



Capstone Project Report On “Travel Approval App”

Submitted by:

Name: Bharath Kumar Gudiganti

Batch WIP-SF-13

LMS Id: MGSA□503

Date:28/02/2023

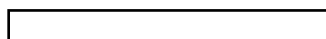
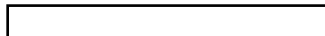


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Abstract

Every travel organization requires a Travel Approval Application. This department deals with the approval of travel requests. It also allows for prime levels of control and oversight over travel bookings, policy and budget. The approval process is usually often lengthy and requires a lot of paperwork. It requires so much of time and work hard to complete it. To eradicate human errors and achieve perfect data and procedures, the use of software is considered a smart choice.

Therefore, with the help of Customer Relation Management (CRM) software services provided by Salesforce, we are making a travel approval application. It starts with building a data model where the objects and fields come into picture followed by customizing the user interface where we Use list views and page layouts to streamline an app user's experience.

Every application generally needs a business logic so in this it is achieved by validation rules , formula fields and approval process. Finally, to analyze travel approvals we add reports and dashboards. This application will help them in keeping track of the complete travel approval process.

Introduction

In today's fast-paced business environment, sales teams often need to travel frequently to meet with clients, attend conferences, and conduct business. However, managing travel requests and approvals can be a time-consuming and error-prone process, particularly when done manually. To address this challenge, many organizations are turning to technology solutions such as the Travel Approval App for Salesforce

This app is a powerful tool that allows sales teams to easily submit and manage travel requests directly within the Salesforce platform. By automating the travel approval process, the app saves time and reduces the risk of errors and delays. It also provides sales managers with real-time visibility into their teams' travel plans, enabling them to make informed decisions about resource allocation and budgeting.



In this report, we will provide an overview of the Travel Approval App for Salesforce, including its features, benefits, and potential use cases. We will also explore how this app can help organizations improve their travel management processes, increase efficiency, and reduce costs. Finally, we will discuss best practices for implementing and using the app effectively.

Flow of the Project

The flow of the Travel Approval App for Salesforce typically involves several steps, which are as follows:

Travel Request Submission: Sales representatives submit travel requests using the Travel Approval App within the Salesforce platform. The request includes details such as travel dates, destinations, budgets, and purpose.

Automated Routing of Requests: The app automatically routes the travel request to the appropriate approvers based on predefined rules and workflows. This ensures that requests are reviewed by the right people, in the right order.

Review and Approval: Approvers receive notifications when a travel request requires their approval. They can review the request details and approve or reject it within the app.

Notification and Feedback: Sales representatives are notified of the approval or rejection of their travel request. If rejected, the app may allow the representative to revise and resubmit the request.

Real-Time Reporting: The app provides real-time visibility into travel requests and approvals, allowing sales managers to monitor travel spend and make informed decisions about their teams' travel plans.

Overall, the Travel Approval App for Salesforce automates and streamlines the travel request and approval process, providing a seamless experience for sales representatives and managers while ensuring compliance and cost-effectiveness.

Software Requirements

For the fastest and most stable experience, we recommend:

- An Octane 2.0 score of 30,000 or greater
- Network latency of 150 ms or less
- Download speed of 3 Mbps or greater
- At least 8 GB of RAM, with 3 GB available for Salesforce browser tabs

Minimum requirements are:

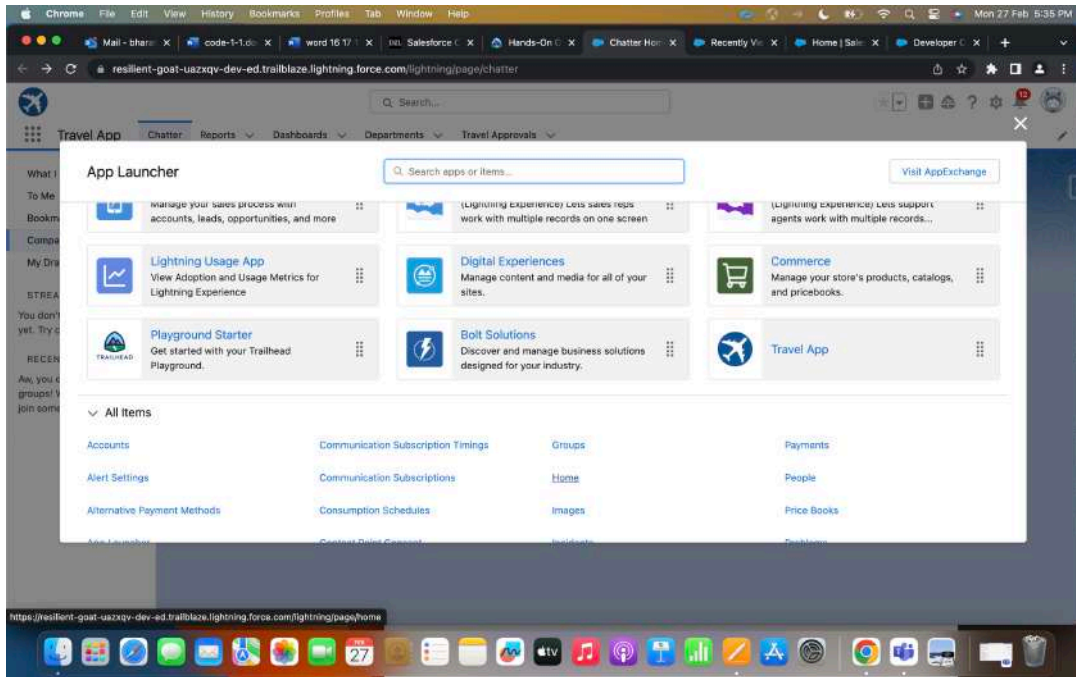
- An Octane 2.0 score of 20,000 or greater
- Network latency of 200 ms or less
- Download speed of 1 Mbps or greater
- At least 5 GB of RAM, with 2 GB available for Salesforce browser tabs

OR

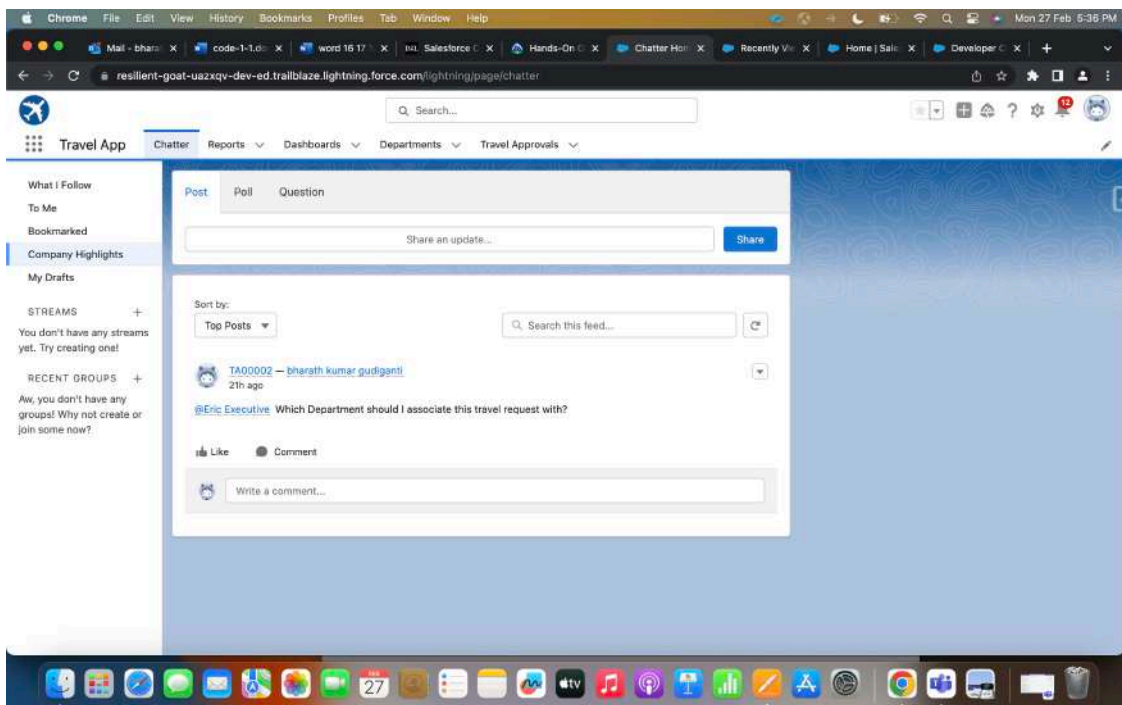
Requirements	
Windows	
Operating system	Windows 8.1 64-bit, Windows 8 64-bit, Windows 7 Service Pack 1 64-bit, Windows Vista Service Pack 2 64-bit
CPU	Core 2 Quad Q6600 at 2.4 GHz or AMD Phenom 9850 at 2.5 GHz
Memory	4 GB RAM
Free space	65 GB of free space
Graphics hardware	DirectX 10-compatible GPU : GeForce 9800GT 1GB or ATI Radeon HD 4870 1GB
Sound hardware	DirectX 10 compatible sound card

