



Capstone Project Report

On

“TRAVEL APPROVAL APP”

BY:

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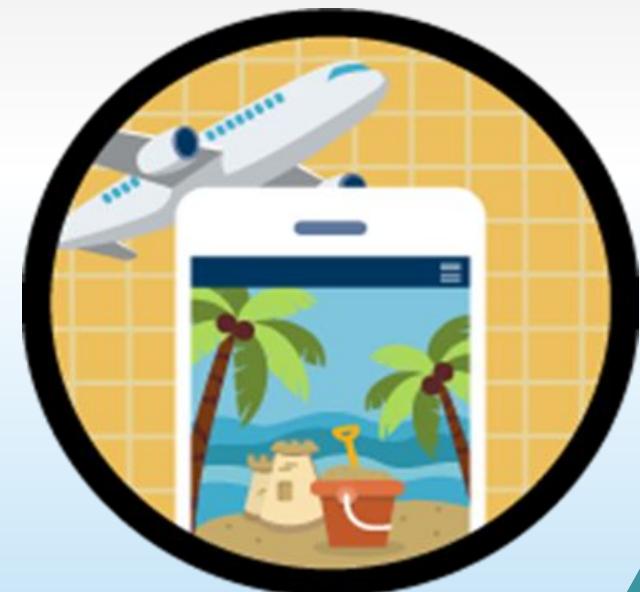
INTRODUCTION TO SALESFORCE

- Salesforce is a cloud-based software company that provides its customers with a platform to develop their own applications without following the tough steps that they used to follow in the legacy system. The software or application once created can be uploaded onto the cloud allowing the end-users to view them.
- Salesforce is currently providing various software solutions and platforms for developers to create and distribute custom software/applications. Tech giants like Google, Twitter, Amazon, and Facebook are using Salesforce either in the form of SaaS or PaaS.



INTRODUCTION OF TRAVEL APPROVAL APP

- The travel approval project in Salesforce is a system designed to automate and streamline the process of requesting and approving travel expenses for employees. The project involves several components, including a custom object to track travel requests, a custom approval process, and various integrations with external systems.
- Overall, the travel approval project in Salesforce provides a streamlined and efficient way for employees to request and manage travel expenses, while also providing managers with the tools they need to ensure that all expenses are approved and accounted for.



Module -1

- This project module focuses on the non-coding approach to modifying the user interface, as you customize an app that tracks company travel.
- Create Custom App, Objects, Fields & Relationships, and how you customize the App using declarative tools.



Exercise-01

Creating Lightning App: TRAVEL APP

Lightning App Builder | App Settings | Pages | Travel App

App Settings

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 App

* Developer Name: Travel_App

Description: Enter a description...

App Branding

Image:  Primary Color Hex Value: #0070D2

Clear

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

App Launcher Preview

 Travel App

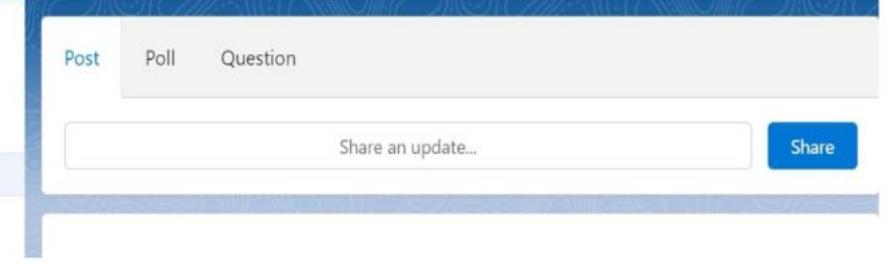
All | Search Chatter and more...

Travel App | Chatter | Reports | Dashboards

What I Follow
To Me
Bookmarked
Company Highlights
My Drafts

Post | Poll | Question

Share an update... | Share



Custom object Department and Creating custom fields in Department object

The screenshot shows the Salesforce Object Manager interface for the 'Department' object. The left sidebar lists various configuration options: Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main details pane shows the following information:

- Description:** (empty)
- API Name:** Department__c
- Custom:** ✓
- Singular Label:** Department
- Plural Label:** Departments
- Enable Reports:** ✓
- Track Activities:** (disabled)
- Track Field History:** (disabled)
- Deployment Status:** Deployed
- Help Settings:** Standard salesforce.com Help Window

A context menu is open on the right side of the page, showing the user profile 'Shaik Karimunnisa' and the following options:

- DISPLAY DENSITY
 - ✓ Comfy
 - Compact
- OPTIONS
 - Switch to Salesforce Classic ⓘ
 - Add Username

Field dependency in department

The screenshot shows a Salesforce setup page titled "Edit Field Dependency" for the "Department" object. The "Fields & Relationships" tab is selected in the sidebar. The main area displays the "Controlling Field" as "Location" and the "Dependent Field" as "Department Type". Below this, instructions advise using double-click to toggle visibility and shift+click to select ranges. A legend indicates that yellow cells represent "Included Value" and white cells represent "Excluded Value". The dependency grid shows rows for "Kolkata" and "Delhi", each with multiple department types: Banking, Finance, Education, Energy, and IT. The "Kolkata" row has all departments included, while the "Delhi" row has Finance, Education, and Energy included. Buttons at the bottom allow for including or excluding values from the dependent picklist.

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

List View Button Layout

Restriction Rules

Help for this Page ?

Save Cancel Preview

Controlling Field Location
Dependent Field Department Type

Instructions

- Double click on a cell to toggle its visibility for the Controlling Field value shown in the column heading.
- To change multiple cells at once, select multiple cells and then click the Include Values or Exclude Values button to change the visibility of all selected cells at once.
- Use SHIFT + click to select a range of adjacent cells. Use CTRL + click to select multiple cells that are not adjacent.
- Use the Preview button to test the results.

Legend

Excluded Value

Included Value

Edit Field Dependency ~ Salesforce - Developer Edition

Click button to include or exclude selected values from the dependent picklist:

Include Values Exclude Values

Location:	Kolkata	Delhi
Department Type:	Banking, Finance, Education, Energy, IT	Banking, Finance, Education, Energy, IT
Kolkata	Banking, Finance, Education, Energy, IT	Banking, Finance, Education, Energy, IT
Delhi		

Show Columns: 1 - 2 (of 2) < Previous | Next > [View All](#) [Go to](#)

Show Columns: 1 - 2 (of 2) < Previous | Next > [View All](#)

```
javascript:srcUp(%27%2Fp%2Fdependency%2FeditDependencyUI%2Fe%3FtableEnumOrId%3D012w000003Cobl%26controller%3D00N2w00000V6uBM%26dependent%3D00N2w00000V6uBv%26retURL%3D%252Fsetup%252Fui%252Fdep...
```

Creating Custom Object Travel Approval and Custom Fields in that Object

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

- Setup Tab:** The user is currently in the "Object Manager" tab under the "Travel Approval" object.
- Fields & Relationships:** This section lists 13 items, sorted by Field Label. The table includes columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED.
- Table Data:**

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(2)		
Last Modified By	LastModifiedById	Lookup(User)		
Out-of-State	Out_of_State__c	Checkbox		
Owner	OwnerId	Lookup(User,Group)		✓
Purpose of Trip	Purpose_of_Trip__c	Text Area(255)		
Status	Status__c	Picklist		
Status Indicator	Status_Indicator__c	Formula (Text)		
Total Expenses	Total_Expenses__c	Roll-Up Summary (SLIM Expense Item)		

After creating travel approval object with fields, it looks as shown below

The screenshot shows a Salesforce Lightning record page for a Travel Approval object. The URL in the browser is mindful-hawk-9qyyuh-dev-ed.trailblaze.lightning.force.com/lightning/r/Travel_Approval__c/a062w00000OInxKAAT/view. The page title is "Travel Approval TA-00001". The top navigation bar includes links for Mail, You're, Tra, (4) Int, (5) Tra, Hands, TA-0001, Travel, Search, Process, Project, word, and a plus sign for new tabs. The main menu has options for Chrome, File, Edit, View, History, Bookmarks, Profiles, Tab, Window, and Help. The date and time displayed are Fri 24 Feb 3:45 PM.

The page header includes a search bar, a star icon, a plus icon, a question mark icon, a gear icon, a bell icon with 14 notifications, and a user profile icon.

The main content area is divided into two sections: "Related" and "Details". The "Details" section contains the following fields:

- Travel Approval #: TA-00001
- Status: Approved
- Total Expenses: \$1,320.00
- Status Indicator: Accepted
- Trip Info:
 - Purpose of Trip: Attend Dreamforce
 - Trip Start Date: 1/31/2023
 - Trip End Date: 2/28/2023
 - Created By: Shaik Karimunnisa, 2/14/2023, 9:06 PM
- Out-of-State:
- Destination State: CA
- Last Modified By: Shaik Karimunnisa, 2/15/2023, 1:35 AM

The right side of the page features a feed with the following entries:

- A post from Shaik Karimunnisa: "Share an update..." with a "Share" button.
- A search bar with the placeholder "Search this feed..." and a refresh icon.
- A status update from Shaik Karimunnisa: "Shaik Karimunnisa updated this record. February 15, 2023 at 1:35 AM" followed by a "Status" field showing "Draft to Approved".
- Like and Comment buttons.
- A comment input field with the placeholder "Write a comment...".
- A final status update from Shaik Karimunnisa: "Shaik Karimunnisa February 14, 2023 at 9:37 PM".

The bottom of the screen shows a purple Mac-style dock with various application icons, including Finder, Mail, Safari, and Microsoft Office applications.

Importing Department records using data import wizard and imported record data status can viewed below

The screenshot shows a Salesforce Lightning interface for a "Travel App". The main screen displays a list of "Departments" under the "All" tab. There are 16 items listed, sorted by Department Name. The list includes:

- 1 Audit Services
- 2 Contract Management
- 3 Disability Determination Bureau
- 4 Division of Aging
- 5 Division of Disability and Rehabilitative Services
- 6 Division of Family Resources
- 7 Division of Finance
- 8 Division of Mental Health and Addiction
- 9 Human Resources
- 10 Legislative Services
- 11 Office of Communications and Media
- 12 Office of Early Childhood and Out-of-School Learning
- 13 Office of General Counsel
- 14 Office of Medicaid Policy and Planning
- 15 Quality and Compliance Office

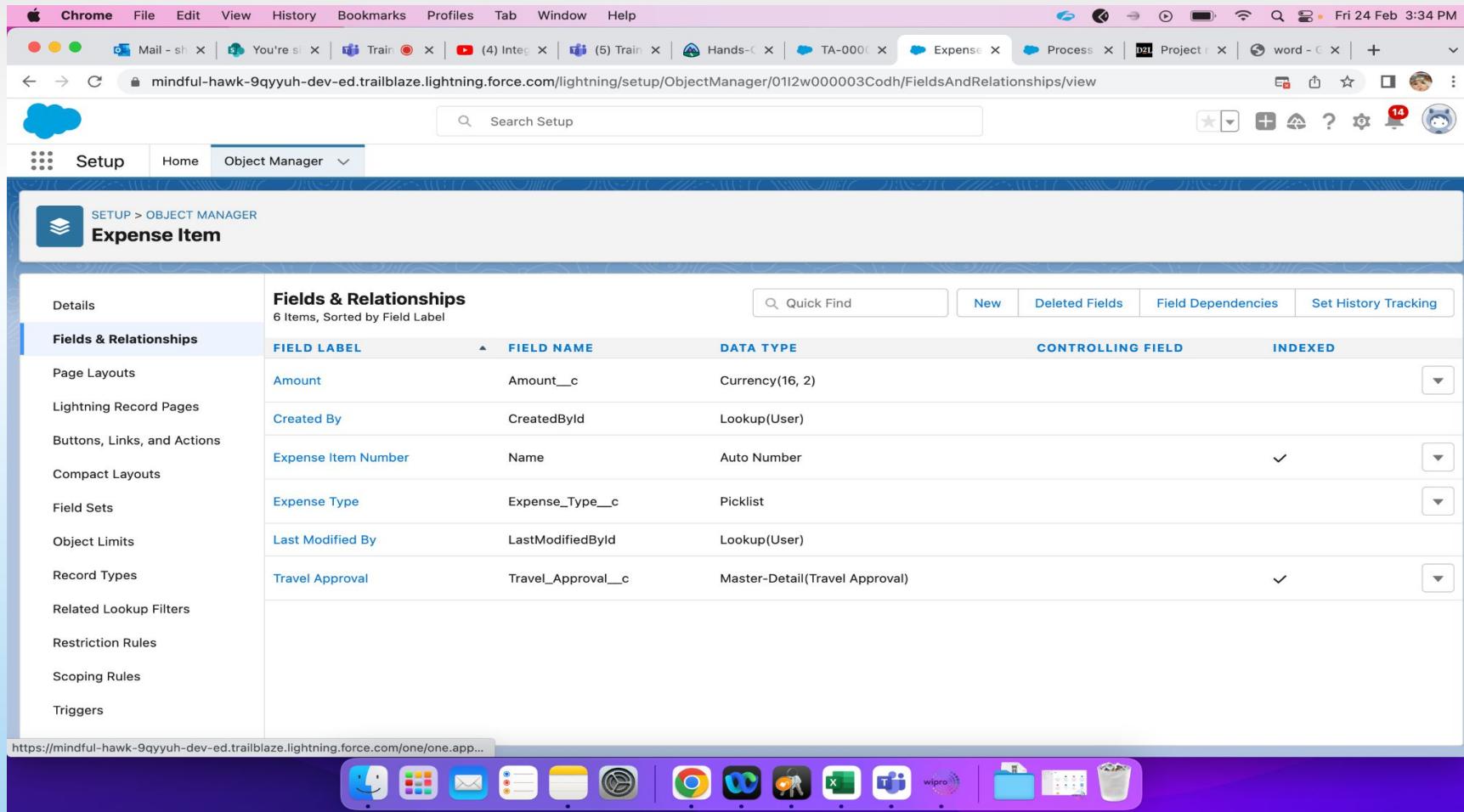
A context menu is open for the first item, "Audit Services". The menu includes:

- DISPLAY DENSITY
 - ✓ Comfy (selected)
 - Compact
- OPTIONS
 - Switch to Salesforce Classic ⓘ
 - Add Username

The browser's address bar shows the URL: `mindful-hawk-9qyyuh-dev-ed.trailblaze.lightning.force.com/lightning/o/Department__c/list?filterName=00B2w00000YWWztEAH`. The top navigation bar includes tabs for "Travel App", "Chatter", "Reports", "Dashboards", "Departments", and "Travel Approvals". The bottom dock contains icons for various applications.

