



Capstone Project Report  
On  
**“Salesforce application”**

Submitted by:

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**GitHub link: <https://github.com/Siddhu9491/Capstonegit.git>**

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## **Abstract**

The Travel Approval App for Salesforce is a comprehensive solution designed to streamline the travel approval process for sales teams. With this app, sales representatives can quickly and easily submit travel requests, including details on travel dates, destinations, and budgets, all from within the Salesforce platform. The app automates the approval process, ensuring that requests are routed to the appropriate approvers based on pre-defined rules and workflows. The app also provides realtime visibility into travel requests and approvals, helping sales managers make informed decisions about their teams' travel plans. Overall, the Travel Approval App for Salesforce enables sales teams to save time, increase efficiency, and improve collaboration, all while ensuring that travel is managed in a compliant and cost-effective manner.

## **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:

**1.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.

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

**3. 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.

**4. 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.

**5. 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

## 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

## Exercise - 1

### Step – 1

The screenshot shows the Salesforce Chatter interface for the 'Travel App' community. The left sidebar includes sections for 'What I Follow', 'To Me', 'Bookmarked', 'Company Highlights' (which is selected), and 'My Drafts'. Under 'STREAMS', it says 'You don't have any streams yet. Try creating one!'. Under 'RECENT GROUPS', there is a link to 'Edge Communications...'. The main feed area shows a post from user TA-00001 (@Eric Executive) asking which department to associate a travel request with. A comment from user Hema Kumar Undrajavarapu (@Hema Kumar Undrajavarapu) suggests Technology as the correct department. The Einstein Recommendations sidebar on the right suggests users 'Eric Executive' (Your manager) and 'Development User' (Joined in the last month).

## Step – 2

### Create Department Custom Object

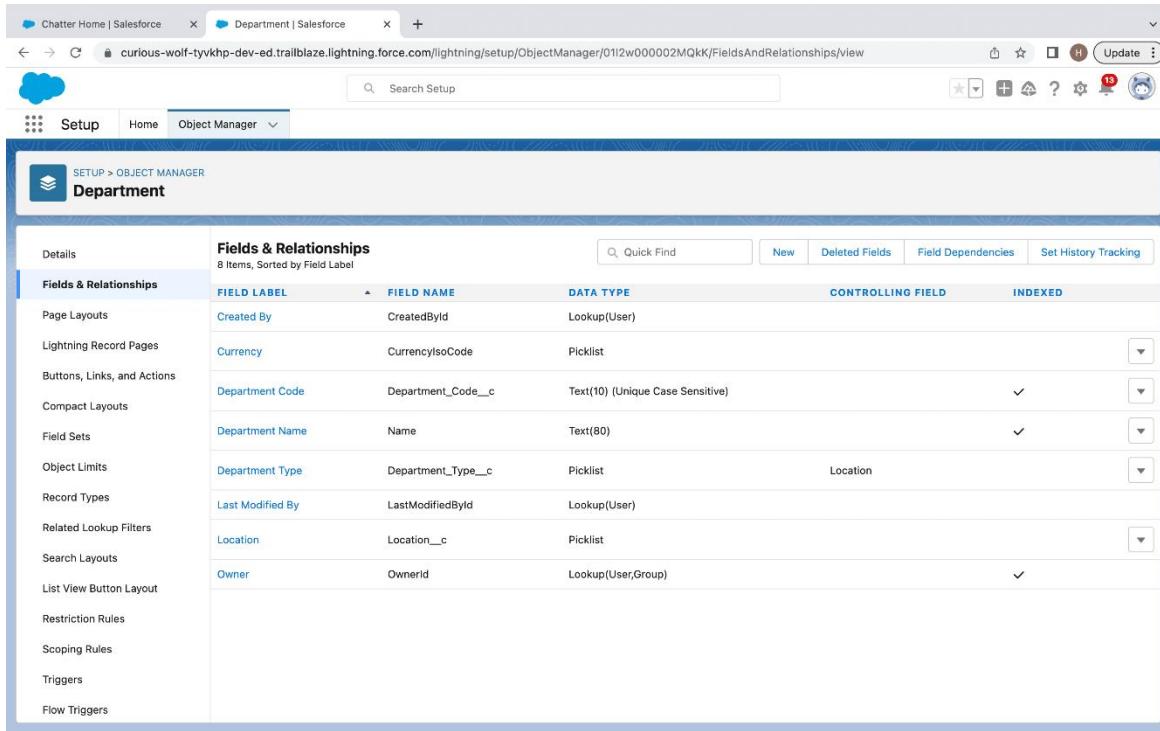
The screenshot shows the Salesforce Setup interface with the 'Object Manager' tab selected. A new object named 'Department' is being created. The 'Details' section includes fields for API Name ('Department\_\_c'), Singular Label ('Department'), and Plural Label ('Departments'). Other settings like 'Enable Reports' and 'Track Activities' are checked. The left sidebar lists various configuration options for the object.

### Create New Custom Object Tab

This screenshot is identical to the one above, showing the creation of a new custom object named 'Department'. The 'Details' section includes fields for API Name ('Department\_\_c'), Singular Label ('Department'), and Plural Label ('Departments'). Other settings like 'Enable Reports' and 'Track Activities' are checked. The left sidebar lists various configuration options for the object.

## Step – 3

### Created all the required Custom Fields



The screenshot shows the Salesforce Object Manager interface for the 'Department' object. The left sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, etc. The main content area displays a table titled 'Fields & Relationships' with 8 items, sorted by Field Label. The table columns are FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The data is as follows:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Currency	CurrencyIsoCode	Picklist		
Department Code	Department_Code__c	Text(10) (Unique Case Sensitive)		
Department Name	Name	Text(80)		
Department Type	Department_Type__c	Picklist	Location	
Last Modified By	LastModifiedById	Lookup(User)		
Location	Location__c	Picklist		
Owner	OwnerId	Lookup(User,Group)		

### Created Field Dependency

The screenshot shows the Salesforce Setup interface with the URL [curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01l2w000002MQkK/FieldsAndRelationships/editDependency?contro...](https://curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01l2w000002MQkK/FieldsAndRelationships/editDependency?contro...). The page title is "Edit Field Dependency" for the "Department" object. The left sidebar lists various setup categories like Details, Fields & Relationships, Page Layouts, etc. The main content area shows a table with columns "Controlling Field" and "Location". The "Controlling Field" dropdown is set to "Department Type". The "Location" dropdown has several options: Kolkata, Banking, Finance, Education, Energy, and IT. A legend indicates that yellow cells represent "Included Value" and grey cells represent "Excluded Value". Below the table, there are two sections for "Location" and "Department Type" with similar filtering options. The top right corner shows the user profile of "Hema Kumar Undrajavarapu" and the "DISPLAY DENSITY" settings.

## Step – 4

Created the required Travel Approval Object

The screenshot shows the Salesforce Setup interface with the URL [curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01l2w000002MQmV/Details/view](https://curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01l2w000002MQmV/Details/view). The page title is "Travel Approval". The left sidebar lists various setup categories like Details, Fields & Relationships, Page Layouts, etc. The main content area shows the "Details" tab with fields for "Description" (set to "Travel Approval"), "API Name" (set to "Travel\_Approval\_\_c"), and "Custom" (checkbox checked). Other fields include "Singular Label" (set to "Travel Approval") and "Plural Label" (set to "Travel Approvals"). On the right side, there is a list of settings under "OPTIONS": "Enable Reports" (checkbox checked), "Track Activities" (checkbox checked), "Track Field History" (checkbox checked), "Deployment Status" (set to "Deployed"), "Help Settings" (link to "Standard salesforce.com Help Window"), and "Standard salesforce.com Help Window". The top right corner shows the user profile of "Hema Kumar Undrajavarapu" and the "DISPLAY DENSITY" settings.