Module-1 Screenshots

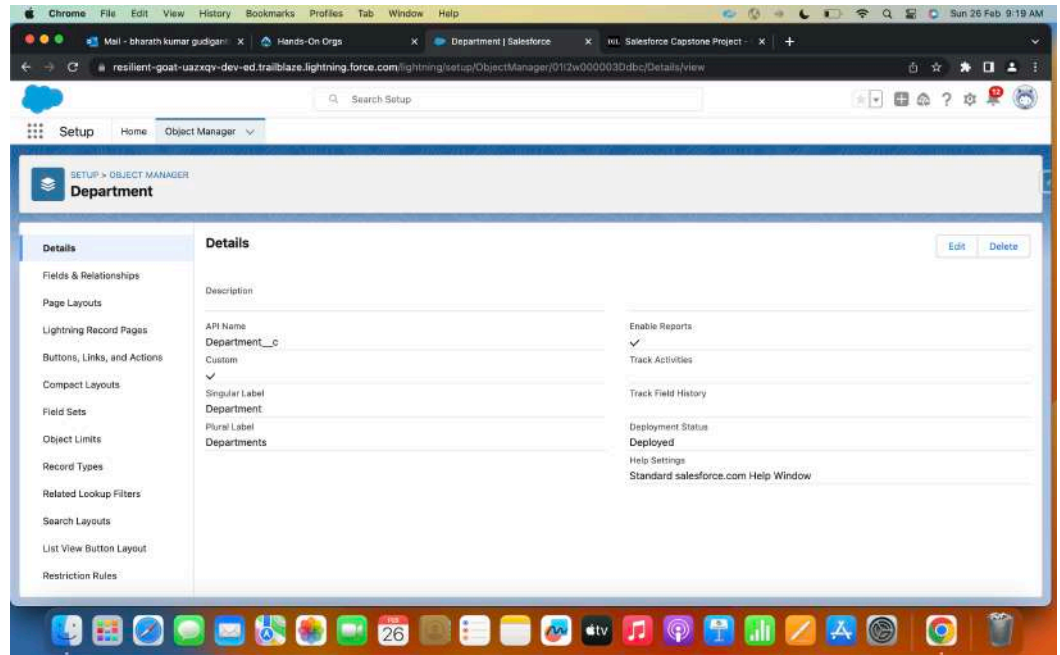
Travel App:-



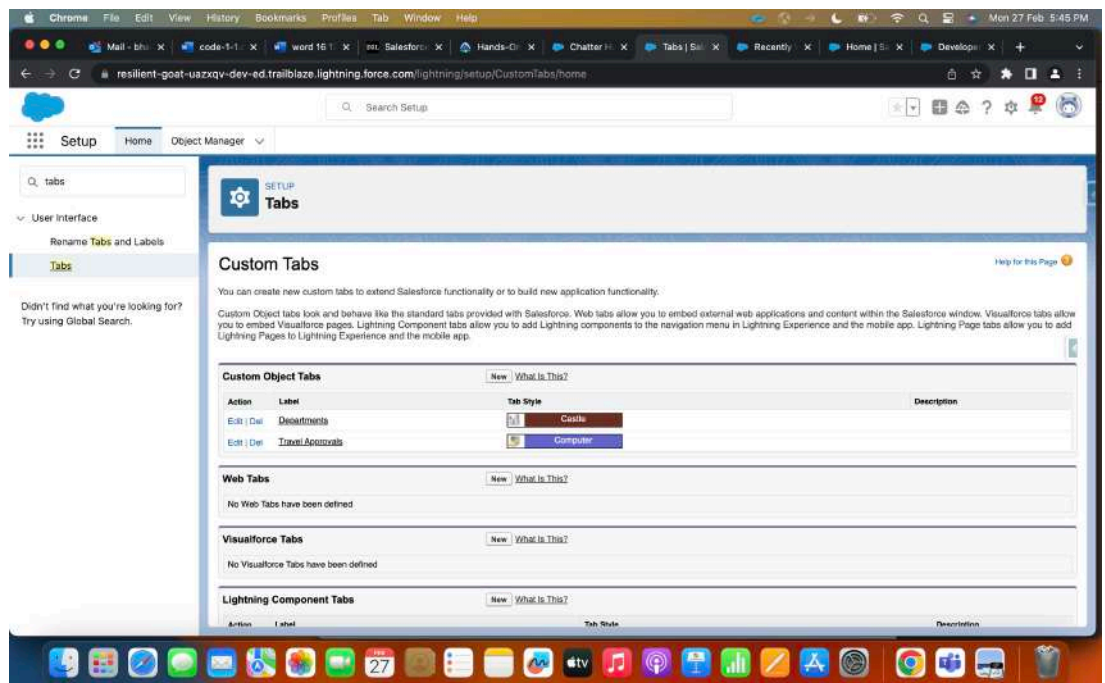
Exercise -1 Step-1



Step-2 Created Department custom object

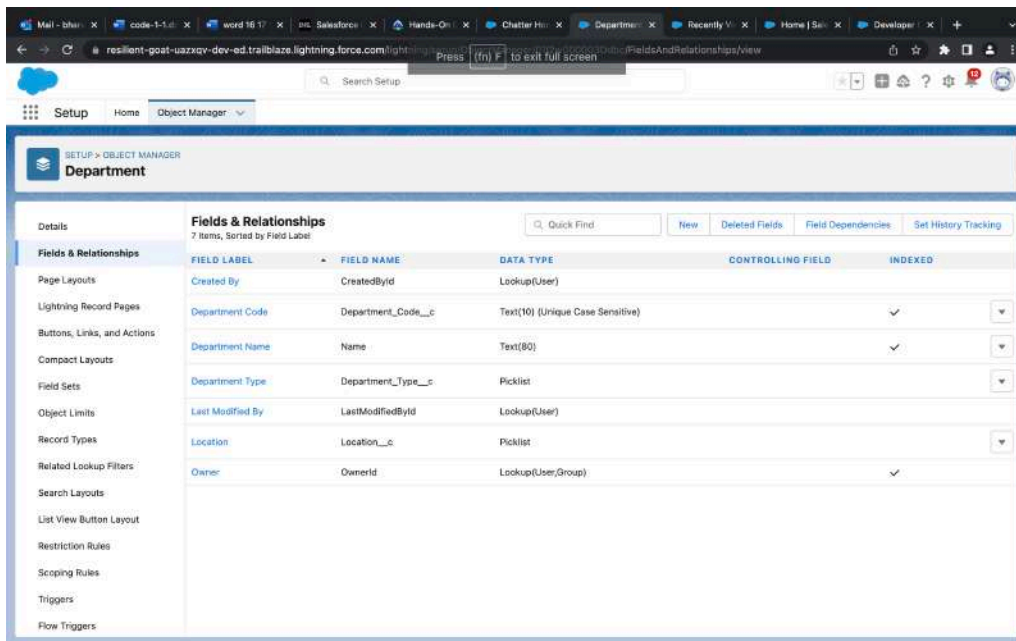


Created new custom object tab

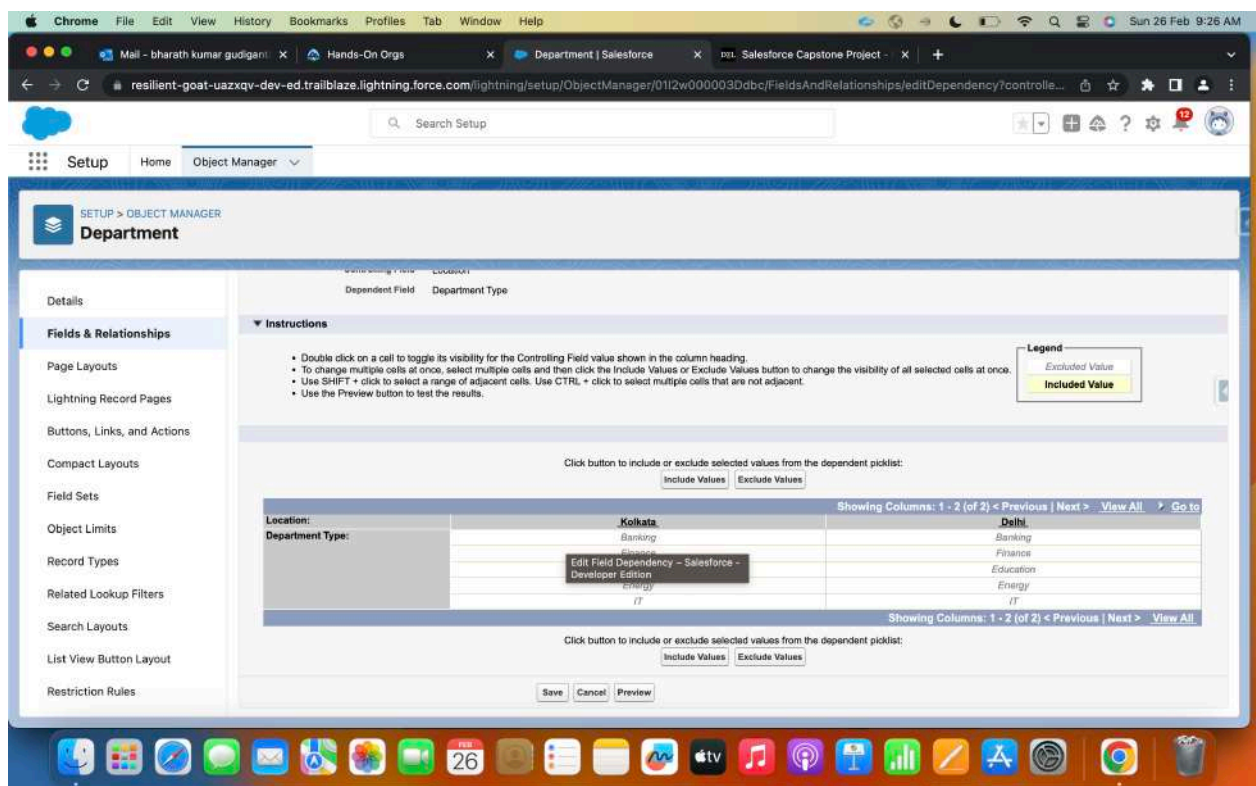


Step-3

Created all the required fields

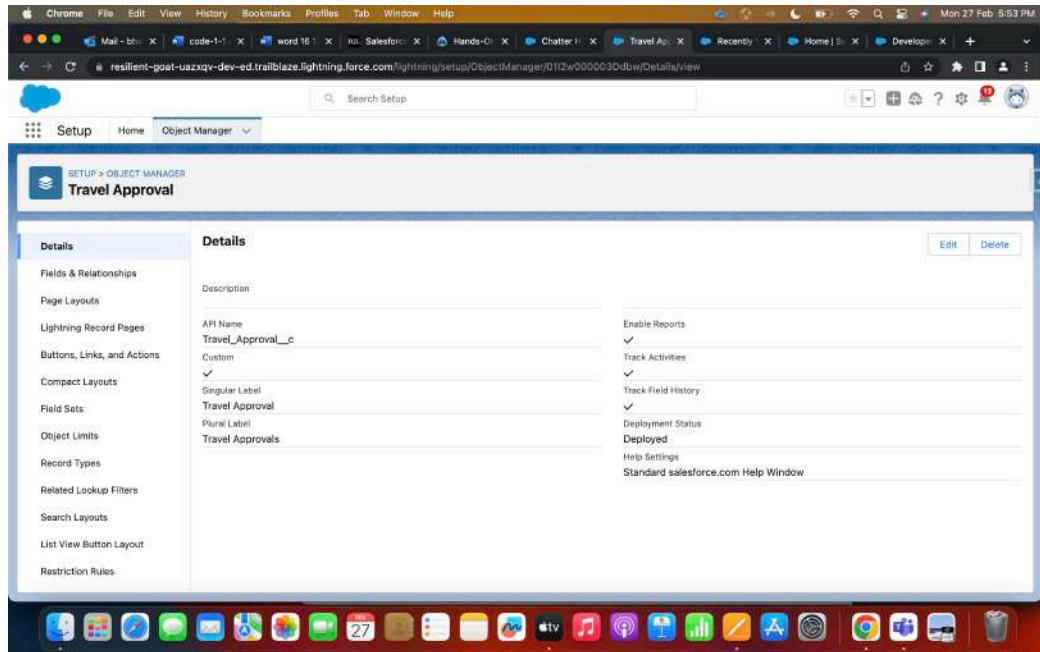


Created Field Dependency

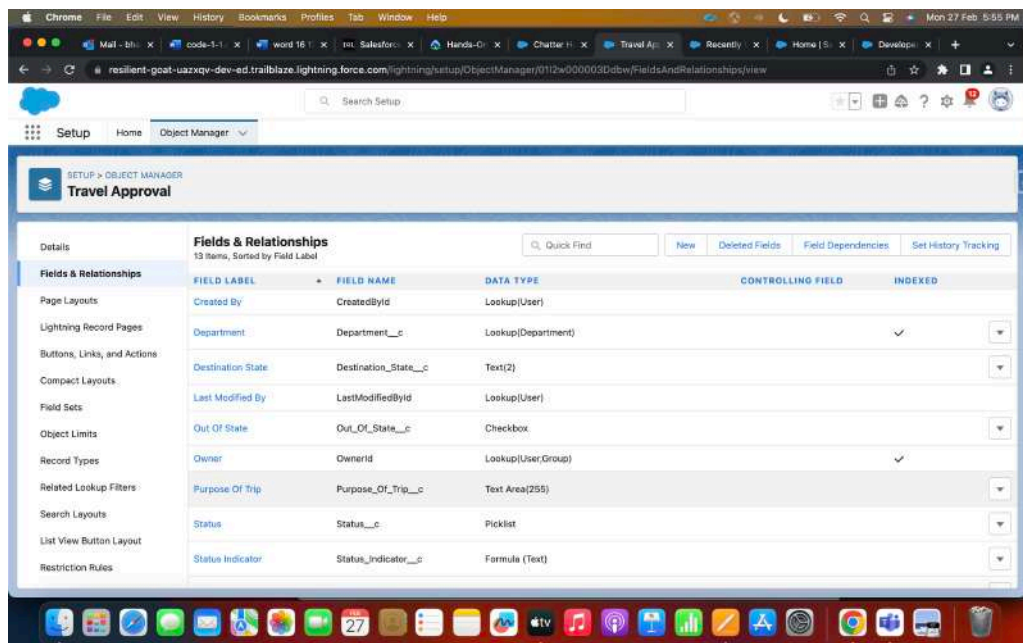


Step-4

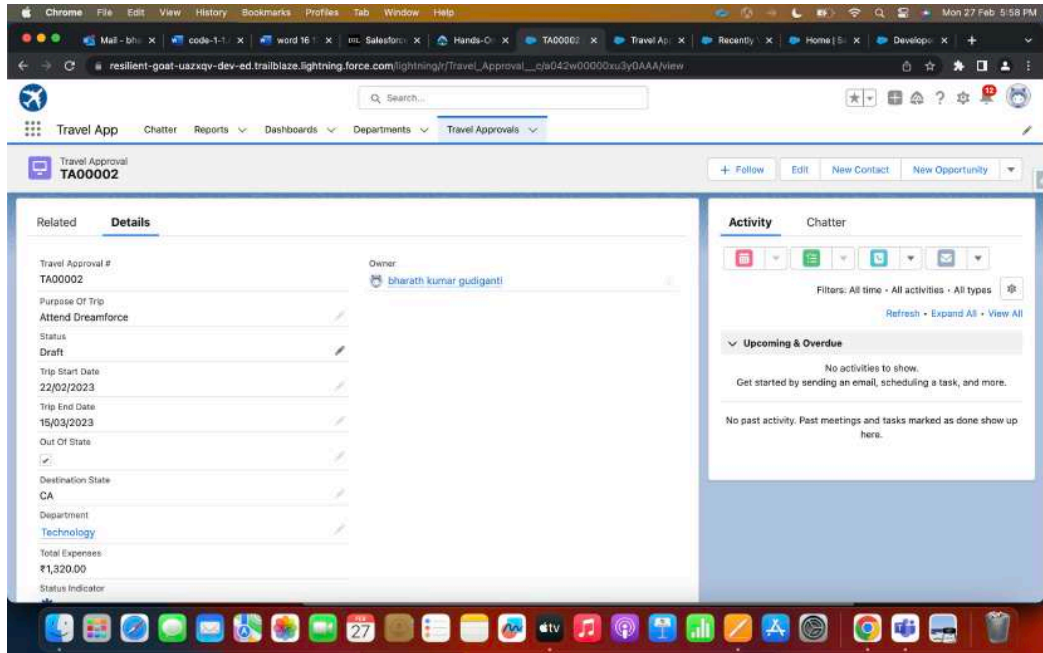
Created the required Travel Approval Object



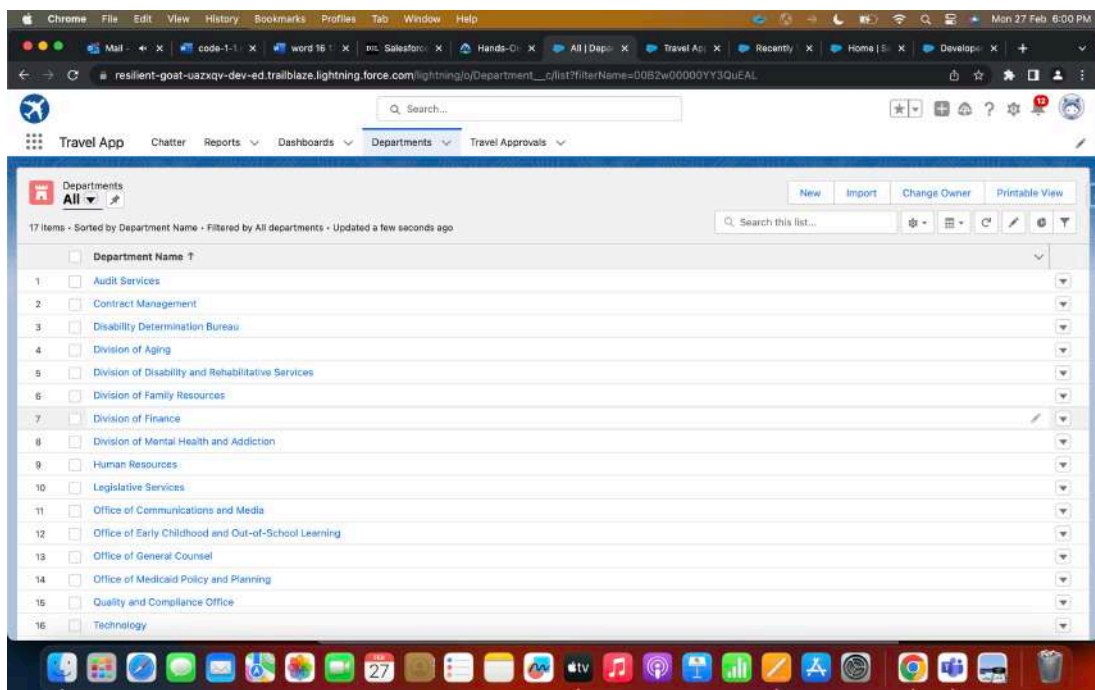
Created the required fields



After testing the app



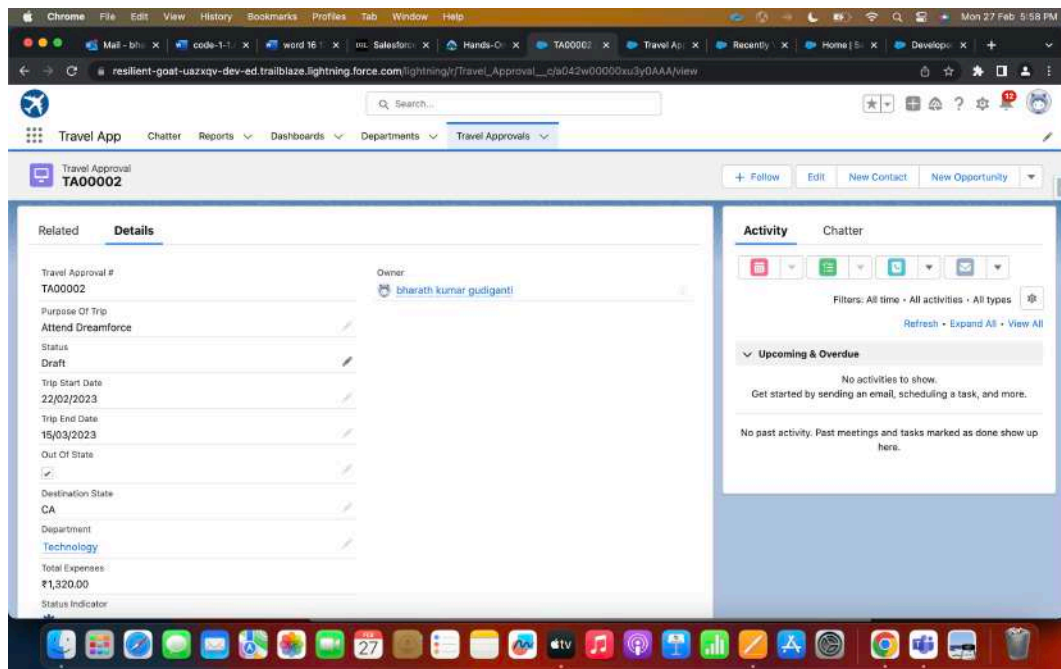
Step-5 Imported departments.csv file using Data Import Wizard



Exercise-2

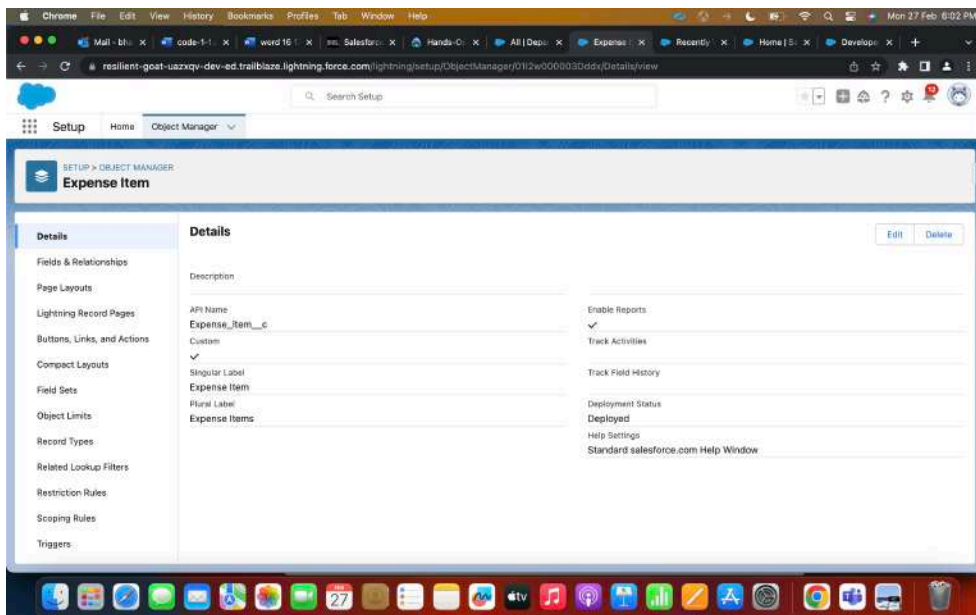
Step-1

Created Travel Approval Record



Step-2

Created Expense Item Custom Object



Step-3 Created Custom Fields

The screenshot shows the Salesforce Setup interface for the 'Expense Item' object. The 'Fields & Relationships' tab is selected, displaying a table of custom fields. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields listed are:

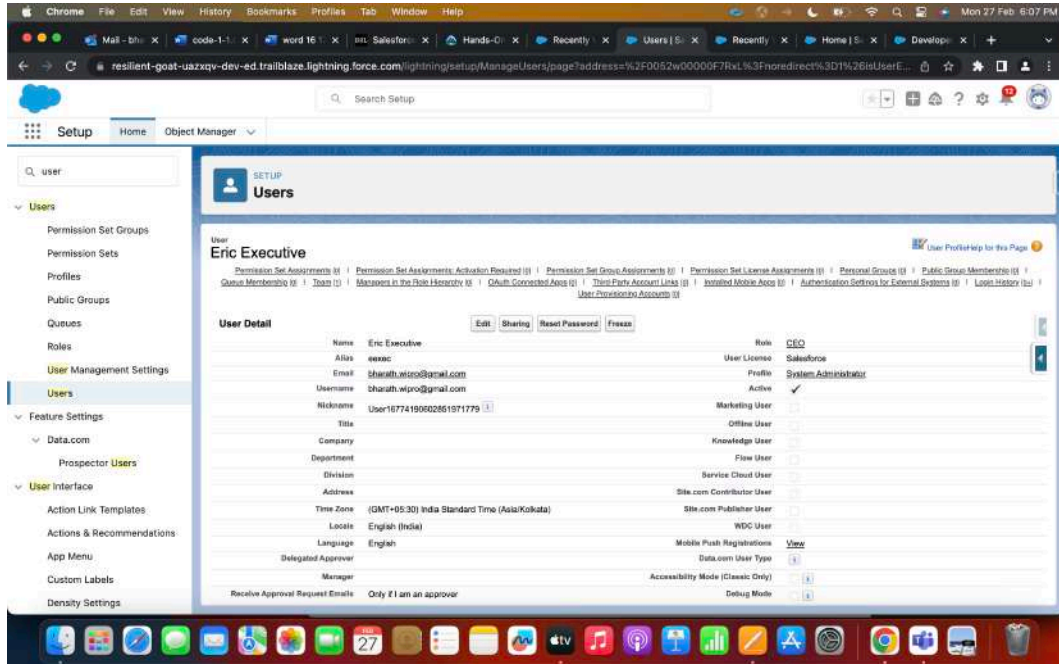
FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Currency(16, 2)		
Created By	CreatedById	Lookup(User)		
Expense Item Name	Name	Auto Number		✓
Expense Type	Expense_Type__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Travel Approval	Travel_Approval__c	Master-Detail(Travel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

Step-4 Create Records

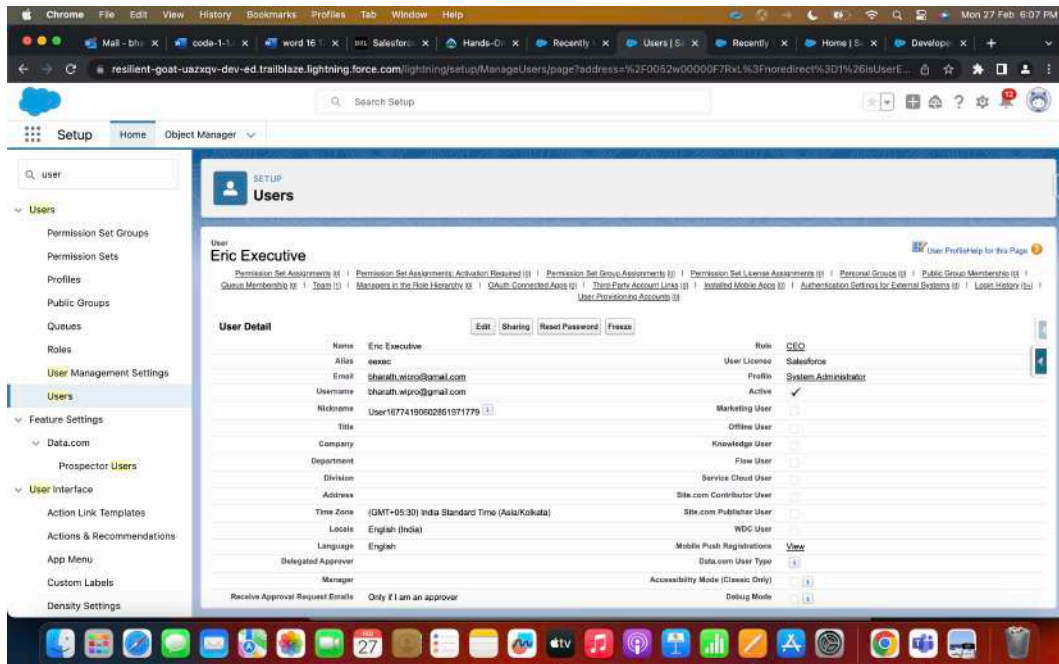
The screenshot shows the Salesforce Travel App interface for the 'Travel Approvals' list view. The list displays 2 items, sorted by 'Recently Viewed'. The table has columns for Travel Approval #, Purpose Of Trip, Department, Status, Destination St..., Trip Start Date, and Trip End Date. The data rows are:

Travel Approval #	Purpose Of Trip	Department	Status	Destination St...	Trip Start Date	Trip End Date
1 TA00002	Attend Dreamforce	Technology	Draft	CA	22/02/2023	15/03/2023
2 TA00001	Business Trip to USA	Test 1	New	US	21/02/2023	16/03/2023