Exercise-02

Creating Expense Item custom object and Custom fields in Expense Item object



The screenshot shows the Salesforce Object Manager interface for the 'Expense Item' object. The page title is 'SETUP > OBJECT MANAGER Expense Item'. On the left, a sidebar lists various setup categories: Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Restriction Rules, Scoping Rules, and Triggers. The main content area displays the 'Fields & Relationships' section with 6 items, sorted by Field Label. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The data is as follows:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(16, 2)		
Created By	CreatedById	Lookup(User)		
Expense Item Number	Name	Auto Number	✓	
Expense Type	Expense_Type__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Travel Approval	Travel_Approval__c	Master-Detail(Travel Approval)	✓	

Creating User Eric

The screenshot shows a Salesforce Setup page for creating a new user. The URL in the browser is mindful-hawk-9qyyuh-dev-ed.lightning.force.com/lightning/setup/ManageUsers/page?address=%2F0052w00000EhbZR%3Fnoredirect%3D1%26isUserE.... The page title is "SETUP Users".

User Detail

Name	Eric Executive	Role	CEO
Alias	eexec	User License	Salesforce
Email	shaik.karimunnisa2@wipro.com	Profile	System Administrator
Username	shaik.karimunnisa5@wipro.com	Active	<input checked="" type="checkbox"/>
Nickname	eric.exec	Marketing User	<input type="checkbox"/>
Title		Offline User	<input type="checkbox"/>
Company		Knowledge User	<input type="checkbox"/>
Department		Flow User	<input type="checkbox"/>
Division		Service Cloud User	<input type="checkbox"/>
Address		Site.com Contributor User	<input type="checkbox"/>
Time Zone	(GMT-08:00) Pacific Standard Time (America/Los_Angeles)	Site.com Publisher User	<input type="checkbox"/>
Locale	English (United States)	WDC User	<input type="checkbox"/>
Language	English	Mobile Push Registrations	<input type="checkbox"/> View
Delegated Approver		Data.com User Type	<input type="checkbox"/> i
Manager		Accessibility Mode (Classic Only)	<input type="checkbox"/> i
Receive Approval Request Emails	Only if I am an approver	Debug Mode	<input type="checkbox"/> i
Federation ID		Hints-Contract Palette on Charts	<input type="checkbox"/> i

User Detail Buttons: Edit, Sharing, Reset Password, Freeze.

User Detail Fields: Name, Alias, Email, Username, Nickname, Title, Company, Department, Division, Address, Time Zone, Locale, Language, Delegated Approver, Manager, Receive Approval Request Emails, Federation ID.

User Detail Roles: CEO, Salesforce, System Administrator, Marketing User, Offline User, Knowledge User, Flow User, Service Cloud User, Site.com Contributor User, Site.com Publisher User, WDC User, Mobile Push Registrations, Data.com User Type, Accessibility Mode (Classic Only), Debug Mode, Hints-Contract Palette on Charts.

Customize The Travel Approval Default Search Layout

The screenshot shows a Salesforce Einstein Search Layouts page titled "Travel Approval Search Results". The page allows users to edit the search layout by selecting fields from the "Available Fields" list and adding them to the "Selected Fields" list. The "Available Fields" list includes: Record ID, Out-of-State, Status Indicator, Total Expenses, Owner Alias, Owner First Name, Owner Last Name, Created By Alias, Created By, Created Date, and Last Modified By Alias. The "Selected Fields" list contains: Department, Purpose of Trip, Status, Destination State, Trip Start Date, Trip End Date, and Travel Approval #. There are "Up" and "Down" arrows to re-order the selected fields. A checkbox at the bottom left allows users to "Override the search result column customizations for all users". Below the field lists, sections for "Standard Buttons" and "Custom Buttons" are present, both stating there are no customizable options available.

Setup

Search Layouts

Travel Approval Search Results

Select the fields to include in this search layout. Note that your choices only determine the display of search results and do not affect the fields that are actually searched. Your selections also determine the fields that are available to users when customizing their search results columns. Please refer to the online help for [more information on search fields](#).

Available Fields

Selected Fields

Record ID
Out-of-State
Status Indicator
Total Expenses
Owner Alias
Owner First Name
Owner Last Name
Created By Alias
Created By
Created Date
Last Modified By Alias

Department
Purpose of Trip
Status
Destination State
Trip Start Date
Trip End Date
Travel Approval #

Add
Remove
Up
Down

Override the search result column customizations for all users

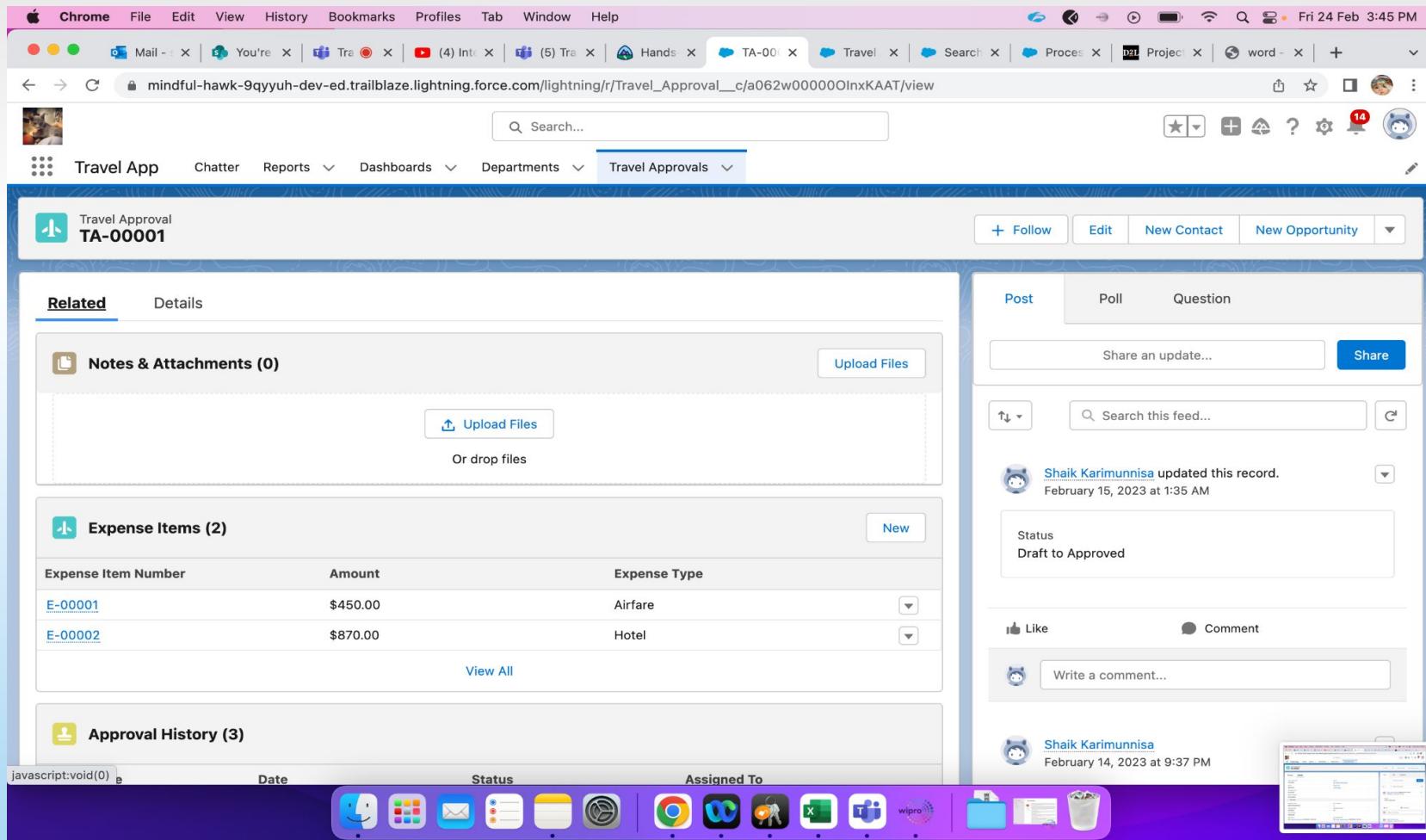
Standard Buttons

There are no customizable standard buttons for this view.

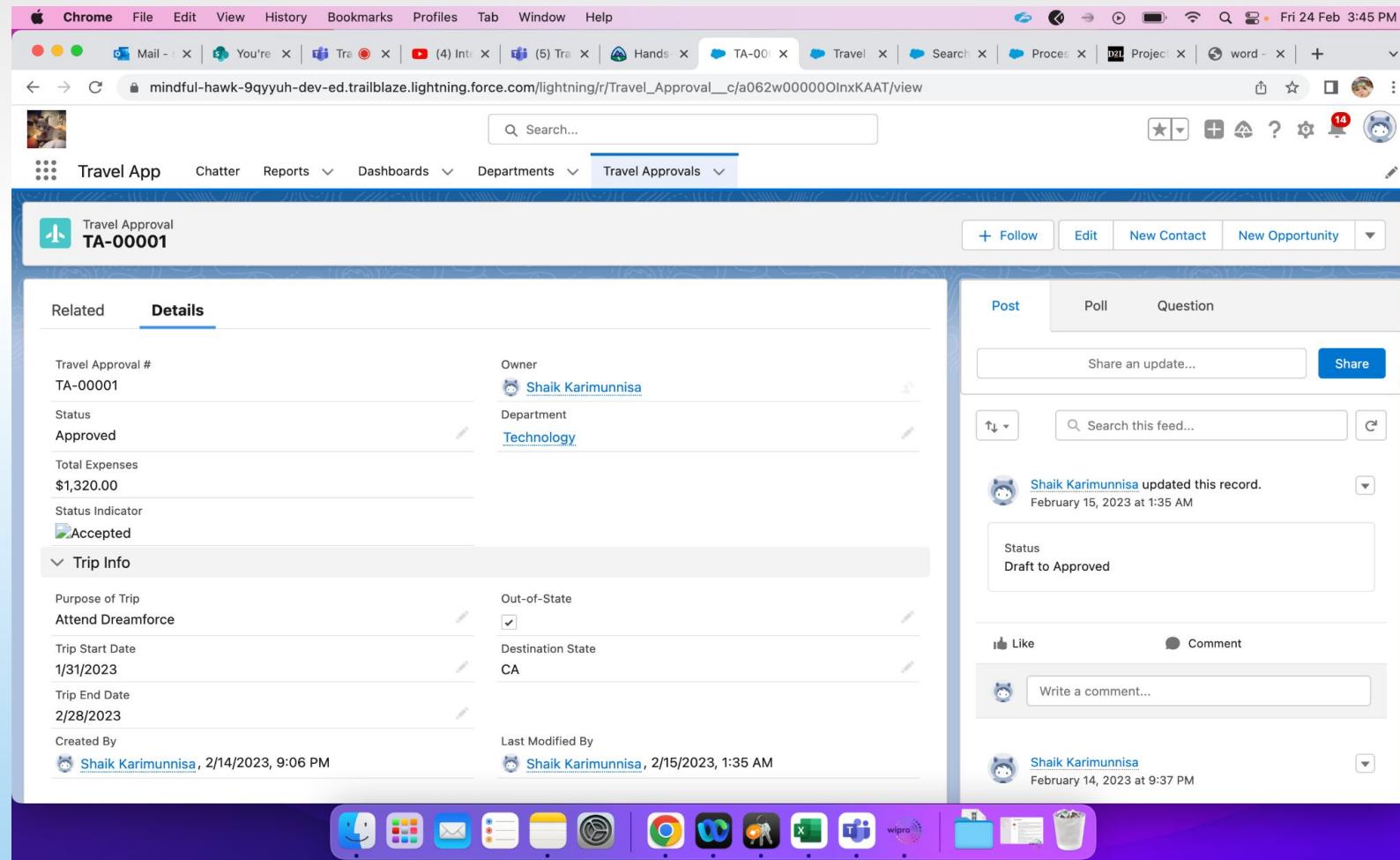
Custom Buttons

[Click here to create a new custom list button](#)

Customizing page layout



Test the app:

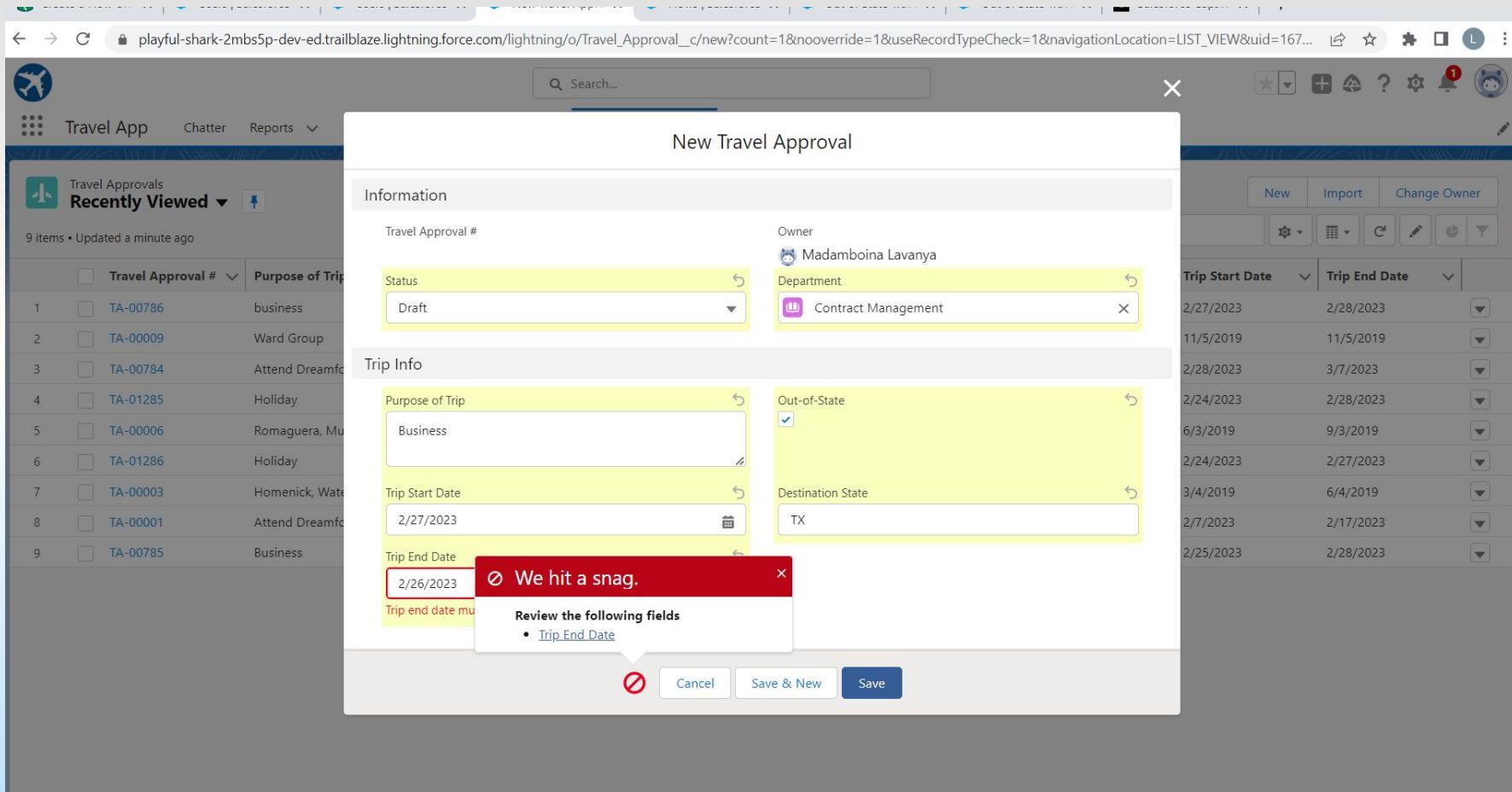


MODULE 2

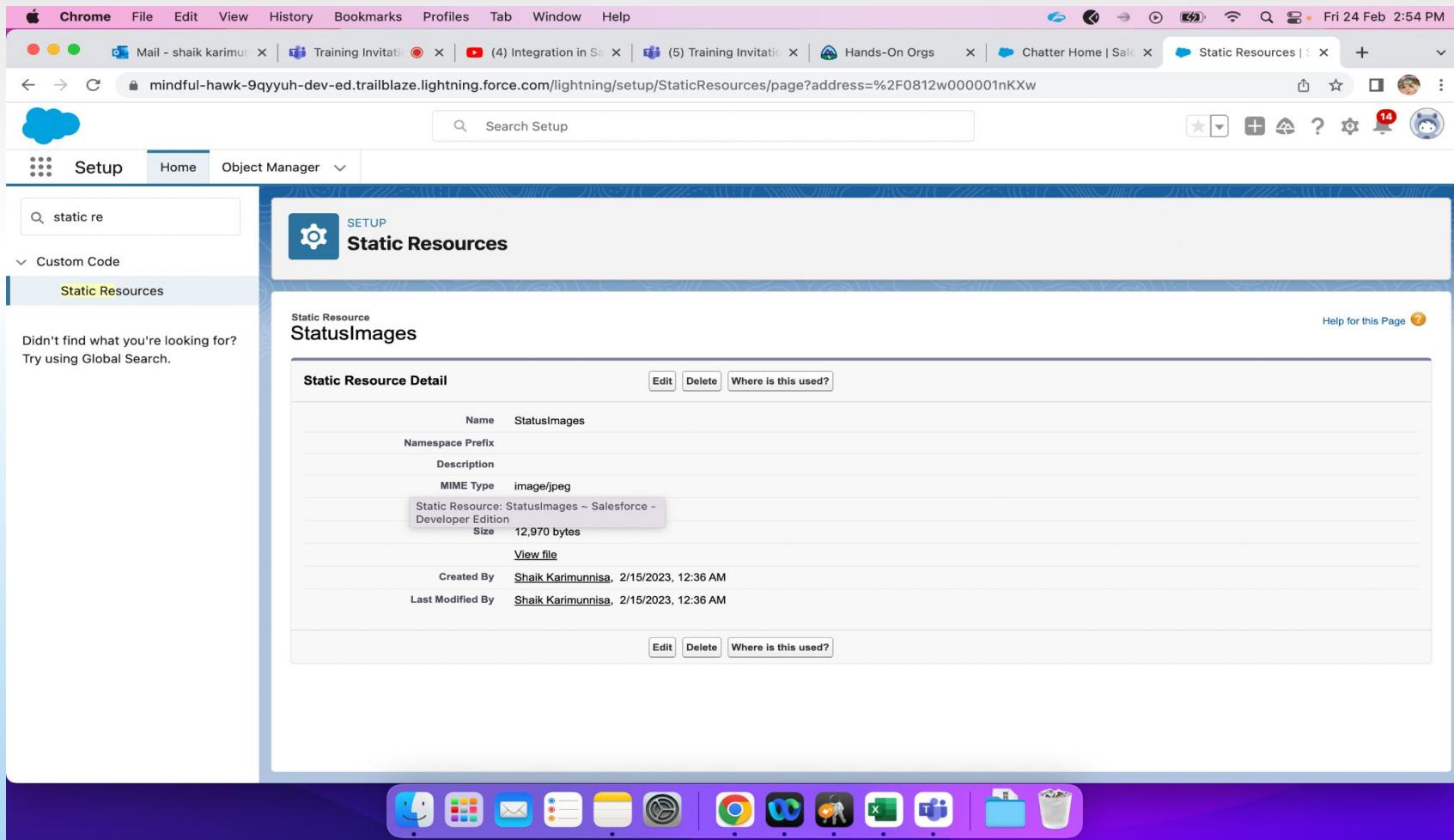
- This project module focuses on the Automation and Analytics Tools to enhance your custom App development.
- Define Business logic using Validation rules, Roll-up summary fields, Formulas, Flows & how you track Travel Approvals using Reports and Dashboards.



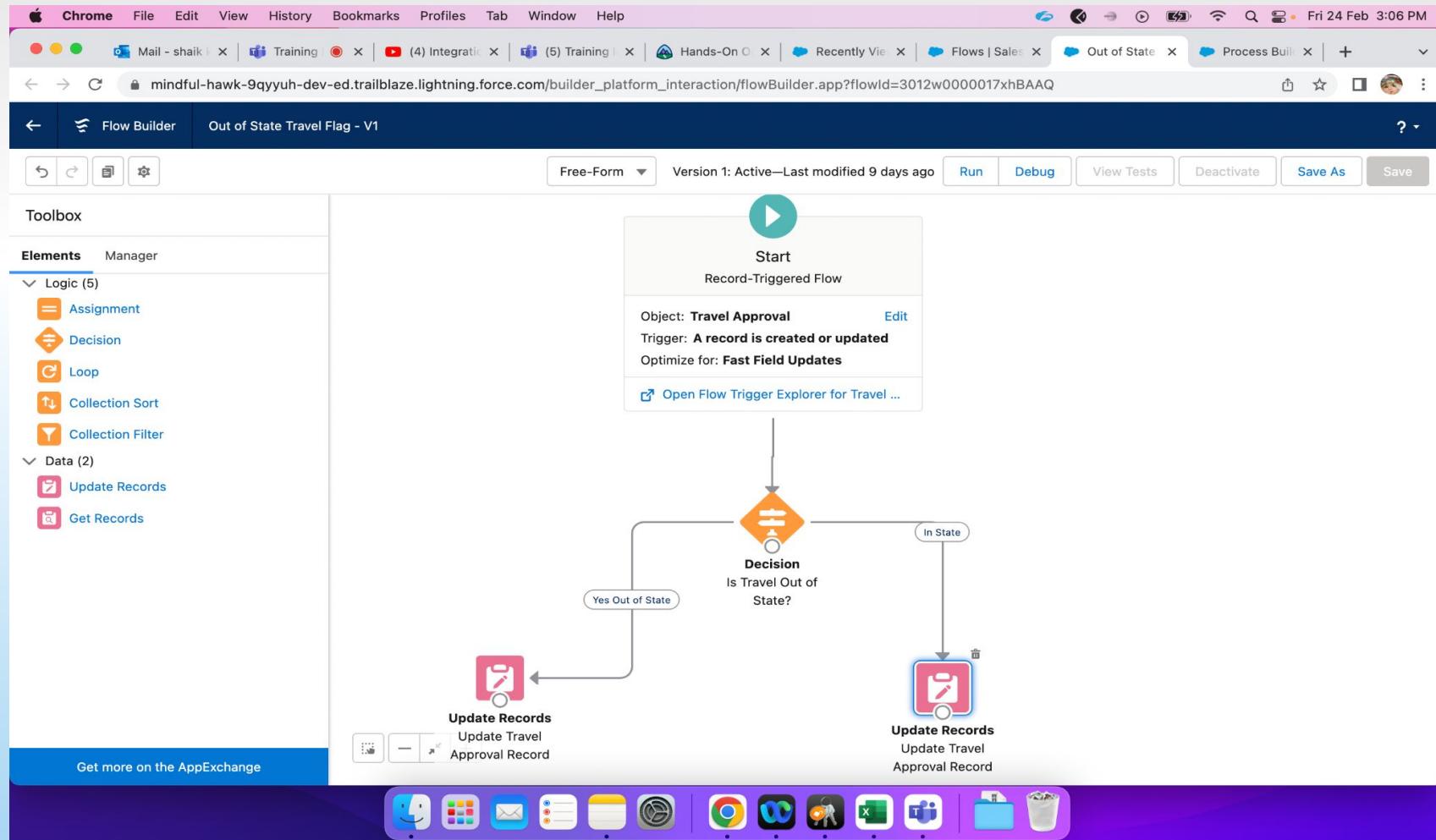
Validation Rule that trip end date always \geq start date



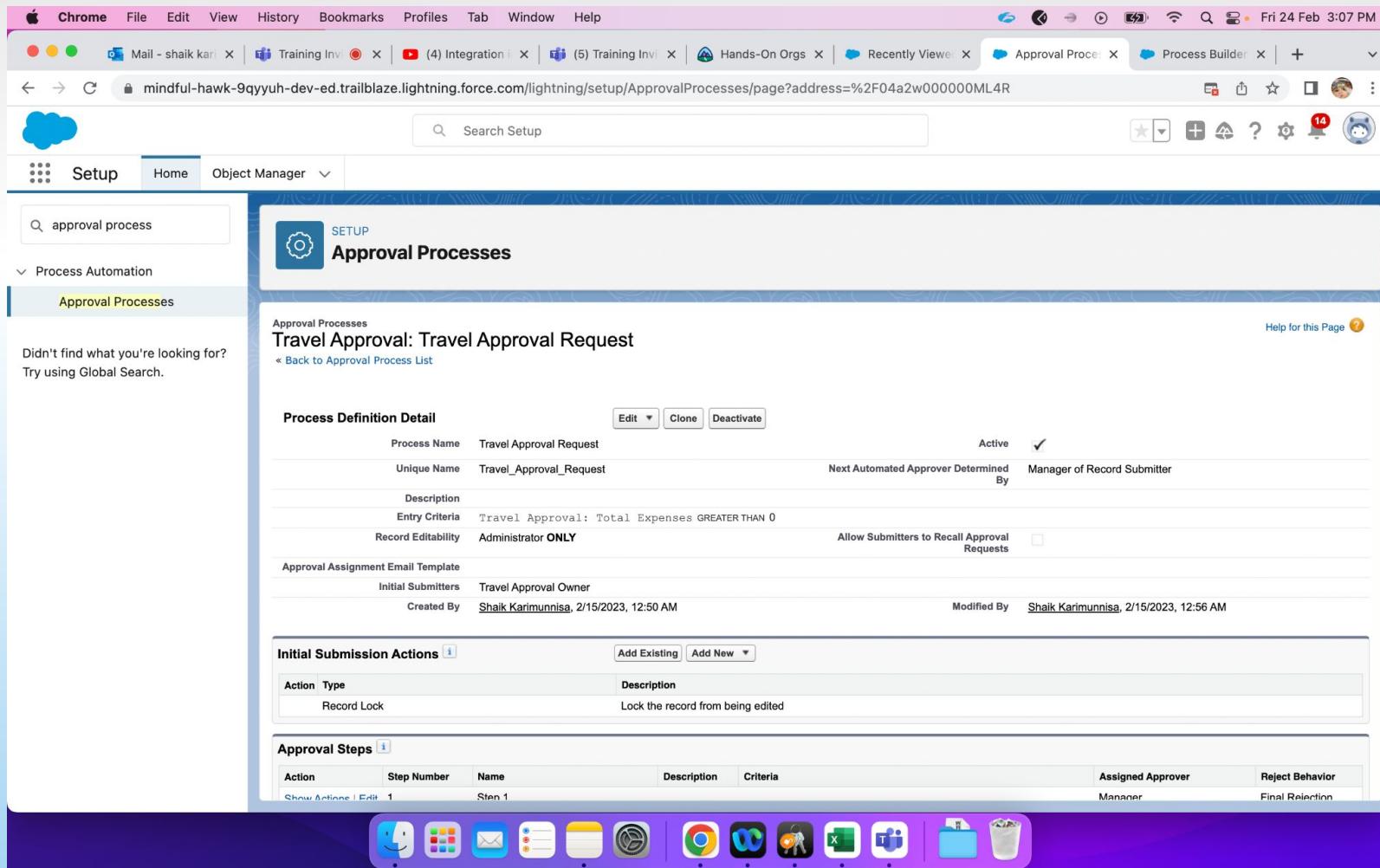
Creating Formula Fields Static Resource with name Status Images



Create a flow looks as shown, save and activate



Creating an Approval Process to send travel approvals to manager or travel coordinator



Testing the Approval Process Status is Pending Here, Next Submit For Approval

The image displays two side-by-side screenshots of a Salesforce Lightning application, specifically the "Travel App". Both screenshots show a "Process Instance Step" for a "Travel Approval" record.

Screenshot 1 (Left): Approved Status

- Header:** "Travel App" tab is selected.
- Record Details:** "Process Instance Step" for "Travel Approval Approval" is shown as "Approved".
- Fields:** Submitter (Madamboina Lavanya), Date Submitted (Feb 14, 2023), Actual Approver (Madamboina Lavanya), Assigned To (Eric Executive).
- Details Panel:** Shows "Approval Details" with "Travel Approval #" (TA-00001) and "Owner" (Madamboina Lavanya).
- Approver Comment:** A comment from "Madamboina Lavanya" dated Feb 14, 2023, stating "Looks good".
- User Selection Overlay:** A modal window titled "Approver Comment" is open, showing a list of user names under "USERNAMES". The list includes:
 - madamboinalavanya1@wipro.com (wipro-6a4-dev-ed-develop.my.salesforce.com)
 - madamboinalavanya2@wipro.com (wipro-28b-dev-ed-develop.my.salesforce.com)
 - lavanya2k32@wipro.com (wiprocom-72f-dev-ed-develop.my.salesforce.com)With "lavanya2k32@wipro.com" selected.
- Display Options:** Includes "DISPLAY DENSITY" (set to "Comfy"), "OPTIONS", and links to "Switch to Salesforce Classic" and "Add Username".