Created the required Fields

**Fields & Relationships**

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	OPTIONS
Created By	CreatedById	Lookup(User)		
Currency	CurrencyIsoCode	Picklist		
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 (SUM Expense Item)		
Travel Approval #	Name	Auto Number		
Trip End Date	Trip_End_Date__c	Date		
Trip Start Date	Trip_Start_Date__c	Date		

## After testing the App

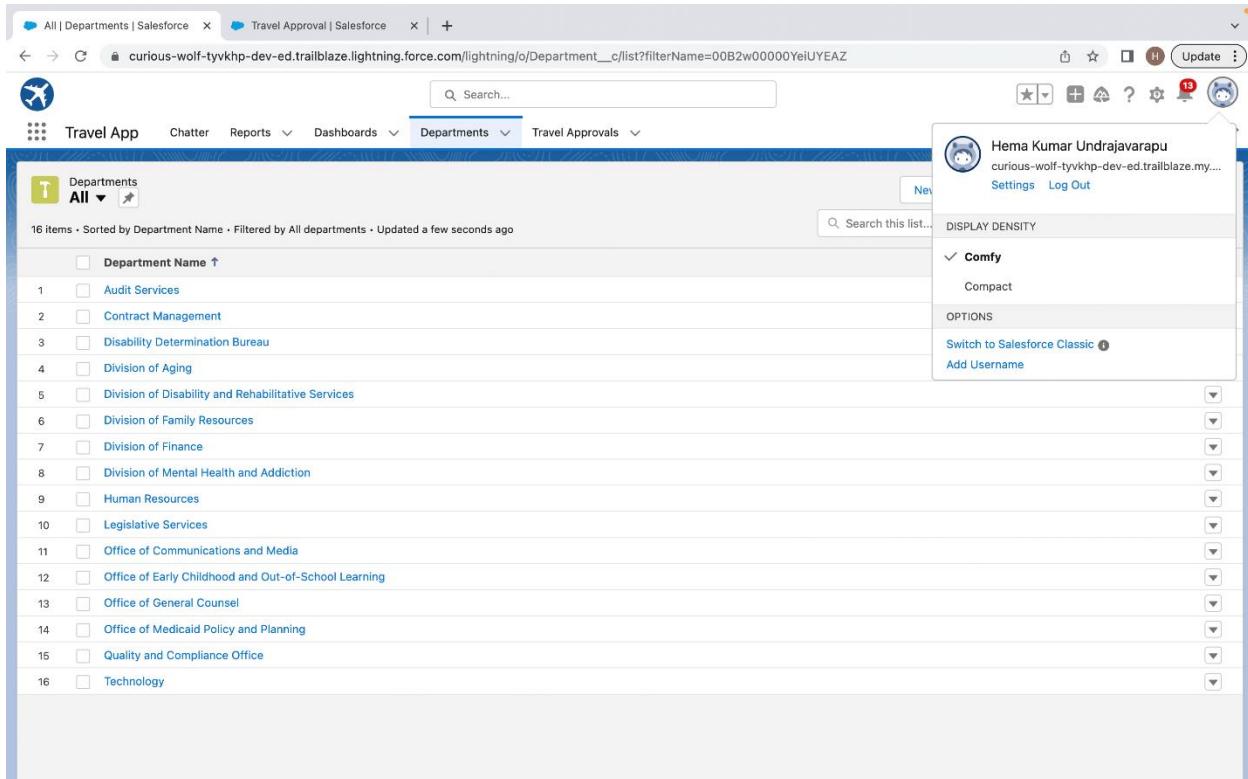
**Travel Approval**  
TA-00001

**Related** **Details**

Travel Approval #	TA-00001	Owner	Hema Kumar Undrajavarapu
Status	Rejected	Currency	USD - U.S. Dollar
Total Expenses	USD 1,310.00	Department	Technology
Status Indicator	?		
<b>Trip Info</b>			
Purpose of Trip	Attend Dreamforce	Out-of-State	<input checked="" type="checkbox"/>
Trip Start Date	2/1/2023	Destination State	CA
Trip End Date	2/28/2023	Last Modified By	Hema Kumar Undrajavarapu, 2/15/2023, 3:12 AM
Created By	Hema Kumar Undrajavarapu		2/15/2023, 6:46 AM

## Step – 5

### Imported Departments.CSV file using Data Import Wizard



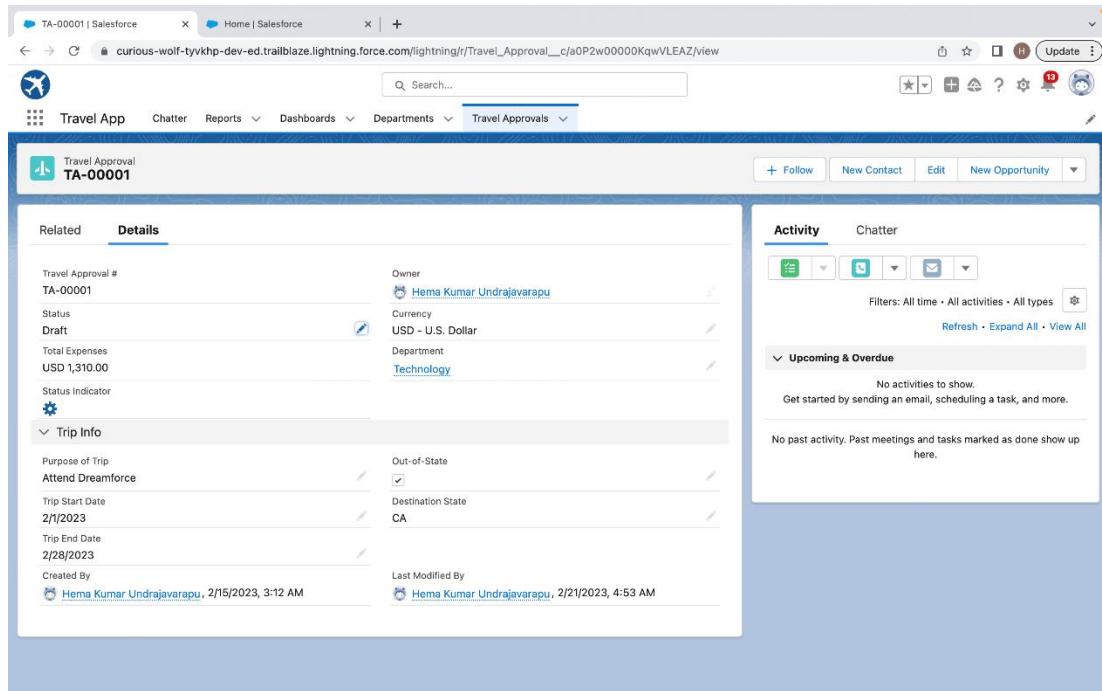
The screenshot shows the Salesforce Lightning interface for the 'Travel App'. The top navigation bar includes links for 'All | Departments | Salesforce', 'Travel Approval | Salesforce', and other tabs like 'Chatter', 'Reports', 'Dashboards', 'Departments', and 'Travel Approvals'. The main content area displays a list titled 'Departments' with a 'All' filter selected. The list contains 16 items, each with a checkbox and a department name. The names listed are: Audit Services, Contract Management, Disability Determination Bureau, Division of Aging, Division of Disability and Rehabilitative Services, Division of Family Resources, Division of Finance, Division of Mental Health and Addiction, Human Resources, Legislative Services, Office of Communications and Media, Office of Early Childhood and Out-of-School Learning, Office of General Counsel, Office of Medicaid Policy and Planning, Quality and Compliance Office, and Technology. A search bar at the top right says 'Search...'. On the right side, there's a user profile for 'Hema Kumar Undrajavarapu' with options to 'Update', 'Settings', and 'Log Out'. Below the user info, there's a 'DISPLAY DENSITY' dropdown set to 'Comfy', with 'Compact' as an option. There are also buttons for 'OPTIONS', 'Switch to Salesforce Classic', and 'Add Username'.