Created User Eric

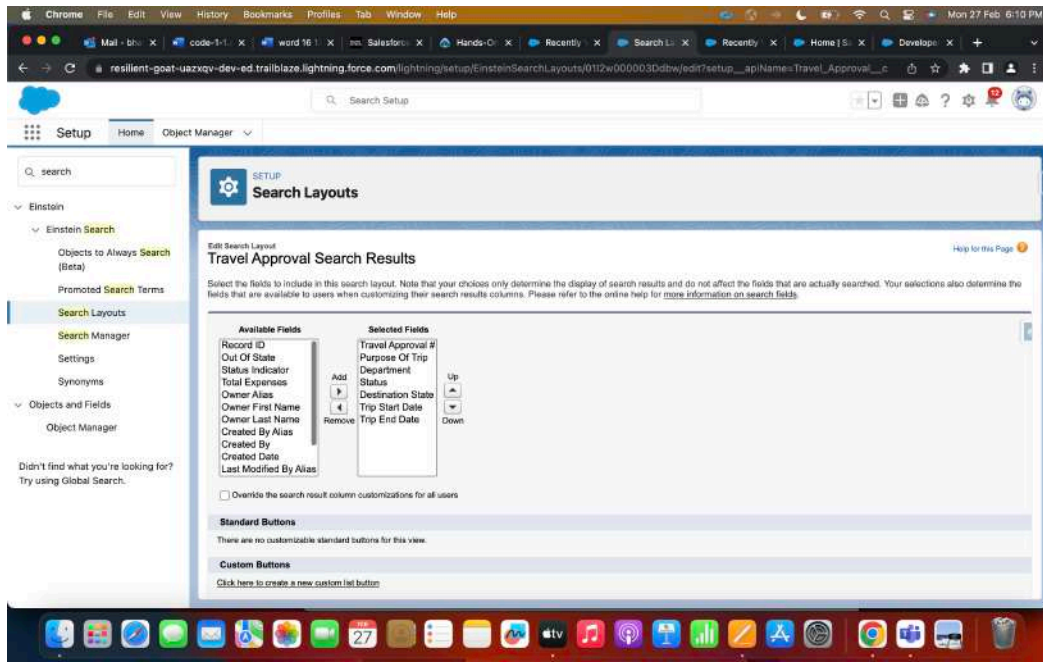


Step-6 Added Eric Executive as Manager to System Administrator



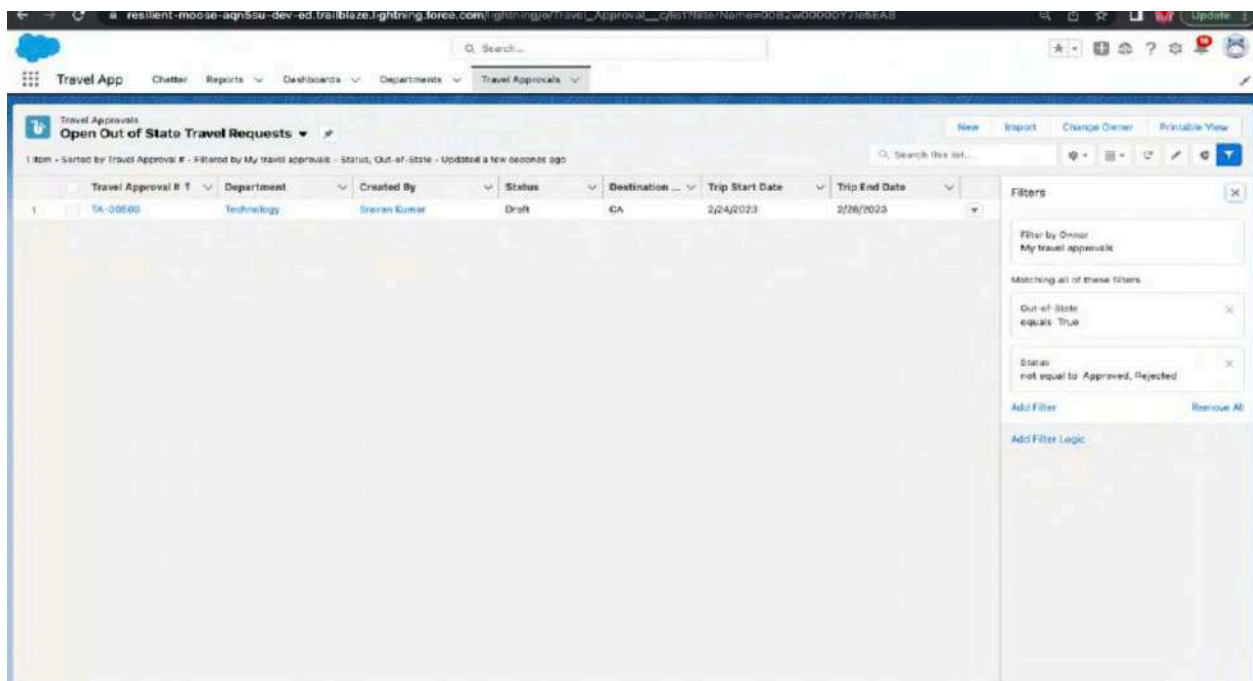
Step-7

Customized the Travel Approval Default Search



Step-9

Created Travel Approval custom list view open out of state Travel Requests



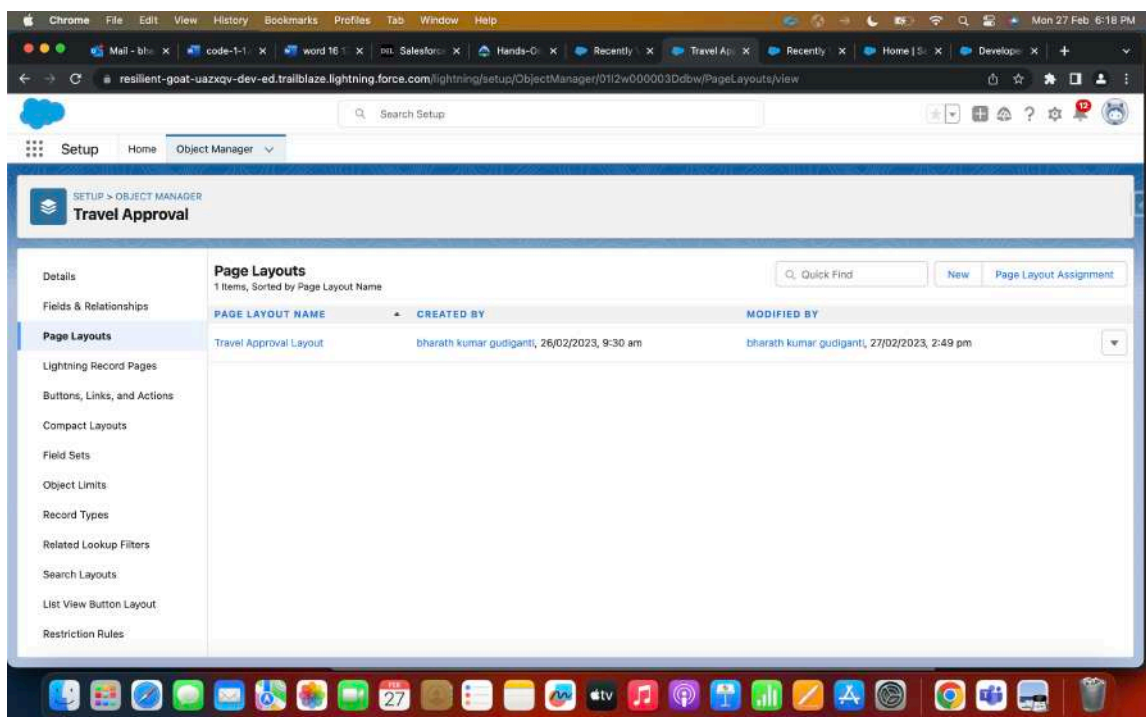
Step-10

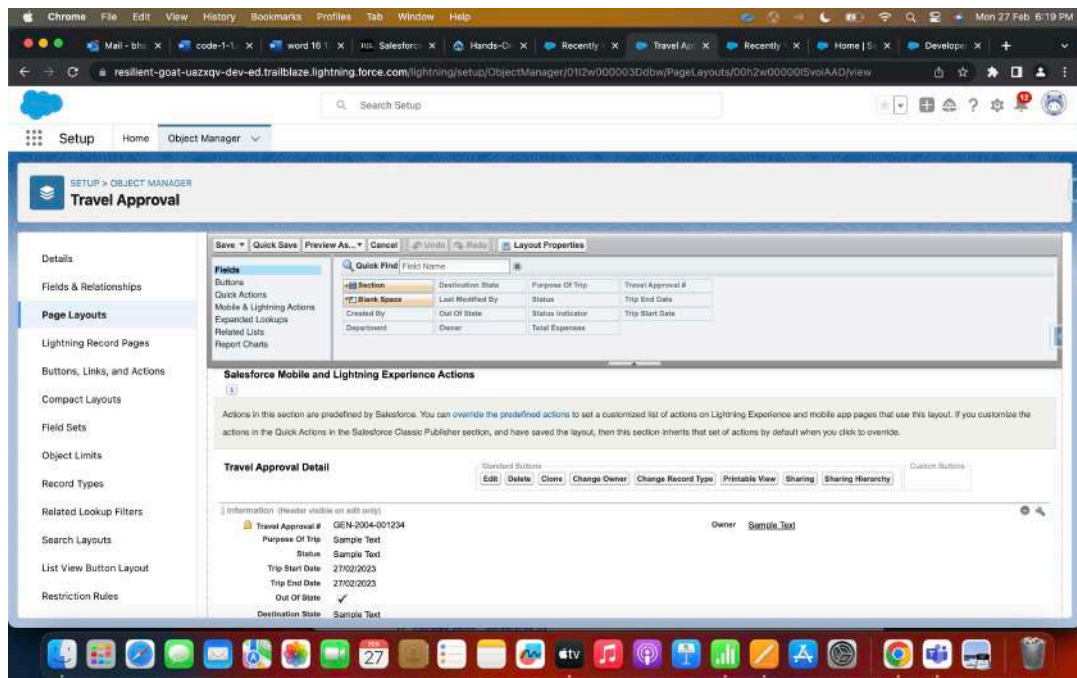
Selected fields to display in the Travel Approval Open Out of State Travel Requests

The screenshot shows the 'New Travel Approval' form in Salesforce. The form is divided into two main sections: 'Information' and 'Trip Info'. The 'Information' section includes fields for 'Travel Approval #', 'Status' (a dropdown menu currently showing '--None--'), 'Owner' (a user icon for 'Srinivas Kumar'), and 'Department' (a search field). The 'Trip Info' section includes fields for 'Trip End Date', 'Trip Start Date', 'Purpose of Trip', 'Out of State' (a checkbox), and 'Destination State'. At the bottom of the form are three buttons: 'Cancel', 'Save & New', and 'Save'. The background shows a list of travel approvals with columns for 'Travel Approval #', 'Department', and 'Status'.

Step-11

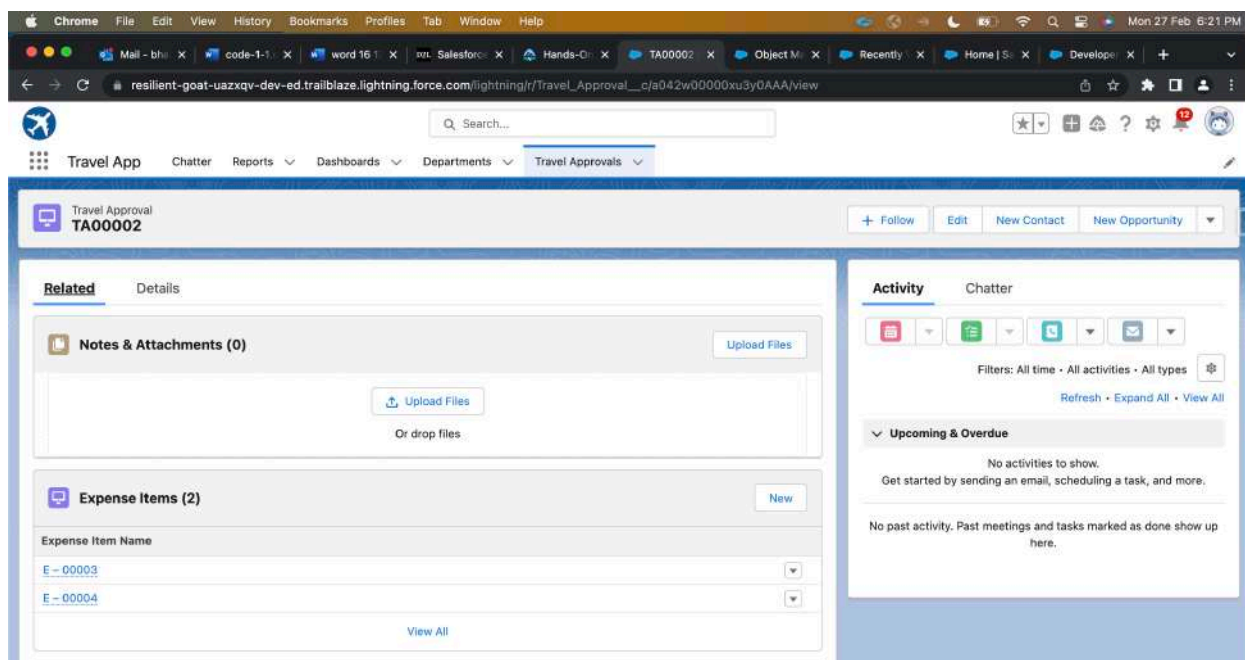
Customized Travel Approval Page Layout





Step-12

Customized the Expense Item Related list under Travel Approval page layout



Step-13 Enable Feed Tracking

The screenshot shows the Salesforce Setup interface for the 'Feed Tracking' feature. The left sidebar contains a search bar with 'feed' and a list of feature settings under 'Feature Settings', including 'Chatter', 'Feed Item', 'Feed Item Actions', 'Feed Item Layouts', 'Feed Tracking' (selected), 'Triggers', 'FeedComment Triggers', 'FeedItem Triggers', 'Service', and 'Feed Filters'. The main content area is titled 'Feed Tracking' and includes a description: 'Enable feed tracking for objects so users can follow records of that object type. Select fields to track so users can see feed updates when those fields are changed on records they follow.' Below this, there are two sections: 'Problem Related Item' and 'Fields in api anomaly event stores'. The 'Problem Related Item' section lists various objects with their corresponding field counts: Product (0 Fields), Related Problem and Incident (0 Fields), Report (0 Fields), Report Anomaly Event Store (0 Fields), Service Contract (0 Fields), Session Hijacking Event Store (0 Fields), Site (0 Fields), Solution (0 Fields), Task (0 Fields), Threat Detection Feedback (1 Field), Topic (1 Field), Travel Approval (2 Fields), User (6 Fields), Web Cart Document (0 Fields), Work Order (0 Fields), Work Order Line Item (0 Fields), Work Plan (0 Fields), and Work Plan Template (0 Fields). The 'Fields in api anomaly event stores' section has a 'Save' button, a 'Cancel' button, and an 'Enable Feed Tracking' checkbox. Below this, there is a list of fields to track, including Event Date, Event ID, Event Name, Login Key, Operation, Policy, Policy Outcome, Queried Entities, Request Identifier, Score, Session Key, Session Level, Summary, Source IP Address, User, User Agent, and Username. The 'Enable Feed Tracking' checkbox is currently unchecked.

The screenshot shows the Salesforce Setup interface for the 'Feed Tracking' feature, specifically the 'Fields in travel approvals' section. The left sidebar is identical to the previous screenshot, with 'Feed Tracking' selected. The main content area is titled 'Feed Tracking' and includes the same description. Below this, there are two sections: 'Problem Related Item' and 'Fields in travel approvals'. The 'Problem Related Item' section lists various objects with their corresponding field counts: Product (0 Fields), Related Problem and Incident (0 Fields), Report (0 Fields), Report Anomaly Event Store (0 Fields), Service Contract (0 Fields), Session Hijacking Event Store (0 Fields), Site (0 Fields), Solution (0 Fields), Task (0 Fields), Threat Detection Feedback (1 Field), Topic (1 Field), Travel Approval (2 Fields), User (6 Fields), Web Cart Document (0 Fields), Work Order (0 Fields), Work Order Line Item (0 Fields), Work Plan (0 Fields), and Work Plan Template (0 Fields). The 'Fields in travel approvals' section has a 'Save' button, a 'Cancel' button, and an 'Enable Feed Tracking' checkbox. Below this, there is a list of fields to track, including Department, Destination State, Out Of State, Owner, Purpose Of Trip, Status, Travel Approval #, Trip End Date, and Trip Start Date. The 'Enable Feed Tracking' checkbox is currently checked.

Module 2 Screenshots

Exercise-1

Step-1

Created Trip end date after start date Validation Rule

The screenshot displays the Salesforce Setup interface, specifically the 'Travel Approval Validation Rule' page. The browser's address bar shows the URL: `resilient-goat-uazxqv-dev-ed.trailblaze.lightning.force.com/lightning/setup/ValidationRules/03d2w000000JY1E/view`. The page title is 'Travel Approval Validation Rule'. The left sidebar contains a navigation menu with the following items: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, Scoping Rules, Triggers, and Flow Triggers. The main content area is titled 'Travel Approval Validation Rule' and includes a 'Back to Travel Approval' link. Below the title, there is a 'Validation Rule Detail' section with the following information:

Validation Rule Detail		Active
Rule Name	Trip_end_date_after_start_date	<input checked="" type="checkbox"/>
Error Condition Formula	Trip_End_Date__c <= Trip_Start_Date__c	
Error Message	Trip end date must be greater than or equal to start date	
Error Location	Trip End Date	
Description		
Created By	bharath.kumar.gudipati, 27/02/2023, 1:46 pm	Modified By
		bharath.kumar.gudipati, 27/02/2023, 2:06 pm

Buttons for 'Edit' and 'Clone' are available for the rule name, error message, and the user information.

Step-2

Created a Roll Up summary field Total Expenses

The screenshot shows the Salesforce Setup interface for the 'Travel Approval' object. The 'Fields & Relationships' tab is selected, and the 'Custom Field Definition Detail' for the 'Total Expenses' field is displayed. The field is a Roll-Up Summary type, with the summary type set to 'SUM'. The field is named 'Total Expenses' and is associated with the 'Travel Approval' object. The field is created by 'bharath kumar gudi' on 27/02/2023 at 1:49 pm.

Travel Approval Custom Field
Total Expenses
Back to Travel Approval

Custom Field Definition Detail Edit Set Field-Level Security View Field Accessibility Where is this used?