Screenshot 2 (Right): Pending Status

- Header:** "Travel App" tab is selected.
- Record Details:** "Process Instance Step" for "Travel Approval" is shown as "Pending".
- Fields:** Submitter (Madamboina Lavanya), Date Submitted (Feb 24, 2023), Actual Approver (Eric Executive), Assigned To (Eric Executive).
- Details Panel:** Shows "Approval Details" with "Travel Approval #" (TA-00001) and "Owner" (Madamboina Lavanya).
- Approver Comment:** A comment from "Eric Executive" dated Feb 24, 2023, stating "yeah app".
- User Selection Overlay:** A modal window titled "Approver Comment" is open, showing a list of user names under "USERNAMES". The list includes:
 - madamboinalavanya1@wipro.com (wipro-6a4-dev-ed-develop.my.salesforce.com)
 - madamboinalavanya2@wipro.com (wipro-28b-dev-ed-develop.my.salesforce.com)
 - lavanya2k32@wipro.com (wiprocom-72f-dev-ed-develop.my.salesforce.com)With "lavanya2k32@wipro.com" selected.
- Display Options:** Includes "DISPLAY DENSITY" (set to "Comfy"), "OPTIONS", and links to "Switch to Salesforce Classic" and "Add Username".

Using Data import wizard to import travel approval records , later the Records imported successfully

The screenshot shows the Salesforce Setup interface with the Bulk Data Load Jobs page open. The job ID is 7502w00000OLifI. The job details indicate it was submitted by Madamboina Lavanya on 2/24/2023 at 12:37 AM IST, with a duration of 00:02. The object is Travel Approval, and the content type is CSV. The job is completed with 1 record processed and 0 failed. The progress is 100%, and there were 300 records processed and 1 record failed. The sidebar shows the user profile of Madamboina Lavanya and a list of other usernames.

Bulk Data Load Jobs

Bulk Data Load Job
7502w00000OLifI

View the details of a bulk data load job.

Back to List: Bulk Data Load Jobs

Bulk Data Load Job Detail

Job ID		7502w00000OLifI	Job Type	Bulk V1	
Submitted By	Madamboina Lavanya			Operation	Insert
Start Time	2/24/2023, 12:37 AM IST			Queued Batches	0
End Time	2/24/2023, 12:37 AM IST			In Progress Batches	0
Time to Complete (hh:mm:ss)	00:02			Completed Batches	1
Object	Travel Approval			Failed Batches	0
External ID Field				Progress	100%
Content Type	CSV			Records Processed	300
Concurrency Mode	Parallel			Records Failed	1
API Version	57.0			Retries	0

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

> Apps

> Feature Settings

> Slack

> Workflow Services

Search Setup

Madamboina Lavanya
playful-shark-2mbs5p-dev-ed.trailblaze.lightning.force.com/lightning/setup/AsyncApiJobStatus/page?address=%2F7502w00000OLifI#AAD

Quick Find

USERNAMES

madamboinalavanya1@wipro.com
wipro-6a4-dev-ed.develop.my.salesforce.com

madamboinalavanya@wipro.com
wipro-28b-dev-ed.develop.my.salesforce.com

lavanya2k32@wipro.com
wiprocom-72f-dev-ed.develop.my.salesforce.com

7 More Usernames

DISPLAY DENSITY

✓ Comfy

Compact

OPTIONS

Switch to Salesforce Classic ⓘ

Add Username

Created Reports and Dashboard

playful-shark-2mb5p-dev-ed.trailblaze.lightning.force.com/lightning/o/Report/home?queryScope=mru

Travel App Chatter Reports Dashboards Travel Approvals SCustomers Expense Items

Reports Recent 3 items

REPORTS Report Name Description Folder Created By Created On

Recent

Report Name	Description	Folder	Created By	Created On
Travel Requests by Month		Public Reports	Madamboina Lavanya	2/15/2023, 4:10 PM
Travel Requests by Department		Public Reports	Madamboina Lavanya	2/15/2023, 4:05 PM
Sample Flow Report: Screen Flows	Which flows run, what's the status of each interview, and how long do users take to complete the screens?	Public Reports	Automated Process	2/14/2023, 7:15 PM

Created by Me

Private Reports

Public Reports

All Reports

FOLDERS

All Folders

Created by Me

Shared with Me

FAVORITES

All Favorites

Quick Find

Madamboina Lavanya
playful-shark-2mb5p-dev-ed.trailblaze.my.s...
Settings Log Out

USERNAMES

- madamboinalavanya1@wipro.com
wipro-6a4-dev-ed.develop.my.salesforce.com
- madamboinalavanya1@wipro.com
wipro-28b-dev-ed.develop.my.salesforce.com
- lavanya2k32@wipro.com
wiprocom-72f-dev-ed.develop.my.salesforce.com

7 More Usernames

DISPLAY DENSITY

✓ Comfy

Compact

OPTIONS

Switch to Salesforce Classic Add Username

playful-shark-2mb5p-dev-ed.trailblaze.lightning.force.com/lightning/r/Dashboard/01Z2w000000jyBOEA0/view?queryScope=userFolders

Travel App Chatter Reports Dashboards Travel Approvals SCustomers Expense Items

Dashboard Travel Requests Dashboard

As of Feb 24, 2023, 12:48 AM Viewing as Madamboina Lavanya

Travel Requests by Department

Department	Record Count
Audit Services	2
Contract Management	51
Disability Determination Bur...	60
Division of Aging	58
Division of Disability and Re...	58
Division of Family Resources	58
Division of Finance	62
Division of Mental Health an...	58
Human Resources	44
Legislative Services	50
Office of Communications a...	58

Travel Requests by Month

Trip End Date	Record Count
January 2...	10
February 2...	15
March 2019	12
April 2019	14
May 2019	10
June 2019	12
July 2019	10
August 2019	12
September	10
October 2...	10
November	10
December	10
January 2...	10
February 2...	10
March 2023	10

View Report (Travel Requests by Department)

View Report (Travel Requests by Month)

Madamboina Lavanya
playful-shark-2mb5p-dev-ed.trailblaze.my.s...
Settings Log Out

USERNAMES

- madamboinalavanya1@wipro.com
wipro-6a4-dev-ed.develop.my.salesforce.com
- madamboinalavanya1@wipro.com
wipro-28b-dev-ed.develop.my.salesforce.com
- lavanya2k32@wipro.com
wiprocom-72f-dev-ed.develop.my.salesforce.com

7 More Usernames

DISPLAY DENSITY

✓ Comfy

Compact

OPTIONS

Switch to Salesforce Classic Add Username

MODULE 3

- This project module focuses on the coding approach to extend the functional capabilities of your custom App.



Exercise - 01

Creating Code Playground Lightning App with Lead, Account, Contact, Opportunity, Case to navigation profile as system admin.

The screenshot shows a Salesforce Lightning App interface. The main area displays a list of 'All Open Leads' with 15 items. The columns include Name, Company, State/Prov, Email, Lead Status, and Created Date. The data is sorted by Name. The sidebar on the right shows the user profile of 'Madamboina Lavanya' with options to switch to Salesforce Classic or add a new username.

	Name ↑	Company	State/P...	Email	Lead Status	Created Date
1	Bertha Boxer	Farmers Coop. of Florida	FL	bertha@fcof.net	Working - Contacted	2/14/2023, 7:15 PM
2	Betty Bair	American Banking Corp.	PA	bblair@abankingco.com	Working - Contacted	2/14/2023, 7:15 PM
3	Brenda McClure	Cadinal Inc.	IL	brenda@cardinal.net	Working - Contacted	2/14/2023, 7:15 PM
4	David Monaco	Blues Entertainment Corp.		david@blues.com	Working - Contacted	2/14/2023, 7:15 PM
5	Jeff Glimpse	Jackson Controls		jeffg@jackson.com	Open - Not Contacted	2/14/2023, 7:15 PM
6	Kathy Snyder	TNR Corp.	CT	ksnyder@tnr.net	Working - Contacted	2/14/2023, 7:15 PM
7	Kristen Akin	Aethna Home Products	VA	kakin@athenahome.com	Working - Contacted	2/14/2023, 7:15 PM
8	Mike Braund	Metropolitan Health Services	MD	likeb@metro.com	Open - Not Contacted	2/14/2023, 7:15 PM
9	Norm May	Greenwich Media	OH	norm_may@greenwich.net	Working - Contacted	2/14/2023, 7:15 PM
10	Patricia Feager	International Shipping Co.	NC	patricia_feager@is.com	Working - Contacted	2/14/2023, 7:15 PM
11	Phyllis Cotton	Abbott Insurance	VA	pcotton@abbottins.net	Open - Not Contacted	2/14/2023, 7:15 PM
12	Sandra Eberhard	Highland Manufacturing Ltd.	CA	sandra_e@highland.net	Working - Contacted	2/14/2023, 7:15 PM
13	Shelly Brownell	Western Telecommunications Corp.	CA	shellyb@westerntelecom.com	Working - Contacted	2/14/2023, 7:15 PM
14	Tom James	Delphi Chemicals	MN	tom.james@delphi.chemicals.com	Working - Contacted	2/14/2023, 7:15 PM
15	Violet Macleod	Emerson Transport	GA	violetm@emersontransport.com	Working - Contacted	2/14/2023, 7:15 PM

Creating custom objects Customer , Billing and add related fields

The screenshot shows the Salesforce Object Manager interface for the 'SCustomer' object. The left sidebar lists various setup categories like Page Layouts, Lightning Record Pages, and Field Sets. The main content area displays the 'Fields & Relationships' section for the 'SCustomer' object. It shows 7 items sorted by Field Label. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD
Active	Active__c	Checkbox	
Created By	CreatedById	Lookup(User)	
Customer Name	Name	Text(80)	
Customer Type	Customer_Type__c	Picklist	
Description	Description__c	Text Area(255)	
Last Modified By	LastModifiedById	Lookup(User)	
Owner	OwnerId	Lookup(User,Group)	

A sidebar on the right provides options for managing users, including 'Quick Find', 'Usernames', and 'OPTIONS'.

The screenshot shows the Salesforce Object Manager interface for the 'Billing' object. The left sidebar lists various setup categories. The main content area displays the 'Fields & Relationships' section for the 'Billing' object. It shows 7 items sorted by Field Label. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD
Amount Paid	Amount_Paid__c	Currency(18, 0)	
Billing Number	Name	Auto Number	
Created By	CreatedById	Lookup(User)	
Customer Type	Customer_Type__c	Picklist	
Last Modified By	LastModifiedById	Lookup(User)	
SCustomer	SCustomer__c	Master-Detail(SCustomer)	
Status	Status__c	Picklist	

A sidebar on the right provides options for managing users, including 'Quick Find', 'Usernames', and 'OPTIONS'.

Exercise - 02

Define a String Variable & use string method 'endsWith' to display the output.

The screenshot shows the Salesforce Developer Console interface. At the top, it says "Developer Console - Google Chrome" and the URL "curious-badger-d5cah7-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCsPage". Below this is the "Execution Log" section with a timestamp of "00:19:22:005" and an event "USER_DEBUG" with message "[3]DEBUG:true". The main area is titled "Enter Apex Code" and contains the following code:

```
1 String s='Salesforce Capstone';
2 if(s.endsWith('Capstone')){
3     System.debug('true');
4 }
5 else{
6     System.debug('false');
7 }
```

At the bottom of the code editor are buttons for "Open Log", "Execute", and "Execute Highlighted". Below the code editor is a "Logs" tab with a table showing one log entry:

User	Application	Operation	Time	Status	Read	Size
S V SAI TANMAY DEVARAJETTI	Unknown	/services/data/v57.0/tooling/executeAn...	2/23/2023, 12:19:22 AM	Success	2.41 KB	

The status bar at the bottom shows "23° Clear" and the date "23-02-2023".

The screenshot shows the Salesforce Developer Console interface. At the top, it says "Developer Console - Google Chrome" and the URL "playful-shark-2mbs5p-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCsPage". Below this is the "Execution Log" section with a timestamp of "09:38:06:005" and an event "USER_DEBUG" with message "[2]DEBUG:true". The main area is titled "Enter Apex Code" and contains the following code:

```
1 String str='apex class';
2 System.debug(str.endsWith('s'));
```

At the bottom of the code editor are buttons for "Open Log", "Execute", and "Execute Highlighted". Below the code editor is a "Logs" tab with a table showing one log entry:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/executeAn...	21/02/2023, 09:38:06	Success	2.14 KB	

The status bar at the bottom shows "00:19" and the date "21/02/2023".

2. Define 2 Date type variables, use Date method today() & addDays(30) to display the output

The screenshot shows the Salesforce Developer Console interface. In the top navigation bar, there are links for Mail, Gmail, YouTube, Maps, Cloud Fundamentals, Practice | Geeksfo..., AWS Skill Builder, Transcript | AWS T..., AWS Skill Builder, [NEW] Ultimate A..., and AWS-Certified-Cl... The main area has tabs for Log executeAnonymous @21/02/2023, 09:56:33 and Log executeAnonymous @21/02/2023, 09:56:33. Below these are sections for Execution Log, Enter Apex Code, and a Log viewer.

Execution Log:

Timestamp	Event	Details
09:56:33:003	USER_DEBUG	[2]DEBUG@2023-02-21 00:00:00
09:56:33:003	USER_DEBUG	[4]DEBUG@2023-03-23 00:00:00

Enter Apex Code:

```
1 Date str1=Date.today();
2 System.debug(str1);
3 Date str2=str1.addDays(30);
4 System.debug(str2);
```

Log:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 09:56:33	Success		2.53 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 09:38:06	Success		2.14 KB

3. Display the Output of an integer variable from string '10' and then add 20 to it.

The screenshot shows the Salesforce Developer Console interface. In the top navigation bar, there are links for Mail, Gmail, YouTube, Maps, Cloud Fundamentals, Practice | Geeksfo..., AWS Skill Builder, Transcript | AWS T..., AWS Skill Builder, [NEW] Ultimate A..., and AWS-Certified-Cl... The main area has tabs for Log executeAnonymous @21/02/2023, 09:38:06 and Log executeAnonymous @21/02/2023, 09:56:33. Below these are sections for Execution Log, Enter Apex Code, and a Log viewer.