Index	Department Name
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
16	Technology

## Exercise – 2

### Step – 1

Created Travel Approval record



The screenshot shows a Salesforce Lightning interface for a Travel Approval record. The record ID is TA-00001. The page has two main sections: 'Details' and 'Activity'.

**Details Section:**

- Travel Approval #:** TA-00001
- Status:** Draft
- Total Expenses:** USD 1,310.00
- Status Indicator:** (gear icon)
- Trip Info:**
  - Purpose of Trip: Attend Dreamforce
  - Trip Start Date: 2/1/2023
  - Trip End Date: 2/28/2023
  - Created By: Hema Kumar Undrajavarapu, 2/15/2023, 3:12 AM
- Owner:** Hema Kumar Undrajavarapu
- Currency:** USD - U.S. Dollar
- Department:** Technology
- Out-of-State:** Checked
- Destination State:** CA

**Activity Section:**

- Chatter:** No activities to show. Get started by sending an email, scheduling a task, and more.
- Filters:** All time • All activities • All types
- Upcoming & Overdue:** No past activity. Past meetings and tasks marked as done show up here.

## Step – 2

### Created Expense Item Custom Object

The screenshot shows the Salesforce Object Manager interface. The top navigation bar includes tabs for 'TA-00001 | Salesforce' and 'Expense Item | Salesforce'. The main title is 'Expense Item'. The left sidebar lists various configuration options under 'Details & Relationships' such as 'Fields & Relationships', 'Page Layouts', 'Lightning Record Pages', 'Buttons, Links, and Actions', 'Compact Layouts', 'Field Sets', 'Object Limits', 'Record Types', 'Related Lookup Filters', 'Restriction Rules', 'Scoping Rules', 'Triggers', 'Flow Triggers', and 'Validation Rules'. The right panel displays the 'Details' section for the 'Expense Item' object. It shows the API Name as 'Expense\_Item\_\_c', the Singular Label as 'Expense Item', and the Plural Label as 'Expense Items'. A context menu is open on the right side, showing options like 'DISPLAY DENSITY' (set to 'Comfy'), 'OPTIONS' (with 'Switch to Salesforce Classic' and 'Add Username' buttons), and user information for 'Hema Kumar Undrajavarapu'.

## Step – 3

### Created Custom Fields

The screenshot shows the Salesforce Object Manager interface for the 'Expense Item' object. The left sidebar lists various setup categories like Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, etc. The main content area is titled 'Fields & Relationships' and displays a table of fields:

FIELD LABEL	FIELD NAME	DATA TYPE
Amount	Amount__c	Currency(16, 2)
Created By	CreatedById	Lookup(User)
Currency	CurrencyIsoCode	Picklist
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)

A context menu is open on the right side of the page, showing options like 'Comfy' (selected), 'Compact', 'Switch to Salesforce Classic', and 'Add Username'.

## Step – 4

### Created Records

The screenshot shows the 'Travel App' interface with a navigation bar for Chatter, Reports, Departments, and Travel Approvals. The main content area displays the details of a newly created 'Expense Item' record, identified by the ID 'E-00001'. The record's details are:

Related	Details
Expense Item Number	E-00001
Amount	USD 450.00
Expense Type	Airfare
Travel Approval	TA-00001
Created By	Hema Kumar Undrajavarapu, 2/15/2023, 3:13 AM
Last Modified By	Hema Kumar Undrajavarapu, 2/15/2023, 3:13 AM

A context menu is open on the right side of the page, showing options like 'Comfy' (selected), 'Compact', 'Switch to Salesforce Classic', and 'Add Username'.

The screenshot shows a Salesforce Lightning page for an Expense Item. The record ID is E-00002. The details include:

- Expense Item Number: E-00002
- Currency: USD - U.S. Dollar
- Amount: USD 870.00
- Expense Type: Hotel
- Travel Approval: TA-00001
- Created By: Hema Kumar Undrajavarapu, 2/15/2023, 3:13 AM
- Last Modified By: Hema Kumar Undrajavarapu, 2/21/2023, 5:10 AM

A context menu is open for the user Hema Kumar Undrajavarapu, showing options like "DISPLAY DENSITY" (set to Comfy), "OPTIONS" (Switch to Salesforce Classic, Add Username), and "Log Out".

## Created User Eric

The screenshot shows the Salesforce Setup interface under the Users section. A user named "Eric Executive" is selected. The User Detail page includes the following information:

Name	Eric Executive	Role	CEO
Alias	exec	User License	System Administrator
Email	sdithu333@gmail.com	Profile	Active
Username	eeexec@wiprhe.com	Marketing User	<input type="checkbox"/>
Nickname	eric.exec	Offline User	<input type="checkbox"/>
Title		Knowledge User	<input type="checkbox"/>
Company		Flow User	<input type="checkbox"/>
Department		Service Cloud User	<input type="checkbox"/>
Division		Site.com Contributor User	<input type="checkbox"/>
Address		Site.com Publisher User	<input type="checkbox"/>
Time Zone	(GMT-07:00) Mountain Standard Time (America/Phoenix)	WDC User	<input type="checkbox"/>
Locale	English (United States)	Mobile Push Registrations	<input type="checkbox"/> View
Language	English	Data.com User Type	<input type="checkbox"/> i
Currency	INR - Indian Rupee	Accessibility Mode (Classic Only)	<input type="checkbox"/> i
Delegated Approver	Manager	Debug Mode	<input type="checkbox"/> i
Manager	Only if I am an approver	High-Contrast Palette on Charts	<input type="checkbox"/> i
Receive Approval Request Email		Load Lightning Pages While Scrolling	<input checked="" type="checkbox"/> ✓ i
Federation ID		Send Apex Warning Emails	<input type="checkbox"/> i
App Registration: One-Time Password Authenticator		Salesforce CRM Content User	<input checked="" type="checkbox"/> ✓
App Registration: Salesforce Authenticator		Receive Salesforce CRM Content Small Alerts	<input checked="" type="checkbox"/> ✓
Security Key (U2F or WebAuthn)		Receive Salesforce CRM Content Alerts as Daily Digest	<input checked="" type="checkbox"/> ✓
Lightning Login		Make Setup My Default Landing Page	<input type="checkbox"/> i
Temporary Verification Code (Expires in 1 to 24 Hours)	[Generate] i	Quick Access Menu	<input checked="" type="checkbox"/> ✓

Step – 6

Added Eric Executive as manager to System Administrator

The screenshot shows the Salesforce Setup interface. On the left, the navigation pane is open with 'Users' selected. In the center, a user record for 'eric.exec' is displayed with fields like Email, Username, Nickname, Title, Company, Department, Division, Address, Time Zone, Locale, Language, Currency, Delegated Approver, Manager, Federation ID, App Registration: One-Time Password Authenticator, App Registration: Salesforce Authenticator, Security Key (2FA or WebAuthn), Lightning Login, and Temporary Verification Code. On the right, a sidebar titled 'DISPLAY DENSITY' has 'Comfy' checked. Under 'OPTIONS', several checkboxes are listed: 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, High-Contrast Palette on Charts, Lead Lightning Pages While Scrolling, Send Apex Warning Emails, Salesforce CRM Content User, Receive Salesforce CRM Content Email Alerts, Receive Salesforce CRM Content Alerts as Daily Digest, Make Setup My Default Landing Page, Quick Access Menu, Development Mode, Show View State in Development Mode, Cache Diagnostics, Allow Forecasting, Call Center, Phone, and Fax.