Field Information

Field Label	Total Expenses	Object Name	Travel Approval
Field Name	Total_Expenses		
API Name	Total_Expenses__c		
Description			
Help Text			
Data Owner			
Field Usage			
Data Sensitivity Level			
Compliance Categorization			
Created By	bharath kumar gudi	Modified By	bharath kumar gudi
Created Date	27/02/2023, 1:49 pm	Modified Date	27/02/2023, 1:49 pm

Roll-Up Summary Options

Data Type	Roll-Up Summary	Summary Type	SUM
Summarized Object	Expense Item		
Field to Aggregate	Expense Item Amount		
Filter Criteria			

Step-3

Created a formula field StatusImages

The screenshot shows the Salesforce Setup interface for the 'Travel Approval' object. The 'Fields & Relationships' tab is selected, and the 'Custom Field Definition Detail' for the 'Status Indicator' field is displayed. The field is a Formula type, with the formula set to '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 field is named 'Status Indicator' and is associated with the 'Travel Approval' object. The field is created by 'bharath kumar gudi' on 27/02/2023 at 1:56 pm.

Travel Approval Custom Field
Status Indicator
Back to Travel Approval

Custom Field Definition Detail Edit Set Field-Level Security View Field Accessibility Where is this used?

Field Information

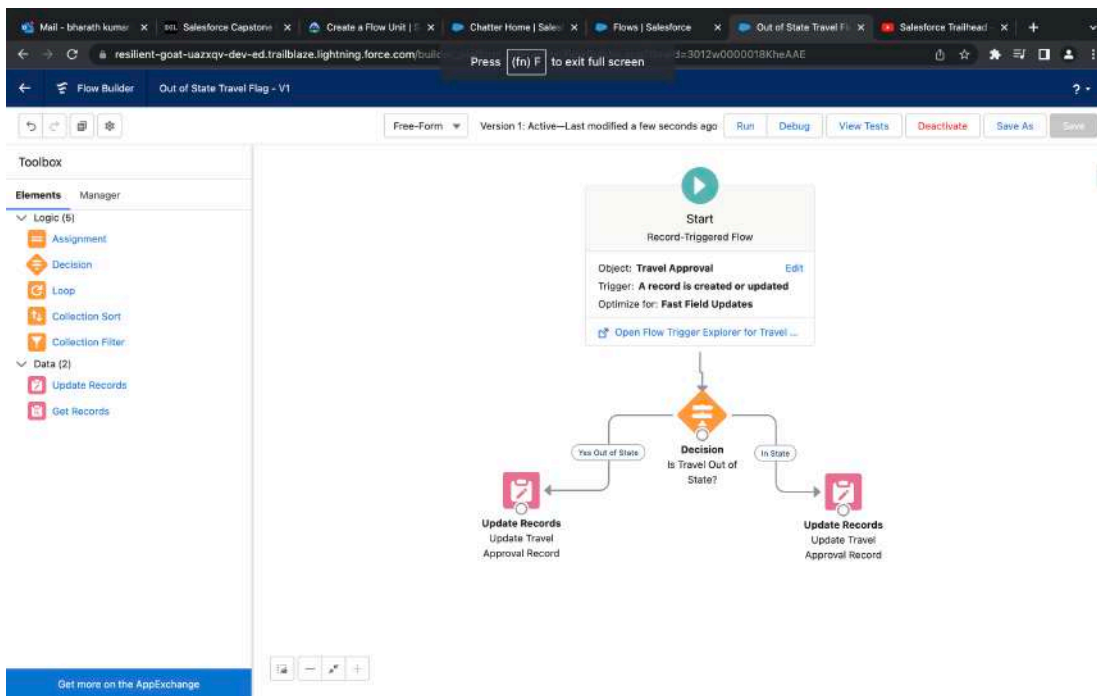
Field Label	Status Indicator	Object Name	Travel Approval
Field Name <th>Status_Indicator</th> <td></td> <td></td>	Status_Indicator		
API Name <td>Status_Indicator__c</td> <td></td> <td></td>	Status_Indicator__c		
Description <td></td> <td></td> <td></td>			
Help Text <td></td> <td></td> <td></td>			
Data Owner <td></td> <td></td> <td></td>			
Field Usage <td></td> <td></td> <td></td>			
Data Sensitivity Level <td></td> <td></td> <td></td>			
Compliance Categorization <td></td> <td></td> <td></td>			
Created By	bharath kumar gudi	Modified By	bharath kumar gudi
Created Date	27/02/2023, 1:56 pm	Modified Date	27/02/2023, 1:56 pm

Formula Options

Data Type	Formula
	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)))

Step-5

Created a Record -Triggered Flow Decision Block



Step-6

Created an approval process Travel Approval Request

The screenshot shows the Salesforce Setup page for 'Approval Processes'. The page is titled 'Approval Processes' and shows the configuration for the 'Travel Approval Owner' process. The 'Initial Submission Actions' section shows a 'Record Lock' action. The 'Approval Steps' section is expanded, showing two steps: 'Step 1' and 'Travel Coordinator Approval'. The 'Final Approval Actions' section shows a 'Record Lock' action. The 'Final Rejection Actions' section shows a 'Record Lock' action. The 'Recall Actions' section shows a 'Record Lock' action. The left sidebar shows the 'Setup' menu with 'Process Automation' selected. The top bar includes a search bar and various utility icons.

Action	Type	Description
Record Lock	Record Lock	Lock the record from being edited

Action	Step Number	Name	Description	Criteria	Assigned Approver	Reject Behavior
Show Actions Edit Del	1	Step 1			Manager	Final Rejection
Show Actions Edit Del	2	Travel Coordinator Approval		Travel Approval: Out of State EQUALS True	User:bharath.kumar.gudi@ntti	Final Rejection

Action	Type	Description
Edit Record Lock	Record Lock	Unlock the record for editing

Action	Type	Description
Record Lock	Record Lock	Unlock the record for editing

Approval Processes

Process Name: Travel Approval Request Active ☒

Unique Name: Travel_Approval_Request Next Automated Approver Determined By: Manager of Record Submitter

Description: Travel Approval: Total Expenses GREATER THAN 0

Entry Criteria: Travel Approval: Total Expenses GREATER THAN 0

Record Editability: Administrator ONLY Allow Submitters to Recall Approval Requests ☐

Approval Assignment Email Template: Travel Approval Owner

Initial Submitters: Created By: bharath.kumar.gudigani, 27/02/2023, 2:49 pm Modified By: bharath.kumar.gudigani, 27/02/2023, 2:59 pm

Initial Submission Actions

Action	Type	Description
Record Lock		Lock the record from being edited

Approval Steps

Action	Step Number	Name	Description	Criteria	Assigned Approver	Reject Behavior
Show Actions Edit	1	Step 1			Manager	Final Rejection
Show Actions Edit	2	Travel Coordinator Approval		Travel Approval: Out Of State EQUALS True	User:bharath.kumar.gudigani	Final Rejection

Final Approval Actions

Action	Type	Description
Edit Record Lock		Lock the record from being edited
Edit Remove Field Update		Set Status to Approved
Edit Remove Field Update		Set Status to Rejected

Process automation setting

Process Automation Settings

Save Cancel

The default workflow user is required for scheduled paths in record-triggered flows and time-dependent actions in workflow rules. If the user who triggered the automation is no longer active, the default workflow user is associated with the actions that are executed by the automation. The default workflow user always runs schedule-triggered flows.

Default Workflow User: bharath.kumar.gudigani

By default, no email address is set for the Automated Process User. Event processes and auto-launched flows with triggers use the email address to send emails for actions and errors. Orchestrations use the email address to send notifications. To set the email address for the Automated Process User, specify an organization-wide email address for the system administrator profile.

Automated Process User Email Address:

By default, the email approval sender is the approval submitter. To override the default sender, select an organization-wide email address.

Email Approval Sender: Approval Submitter

Enabling email approval response lets users reply to email approval requests by typing APPROVE or REJECT in the first line and adding comments in the second line.

Enable email approval response ☐

By enabling the email approval response feature, you agree to allow Salesforce to process email approval responses, update approval requests for all active users in your organization, and update the approval object on behalf of your organization's users.

Let users pause flows when they need to wait for more information. Once you enable this setting, the Pause button appears on every screen that has Pause enabled.

Let users pause flows ☐

Let users resume interviews that are shared with them, either directly or via the role hierarchy. When disabled, interviews can be resumed only by the user who paused the interview or a flow admin who has view access.

Let users resume shared flow interviews ☒

Flows launched from a URL or from Setup use the Lightning runtime experience instead of the classic runtime experience. Only Lightning runtime supports two-column flow screens, custom screen components, and local

Exercise-2

Step-1

Imported Travel Approval records

Travel App Chatter Reports Dashboards Departments Travel Approvals *Travel_Approval_c X

Travel Approvals All

150+ Items - Sorted by Travel Approval # - Filtered by All travel approvals - Updated a few seconds ago

Search this list...

	Travel Approval #	Department	Created By	Status	Trip Start Date	Trip End Date	
1	TA-00001	Technology	Shravan Kumar	Approved	2/15/2023	2/28/2023	
2	TA-00201	Office of Communications and Media	Shravan Kumar	Approved	6/14/2019	6/15/2019	
3	TA-00202	Disability Determination Bureau	Shravan Kumar	Approved	10/1/2019	10/1/2019	
4	TA-00203	Division of Disability and Rehabilitative Services	Shravan Kumar	Rejected	4/3/2019	4/6/2019	
5	TA-00204	Technology	Shravan Kumar	Approved	3/13/2019	3/20/2019	
6	TA-00205	Human Resources	Shravan Kumar	Approved	4/2/2019	5/5/2019	
7	TA-00206	Division of Finance	Shravan Kumar	Rejected	3/9/2019	3/9/2019	
8	TA-00207	Contract Management	Shravan Kumar	Approved	12/22/2019	1/1/2020	
9	TA-00208	Division of Aging	Shravan Kumar	Approved	4/23/2019	4/28/2019	
10	TA-00209	Audit Services	Shravan Kumar	Rejected	8/9/2019	8/15/2019	
11	TA-00210	Division of Aging	Shravan Kumar	Approved	11/5/2019	11/11/2019	
12	TA-00211	Disability Determination Bureau	Shravan Kumar	Approved	3/22/2019	3/22/2019	
13	TA-00212	Technology	Shravan Kumar	Approved	3/6/2019	3/9/2019	
14	TA-00213	Office of General Counsel	Shravan Kumar	Approved	11/21/2019	11/26/2019	
15	TA-00214	Office of Communications and Media	Shravan Kumar	Approved	3/7/2019	3/19/2019	
16	TA-00215	Division of Aging	Shravan Kumar	Approved	8/6/2019	8/14/2019	
17	TA-00216	Legislative Services	Shravan Kumar	Approved	4/7/2019	4/14/2019	
18	TA-00217	Contract Management	Shravan Kumar	Approved	5/8/2019	5/14/2019	
19	TA-00218	Division of Disability and Rehabilitative Services	Shravan Kumar	Approved	11/6/2019	11/12/2019	
20	TA-00219	Audit Services	Shravan Kumar	Approved	2/28/2019	3/6/2019	
21	TA-00220	Disability Determination Bureau	Shravan Kumar	Rejected	3/6/2019	3/7/2019	
22	TA-00221	Office of Communications and Media	Shravan Kumar	Approved	7/9/2019	7/13/2019	
23	TA-00222	Legislative Services	Shravan Kumar	Rejected	6/14/2019	6/26/2019	

Step-2

Created a Report on Travel Requests by Department

Report: Travel Approvals
Travel Requests by Department

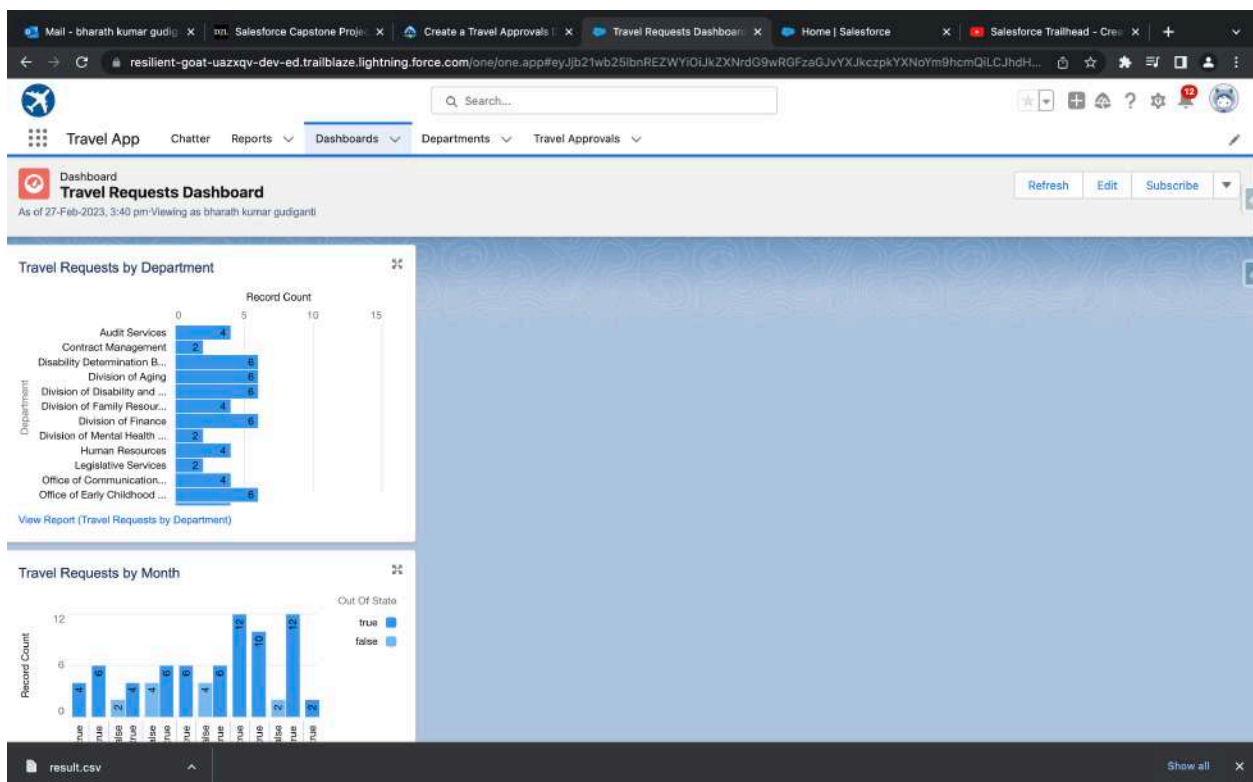
Department	Travel Approval: Travel Approval #	Status	Out Of State	Destination State	Trip Start Date	Trip End Date
Audit Services (4)	TA00053	Approved	☑	OK	11/04/2019	11/07/2019
	TA00045	Approved	☑	OK	07/08/2019	07/09/2019
	TA00131	Approved	☑	OK	11/04/2019	11/07/2019
	TA00123	Approved	☑	OK	07/08/2019	07/09/2019
Subtotal			4			
Contract Management (2)	TA00076	Approved	☑	CA	07/05/2019	07/08/2019
	TA00156	Approved	☑	CA	07/05/2019	07/08/2019
Subtotal			2			
Disability Determination Bureau (6)	TA00042	Approved	☑	OK	07/04/2019	07/10/2019
	TA00040	Rejected	☑	CA	07/05/2019	07/09/2019
	TA00033	Rejected	☑	OK	03/06/2019	03/07/2019
	TA00120	Approved	☑	OK	07/04/2019	07/10/2019
	TA00116	Rejected	☑	CA	07/05/2019	07/09/2019
	TA00111	Rejected	☑	OK	03/06/2019	03/07/2019
Subtotal			6			
Division of Aging (6)	TA00054	Approved	☑	FL	09/02/2019	09/10/2019
	TA00043	Approved	☑	FL	01/03/2019	01/07/2019
Subtotal			2			

Row Counts: 10 Detail Rows: 10 Subtotals: 4 Grand Total: 14

Download: result.csv

Step-4

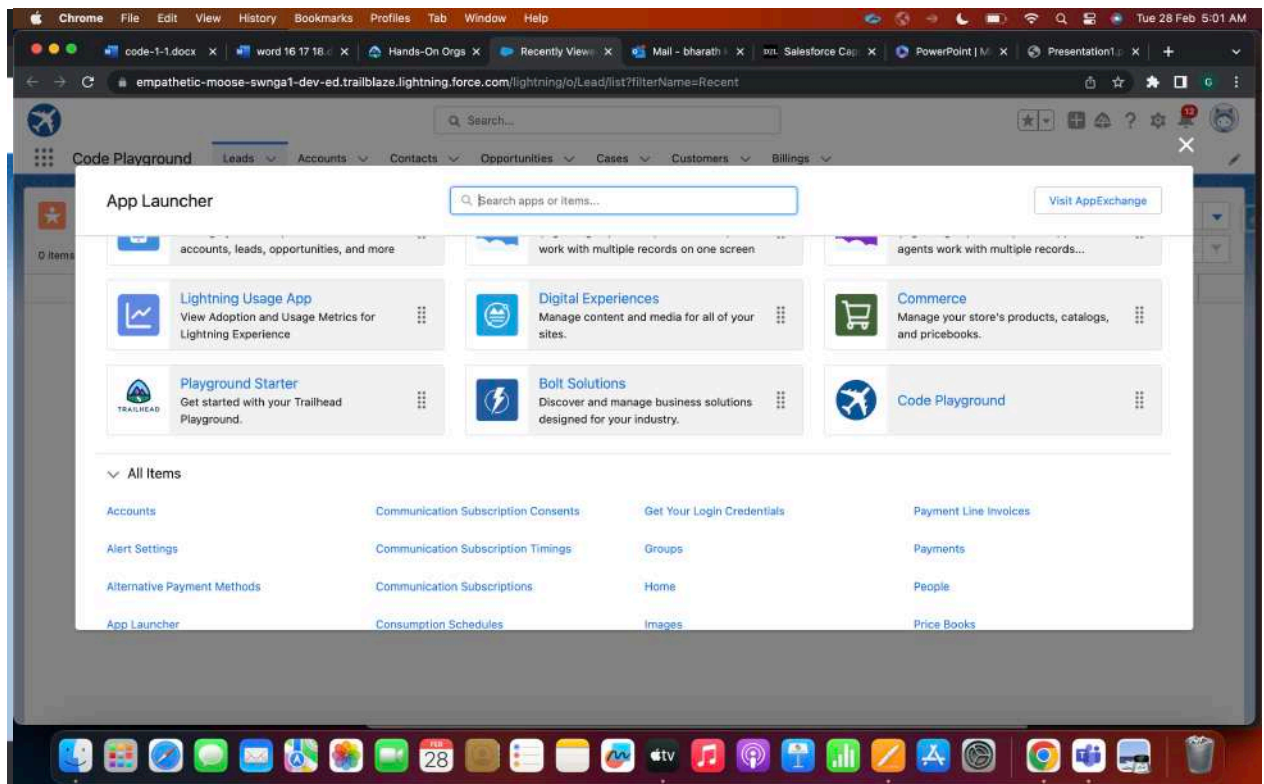
Created a Report and dashboard for Travel Approvals