Execution Log:

Timestamp	Event	Details
11:10:00:004	USER_DEBUG	[3]DEBUG 10
11:10:00:004	USER_DEBUG	[4]DEBUG 30

Enter Apex Code:

```
1 String str='10';
2 Integer x=Integer.ValueOf(str);
3 System.debug(x);
4 System.debug(x+20);
```

Log:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:10:00	Success		2.44 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 09:56:33	Success		2.53 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 09:38:06	Success		2.14 KB

4. Define a string variable & Use String method length() to Display the output

The screenshot shows the Salesforce Developer Console interface. In the top right corner, there is a modal window titled "Enter Apex Code" containing the following code:

```
1 String str='Salesforce Developer Console';
2 System.debug('size:'+str.length());
```

Below the modal is the "Execution Log" section, which displays the following log entries:

Timestamp	Event	Details
11:13:56:003	USER_DEBUG	[2]DEBUG size:28

At the bottom of the page, there is a table titled "Logs" showing a list of log entries:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:13:56	Success		2.28 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:10:00	Success		2.44 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 09:56:33	Success		2.53 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 09:38:06	Success		2.14 KB

5. Define a list of integer and display the output using add(), get(), set() , clear() , Methods

The screenshot shows the Salesforce Developer Console interface. In the top right corner, there is a modal window titled "Enter Apex Code" containing the following code:

```
1 List<Integer> numbers= new List<Integer>();
2 numbers.add(34);
3 numbers.add(58);
4 numbers.add(90);
5 numbers.add(67);
6 numbers.add(45);
7 System.debug('using add() method'+ numbers);
8 system.debug(' using get() method'+ numbers.get(3));
9 numbers.set(4,12);
10 System.debug('using set() method'+ numbers);
11 numbers.clear();
12 System.debug('using clear() method'+numbers);
```

Below the modal is the "Execution Log" section, which displays the following log entries:

Timestamp	Event	Details
11:37:31:004	USER_DEBUG	[7]DEBUG using add() method(34, 58, 90, 67, 45)
11:37:31:004	USER_DEBUG	[8]DEBUG using get() method67
11:37:31:004	USER_DEBUG	[10]DEBUG using set() method(34, 58, 90, 67, 12)
11:37:31:004	USER_DEBUG	[12]DEBUG using clear() method()

At the bottom of the page, there is a table titled "Logs" showing a list of log entries:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:37:31	Success		4.53 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:35:30	Success		4.14 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:33:40	Success		3.69 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:32:23	Success		3.69 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:30:28	Success		3.15 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:13:56	Success		2.28 KB

Use Execute Anonymous to define and execute the following code to display the value of x = 0 to 9.

The screenshot shows the Salesforce Developer Console interface. In the center, there is an "Enter Apex Code" dialog box containing the following Apex code:

```
1 Integer x=20;
2 While(x>12){
3     for(x=0;x<10;x++){
4         System.debug('value of x is ' + x);
5     }
6 }
7
8 }
```

Below the code editor is a "Logs" section with the following table:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:42:58	Success		5.66 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:41:06	Success		5.38 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:41	Success		5.4 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:24	Success		5.37 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:37:31	Success		4.53 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:35:30	Success		4.14 KB

Exercise -03

Answer the following in True or False:

**Integer myunluckyNumber = 7; Integer myluckyNumber = 15;
myluckyNumber != myunluckyNumber + 8.**

The screenshot shows the Salesforce Developer Console interface. In the center, there is a modal window titled "Enter Apex Code" containing the following Apex code:

```
1 Integer myluckyNumber=15;
2 Integer myUnluckyNumber=7;
3 if(myluckyNumber != myUnluckyNumber +8 ){
4     System.debug('False');
5 }
6 else{
7     System.debug('True');
8 }
```

Below the code editor, there are three buttons: "Open Log", "Execute", and "Execute Highlighted".

At the bottom of the page, there is a "Logs" tab selected in a navigation bar, and a table showing log entries:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:47:16	Success		2.63 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:42:58	Success		5.66 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:41:06	Success		5.38 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:41	Success		5.4 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:24	Success		5.37 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:37:31	Success		4.53 KB

Exercise-04

Answer the following in True Or False:
Boolean `isFalse` = false; Boolean `isTrue` = true;

The screenshot shows the Salesforce Developer Console interface. In the center, there is a modal window titled "Enter Apex Code" containing the following code:

```
1 Boolean istrue=True;
2 Boolean isFalse=False;
3 System.debug( istrue || isfalse);
```

Below the modal, the "Logs" tab of the developer console is active, displaying a table of log entries. The table has columns: User, Application, Operation, Time, Status, Read, and Size. There are six log entries, all from the user "Madamboina Lavanya" and application "Unknown". The operations are various API calls to "/services/data/v57.0/tooling/execut...". The times range from 21/02/2023, 11:40:41 to 21/02/2023, 11:50:05. All entries show a "Success" status, a "Read" size between 2.35 KB and 5.66 KB, and a "Size" between 2.35 KB and 5.37 KB.

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:50:05	Success		2.35 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:47:16	Success		2.63 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:42:58	Success		5.66 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:41:06	Success		5.38 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:41	Success		5.4 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:24	Success		5.37 KB

Exercise -05

Answer the following in True Or False:

**Date tomorrow = Date.today().addDays(1); Date today = Date.today();
today != tomorrow**

The screenshot shows the Salesforce Developer Console interface. In the center, there is an 'Enter Apex Code' window containing the following Apex code:

```
1 Date today=Date.today();
2 Date tomorrow=Date.today().addDays(1);
3 System.debug(today != tomorrow);
```

Below the code editor is a toolbar with three buttons: 'Open Log', 'Execute', and 'Execute Highlighted'. The 'Execute' button is highlighted with a blue border.

At the bottom of the page, there is a table titled 'Logs' showing a list of recent operations:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:52:56	Success		2.45 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:50:05	Success		2.35 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:47:16	Success		2.63 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:42:58	Success		5.66 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:41:06	Success		5.38 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:40:41	Success		5.4 KB

Exercise-06

Write a program and execute to demo the use of “If..else if...else”

The screenshot shows a web browser window with multiple tabs open. The active tab is the 'Developer Console' tab, which displays the 'Execution Log'. The log table has three columns: 'Timestamp', 'Event', and 'Details'. There are two entries:

Timestamp	Event	Details
12:04:36:013	USER_DEBUG	[4]DEBUG Score is 100
12:04:36:013	USER_DEBUG	[6]DEBUG Grade: A+

Below the log, there is a larger table titled 'Logs' with columns: User, Application, Operation, Time, Status, Read, and Size. It lists several log entries from a user named 'Madamboina Lavanya'.

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:04:36	Success		3.09 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:03:32	Success		3.09 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:52:56	Success		2.45 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:50:05	Success		2.35 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:47:16	Success		2.63 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:42:58	Success		5.66 KB

Exercise-07

Write a program to execute and demo the use of “Apex – for Loop”

The screenshot shows the Salesforce Developer Console interface. At the top, there are several tabs: Mail - MADAMBOINA LAVA, Join conversation, Salesforce Capstone Project, Hands-On Orgs, All | Billings | Salesforce, and Developer Console. Below the tabs, the URL is playful-shark-2mbs5p-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage. The browser toolbar includes Gmail, YouTube, Maps, Cloud Fundament..., Practice | Geeksfo..., AWS Skill Builder, Transcript | AWS T..., AWS Skill Builder, [NEW] Ultimate A..., and AWS-Certified-Cl... . The main content area has a header "Execution Log" with columns: Timestamp, Event, and Details. The log entries are:

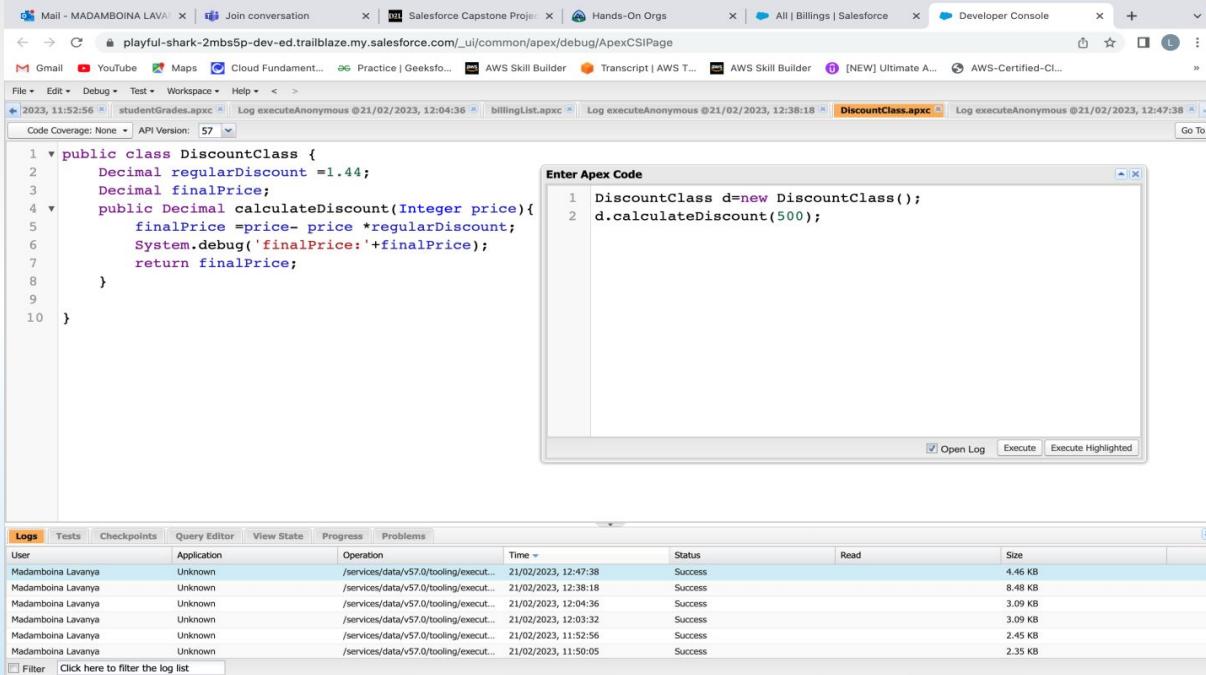
Timestamp	Event	Details
12:38:18:107	USER_DEBUG	[23]DEBUG Value of Billing List: (Billing__c:{Id=a042w00000xtDOuAAM, Name=B-0001, Status__c=Paid}, Billing__c:{Id=a042w00000xtDOvAAM, Name=B-0002, Status__c=Unpaid}, Billing__c:{Id=a042w00000xtDowAAM, Name=B-0003, Status__c=Paid})
12:38:18:108	USER_DEBUG	[27]DEBUG Value of Current record over which current record is iterating is: Billing__c:{Id=a042w00000xtDOuAAM, Name=B-0001, Status__c=Paid}
12:38:18:108	USER_DEBUG	[28]DEBUG Billing Records are: B-0001
12:38:18:108	USER_DEBUG	[27]DEBUG Value of Current record over which current record is iterating is: Billing__c:{Id=a042w00000xtDowAAM, Name=B-0003, Status__c=Paid}
12:38:18:108	USER_DEBUG	[28]DEBUG Billing Records are: B-0003

At the bottom, there is a "Logs" tab selected, showing a table of log entries:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:38:18	Success		8.48 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:04:36	Success		3.09 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:03:32	Success		3.09 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:52:56	Success		2.45 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:50:05	Success		2.35 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:47:16	Success		2.63 KB

Exercise-08

Write a Class to demo the use of Constants in Apex



The screenshot shows the Salesforce Developer Console interface. On the left, the code editor displays the Apex class `DiscountClass`:

```
1 public class DiscountClass {
2     Decimal regularDiscount =1.44;
3     Decimal finalPrice;
4     public Decimal calculateDiscount(Integer price){
5         finalPrice =price- price *regularDiscount;
6         System.debug('finalPrice:' +finalPrice);
7         return finalPrice;
8     }
9 }
10 }
```

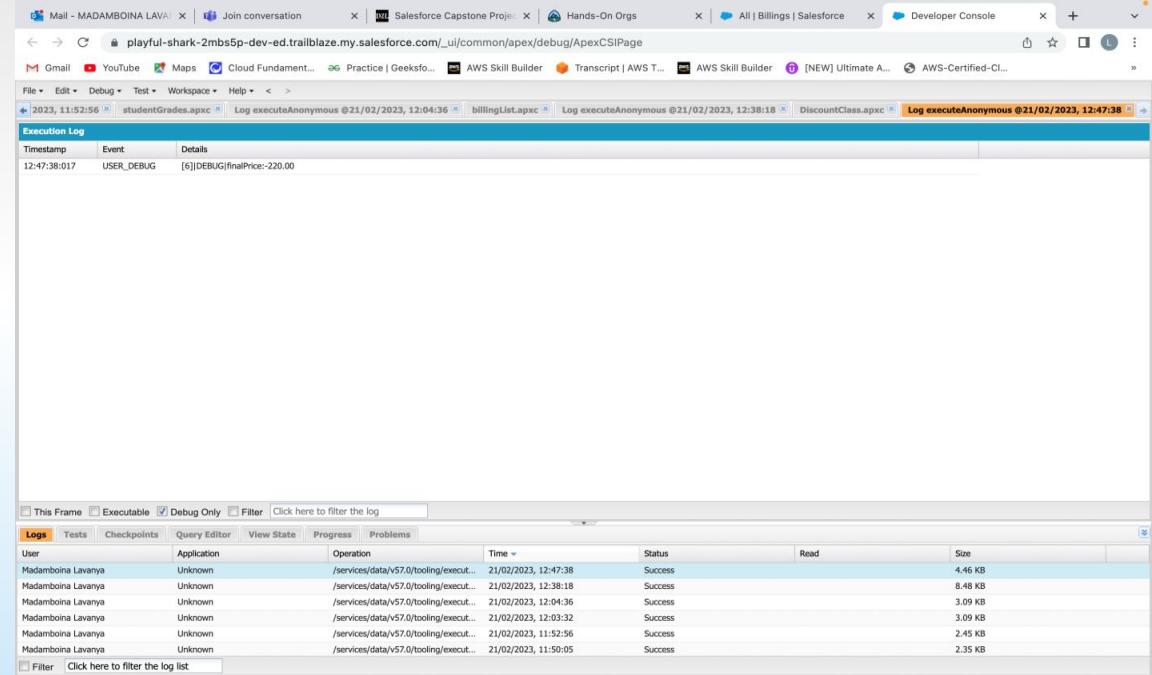
In the center, a modal window titled "Enter Apex Code" contains the following code:

```
1 DiscountClass d=new DiscountClass();
2 d.calculateDiscount(500);
```

At the bottom of the modal are buttons for "Open Log", "Execute", and "Execute Highlighted". Below the code editor is a log table:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:47:38	Success	4.46 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:38:18	Success	8.48 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:04:36	Success	3.09 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:03:32	Success	3.09 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:52:56	Success	2.45 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:50:05	Success	2.35 KB	

At the bottom of the page, there is a "Logs" tab selected.