## Step – 7

### Customized the Travel Approval Default Search

The screenshot shows the Salesforce Setup interface. On the left, the navigation pane is open with 'Search Layouts' selected. In the center, the 'Edit Search Layout' page for 'Travel Approval Search Results' is displayed. It shows a list of 'Available Fields' on the left and 'Selected Fields' on the right. Available fields include Record ID, Out-of-State, Status Indicator, Total Expenses, Currency, Owner Alias, Owner First Name, Owner Last Name, Created By Alias, and Created Date. Selected fields include Travel Approval #, Description, Destination State, Purpose of Trip, Status, Trip End Date, and Trip Start Date. Below the field lists are sections for 'Standard Buttons' (none listed) and 'Custom Buttons' (a link to 'Click here to create a new custom list button'). At the bottom are 'Save' and 'Cancel' buttons. On the right, a sidebar titled 'DISPLAY DENSITY' has 'Comfy' checked. Under 'OPTIONS', several checkboxes are listed: 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, High-Contrast Palette on Charts, Lead Lightning Pages While Scrolling, Send Apex Warning Emails, Salesforce CRM Content User, Receive Salesforce CRM Content Email Alerts, Receive Salesforce CRM Content Alerts as Daily Digest, Make Setup My Default Landing Page, Quick Access Menu, Development Mode, Show View State in Development Mode, Cache Diagnostics, Allow Forecasting, Call Center, Phone, and Fax.

## Step – 8

## Selected all the fields to display

The screenshot shows a Salesforce Lightning interface for a 'Travel Approvals' custom object. A modal window titled 'Select Fields to Display' is open, allowing users to map fields from the 'Available Fields' list to the 'Visible Fields' list. The 'Available Fields' list includes: Owner Last Name, Purpose of Trip, Record ID, Status Indicator, Total Expenses, and Travel Approval #. The 'Visible Fields' list includes: Department, Created By, Status, Trip Start Date, and Trip End Date. The main list area displays 50+ items, sorted by Department, filtered by All travel approvals, and updated a few seconds ago. The items show various travel details like trip start and end dates, status (Approved or Rejected), and created by user.

Field	Value	Field	Value
Trip End Date	8/14/2019	Created By	Hema Kumar Undrajavarapu
	8/5/2019	Department	Audit Services
	5/9/2019	Status	Approved
	1/9/2020	Trip Start Date	7/7/2019
	10/5/2019		Rejected
	9/2/2019		Approved
	4/9/2019		Rejected
	7/8/2019		Approved
	8/6/2019		Approved
	2/9/2019		Rejected
	11/6/2019		Approved
	6/3/2019		Rejected

## Step – 9

Created Travel Approval Custom List View Open Out Of State Travel Request

TA-00001 | Salesforce    Open Out of State Travel Requests | X    Search Layouts | Salesforce | +

curious-wolf-tyvkh-p-dev-ed.trailblaze.lightning.force.com/lightning/o/Travel\_Approval\_\_c/list?filterName=00B2w00000YejwpEAB

Travel App Chatter Reports Dashboards Departments Travel Approvals

Travel Approvals  
Open Out of State Travel Requests

1 item - Sorted by Travel Approval # - Filtered by My travel approvals - Status, Out-of-State - Updated a few seconds ago

Travel Approval #	Department	Created By	Destination S...	Trip Start Date	Trip End Date
1 TA-00001	Technology	Hema Kumar Undrajavarapu	CA	2/1/2023	2/28/2023

New Import Change Owner Printable View

Search this list...

Filters

Filter by Owner  
My travel approvals

Matching all of these filters

Out-of-State equals True

Status not equal to Approved, Rejected

Add Filter Logic

Add Filter Logic

The screenshot shows a Salesforce Lightning interface for managing travel approvals. The main title is "Open Out of State Travel Requests". The table displays a single record: TA-00001, which is a travel approval for a trip to CA starting on 2/1/2023 and ending on 2/28/2023. The approval was created by Hema Kumar Undrajavarapu and is associated with the Technology department. On the right side, there is a "Filters" sidebar where two filters are applied: "Out-of-State equals True" and "Status not equal to Approved, Rejected". These filters are combined using the logical operator "and". There are also buttons for adding more filters or removing all filters.

The screenshot shows the Salesforce Lightning interface. The top navigation bar includes tabs for 'TA-00001 | Salesforce', 'Open Out of State Travel Request', and 'Search Layouts | Salesforce'. The main content area is titled 'Travel Approvals' and 'Open Out of State Travel Requests'. A single item is listed: '1 item · Sorted by Travel Approval # · Filtered by My travel approvals - Status, Out-of-State · Updated a minute ago'. The row details are: Travel Approval #: TA-00001, Department: Technology, Created By: Hema Kumar Undrajavarapu, Destination State: CA, Trip Start Date: 2/1/2023. The right sidebar displays the user profile 'Hema Kumar Undrajavarapu' and settings for 'DISPLAY DENSITY' (set to 'Comfy') and 'OPTIONS'.

## Step – 10

Selected Fields to Display in the Travel Approval Open Out State Travel Requests

This screenshot is identical to the one above, showing the same travel approval record and user interface elements. The travel request is: Travel Approval #: TA-00001, Department: Technology, Created By: Hema Kumar Undrajavarapu, Destination State: CA, Trip Start Date: 2/1/2023. The right sidebar shows the user profile and density settings.

## Step – 11

### Customized Travel Approval Page Layout

The screenshot shows the Lightning App Builder interface with the following details:

- Page Title:** Travel Approval Record Page
- Page Label:** Travel Approval Record Page
- Developer Name:** Travel\_Approval\_Record\_Page1
- Type:** Record Page
- Object:** Travel Approval
- Template:** Header and Right Sidebar
- Description:** (Empty)
- Enable page-level dynamic actions for the Salesforce mobile app:** (unchecked)

The main preview area displays the Travel Approval record page with the following fields and sections:

- Details Section:** Includes fields like Travel Approval # (TA-00001), Name (Hema Kumar Undrajavarapu), Status (Draft), Total Expenses (USD 1,320.00), and Status Indicator (Technology).
- Activity Section:** Shows a Chatter feed with a message from Hema Kumar Undrajavarapu.
- Trip Info Section:** Displays trip details such as Duration of Trip (Attend Dreamforce), Trip Start Date (2/10/2023), and Destination State (CA).
- Logistics Section:** Shows Out of State (checked) and Destination State (CA).
- History:** Last Modified by (Hema Kumar Undrajavarapu, 2/15/2023, 3:12 AM).

The screenshot shows the Salesforce Setup interface for the Travel Approval object:

- Page Layouts:** A table listing the "Travel Approval Layout" with details: Page Layout Name (Travel Approval Layout), Created By (Hema Kumar Undrajavarapu, 2/15/2023, 1:25 AM), and Modified By (Hema Kumar Undrajavarapu, 2/15/2023, 1:25 AM).