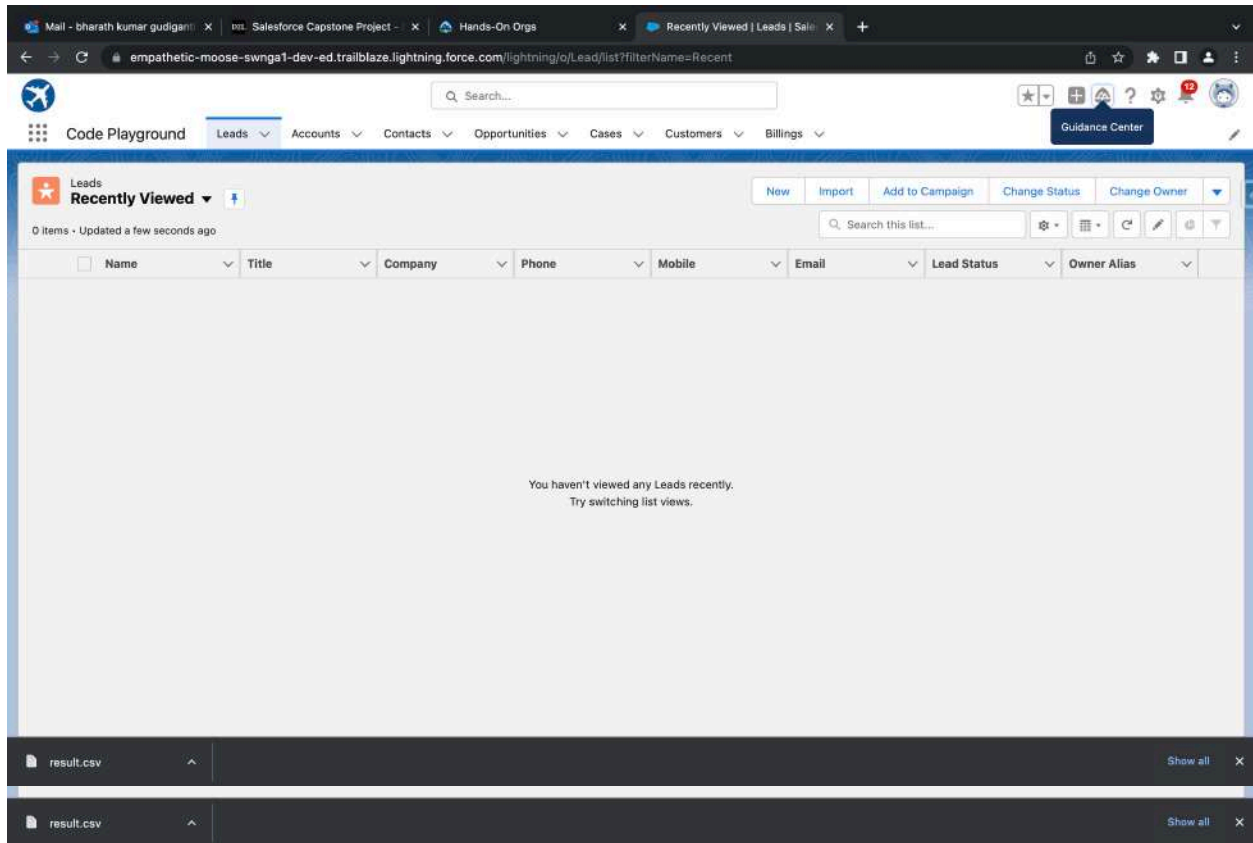


Module-3 Screenshots

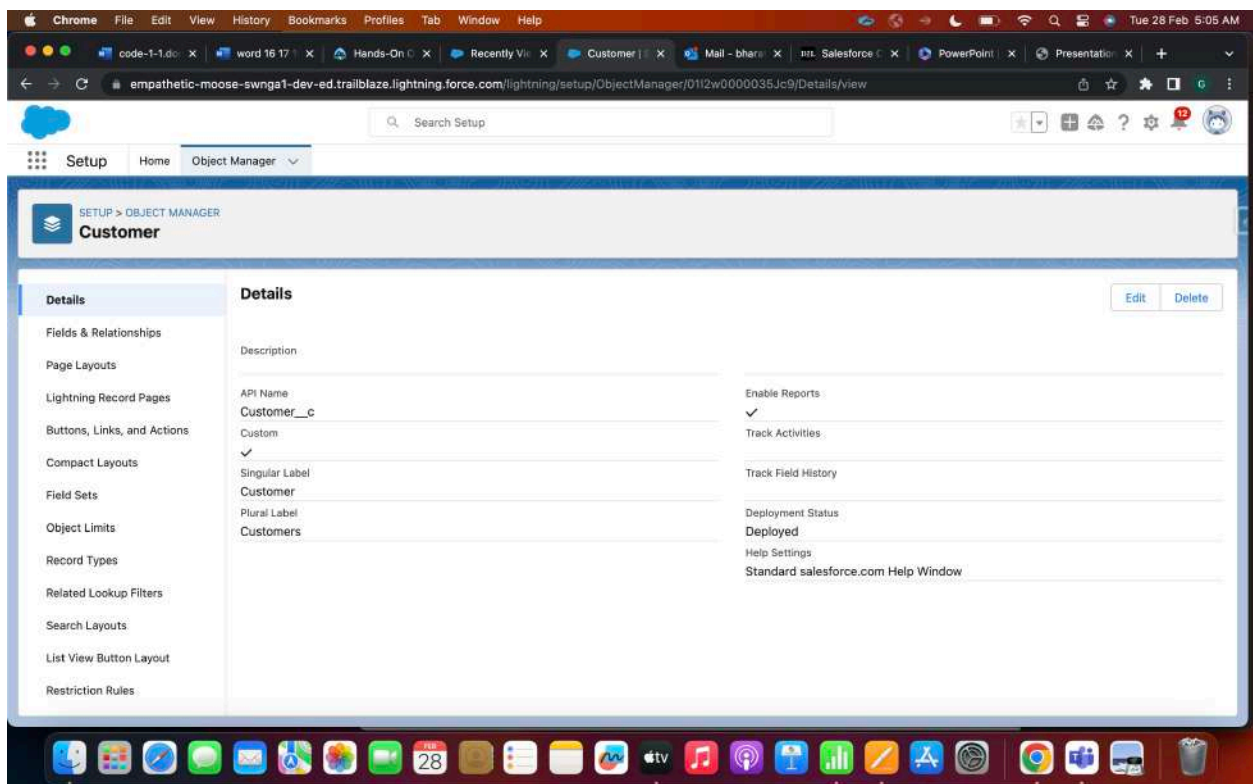
Exercise - 1

Created Code Playground App

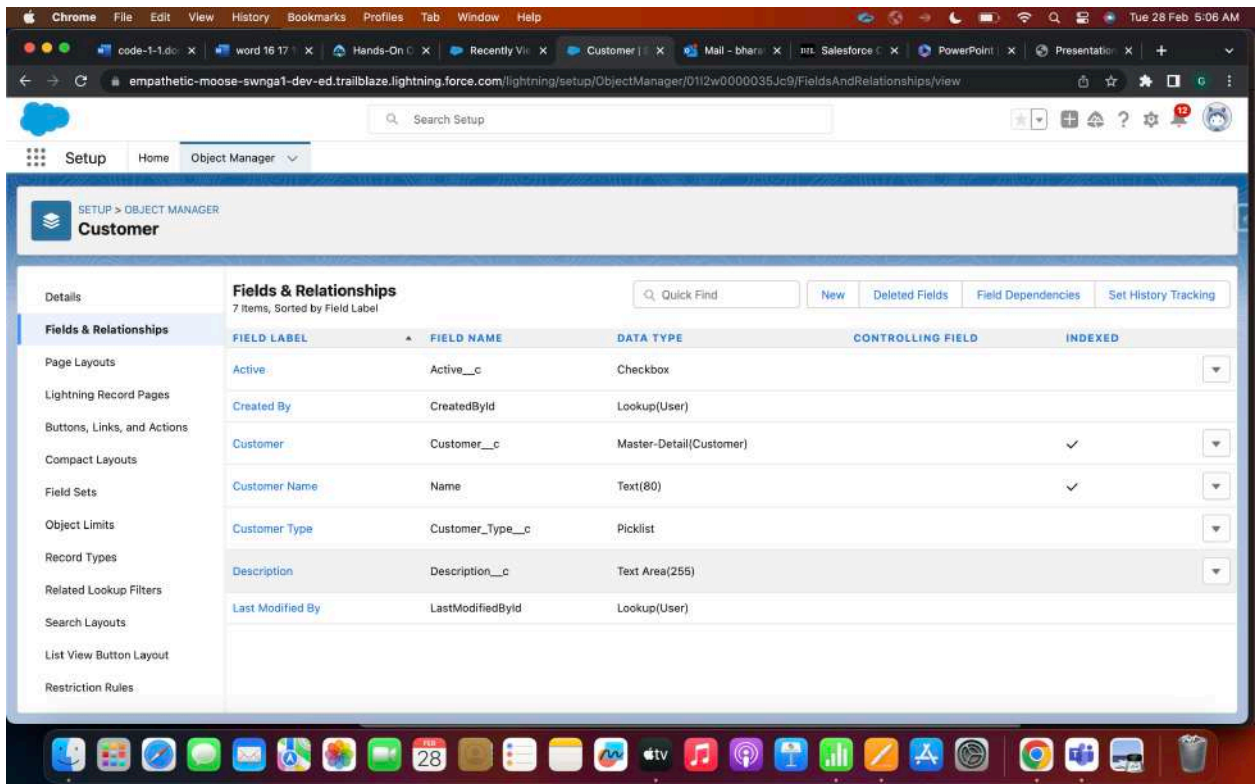




Created the Custom Object Customer as Customer



Created all the Custom



Created a Custom Object named Billing

Chrome File Edit View History Bookmarks Profiles Tab Window Help Tue 28 Feb 5:07 AM

code-1-1.doc word 16 17 Hands-On C Recently Vi Billing | Sale Mail - bhar Salesforce C PowerPoint Presentation X

empathetic-moose-swngat1-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/0112w0000035JhA/Details/view

Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER

Billing

Details Edit Delete

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

Description

API Name
Billing__c

Custom

✓

Singular Label
Billing

Plural Label
Billings

Enable Reports
✓

Track Activities

Track Field History

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

28

Chrome File Edit View History Bookmarks Profiles Tab Window Help Tue 28 Feb 5:08 AM

code-1-1.doc word 16 17 Hands-On C Recently Vi Billing | Sale Mail - bhar Salesforce C PowerPoint Presentation X

empathetic-moose-swngat1-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/0112w0000035JhA/FieldsAndRelationships/view

Search Setup

Setup Home Object Manager

SETUP > OBJECT MANAGER

Billing

Details

Fields & Relationships

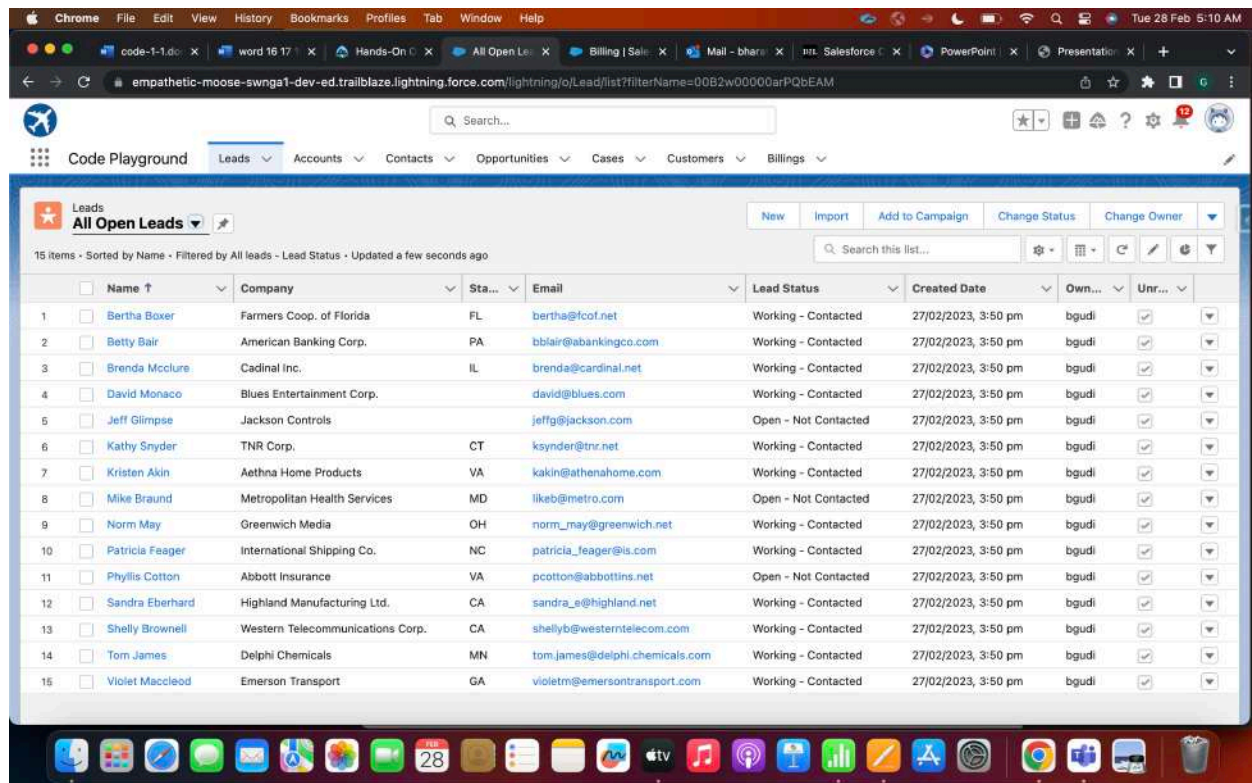
7 Items, Sorted by Field Label

Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount Paid	Amount_Paid__c	Currency(18, 0)		
Billing Name	Name	Auto Number		✓
Created By	CreatedById	Lookup(User)		
Customer Type	Customer_Type__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Status	Status__c	Picklist		

28

Create Playground App



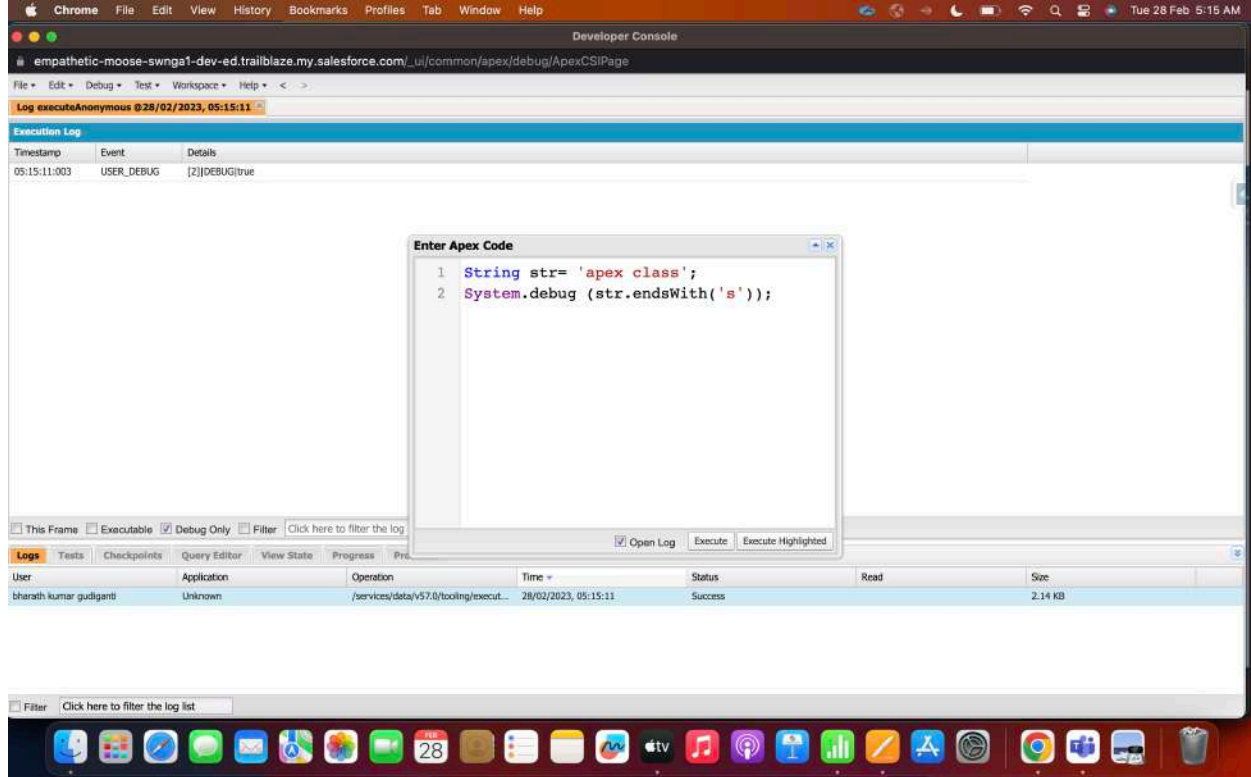
Leads

All Open Leads

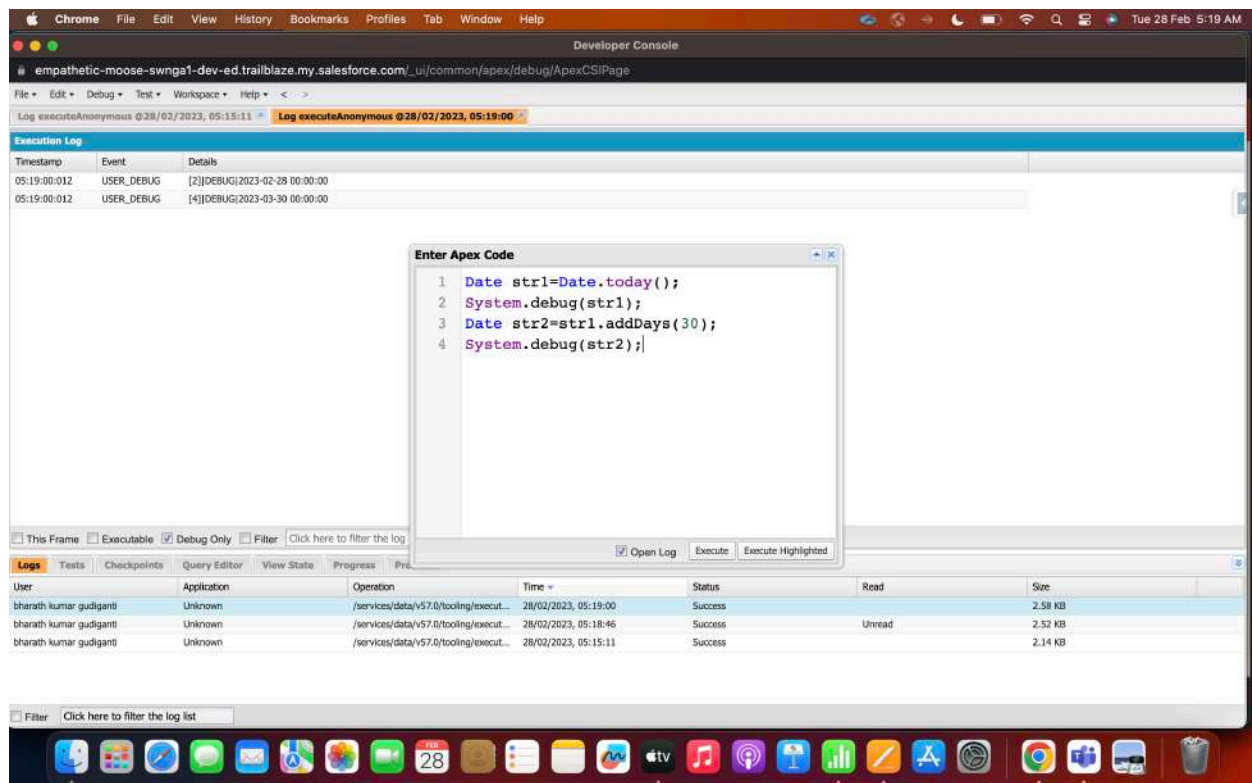
15 Items • Sorted by Name • Filtered by All leads - Lead Status • Updated a few seconds ago