The screenshot shows the Salesforce Developer Console interface. On the left, the code editor displays the Apex class `DiscountClass` (the same as the first screenshot). In the center, the "Execution Log" pane shows the following log entry:

Timestamp	Event	Details
12:47:38:017	USER_DEBUG	[S]DEBUG@finalPrice:-220.00

Below the log is another log table:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:47:38	Success	4.46 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:38:18	Success	8.48 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:04:36	Success	3.09 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 12:03:32	Success	3.09 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:52:56	Success	2.45 KB	
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	21/02/2023, 11:50:05	Success	2.35 KB	

At the bottom of the page, there is a "Logs" tab selected.

Exercise-09

Write a Class to demo the use of Interface in Apex

The screenshot shows the Salesforce IDE interface. At the top, there are tabs for 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and three log files: 'billingloop.apxc', 'Log executeAnonymous @2/23/2023, 2:27:05 PM', and 'Discount.apxc'. Below the tabs, the API Version is set to 57. The main area displays the following Apex code:

```
1 public class Discount {
2     public interface InterfaceExample{
3         Double percentageDiscountTobeApplied();
4     }
5     public class PremiumCustomer implements InterfaceExample{
6         public Double percentageDiscountTobeApplied() {
7             return 0.30;
8         }
9     }
10    public class NormalCustomer implements InterfaceExample{
11        public Double percentageDiscountTobeApplied(){
12            return 0.10;
13        }
14    }
15 }
```

At the bottom of the screen, there is a 'Logs' tab which is currently selected. It shows a table with the following data:

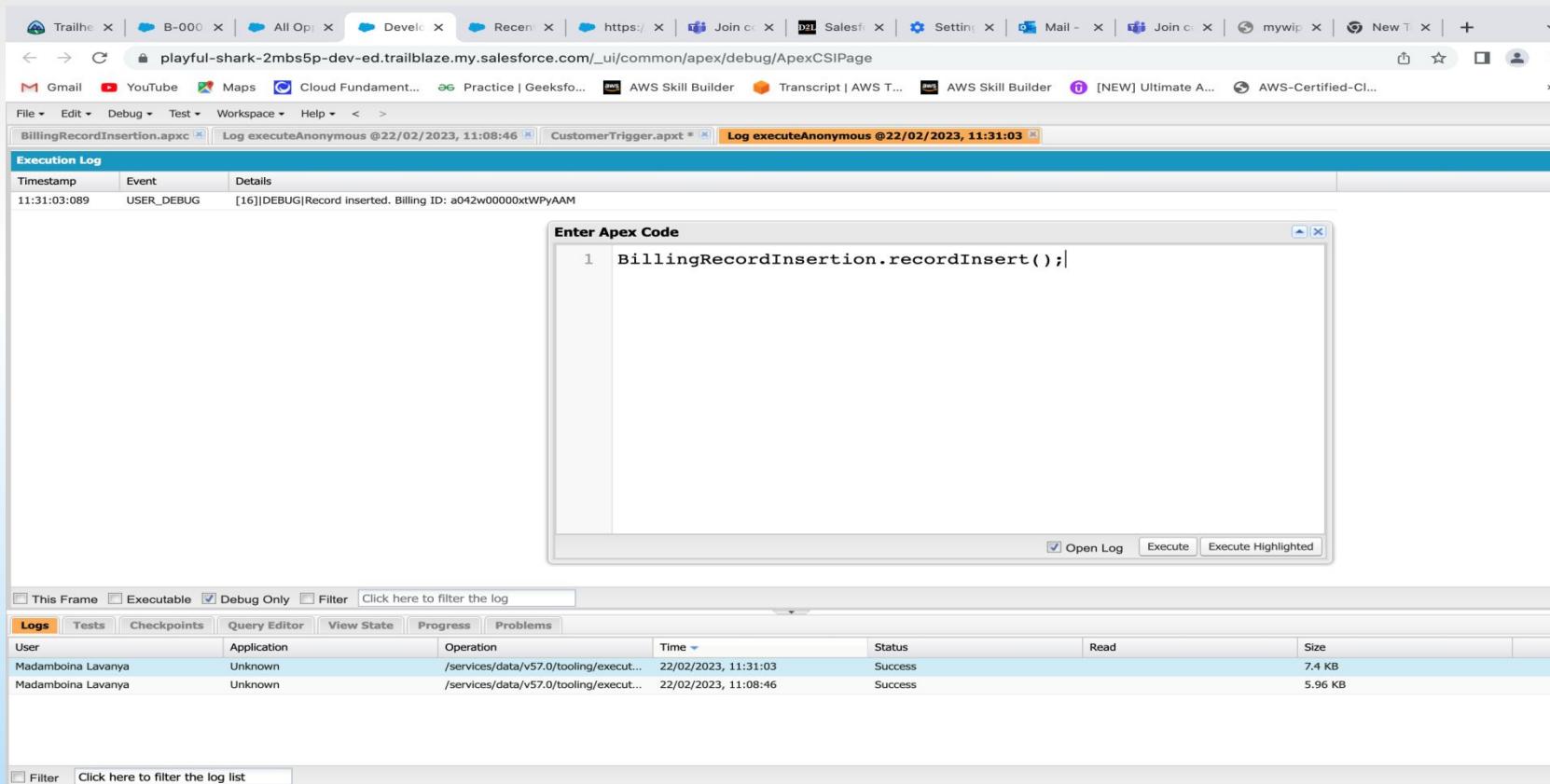
User	Application	Operation	Time	Status	Read	Size
S V SAT TANMAYI DEVARASSETTI	Unknown	ApexTestHandler	2/23/2023, 2:40:48 PM	Success	Unread	998 bytes
S V SAT TANMAYI DEVARASSETTI	Unknown	/services/data/v57.0/tooling/executeAn...	2/23/2023, 2:32:41 PM	Success		3.69 KB
S V SAT TANMAYI DEVARASSETTI	Unknown	ApexTestHandler	2/23/2023, 2:31:09 PM	Success	Unread	1012 bytes
S V SAT TANMAYI DEVARASSETTI	Unknown	/services/data/v57.0/tooling/executeAn...	2/23/2023, 2:27:05 PM	Success		7.75 KB
S V SAT TANMAYI DEVARASSETTI	Unknown	/services/data/v57.0/tooling/executeAn...	2/23/2023, 2:20:46 PM	Success		3.71 KB
S V SAT TANMAYI DEVARASSETTI	Unknown	ApexTestHandler	2/23/2023, 2:19:10 PM	Success	Unread	999 bytes

At the bottom left of the logs table, there are 'Filter' and 'Click here to filter the log list' buttons.

Exercise-10

Demo on DML Insert Operation Using Database methods

Insert a Customer Record First using simple DML Statement



Exercise-11

Write and execute SOQL queries from Developer Console

The screenshot shows the Salesforce Developer Console interface. At the top, there are several tabs and links. Below the header, a menu bar includes File, Edit, Debug, Test, Workspace, and Help. The main area displays a query result grid and a query editor.

Query Results - Total Rows: 10

AccountId	Amount	Name	StageName	Account.Industry	Account.Website
0012w00001KvfCbAAJ	125000	United Oil Office Portable Generators	Negotiation/Review	Energy	http://www.uos.com
0012w00001KvfCbAAJ	270000	United Oil Refinery Generators	Proposal/Price Quote	Energy	http://www.uos.com
0012w00001KvfCbAAJ	120000	United Oil SLA	Closed Won	Energy	http://www.uos.com
0012w00001KvfCbAAJ	270000	United Oil Installations	Negotiation/Review	Energy	http://www.uos.com
0012w00001KvfCbAAJ	270000	United Oil Installations	Closed Won	Energy	http://www.uos.com
0012w00001KvfCbAAJ	915000	United Oil Refinery Generators	Closed Won	Energy	http://www.uos.com
0012w00001KvfCbAAJ	235000	United Oil Installations	Closed Won	Energy	http://www.uos.com
0012w00001KvfCbAAJ	440000	United Oil Emergency Generators	Closed Won	Energy	http://www.uos.com
0012w00001KvfCbAAJ	120000	United Oil Standby Generators	Closed Won	Energy	http://www.uos.com
0012w00001KvfCbAAJ	675000	United Oil Plant Standby Generators	Needs Analysis	Energy	http://www.uos.com

Query Grid: Save Rows | Insert Row | Delete Row | Refresh Grid **Access in Salesforce:** Create New | Open Detail Page | Edit Page

Logs Tests Checkpoints Query Editor View State Progress Problems

Select AccountId,Amount,Name,StageName,Account.Industry,Account.Website FROM Opportunity where Account.Industry='Energy' AND Account.AnnualRevenue>5000

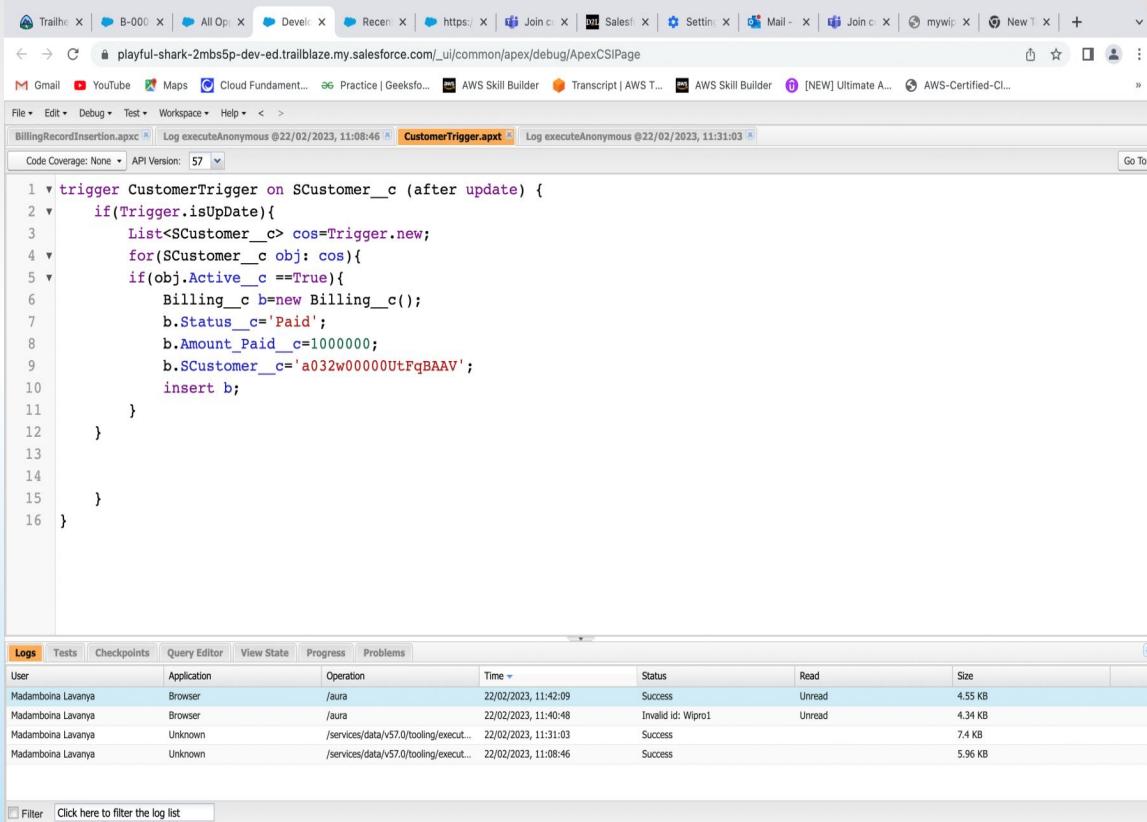
Any query errors will appear here...

History
Executed
Select AccountId,Amount,Name,StageName,Account.Industry,Accou...

Execute Use Tooling API

Exercise-12

Write an Apex Trigger, Name = CustomerTrigger.