A context menu is open on the "Travel Approval Layout" row, showing options:

- User Profile: Hema Kumar Undrajavarapu (curious-wolf-tyvkhp-dev-ed.trailblaze.my...)
- Settings
- Log Out
- DISPLAY DENSITY:** Comfy (selected), Compact
- OPTIONS:** Switch to Salesforce Classic, Add Username

TA-00001 | Salesforce    Travel Approval Record Page -    Travel Approval | Salesforce

curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01I2w000002MQmV/PageLayouts/00h2w00000FhXxpAAF/view

Setup Home Object Manager

Search Setup

Travel Approval

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

Flow Triggers

Validation Rules

Save Quick Save Preview As... Cancel Undo Redo Layout Properties

Quick Find Field Name \*

Section Department Owner Total Expenses

\* Blank Space Destination State Purpose of Trip Travel Approval #

Created By Last Modified By Status Trip End Date

Currency Out-of-State Status Indicator Trip Start Date

DISPLAY DENSITY

✓ Comfy Compact

OPTIONS

Switch to Salesforce Classic Add Username

Customize this page for this object layout...

Quick Actions in the Salesforce Classic Publisher

Actions in this section are currently inherited from the global publisher layout. You can override the global publisher layout to set a customized list of actions for the publisher on pages that use this layout.

Salesforce Mobile and Lightning Experience Actions

Actions in this section are predefined by Salesforce. You can override the predefined actions to set a customized list of actions on Lightning Experience and mobile app pages that use this layout. If you customize the actions in the Quick Actions in the Salesforce Classic Publisher section, and have saved the layout, then this section inherits that set of actions by default when you click to override.

Travel Approval Detail

Standard Buttons Edit Delete Clone Change Owner Change Record Type Printable View Sharing Sharing Hierarchy Submit for Approval Custom Buttons

Information (Header visible on edit only)

Travel Approval #	GEN-2024-001234
Status	Sample Text
Out-of-State	✓
Destination State	Sample Text

Owner Sample Text  
Department Sample Text

Trip Info

Purpose of Trip	Sample Text
Trip Start Date	2/21/2023
Trip End Date	2/21/2023

System Information (Header visible on edit only)

Created By	Sample Text
Last Modified By	Sample Text

## Step – 12

### Customized the Expense Item Related List User Travel Approval Page Layout

The screenshot shows a Salesforce Lightning page for a travel approval record. The URL in the browser is [curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/r/Travel\\_Approval\\_\\_c/a0P2w00000KqwVLEAZ/view](https://curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/r/Travel_Approval__c/a0P2w00000KqwVLEAZ/view). The page title is "Travel Approval | Salesforce". The main content area displays the travel approval record with sections for "Notes & Attachments" (0), "Expense Items" (2), and "Approval History" (3). The "Expense Items" section shows two entries:

Expense Item Number	Expense Type	Amount
E-00001	Airfare	USD 450.00
E-00002	Hotel	USD 870.00

The "Approval History" section shows three steps:

Step Name	Date	Status	Assigned To
Travel Coordinator Approval	2/15/2023, 6:46 AM	Approved	Hema Kumar Undrajavarapu
Step 1	2/15/2023, 6:46 AM	Approved	Eric Executive
Approval Request Submitted	2/15/2023, 6:34 AM	Submitted	Hema Kumar Undrajavarapu

The right sidebar shows the user profile of Hema Kumar Undrajavarapu and various settings like "DISPLAY DENSITY" (set to "Comfy"), "OPTIONS" (with "Switch to Salesforce Classic" and "Add Username" buttons), and an "Upcoming & Overdue" section which is currently empty.

## Step – 13

### Enabled Feed Tracking

The screenshot shows the Salesforce Setup interface for Feed Tracking. The left sidebar navigation includes 'Feature Settings' (Chatter, Feed Item Actions, Feed Item Layouts, **Feed Tracking**, Triggers, Service, Feed Filters), 'Search Setup' search bar, and a message about global search. The main content area is titled 'Feed Tracking' and describes enabling feed tracking for objects. A modal window titled 'Fields in travel approvals' lists fields like 'Service', 'Service Contract', 'Session', 'Session Hijacking Event Store', 'Session Registration', 'Site' (0 Fields), 'Solution', 'Students', 'Suggestion', 'Supply', 'Task', 'Threat Detection Feedback', 'Topic' (1 Field), and 'Travel Approval' (2 Fields). The 'Travel Approval' row is selected. The modal has 'Save' and 'Cancel' buttons, a checked 'Enable Feed Tracking' checkbox, and a note about selecting up to 10 fields. To the right, a user profile for Hema Kumar Undrajavarapu is shown, along with options for 'DISPLAY DENSITY' (Compact), 'OPTIONS' (Switch to Salesforce Classic, Add Username), and a 'Comfy' view toggle. The bottom of the modal has 'All Related Objects' and 'Restore Defaults' buttons.

## MODULE -2

### Exercise – 1

#### Step – 1

#### Created Trip End Date After Start Date Validation Rule

The screenshot shows the Salesforce Setup interface for the 'Travel Approval' object. On the left, a sidebar lists various setup categories like Details, Fields & Relationships, Page Layouts, etc. The main content area displays the 'Travel Approval Validation Rule' detail page. The rule is titled 'Trip\_End\_Date\_After\_Start\_Date'. The validation formula is `Trip_End_Date__c < Trip_Start_Date__c`. The error message is 'Trip end date must be greater than or equal to start date'. The rule is active and applies to the 'Trip End Date' field. A right-click context menu is open, showing options like 'Comfy' (selected), 'Compact', 'OPTIONS', 'Switch to Salesforce Classic', and 'Add Username'. The top navigation bar shows 'Chatter Home | Salesforce' and 'Travel Approval | Salesforce'.

## Step – 2

### Created a Roll Up Summary Field Total Expenses

The screenshot shows the Salesforce Setup interface for the 'Travel Approval' object. A custom field named 'Total Expenses' has been created. The field details are as follows:

- Field Label:** Total Expenses
- Field Name:** Total\_Expenses
- API Name:** Total\_Expenses\_c
- Description:** (empty)
- Help Text:** (empty)
- Data Owner:** (empty)
- Field Usage:** (empty)
- Data Sensitivity Level:** (empty)
- Compliance Categorization:** (empty)
- Created By:** Hema Kumar Undrajavarapu, 2/15/2023, 5:50 AM
- Modified By:** Hema Kumar Undrajavarapu, 2/15/2023, 5:50 AM

The 'Roll-Up Summary Options' section shows:

- Data Type:** Roll-Up Summary
- Summarized Object:** Expense Item
- Field to Aggregate:** Expense Item Amount
- Filter Criteria:** (empty)
- Summary Type:** SUM

## Step – 3

### Created a Formula Field Status Images

The screenshot shows the Salesforce Setup interface for creating a static resource named 'StatusImages'. The static resource information is as follows:

- Name:** StatusImages
- Description:** (empty)
- File:** Choose file StatusImages.zip
- Cache Control:** Public

The screenshot shows the Salesforce Setup interface with the URL [curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/StaticResources/page?address=%2Fapexpages%2Fsetup%2FviewStaticResource.ap...](https://curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/StaticResources/page?address=%2Fapexpages%2Fsetup%2FviewStaticResource.ap...). The page displays a static resource named "StatusImages" with the following details:

Name	StatusImages
Namespace Prefix	
Description	
MIME Type	application/zip
Cache Control	Public
Size	39,130 bytes
View file	
Created By	Hema Kumar Undrajavarapu, 2/15/2023, 5:53 AM
Last Modified By	Hema Kumar Undrajavarapu, 2/23/2023, 12:44 AM

The right sidebar shows the user profile of Hema Kumar Undrajavarapu and the "Comfy" display density setting.