	Name ↑	Company	Sta...	Email	Lead Status	Created Date	Own...	Unr...
1	Bertha Boxer	Farmers Coop. of Florida	FL	bertha@fcof.net	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
2	Betty Blair	American Banking Corp.	PA	bblair@abankingco.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
3	Brenda McClure	Cadinal Inc.	IL	brenda@cardinal.net	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
4	David Monaco	Blues Entertainment Corp.		david@blues.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
5	Jeff Glimpse	Jackson Controls		jeffg@jackson.com	Open - Not Contacted	27/02/2023, 3:50 pm	bgudi	✓
6	Kathy Snyder	TNR Corp.	CT	ksnyder@tnr.net	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
7	Kristen Akin	Aethna Home Products	VA	kakin@athenahome.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
8	Mike Braund	Metropolitan Health Services	MD	likeb@metro.com	Open - Not Contacted	27/02/2023, 3:50 pm	bgudi	✓
9	Norm May	Greenwich Media	OH	norm_may@greenwich.net	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
10	Patricia Feager	International Shipping Co.	NC	patricia_feager@isa.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
11	Phyllis Cotton	Abbott Insurance	VA	pcotton@abbottins.net	Open - Not Contacted	27/02/2023, 3:50 pm	bgudi	✓
12	Sandra Eberhard	Highland Manufacturing Ltd.	CA	sandra_e@highland.net	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
13	Shelly Brownell	Western Telecommunications Corp.	CA	shellyb@westerntelecom.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
14	Tom James	Delphi Chemicals	MN	tom.james@delphi.chemicals.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓
15	Violet Maccleod	Emerson Transport	GA	violetm@emersontransport.com	Working - Contacted	27/02/2023, 3:50 pm	bgudi	✓

Exercise - 2 String Variable using endsWith() method



Used Date Method and Displayed the Date



Converted the string to integer and added 20 to it

The screenshot shows the Salesforce Developer Console interface. The 'Enter Apex Code' window contains the following code:

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

The 'Execution Log' shows two events:

Timestamp	Event	Details
05:22:26:003	USER_DEBUG	[3]DEBUG:10
05:22:26:003	USER_DEBUG	[4]DEBUG:30

The 'Logs' table at the bottom shows the following data:

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:22:26	Success		2.43 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:19:00	Success		2.58 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:18:46	Success	Unread	2.52 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:15:11	Success		2.14 KB

Used Length method to display String length

The screenshot shows the Salesforce Developer Console interface. The 'Enter Apex Code' window contains the following code:

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

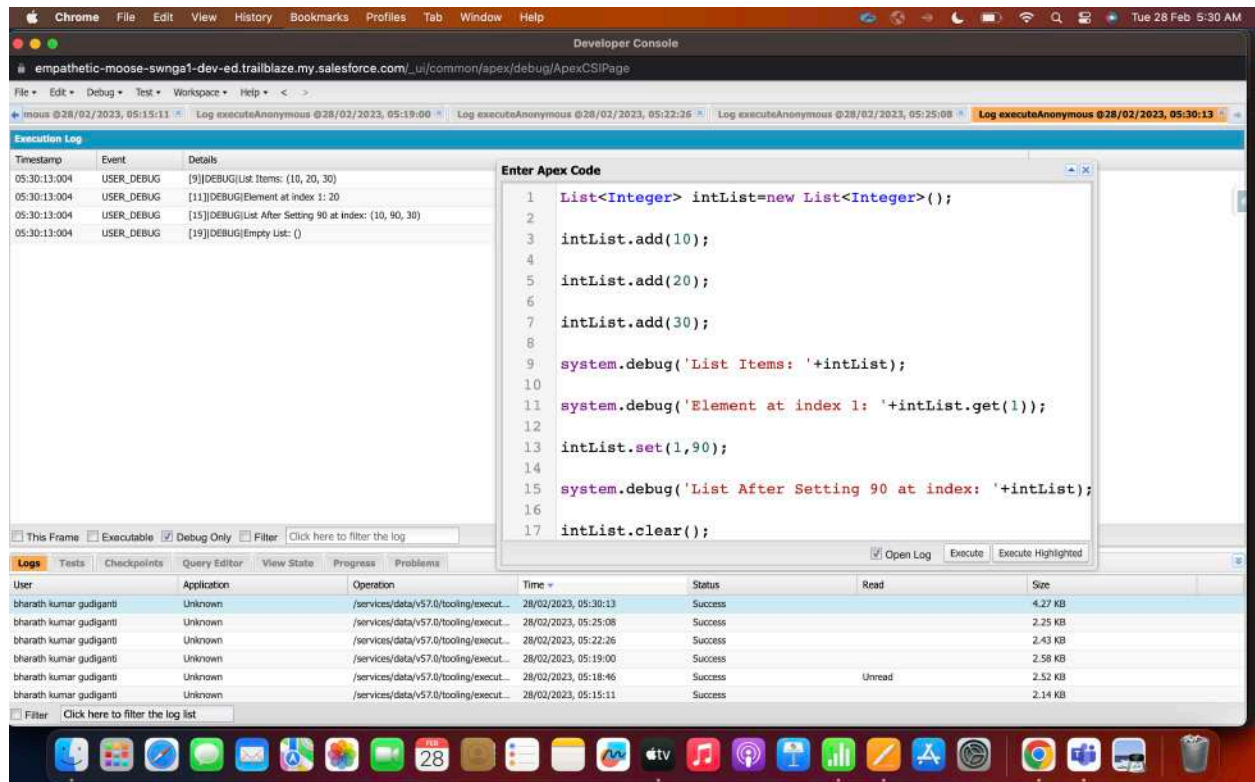
The 'Execution Log' shows one event:

Timestamp	Event	Details
05:25:08:004	USER_DEBUG	[2]DEBUG:size20

The 'Logs' table at the bottom shows the following data:

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:25:08	Success		2.25 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:22:26	Success		2.43 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:19:00	Success		2.58 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:18:46	Success	Unread	2.52 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:15:11	Success		2.14 KB

Defined a list and displayed the outputs using different methods



Printed numbers between 0 to 9

Developer Console

empathetic-moose-swngat1-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage

File • Edit • Debug • Test • Workspace • Help • < • >

Log executeAnonymous @28/02/2023, 05:19:00 Log executeAnonymous @28/02/2023, 05:22:26 Log executeAnonymous @28/02/2023, 05:25:08 Log executeAnonymous @28/02/2023, 05:30:13 Log executeAnonymous @28/02/2023, 05:32:10

Execution Log

Timestamp	Event	Details
05:32:10:003	USER_DEBUG	[7]DEBUG:Value of x: 0
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 1
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 2
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 3
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 4
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 5
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 6
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 7
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 8
05:32:10:004	USER_DEBUG	[7]DEBUG:Value of x: 9

Enter Apex Code

```
1 integer x=20;
2
3 while(x>12){
4
5     for(x=0;x<10; x=x+1){
6
7         system.debug('Value of x: '+x);
8
9     }
10
11 }
```

Open Log Execute Execute Highlighted

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:32:10	Success		5.69 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:32:00	Success	Unread	5.69 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:30:13	Success		4.27 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:25:08	Success		2.25 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:22:26	Success		2.43 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 05:19:00	Success		2.58 KB

Filter Click here to filter the log list

Exercise - 3

Mail - bharath k... code-1-1.docx word 16 17 18.doc ml. Salesforce Caps... Hands-On Orgs Recently Viewed Home | Salesforce Developer Console

empathetic-moose-swngat1-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage

File • Edit • Debug • Test • Workspace • Help • < • >

Log executeAnonymous @27/02/2023, 16:43:47

Execution Log

Timestamp	Event	Details
16:43:47:001	USER_INFO	[EXTERNAL][0052w0000FFVFE][h20421317@empathetic-moose-swngat1.com][GMT+05:30] India Standard Time (Asia/Kolkata) GMT+05:30
16:43:47:001	EXECUTION_ST...	[EXTERNAL][execute_anonymous_apex
16:43:47:001	CODE_UNIT_ST...	[1][myluckyNumber(Integer>false>false
16:43:47:002	VARIABLE_SCO...	[3][myunluckyNumber(Integer>false>false
16:43:47:002	HEAP_ALLOCATE	[79][Bytes:3
16:43:47:002	HEAP_ALLOCATE	[84][Bytes:152
16:43:47:002	HEAP_ALLOCATE	[399][Bytes:408
16:43:47:002	HEAP_ALLOCATE	[412][Bytes:408
16:43:47:002	HEAP_ALLOCATE	[520][Bytes:48
16:43:47:002	HEAP_ALLOCATE	[139][Bytes:6
16:43:47:002	HEAP_ALLOCATE	[EXTERNAL][Bytes:5
16:43:47:002	STATEMENT_EX...	[1]
16:43:47:002	STATEMENT_EX...	[1]
16:43:47:002	HEAP_ALLOCATE	[1][Bytes:4
16:43:47:003	VARIABLE_ASSI...	[1][myluckyNumber]15
16:43:47:003	STATEMENT_EX...	[3]
16:43:47:003	HEAP_ALLOCATE	[3][Bytes:4
16:43:47:003	VARIABLE_ASSI...	[3][myunluckyNumber?]7
16:43:47:003	STATEMENT_EX...	[5]

Enter Apex Code

```
1 Integer myluckyNumber = 15;
2
3 Integer myunluckyNumber = 7;
4
5 system.debug('Ans: '+(myluckyNumber != myunluckyNumber + 8))
```

Open Log Execute Execute Highlighted

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 16:43:47	Success		2.6 KB

Filter Click here to filter the log list

result.csv Show all

Exercise - 4

The screenshot displays the Salesforce Developer Console interface. At the top, the browser address bar shows the URL: `empathetic-moose-swnga1-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`. Below the browser window, the console has a menu bar with options: File, Edit, Debug, Test, Workspace, and Help. A status bar indicates the current log: `Log executeAnonymous @ 27/02/2023, 16:43:47` and a button to `Log executeAnonymous @ 27/02/2023, 16:57:16`.

The main area is divided into two sections. The top section, titled **Execution Log**, contains a table with the following data:

Timestamp	Event	Details
16:57:16:002	USER_DEBUG	[5][DEBUG]Ans: true

The bottom section is a code editor window titled **Enter Apex Code**. It contains the following Apex code:

```
1 Boolean isTrue = True;
2
3 Boolean isFalse = false;
4
5 system.debug('Ans: '+(isTrue || isFalse));
6
7
```

Below the code editor, there are buttons for `Open Log`, `Execute`, and `Execute Highlighted`.

At the bottom of the console, there is a filter bar with checkboxes for `This Frame`, `Executable`, `Debug Only`, and a `Filter` button. Below this is a table with the following columns: **Logs**, **Tests**, **Checkpoints**, **Query Editor**, **View State**, **Progress**, **Problems**, **User**, **Application**, **Operation**, **Time**, **Status**, **Read**, and **Size**.

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/executeAnonymous	27/02/2023, 16:57:16	Success		2.58 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/executeAnonymous	27/02/2023, 16:53:12	Success		2.72 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/executeAnonymous	27/02/2023, 16:50:29	Success		2.54 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/executeAnonymous	27/02/2023, 16:43:47	Success		2.6 KB

At the bottom of the console, there is a `Filter` button and a link to `Click here to filter the log list`.

Ex-5

The screenshot shows the Salesforce Developer Console interface. At the top, the browser tabs include 'Mail - bharath k...', 'code-1-1.docx', 'word 16 17 18.d...', 'Salesforce Caps...', 'Hands-On Orgs', 'Recently Viewed', 'Home | Salesforce', and 'Developer Console'. The address bar shows the URL: `empathetic-moose-swngs1-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`. The 'Execution Log' tab is active, displaying a table with columns: Timestamp, Event, and Details. The log entry shows: Timestamp: 16:53:12:002, Event: USER_DEBUG, Details: [5]DEBUG:Ans; true.

An 'Enter Apex Code' dialog box is open, showing the following code:

```
1 Date today = Date.today();
2
3 Date tomorrow = Date.today().addDays(1);
4
5 system.debug('Ans; '+(today != tomorrow));
6
7
8
9
```

At the bottom, the 'Logs' tab is active, showing a table with columns: User, Application, Operation, Time, Status, Read, and Size. The log entry shows: User: bharath kumar gudiganti, Application: Unknown, Operation: /services/data/v57.0/tooling/execute..., Time: 27/02/2023, 16:53:12, Status: Success, Read: 2.72 KB.

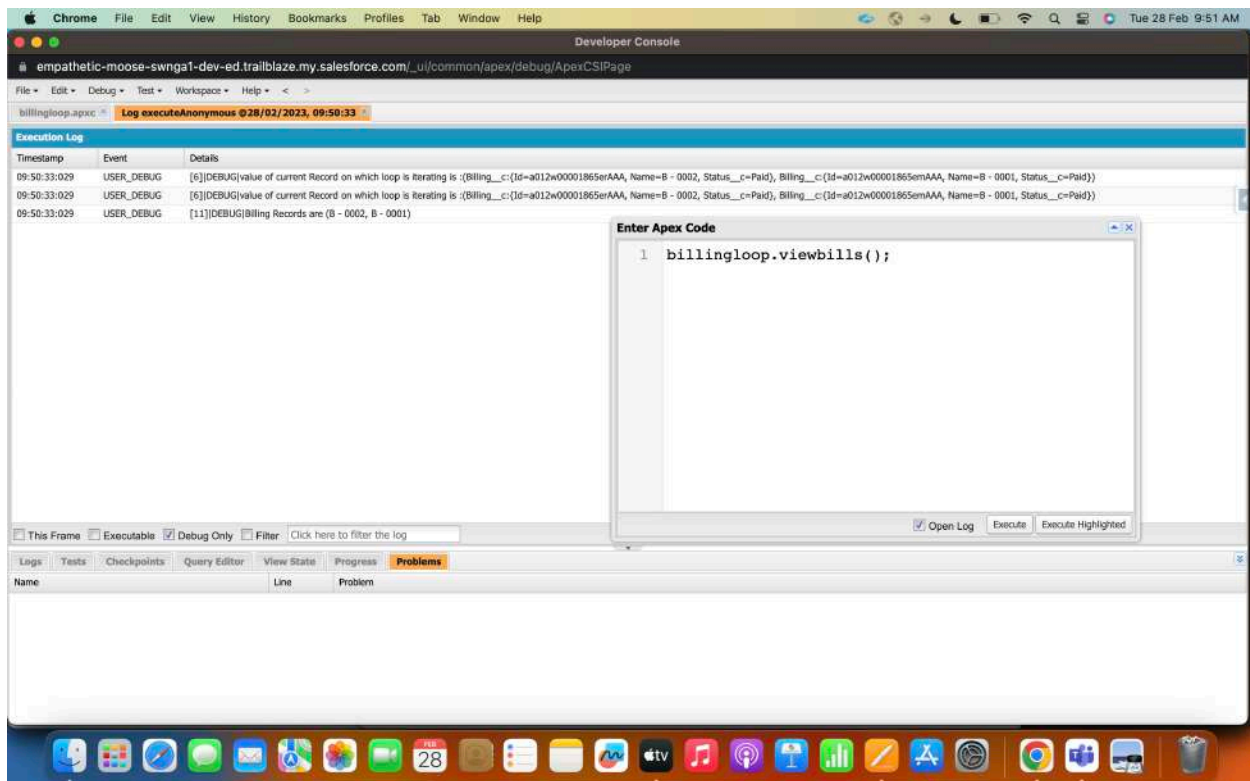
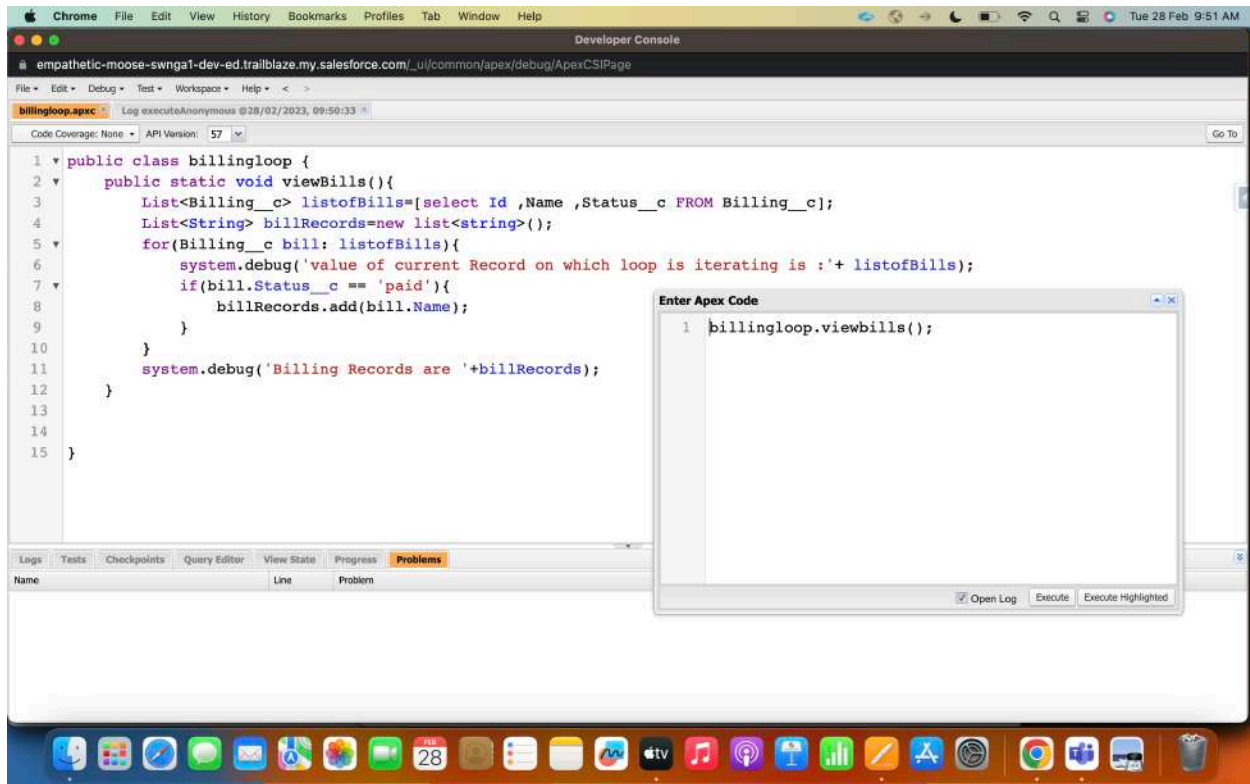
Exercise - 6 Program for finding the grade based on score

The screenshot shows the Salesforce Developer Console interface. At the top, the browser tabs include 'Mail - bharath k...', 'code-1-1.docx', 'word 16 17 18.d...', 'Salesforce Caps...', 'Hands-On Orgs', 'Recently Viewed', 'Home | Salesforce', and 'Developer Console'. The address bar shows the URL: `empathetic-moose-swngs1-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`. The 'Execution Log' tab is active, displaying a table with columns: Timestamp, Event, and Details. The log entry shows: Timestamp: 17:03:42:004, Event: USER_DEBUG, Details: [9]DEBUG:Grade: A.