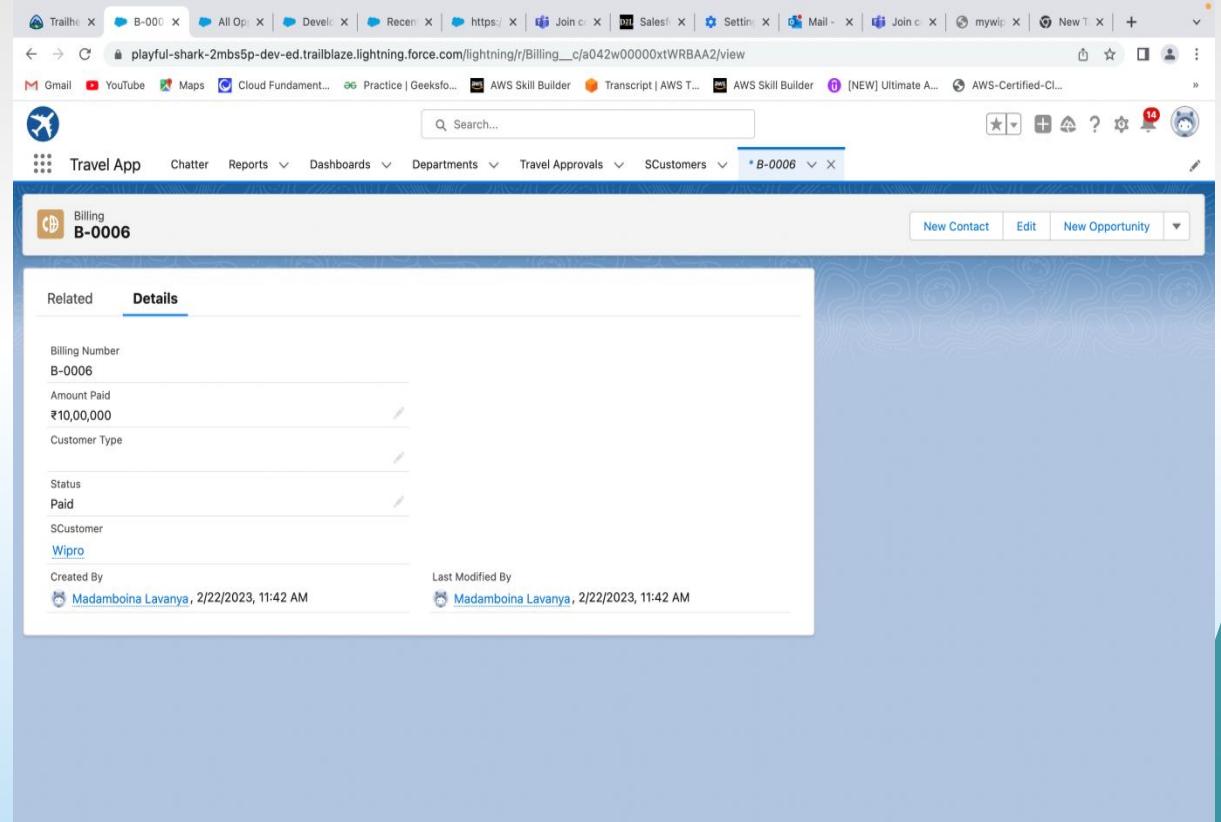


The screenshot shows the Salesforce developer console with the code for CustomerTrigger.apex. The trigger is defined as follows:

```
trigger CustomerTrigger on SCustomer__c (after update) {
    if(Trigger.isUpdate){
        List<SCustomer__c> cos=Trigger.new;
        for(SCustomer__c obj: cos){
            if(obj.Active__c ==True){
                Billing__c b=new Billing__c();
                b.Status__c='Paid';
                b.Amount_Paid__c=1000000;
                b.SCustomer__c='a032w00000UtFqBAAV';
                insert b;
            }
        }
    }
}
```

Below the code, there is a log table showing recent activity:

User	Application	Operation	Time	Status	Read	Size
Madamboina Lavanya	Browser	/aura	22/02/2023, 11:42:09	Success	Unread	4.55 KB
Madamboina Lavanya	Browser	/aura	22/02/2023, 11:40:48	Invalid Id: Wipro	Unread	4.34 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	22/02/2023, 11:31:03	Success		7.4 KB
Madamboina Lavanya	Unknown	/services/data/v57.0/tooling/execut...	22/02/2023, 11:08:46	Success		5.96 KB



The screenshot shows the Salesforce Lightning interface for a Billing record. The record ID is B-0006. The details are as follows:

- Billing Number: B-0006
- Amount Paid: ₹10,00,000
- Customer Type: [Wipro](#)
- Status: Paid
- SCustomer: [Wipro](#)
- Created By: Madamboina Lavanya, 2/22/2023, 11:42 AM
- Last Modified By: Madamboina Lavanya, 2/22/2023, 11:42 AM

Exercise-13

Write a Test Class for CustomerTrigger.

The screenshot shows the Salesforce Developer Console in Google Chrome. The URL is `playful-shark-2mbs5p-dev-edtrailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`. The tabs at the top are "BillingRecordInsertion.apxc", "CustomerTrigger.apxc" (which is selected), and "DisqualifyTestLeadsTest.apxc". The code editor displays the following trigger:

```
trigger CustomerTrigger on SCustomer__c (after update) {
    if(Trigger.isUpdate){
        List<SCustomer__c> cos=Trigger.new;
        for(SCustomer__c obj: cos){
            if(obj.Active__c ==True){
                Billing__c b=new Billing__c();
                b.Status__c='Paid';
                b.Amount_Paid__c=1000000;
                b.SCustomer__c='a032w00000UtFqBAAV';
                insert b;
            }
        }
    }
}
```

The "Tests" tab is selected in the bottom navigation bar. The test results table shows:

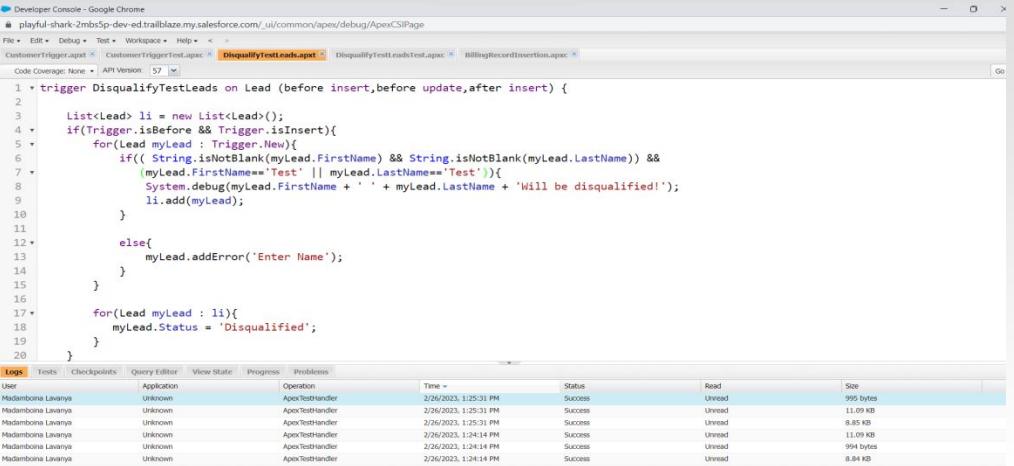
Status	Test Run	Enqueued Time	Duration	Failures	Total
✗	7072w00008LrObd	Sat Feb 25 2023 00:20:09 GMT...		2	2
✗	7072w00008LrOxC	Sat Feb 25 2023 00:21:07 GMT...		0	1
✓	trihdtips.tt_UtilityControllerTest			0	2
✓	CustomerTriggerTest			0	1
✗	DisqualifyTestLeadsTest			2	2

On the right, the "Overall Code Coverage" table is displayed:

Class	Percent	Lines
Overall	25%	
billingList	0%	0/20
BillingRecordInsertion	0%	0/14
CustomerTrigger	100%	9/9
DiscountClass	0%	0/4

Exercise -14

ApexTrigger ,Name = DisqualifytestLeads



```

trigger DisqualifyTestLeads on Lead (before insert,before update,after insert) {
    List<Lead> li = new List<Lead>();
    if(Trigger.isBefore && Trigger.isInsert){
        for(Lead myLead : Trigger.New){
            if(( String.isNotBlank(myLead.FirstName) && String.isNotBlank(myLead.LastName)) && (myLead.FirstName=='Test' || myLead.LastName=='Test')){
                System.debug(myLead.FirstName + ' ' + myLead.LastName + ' Will be disqualified!');
                li.add(myLead);
            }
        }
        else{
            myLeadaddError('Enter Name');
        }
    }
    for(Lead myLead : li){
        myLead.Status = 'Disqualified';
    }
}

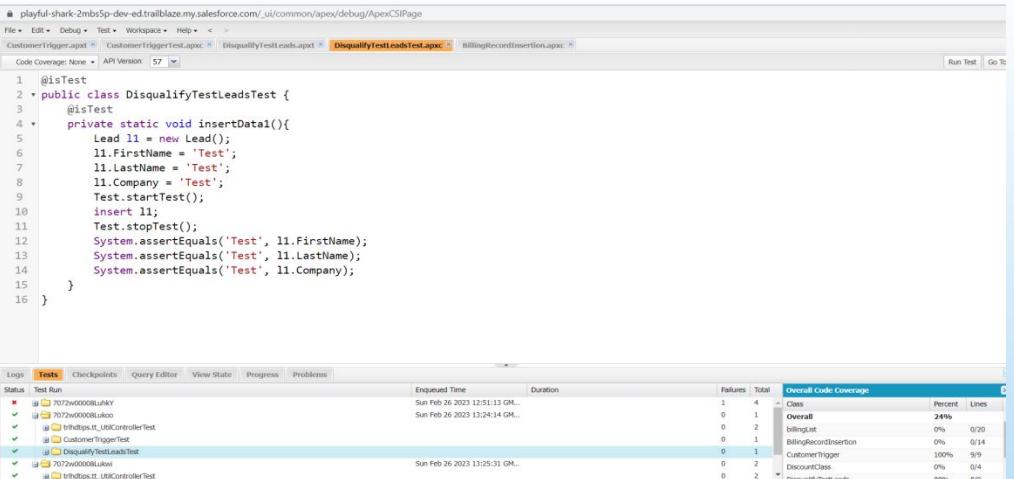
```

The screenshot shows the Salesforce Developer Console with the code for the DisqualifyTestLeads trigger. The code checks if the lead's first and last names are both present and either 'Test'. It adds them to a list if they are. If not, it adds an error message to the lead. Finally, it sets the lead's status to 'Disqualified'. Below the code, there is a table showing the results of a recent test run.

User	Operation	Time	Status	Read	Size
Madamboina Lavanya	Apex Test Handler	2/26/2023, 1:25:31 PM	Success	Unread	995 bytes
Madamboina Lavanya	Apex Test Handler	2/26/2023, 1:25:31 PM	Success	Unread	11.09 kB
Madamboina Lavanya	Apex Test Handler	2/26/2023, 1:25:31 PM	Success	Unread	8.85 kB
Madamboina Lavanya	Apex Test Handler	2/26/2023, 1:24:14 PM	Success	Unread	11.09 kB
Madamboina Lavanya	Apex Test Handler	2/26/2023, 1:24:14 PM	Success	Unread	994 bytes
Madamboina Lavanya	Apex Test Handler	2/26/2023, 1:24:14 PM	Success	Unread	8.84 kB

Exercise -15

Write a test class for Disqualifytestleads



```

@isTest
public class DisqualifyTestLeadsTest {
    @isTest
    private static void insertData1(){
        Lead li = new Lead();
        li.FirstName = 'Test';
        li.LastName = 'Test';
        li.Company = 'Test';
        Test.startTest();
        insert li;
        Test.stopTest();
        System.assertEquals('Test', li.FirstName);
        System.assertEquals('Test', li.LastName);
        System.assertEquals('Test', li.Company);
    }
}

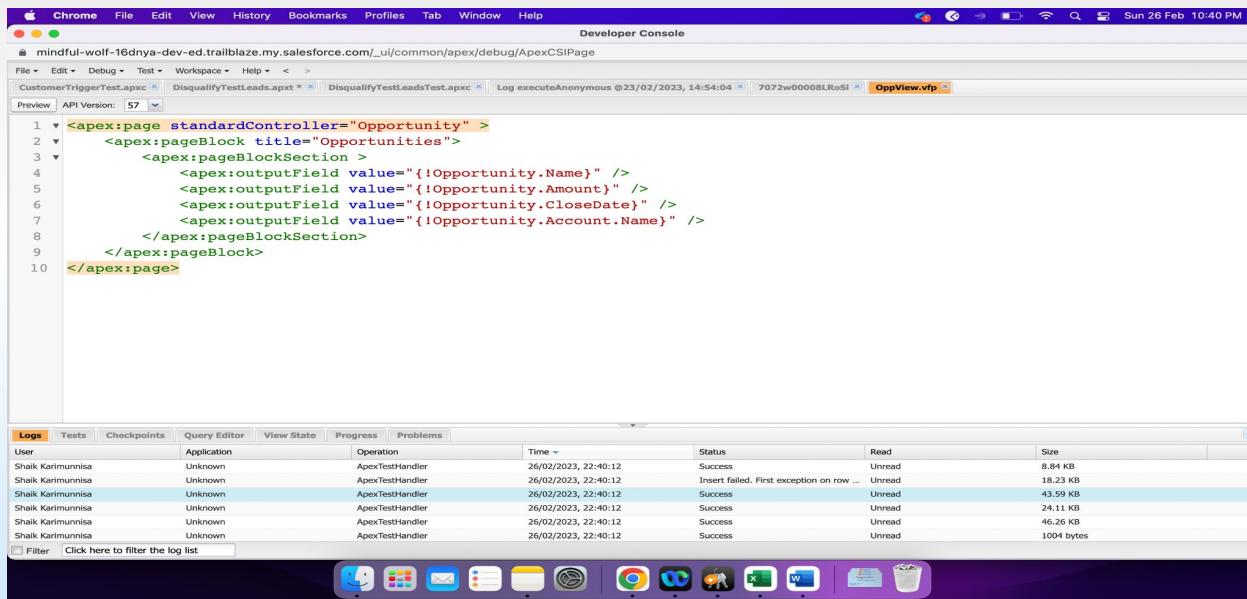
```

The screenshot shows the Salesforce Developer Console with the DisqualifyTestLeadsTest test class. The class contains a single test method, insertData1, which inserts a lead with first name, last name, and company all set to 'Test'. It uses the Test.startTest() and Test.stopTest() methods to ensure the test runs correctly. Below the code, there is a table showing the results of a recent test run.

Status	Test Run	Checkpoints	Query Editor	View State	Progress	Problems	Enqueued Time	Duration	Failures	Total	Overall Code Coverage
✗	7072wv0000BuLuAY						Sun Feb 26 2023 12:51:13 GM...		1	4	Class
✓	7072wv0000BuLuk0						Sun Feb 26 2023 13:24:14 GM...		0	1	Overall
✓	trh0https://UtlControllerTest								0	2	BillingInt
✓	CustomerTriggerTest								0	1	BillingRecordInsertion
✓	DisqualifyTestLeadsTest								0	1	CustomerTrigger
✓	7072wv0000BuLuk1						Sun Feb 26 2023 13:25:31 GM...		0	2	DiscountClass
✓	trh0https://UtlControllerTest								0	2	DisqualifyTestLeads

Exercise-16

Create a Visualforce page which displays Opportunity fields as output fields.