## Step – 4

### Created a Formula Field Status Indicator

The screenshot shows the Salesforce Setup interface with the URL [curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01Iw000002MQmV/FieldsAndRelationships/00N2w00000SqEl/view](https://curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/setup/ObjectManager/01Iw000002MQmV/FieldsAndRelationships/00N2w00000SqEl/view). The page displays a custom field named "Status Indicator" for the "Travel Approval" object.

**Custom Field Definition Detail**

Field Information	Object Name
Field Label: Status Indicator	Travel Approval
Field Name: Status_Indicator	
API Name: Status_Indicator__c	
Description	
Help Text	
Data Owner	
Field Usage	
Data Sensitivity Level	
Compliance Categorization	
Created By	Hema Kumar Undrajavarapu, 2/15/2023, 5:54 AM
Modified By	Hema Kumar Undrajavarapu, 2/15/2023, 5:54 AM

**Formula Options**

```
IF(ISPICKVAL(Status__c, 'Approved'), IMAGE('/resource/Status/Images/thumb-up.png', 'Accepted', 20, 20),  
IF(ISPICKVAL(Status__c, 'Rejected'), IMAGE('/resource/Status/Images/thumb-down.png', 'Rejected', 20, 20),  
IMAGE('/resource/Status/Images/draft.png', 'In-Process', 20, 20)))
```

# Step – 5

## Created a Record – Triggered Flow Decision Block

The screenshot shows the Salesforce Flow Builder interface. At the top, there are three tabs: "Recently Viewed | Travel Approv", "Travel Approval | Salesforce", and "Out of State Travel Flag - V1". The "Out of State Travel Flag - V1" tab is active. The title bar says "curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/builder\_platform\_interaction/flowBuilder.app?flowId=3012w000001MeuzAAC". The toolbar includes "Flow Builder", "Out of State Travel Flag - V1", "Free-Form", "Version 1: Active—Last modified 8 days ago", "Run", "Debug", "View Tests", "Deactivate", "Save As", and "Save".

The main area is titled "Start Record-Triggered Flow". It shows the flow's configuration: Object: Travel Approval, Trigger: A record is created or updated, and Optimized for: Fast Field Updates. There is a link to "Open Flow Trigger Explorer for Travel ...".

The left sidebar is the "Toolbox" with "Elements Manager". Under "Logic (5)", it lists Assignment, Decision, Loop, Collection Sort, and Collection Filter. Under "Data (2)", it lists Update Records and Get Records.

Below the main flow configuration, there is a "Get more on the AppExchange" button and some UI controls.

The screenshot shows the "Edit Decision" dialog box for the "Is Travel Out of State?" decision block. The title is "Edit Decision".

**Outcomes:** For each path the flow can take, create an outcome. For each outcome, specify the conditions that must be met for the flow to take that path.

**OUTCOME ORDER:** + [ ] OUTCOME DETAILS

**Yes Out of State:** \*Label: Yes Out of State, \*Outcome API Name: Yes\_Out\_of\_State

**In State:** Condition Requirements to Execute Outcome: All Conditions Are Met (AND)

**Default Outcome:** Condition Requirements to Execute Outcome: All Conditions Are Met (AND)

**Resource:** \$Record > Destination State X, Operator: Does Not Equal, Value: TX

**When to Execute Outcome:**

- If the condition requirements are met
- Only if the record that triggered the flow to run is updated to meet the condition requirements

Buttons at the bottom: Cancel, Done.

At the bottom of the screen, there is a "Get more on the AppExchange" button and a diagram showing the flow from "Update Records" to "Update Rewards".

# Updated Travel Approval Record (Yes out of State)

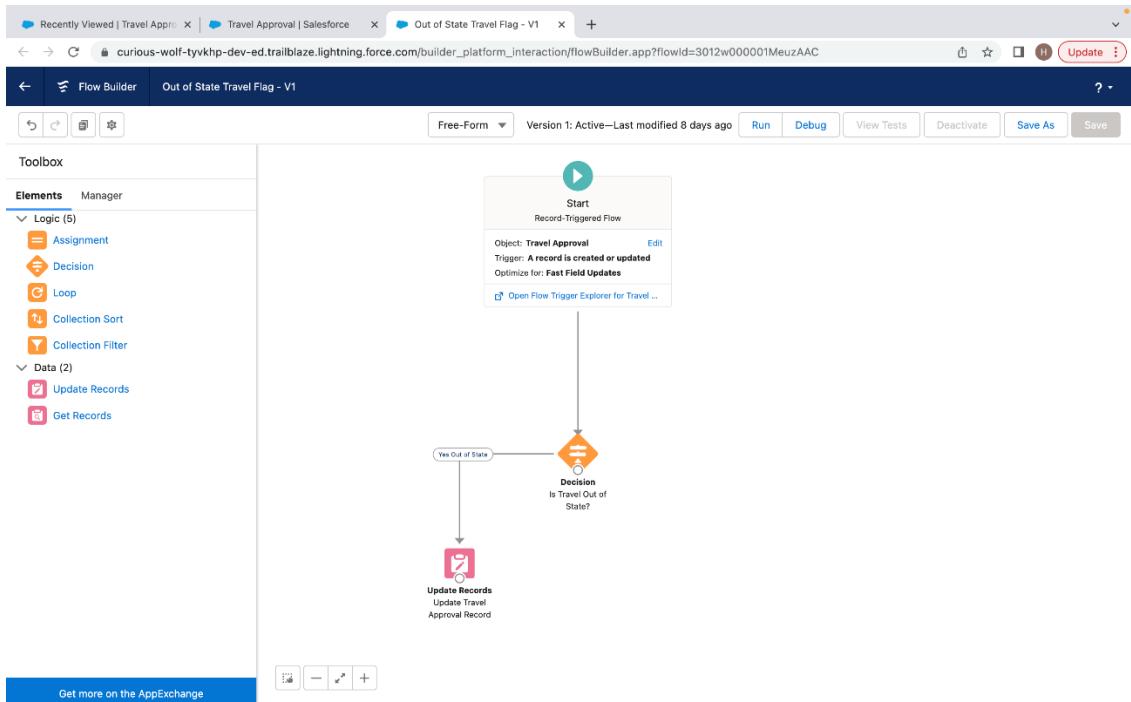
The screenshot shows the Salesforce Flow Builder interface with two windows open:

- Edit Update Records**: This window is titled "Edit Update Records" and contains the following sections:
  - Update Salesforce records using values from the flow.**
  - Update Travel Approval Record (Update\_Travel\_Approval\_Record)**: A note states: "Because this flow runs before a record is saved, you can only update the record that triggered the flow to run. To update other records, configure the trigger to run the flow after the record is saved."
  - Set Filter Conditions**: A dropdown menu shows "None—Always Update Record".
  - Set Field Values for the Travel Approval Record**: A table with one row: "Field: Out\_of\_State\_\_c, Value: True".
- Flow Builder**: This window shows a flow diagram:
  - A "Start" step (Record-Triggered Flow) is connected to a "Decision" step.
  - The "Decision" step has the condition "Is Travel Out of State?".
  - The "True" path from the decision leads to an "Update Records" step, which updates the "Out\_of\_State\_\_c" field to "True".