An 'Enter Apex Code' dialog box is open, showing the following code:

```
1 integer score = 90;
2
3 if(score==100){
4     system.debug('Grade: A+');
5 }
6 else if(score>=90){
7     system.debug('Grade: A');
8 }
9 else if(score>=80){
10    system.debug('Grade: B');
11 }
12
13
```

At the bottom, the 'Logs' tab is active, showing a table with columns: User, Application, Operation, Time, Status, Read, and Size. The log entry shows: User: bharath kumar gudiganti, Application: Unknown, Operation: /services/data/v57.0/tooling/execute..., Time: 27/02/2023, 17:03:42, Status: Success, Read: 2.71 KB.



Exercise - 8

Created a Class to demonstrate constants in Apex

The screenshot shows the Salesforce Developer Console with the following Apex code in `DiscountClass.apex`:

```
1 public class DiscountClass {
2     Decimal regularDiscount = 1.56;
3     Decimal finalPrice;
4     public Decimal calculateDiscount(Integer price){
5         finalPrice = price - price*regularDiscount;
6         System.debug('finalPrice : '+finalPrice);
7         return finalPrice;
8     }
9 }
```

An "Enter Apex Code" dialog box is open, showing the following test code:

```
1 DiscountClass x= new DiscountClass();
2 x.calculateDiscount(200);
```

The "Logs" tab at the bottom displays a table of execution logs:

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 17:06:34	Success		2.02 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 17:05:59	Success		2.02 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 17:03:42	Success		2.71 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 17:03:19	Success	Unread	2.71 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 17:01:31	Success		2.72 KB
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	27/02/2023, 16:59:12	Success		2.64 KB

9

The screenshot shows the Salesforce Developer Console with the following Apex code in `PremiumCustomer.apex`:

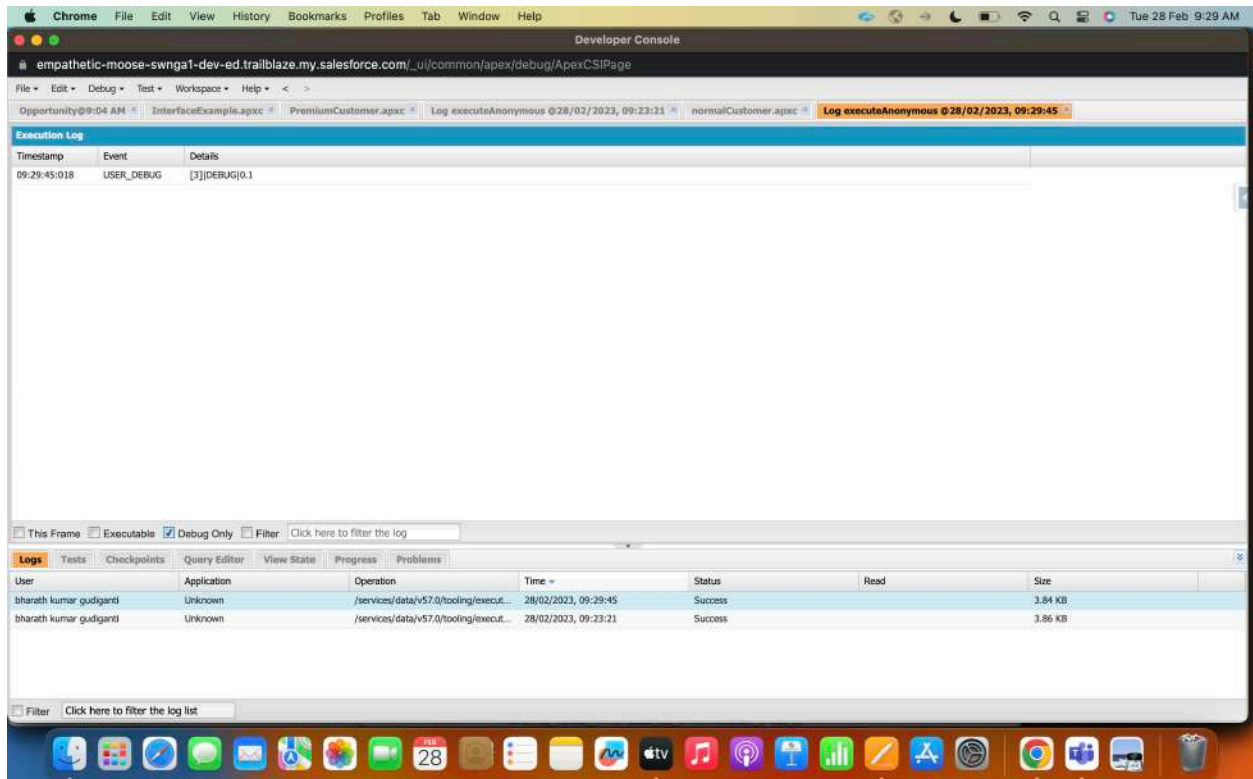
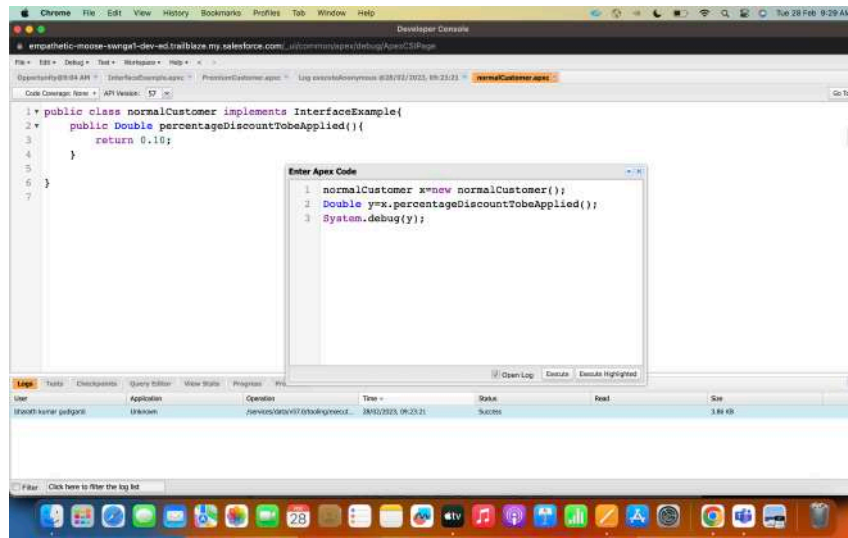
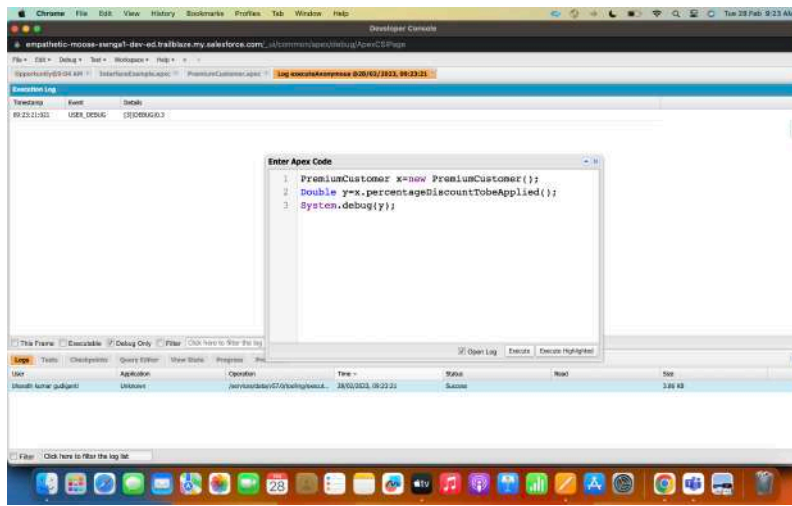
```
1 public class PremiumCustomer implements InterfaceExample{
2     public Double percentageDiscountToBeApplied(){
3         return 0.30;
4     }
5 }
6 }
```

An "Enter Apex Code" dialog box is open, showing the following test code:

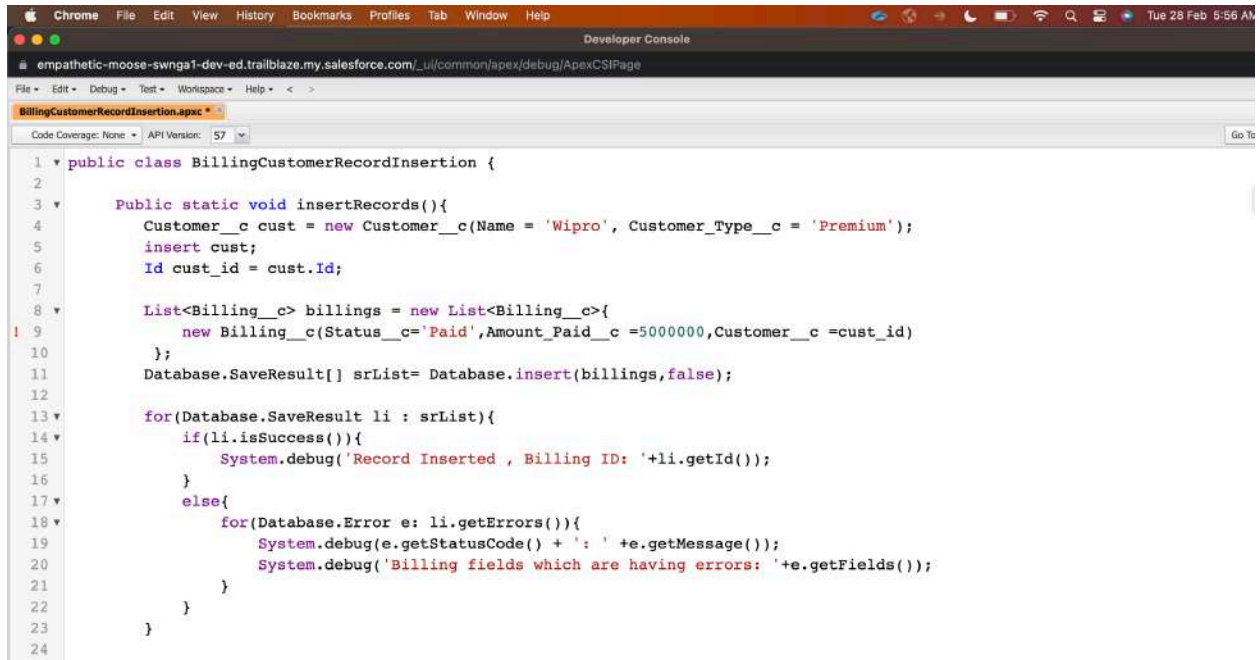
```
1 PremiumCustomer x=new PremiumCustomer();
2 Double y=x.percentageDiscountToBeApplied();
3 System.debug(y);
```

The "Logs" tab at the bottom displays a table of execution logs:

User	Application	Operation	Time	Status	Read	Size
bharath kumar gudiganti	Unknown	/services/data/v57.0/tooling/execute...	28/02/2023, 09:23:21	Success		3.06 KB



EXERCISE -10



```
1 public class BillingCustomerRecordInsertion {
2
3     Public static void insertRecords(){
4         Customer__c cust = new Customer__c(Name = 'Wipro', Customer_Type__c = 'Premium');
5         insert cust;
6         Id cust_id = cust.Id;
7
8         List<Billing__c> billings = new List<Billing__c>{
9             new Billing__c(Status__c='Paid',Amount_Paid__c =5000000,Customer__c =cust_id)
10        };
11        Database.SaveResult[] srList= Database.insert(billings,false);
12
13        for(Database.SaveResult li : srList){
14            if(li.isSuccess()){
15                System.debug('Record Inserted , Billing ID: '+li.getId());
16            }
17            else{
18                for(Database.Error e: li.getErrors()){
19                    System.debug(e.getStatusCode() + ': ' +e.getMessage());
20                    System.debug('Billing fields which are having errors: '+e.getFields());
21                }
22            }
23        }
24    }
```

Exercise-11

Chrome File Edit View History Bookmarks Profiles Tab Window Help

Developer Console

empathetic-moose-swngal-dev-ed.trilblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage

File Edit Debug Test Workspace Help

BillingCustomerRecordInsertion.apex Opportunity@6:44 AM

SELECT ID, Amount, StageName, AccountId, Account.Website, Account.Industry FROM opportunity Where Account.Industry= 'Energy' AND Account.AnnualRevenue>5000

Query Results - Total Rows: 10

ID	Amount	StageName	AccountId	Account.Website	Account.Industry
0062w00000KGSJAAX	125000	Negotiation/Review	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSNAAX	270000	Proposal/Price Quote	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSJAAX	120000	Closed Won	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSWAAX	270000	Negotiation/Review	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSZAAX	270000	Closed Won	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSZAAH	915000	Closed Won	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSJAAX	235000	Closed Won	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSZAAH	440000	Closed Won	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSJAAX	120000	Closed Won	0012w00001MUJEDvAAP	http://www.uos.com	Energy
0062w00000KGSZAAH	675000	Needs Analysis	0012w00001MUJEDvAAP	http://www.uos.com	Energy

Query Grid: Save Rows Insert Row Delete Row Refresh Grid

Access in Salesforce: Create New Open Detail Page Edit Page

Logs, Tests, and Problems

Mac OS X dock with various application icons.

12

Chrome File Edit View History Bookmarks Profiles Tab Window Help

Developer Console

empathetic-moose-swngal-dev-ed.trilblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage

File Edit Debug Test Workspace Help

CustomerTrigger.apex CustomerTriggerTest.apex

Code Coverage: All Tests 100% API Version: 57

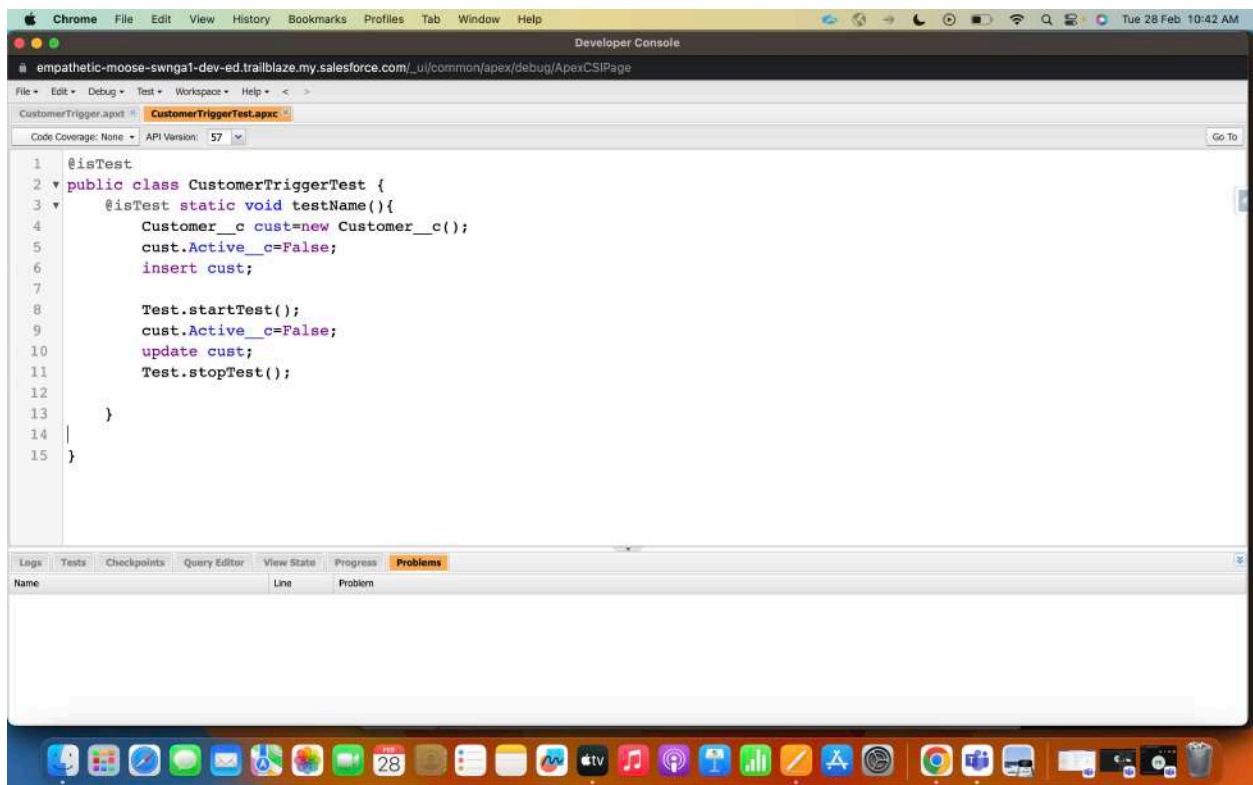
```
1 trigger CustomerTrigger on Customer__c (before insert) {
2     List<Billing__c> BillingList = new List<Billing__c>();
3
4     for (Customer__c objCustomer: Trigger.new)
5     {
6
7         if (objCustomer.Active__c == False)
8         {
9             Billing__c objbill = new Billing__c();
10            objbill.Status__c = 'Paid';
11            objbill.Amount_Paid__c = 1000000;
12            BillingList.add(objbill);
13
14        }
15    }
16    insert BillingList;
17 }
18
19 }
```

Logs Tests Checkpoints Query Editor View State Progress Problems

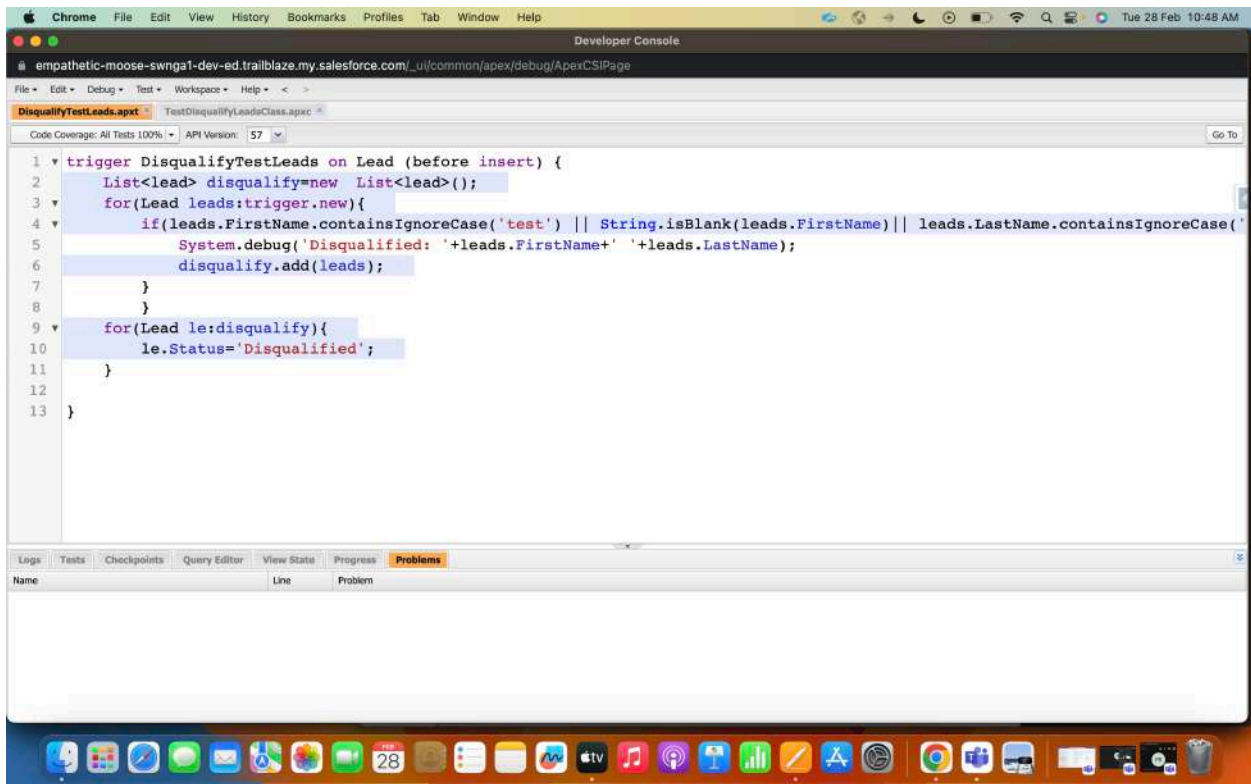
None

Mac OS X dock with various application icons.

