - Description: Travel Approval: Total Expenses GREATER THAN 0
 - Entry Criteria: Travel Approval: Total Expenses GREATER THAN 0
 - Record Editability: Administrator ONLY
 - Approval Assignment Email Template: Initial Submitters
 - Initial Submitters: Travel Approval Owner
 - Created By: pasupuleti.leelavathi (15/04/2024, 10:24 am)
 - Modified By: pasupuleti.leelavathi (15/04/2024, 10:45 am)
 - Initial Submission Actions:** Add Existing, Add New. Action Type: Record Lock. Description: Lock the record from being edited.
 - Approval Steps:**

Action	Step Number	Name	Description	Criteria	Assigned Approver	Reject Behavior
Show Actions Edit	1	Step 1		Travel Approval: Out of State EQUALS TRUE	User pasupuleti.leelavathi	Final Rejection
Show Actions Edit	2	Travel Coordinator Approval			User pasupuleti.leelavathi	Final Rejection
 - Final Approval Actions:** Add Existing, Add New. Action Type: Record Lock. Description: Lock the record from being edited.

The screenshot shows the Salesforce Setup interface with the following details:

- Page Header:** Welcome to Salesforce: Verify | Travel Approval | Salesforce | Flows | Salesforce | Approval Processes | Salesforce
- Search Bar:** Search Setup
- Left Sidebar:** Setup, Home, Object Manager, Data (Mass Transfer Approval Requests, Process Automation, Approval Processes). A search bar shows "approval".
- Central Content:**
 - Section:** Approval Processes
 - Page Title:** Travel Approval: Travel Approval Request
 - Initial Submission Actions:** Add Existing, Add New. Action Type: Record Lock. Description: Lock the record from being edited.
 - Approval Steps:**

Action	Step Number	Name	Description	Criteria	Assigned Approver	Reject Behavior
Show Actions Edit	1	Step 1		Travel Approval: Out of State EQUALS TRUE	User pasupuleti.leelavathi	Final Rejection
Show Actions Edit	2	Travel Coordinator Approval			User pasupuleti.leelavathi	Final Rejection
 - Final Approval Actions:** Add Existing, Add New. Action Type: Record Lock. Description: Lock the record from being edited.
 - Final Rejection Actions:** Add Existing, Add New. Action Type: Record Lock. Description: Unlock the record for editing.
 - Recall Actions:** Add Existing, Add New. Action Type: Record Lock. Description: Unlock the record for editing.

Test Your Approval Process :

Time to Test now you've created your approval process, let's test it out.

1. Using the App Launcher, navigate to the Travel App and click the Travel Approval tab..
2. Select a record from the list. Make sure this is a travel approval record that has at least one expense item and a total expense amount greater than \$0.
3. Click the down arrow next to the New Opportunity button and select Submit for Approval..
4. Enter a comment and click Submit.

5. You should receive an email alert like the following that lets Eric Executive know that he has a travel approval to process. Notice that it provides a link to directly access the Travel Approval record so that Eric could review it. Also, the email includes the option to just respond to the email and reply with text like APPROVE, YES, REJECT, NO.
6. On your Travel Approval record, click the Related tab and you can see the new section titled Approval History that has details of your approval submission. Its status is Pending and it's assigned to Eric Executive.
7. At this point you could log out of Salesforce and log back in as Eric Executive.
8. Click Approve in the Approval History section.
9. In the popup window, enter a comment and click the Approve button once again.
10. Since this was for out-of-town travel, the approval was sent to the Travel Coordinator.
11. Click Approve in the Approve History section to finish the approval.
12. Enter a comment in the popup window and click Approve.
13. Click the detail tab for your travel approval record.
14. Pick or create another travel request record and submit it for approval. Check your email and respond to the email with reject.

Congratulations! You have added automation to your application using point and click tools such as :

- Validations Rules
- Formula Fields
- Roll-Up Summary Fields
- Flow Builder
- Approval Processes

Smartinternz

Home | Salesforce

gayatridegreecollege128-dev-ed.develop.lightning.force.com/lightning/setup/SetupOneHome/home

App Launcher

Setup Home Object Manager

Search Setup

travel approval

SETUP

Home

Get Started with Einstein Bots

Mobile Publisher

Real-time Collaborative Docs

Most Recently Used

NAME TYPE OBJECT

Travel Approval Request Process Definition Travel Approval

Status Indicator Custom Field Definition Travel Approval

Travel Approval Custom Object Definition Travel Approval

30°C Partly cloudy

Windows taskbar: Search, File Explorer, Task View, Start, Taskbar Icons, Network, Power, Date/Time (23:23, 18-04-2024)

Travel Exp | Travel Approval

gayatridegreecollege128-dev-ed.develop.lightning.force.com/lightning/r/Travel_Approval_c/e04IU00003B9E0RYAV/view

Travel Approval

Departments Employee Details Expenses Expense Items Travel Approvals Reports Dashboards

Travel Approval

Travel Exp

Related Details

Travel Approval Name: Travel Exp

Employee Name: Madhu

Department: Computer Science

Status Indicator: Out Of State (true)

Total Expense: 5,000

Trip info

Trip Start date: 20/04/2024

Trip End date: 26/04/2024

Status: Approved

Created By: Prabhu Mounika

Destination State: Kashmir

Purpose of Trip: Vacations

Last Modified By: Prabhu Mounika

Tomorrow's high To tie record

Windows taskbar: Search, File Explorer, Task View, Start, Taskbar Icons, Network, Power, Date/Time (23:22, 19-04-2024)