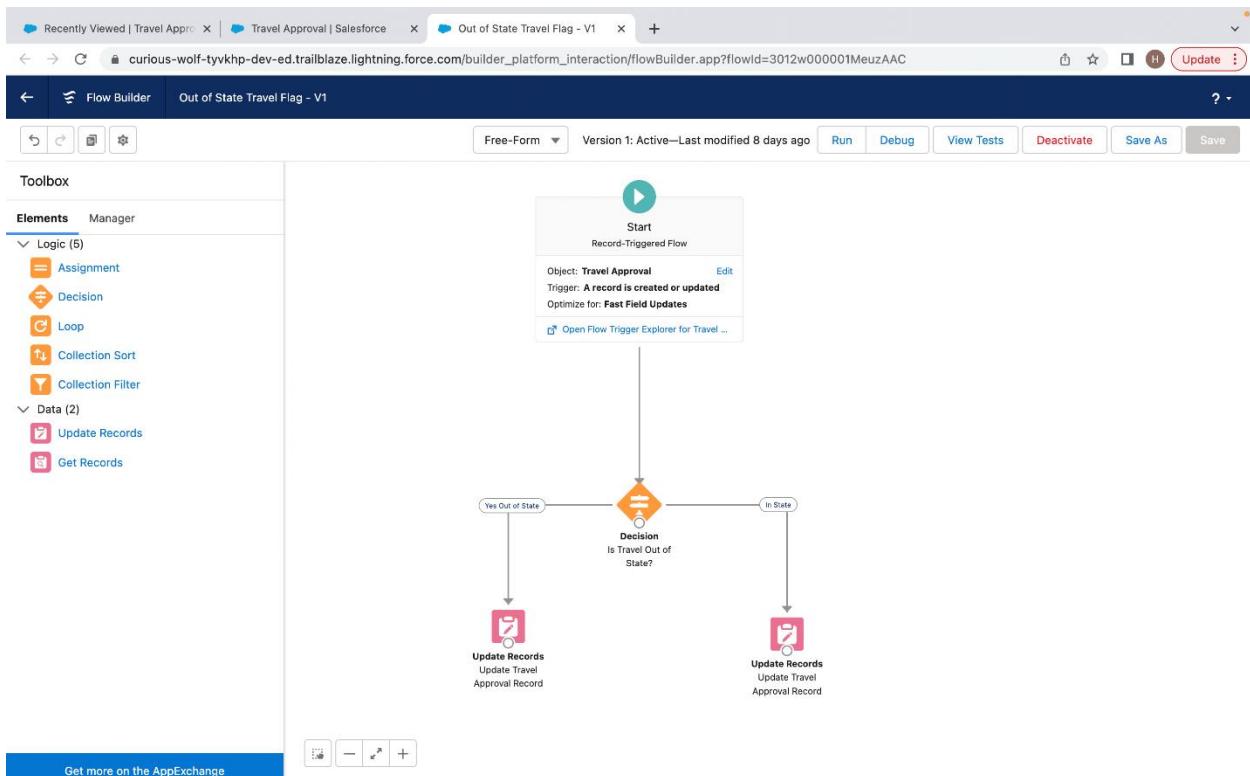
# Updated Travel Approval Record (In State)

The screenshot shows the 'Edit Decision' configuration for a flow element named 'Is Travel Out of State? (is\_Travel\_Out\_of\_State)'. The 'OUTCOME ORDER' section contains two outcomes: 'Yes Out of State' and 'In State'. The 'Default Outcome' is set to 'All Conditions Are Met (AND)'. The condition requirement for the 'In State' outcome is '\$Record > Destination State Equals TX'. The 'When to Execute Outcome' section has the radio button selected for 'Only if the record that triggered the flow is updated to meet the condition requirements'. At the bottom right are 'Cancel' and 'Done' buttons.

The screenshot shows the 'Edit Update Records' configuration for a flow element named 'Update Travel Approval Record (Update\_Travel\_Approval\_Record)'. The 'How to Find Records to Update and Set Their Values' section has the radio button selected for 'Use the travel approval record that triggered the flow'. A note states: 'Because this flow runs before a record is saved, you can only update the record that triggered the flow to run. To update other records, configure the trigger to run the flow after the record is saved.' The 'Set Filter Conditions' section has the condition requirement 'None—Always Update Record'. The 'Set Field Values for the Travel Approval Record' section shows a field value mapping for 'Out\_of\_State\_\_c' with a value of 'True'. At the bottom right are 'Cancel' and 'Done' buttons.



## Out of State Travel Flag (Flow)



## Step – 6

### Created an Approval Process Travel Approval Request

The screenshot shows the Salesforce Setup interface for creating an Approval Process. The left sidebar is collapsed, and the main area displays the 'Approval Processes' screen. A modal window titled 'Approval Process Edit' is open, showing 'Step 1. Enter Name and Description'. The process name is set to 'Travel Approval Request' and the unique name is 'Travel\_Approval\_Request'. The 'Description' field is empty. The right sidebar shows user information and settings.

The screenshot shows the continuation of the Approval Process creation. The modal window is now on 'Step 2. Specify Entry Criteria'. It asks if only certain types of records should enter this approval process. Below is a table for defining filter logic:

Field	Operator	Value	AND
Travel Approval: Total Expenses	greater than	0	AND
--None--	--None--		

At the bottom of the table, there is a link 'Add Filter Logic...'. The right sidebar remains the same as the previous step.

**Approval Processes**

**Travel Approval: Travel Approval Request**

**Process Definition Detail**

Process Name	Travel Approval Request	Active
Unique Name	Travel_Approval_Request	Next Automated Approver Determined By
Description	Travel Approval: Total Expenses GREATER THAN INR 0	Manager of Record Submitter
Entry Criteria	Travel Approval: Total Expenses GREATER THAN INR 0	
Record Editability	Administrator ONLY	Allow Submitters to Recall Approval Requests

**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:Hema Kumar Undrajavarapu	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

## Final Approval Actions

**Approval Processes**

**Travel Approval: Travel Approval Request**

**Process Definition Detail**

Process Name	Travel Approval Request	Active
Unique Name	Travel_Approval_Request	Next Automated Approver Determined By
Description	Travel Approval: Total Expenses GREATER THAN INR 0	Manager of Record Submitter
Entry Criteria	Travel Approval: Total Expenses GREATER THAN INR 0	
Record Editability	Administrator ONLY	Allow Submitters to Recall Approval Requests

**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:Hema Kumar Undrajavarapu	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

**Final Rejection Actions**

Action	Type	Description
--------	------	-------------

# Final Rejections Actions

The screenshot shows the 'Approval Processes' setup page. It includes sections for 'Initial Submission Actions', 'Approval Steps', 'Final Approval Actions', 'Final Rejection Actions', and 'Recall Actions'. A sidebar on the left lists 'Data' (Mass Transfer Approval Requests) and 'Process Automation' (Approval Processes). A message at the bottom says 'Didn't find what you're looking for? Try using Global Search.'

Action Type	Description
Record Lock	Lock the record from being edited

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:Hema Kumar Undrajavarapu	Final Rejection

The screenshot shows the 'Process Automation Settings' page. It includes sections for 'Default Workflow User', 'Email Approval Sender', 'Enable email approval response', 'Let users pause flows', 'Let users resume shared flow interviews', 'Enable Lightning runtime for flows', and 'Change the required permission to view all charts'. A sidebar on the left lists 'Process Automation' (Approval Processes, Automation Home (Beta), Flows, Migrate to Flow, Next Best Action, Paused And Failed Flow Interviews, Post Templates) and 'Process Automation Settings' (Process Builder, Workflow Actions, Email Alerts, Field Updates, Outbound Messages, Send Actions, Tasks, Workflow Rules). A message at the bottom says 'Didn't find what you're looking for? Try using Global Search.'

# Testing the Approval Process

The screenshot shows a Salesforce page for a 'Travel Approval' request. The status is 'Pending'. The details are as follows:

Submitter	Date Submitted	Actual Approver	Assigned To
Hema Kumar Undrajavarapu	Feb 23, 2023	Eric Executive	Eric Executive

The right sidebar shows the user profile of Hema Kumar Undrajavarapu and a dropdown menu with 'DISPLAY DENSITY' set to 'Comfy'.