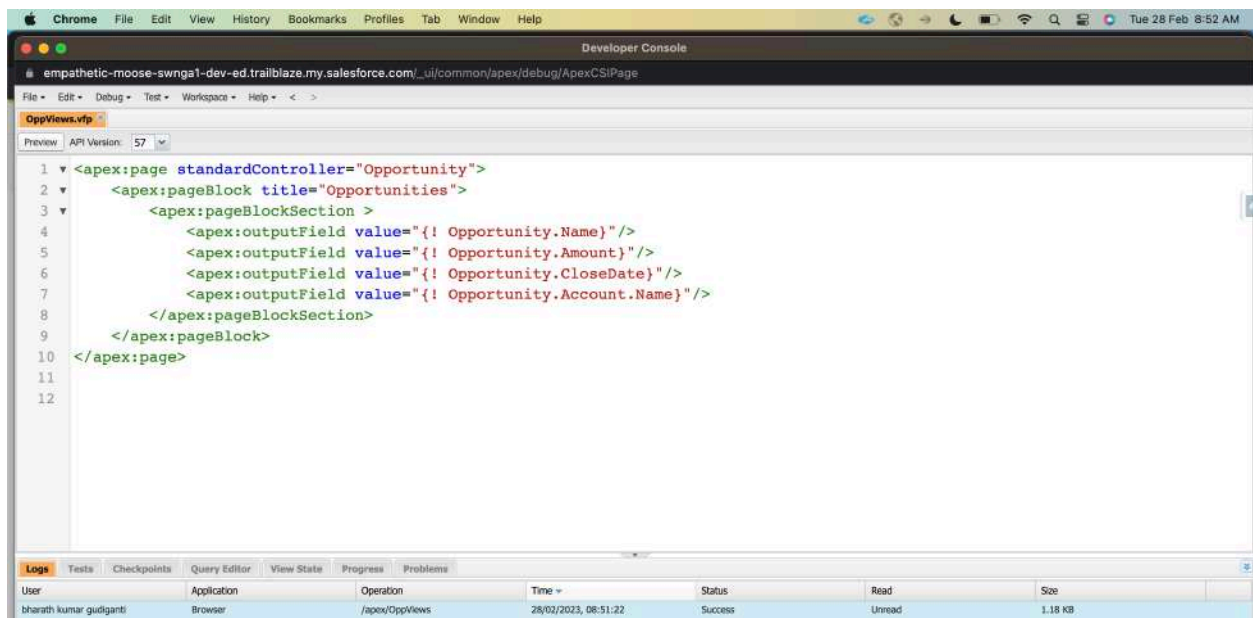
13

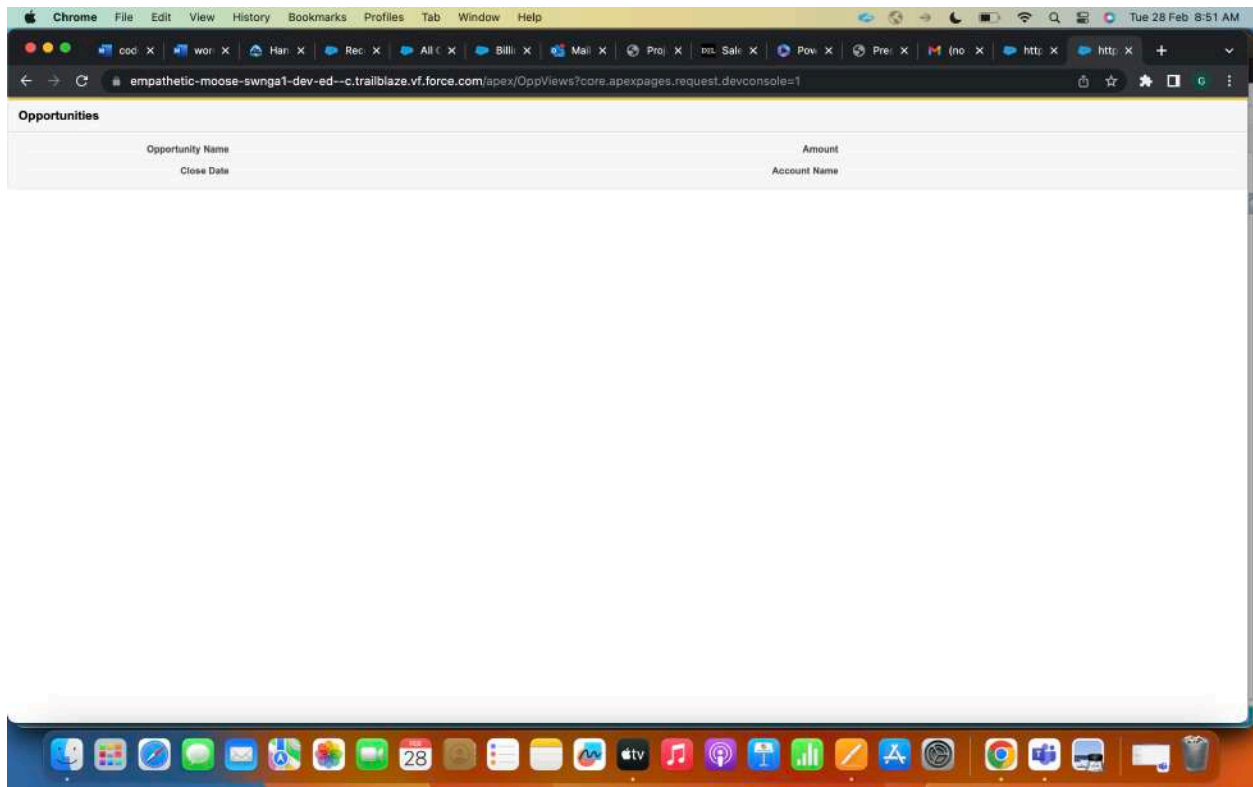


14

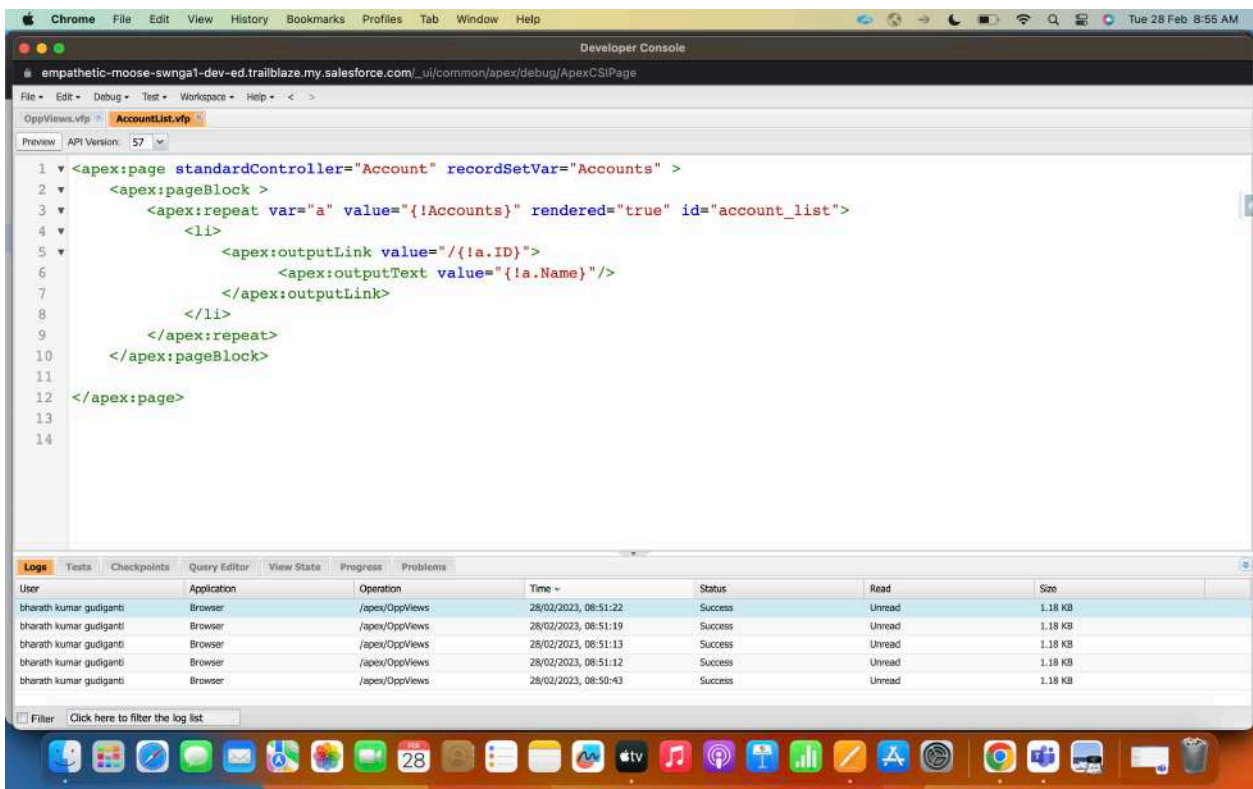


16

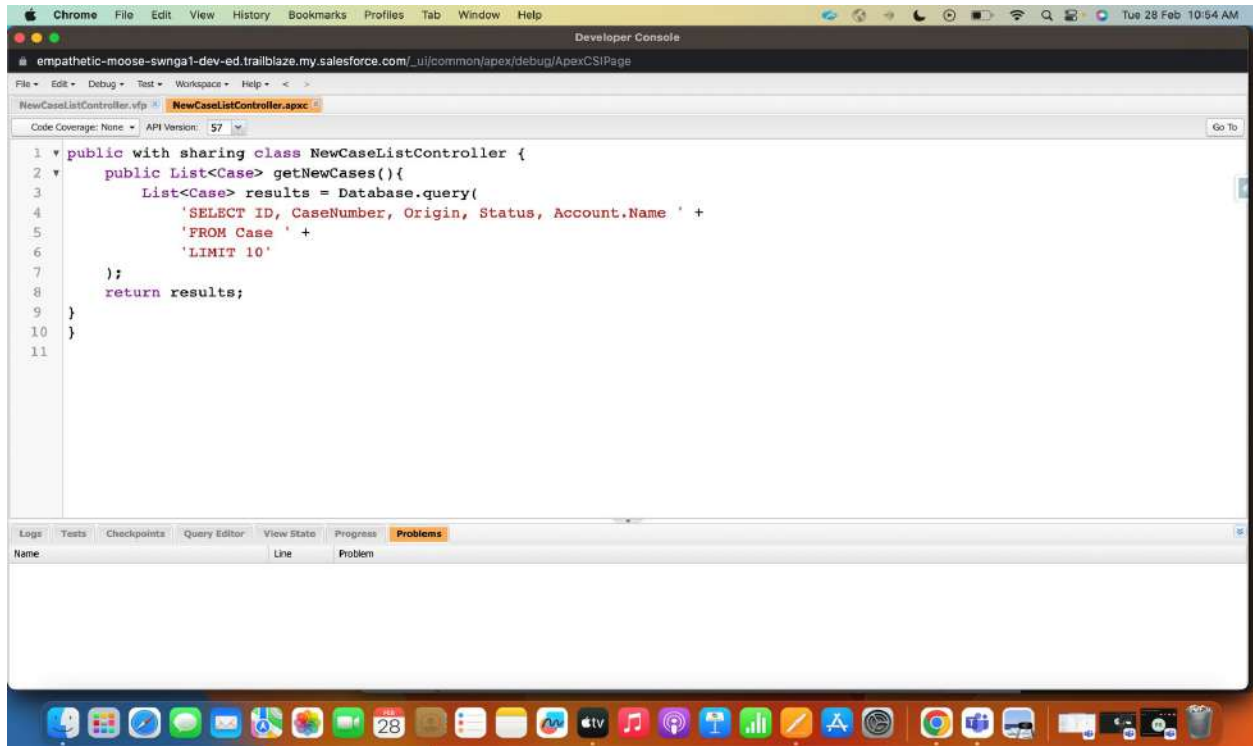
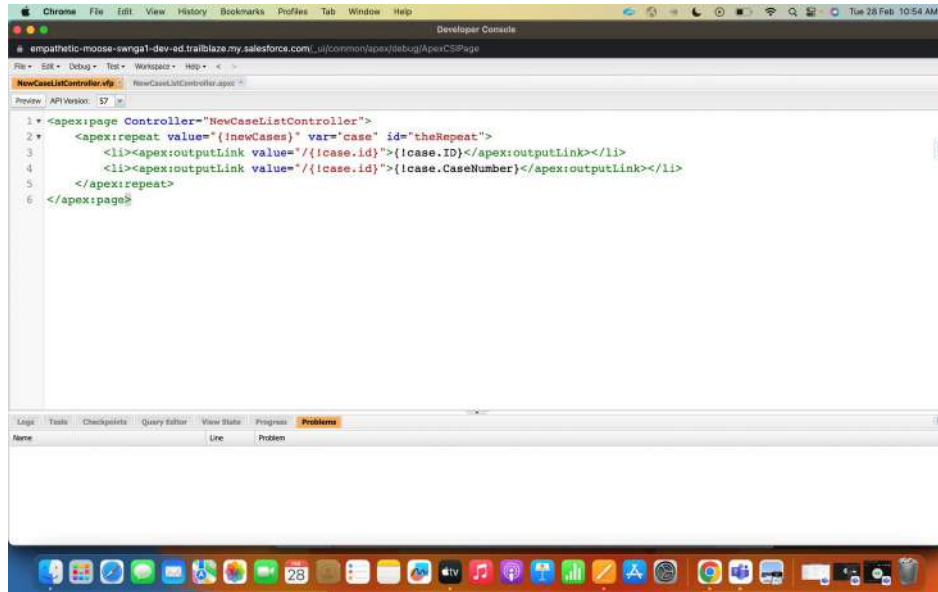


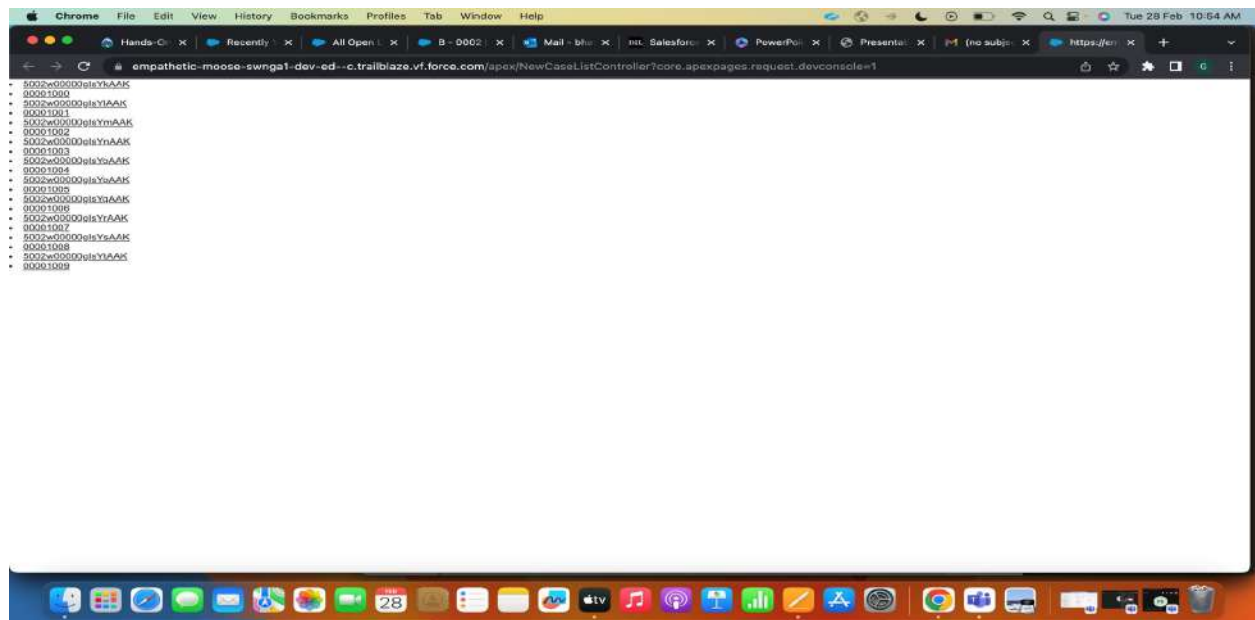


17









References

1. [Manage sales - Salesforce IN](#)
2. [Salesforce - ADX201 Administrative Essentials for New Admins in Lightning Experience \(SFADX201\) \(qa.com\)](#)
3. [Understand the Salesforce Architecture Unit | Salesforce Trailhead](#)