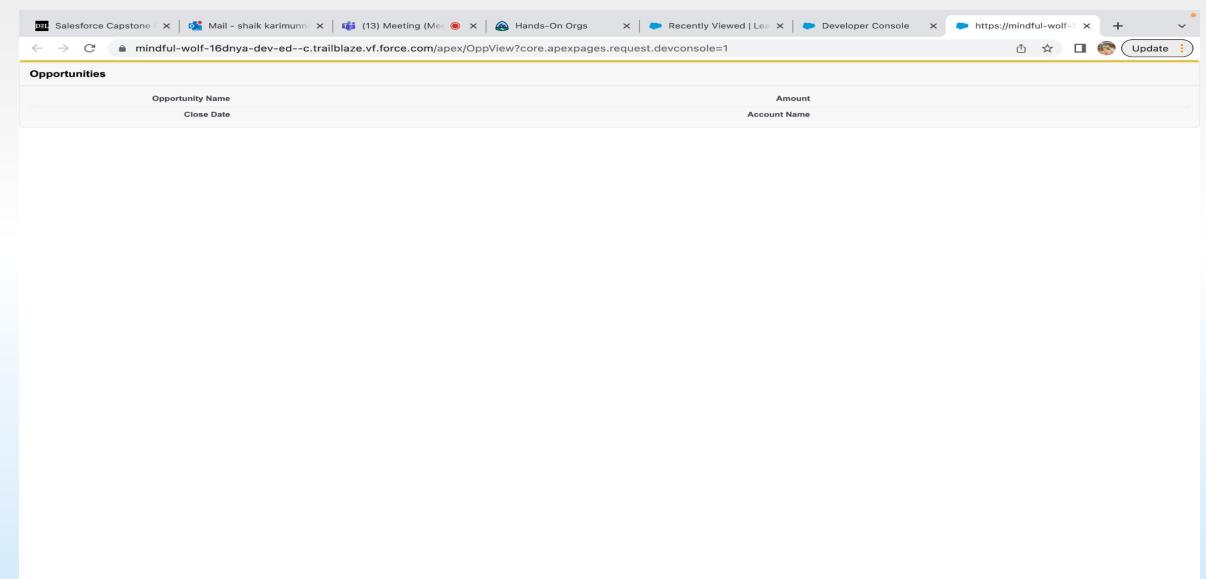


The screenshot shows a Mac desktop environment. In the center is a Chrome browser window displaying the Salesforce Developer Console at https://mindful-wolf-16dnya-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage. The developer console shows the following Apex code:

```
1 <apex:page standardController="Opportunity" >
2   <apex:pageBlock title="Opportunities" >
3     <apex:pageBlockSection >
4       <apex:outputField value="{!Opportunity.Name}" />
5       <apex:outputField value="{!Opportunity.Amount}" />
6       <apex:outputField value="{!Opportunity.CloseDate}" />
7       <apex:outputField value="{!Opportunity.Account.Name}" />
8     </apex:pageBlockSection>
9   </apex:pageBlock>
10 </apex:page>
```

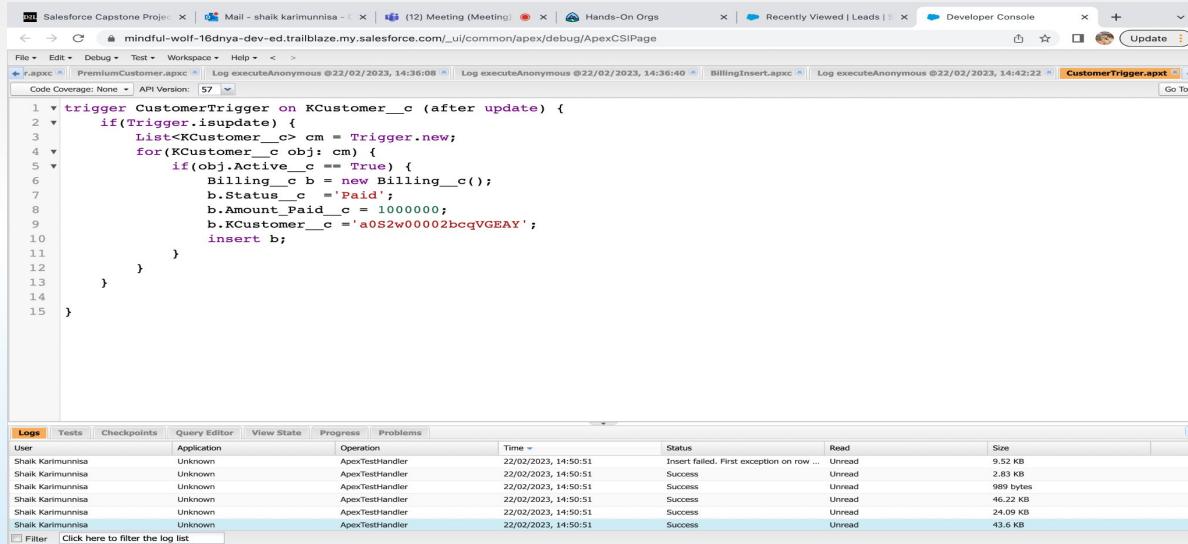
Below the browser is a terminal window showing logs from the Salesforce Dev Console. The logs table has columns for User, Application, Operation, Time, Status, Read, and Size. The log entries show multiple successful inserts by 'Shak Karimunisa' using 'ApexTestHandler' over a period of time.

User	Application	Operation	Time	Status	Read	Size
Shak Karimunisa	Unknown	ApexTestHandler	26/02/2023, 22:40:12	Success	Unread	8.84 KB
Shak Karimunisa	Unknown	ApexTestHandler	26/02/2023, 22:40:12	Insert failed. First exception on row ...	Unread	18.23 KB
Shak Karimunisa	Unknown	ApexTestHandler	26/02/2023, 22:40:12	Success	Unread	43.59 KB
Shak Karimunisa	Unknown	ApexTestHandler	26/02/2023, 22:40:12	Success	Unread	24.11 KB
Shak Karimunisa	Unknown	ApexTestHandler	26/02/2023, 22:40:12	Success	Unread	46.26 KB
Shak Karimunisa	Unknown	ApexTestHandler	26/02/2023, 22:40:12	Success	Unread	1004 bytes



Exercise-17

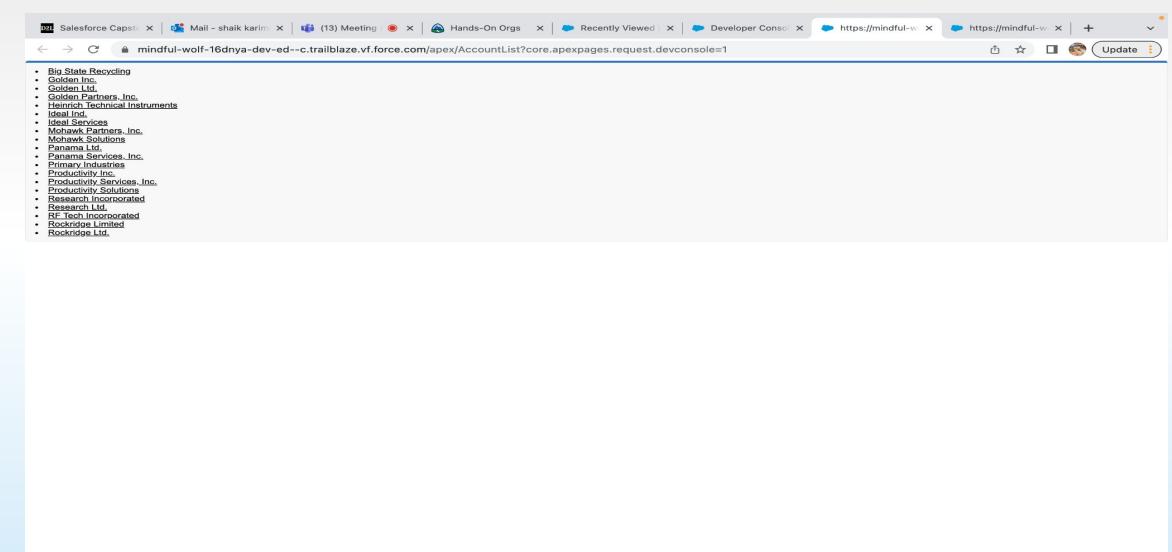
Create a Visualforce page which shows a list of Accounts linked to their record pages



```
trigger CustomerTrigger on KCustomer__c (after update) {
    if(trigger.isupdate) {
        List<KCUSTOMER__C> cm = Trigger.new;
        for(KCustomer__c obj: cm) {
            if(obj.Active__c == TRUE) {
                Billing__c b = new Billing__c();
                b.Status__c = 'Paid';
                b.Amount_Paid__c = 1000000;
                b.KCustomer__c ='a0S2w00002bcqVGEAY';
                insert b;
            }
        }
    }
}
```

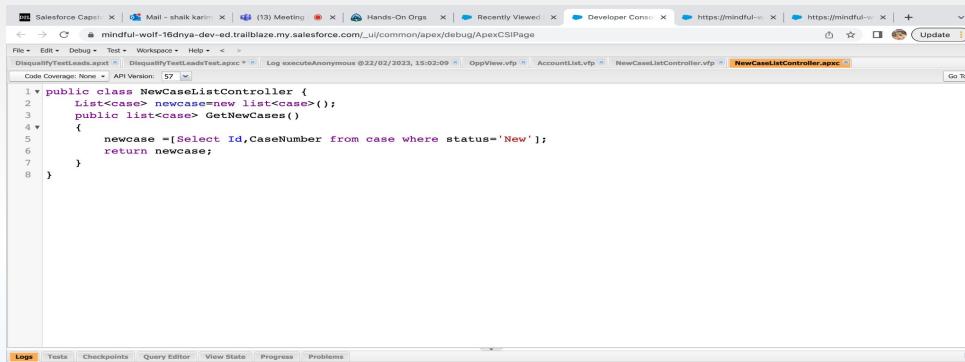
The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for SalesForce Capstone Project, Mail - shaik karimunnisa, (12) Meeting (Meeting), (13) Meeting, Hands-On Orgs, Recently Viewed Leads, and Developer Console. Below the tabs, there are several tabs for apex classes: PremiumCustomer.apxc, Log executeAnonymous @22/02/2023, 14:36:08, Log executeAnonymous @22/02/2023, 14:36:40, BillingInsert.apxc, Log executeAnonymous @22/02/2023, 14:42:22, and CustomerTrigger.apxt (highlighted in orange). The main area displays the Apex trigger code for CustomerTrigger.apxt. At the bottom, there is a log table with columns: User, Application, Operation, Time, Status, Read, and Size. The log shows several entries from the user 'Shak Karimunnisa' performing ApexTestHandler operations.

User	Application	Operation	Time	Status	Read	Size
Shak Karimunnisa	Unknown	ApexTestHandler	22/02/2023, 14:50:51	Insert failed. First exception on row ...	Unread	9.52 KB
Shak Karimunnisa	Unknown	ApexTestHandler	22/02/2023, 14:50:51	Success	Unread	969 bytes
Shak Karimunnisa	Unknown	ApexTestHandler	22/02/2023, 14:50:51	Success	Unread	46.22 KB
Shak Karimunnisa	Unknown	ApexTestHandler	22/02/2023, 14:50:51	Success	Unread	24.09 KB
Shak Karimunnisa	Unknown	ApexTestHandler	22/02/2023, 14:50:51	Success	Unread	43.6 KB



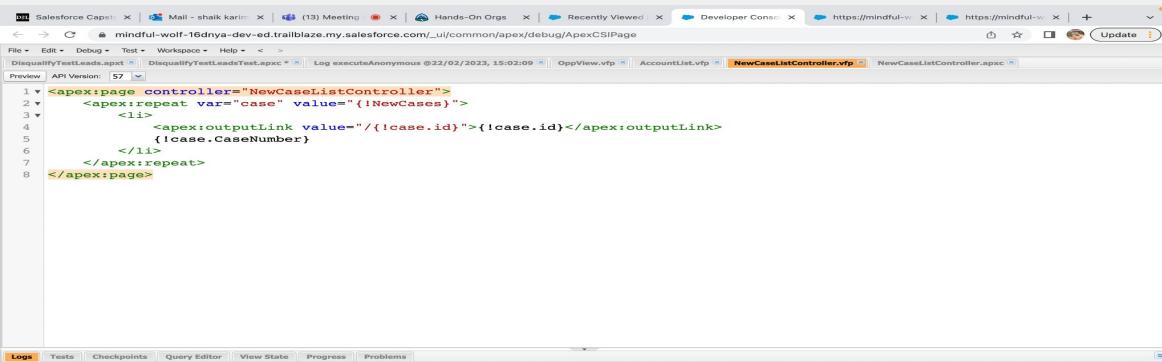
Exercise-18

Create a Visualforce page that uses a custom controller to display a list of cases with the status of 'New'. The page must be named NewCaseList.



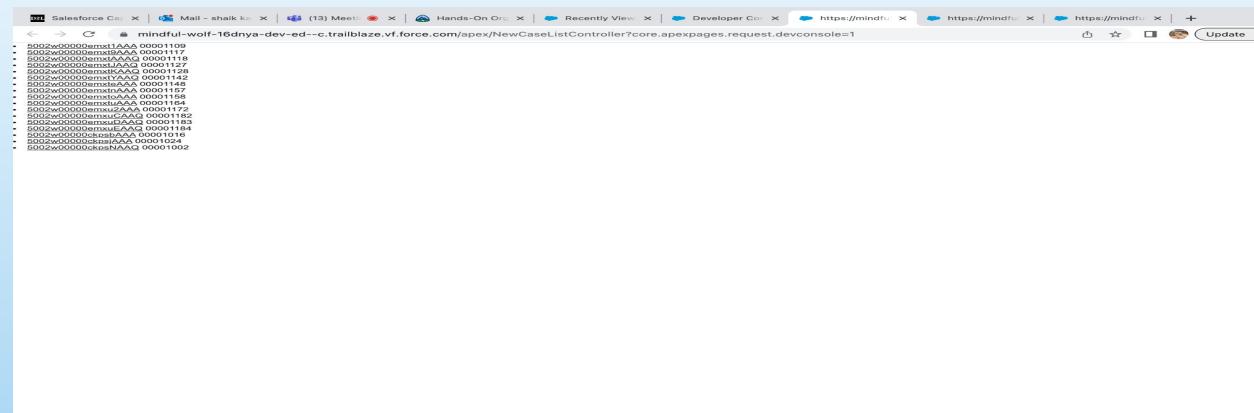
```
1 public class NewCaseListController {
2     List<case> newcase=new list<case>();
3     public list<case> GetNewCases()
4     {
5         newcase =[Select Id,CaseNumber from case where status='New'];
6         return newcase;
7     }
8 }
```

The screenshot shows the Apex code for the `NewCaseListController` class. It defines a list of `case` objects and returns it. The code is annotated with line numbers 1 through 8.



```
1 <apex:page controller="NewCaseListController">
2     <apex:repeat var="case" value="(!NewCases)">
3         <li>
4             <apex:outputLink value="/{!case.id}">{!case.id}</apex:outputLink>
5             ({!case.CaseNumber})
6         </li>
7     </apex:repeat>
8 </apex:page>
```

The screenshot shows the Visualforce page code for `NewCaseListController.vfp`. It uses an `` loop to iterate over the `!NewCases` list and generate a list of links for each case.



Thank You