## Assign to Eric Executive

The screenshot shows the same Salesforce page after the approval has been processed. The status is now 'Approved'. The details remain the same:

Submitter	Date Submitted	Actual Approver	Assigned To
Hema Kumar Undrajavarapu	Feb 23, 2023	Hema Kumar Undrajavarapu	Hema Kumar Undrajavarapu

The right sidebar shows the user profile of Hema Kumar Undrajavarapu and a dropdown menu with 'DISPLAY DENSITY' set to 'Comfy'.

# Exercise – 2

## Step – 1

### Imported Travel Approval Records

	Travel Approval #	Purpose of Trip	Department	Status	
1	TA-00001	Attend Dreamforce	Technology	Approved	3/12/2019 3/19/2019
2	TA-00201	White-Kutch	Office of Communications and Media	Approved	4/26/2019 5/4/2019
3	TA-00202	Runofsson, Bogisch and DuBuque	Disability Determination Bureau	Approved	8/8/2019 8/14/2019
4	TA-00203	Homenick, Waters and Guskowski	Division of Disability and Rehabilitative Services	Rejected	11/4/2019 11/10/2019
5	TA-00204	Schoen, Mitchell and Kovacek	Technology	Approved	3/8/2019 3/8/2019
6	TA-00205	Senger-Schumm	Human Resources	Approved	12/21/2019 12/31/2019
7	TA-00206	Abernathy, Beatty and Leffler	Division of Finance	Rejected	4/22/2019 4/27/2019
8	TA-00207	Mertz-Mertz	Contract Management	Approved	8/14/2019 8/18/2019
9	TA-00208	Tromp Group	Division of Aging	Approved	11/20/2019 11/25/2019
10	TA-00209	Leuschke-Lakin	Audit Services	Rejected	3/6/2019 3/18/2019
11	TA-00210	Homenick, Blanda and Hoppe	Division of Aging	Approved	8/5/2019 8/13/2019
12	TA-00211	Weimann, Larson and Wiza	Disability Determination Bureau	Approved	4/6/2019 4/13/2019
13	TA-00212	Romaguera, Muller and Schulist	Technology	Approved	5/7/2019 5/13/2019
14	TA-00213	Lehner, Robel and Botsford	Office of General Counsel	Approved	11/5/2019 11/11/2019
15	TA-00214	Hodkiewicz LLC	Office of Communications and Media	Approved	1/19/2019 1/25/2019
16	TA-00215	Hoeger-Crist	Division of Aging	Approved	1/21/2019 1/27/2019
17	TA-00216	Kautzer, Fisher and Kiehn	Legislative Services	Approved	2/1/2019 2/7/2019
18	TA-00217	Kerluke, Watsica and Labadie	Contract Management	Approved	2/19/2019 2/25/2019
19	TA-00218	Wintheiser-DuBuque	Division of Disability and Rehabilitative Services	Approved	3/19/2019 3/25/2019

## Step – 2

### Created a Report on Travel Request by Department

Travel Approval: Travel Approval #	Department	Status	Out-of-State
TA-00265	Contract Management	Approved	<input checked="" type="checkbox"/>
TA-00266	Legislative Services	Approved	<input type="checkbox"/>
TA-00267	Division of Finance	Approved	<input checked="" type="checkbox"/>
TA-00268	Office of Early Childhood and Out-of-School Learning	Approved	<input checked="" type="checkbox"/>
TA-00269	Audit Services	Approved	<input checked="" type="checkbox"/>
TA-00270	Technology	Approved	<input checked="" type="checkbox"/>
TA-00271	Office of Communications and Media	Approved	<input checked="" type="checkbox"/>
TA-00272	Office of Early Childhood and Out-of-School Learning	Approved	<input checked="" type="checkbox"/>
TA-00273	Division of Disability and Rehabilitative Services	Approved	<input type="checkbox"/>
TA-00274	Legislative Services	Approved	<input checked="" type="checkbox"/>
TA-00275	Office of Communications and Media	Approved	<input checked="" type="checkbox"/>
TA-00276	Office of Communications and Media	Rejected	<input checked="" type="checkbox"/>
TA-00277	Disability Determination Bureau	Rejected	<input checked="" type="checkbox"/>
TA-00278	Audit Services	Approved	<input checked="" type="checkbox"/>
TA-00279	Division of Family Resources	Approved	<input checked="" type="checkbox"/>
TA-00280	Division of Finance	Approved	<input checked="" type="checkbox"/>
TA-00281	Audit Services	Approved	<input checked="" type="checkbox"/>
TA-00282	Office of General Counsel	Approved	<input type="checkbox"/>
TA-00283	Audit Services	Approved	<input checked="" type="checkbox"/>

Report Builder | Salesforce | Process Automation Settings | Home | Salesforce

curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/r/Report/00O2w00000C6dmIEAB/edit?queryScope=userFolders

Travel App Chatter Reports Dashboards Departments Travel Approvals

REPORT Travel Requests by Department Travel Approvals

Outline Filters 1 Previewing a limited number of records. Run the report to see everything.

Groups GROUP ROWS Add group... Department

GROUP COLUMNS Add group...

Fields

Columns Travel Approval: Travel Approval # Status # Out-of-State

Travel Approval: Travel Approval # x Status x # Out-of-State x Destination State x Trip Start Date x Trip End Date x

Department ↑	Travel Approval: Travel Approval #	Status	Out-of-State	Detail Rows	Subtotals	Grand Total
Audit Services (4)	TA-00269 TA-00278 TA-00281 TA-00283	Approved Approved Approved Approved	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	OK FL OK CA		
Subtotal			4			
Contract Management (1)	TA-00265	Approved	<input checked="" type="checkbox"/>	CA	9/22/2019	9/28/2019
Subtotal			1			
Disability Determination Bureau (2)	TA-00277 TA-00284	Rejected Approved	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	CA OK	7/4/2019 7/7/2019	7/8/2019 7/7/2019
Subtotal			2			
Division of Disability and Rehabilitative Services (1)	TA-00273	Approved	<input type="checkbox"/>	TX	9/17/2019	9/29/2019
Subtotal			0			
Division of Family Resources (1)	TA-00279	Approved	<input checked="" type="checkbox"/>	GA	2/5/2019	2/14/2019
Subtotal			1			
Division of Finance (2)	TA-00267 TA-00280	Approved Approved	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	OK GA	12/10/2019 9/2/2019	12/18/2019 9/2/2019
Subtotal			2			
Legislative Services (2)	TA-00266 TA-00274	Approved Approved	<input type="checkbox"/> <input checked="" type="checkbox"/>	TX FL	1/19/2019 10/3/2019	1/22/2019 10/3/2019
Subtotal			2			

Row Counts Detail Rows Subtotals Grand Total

DISPLAY DENSITY Comfy Compact OPTIONS Switch to Salesforce Classic Add Username

Conditional Formatting Currency: USD

# After Testing

Screenshot of the Salesforce Lightning interface showing the "Travel Requests by Department" report. The report displays travel approvals for various departments, with a total of 300 records and 231 out-of-state trips.

**Report Summary:**

- Total Records: 300
- Total Out-of-State: 231

**Table Data:**

Department	Travel Approval	Status	Out-of-State	Destination State	Trip Start Date	Trip End Date
Audit Services (16)	TA-00269	Approved	<input checked="" type="checkbox"/>	OK	12/26/2019	1/9/2020
	TA-00278	Approved	<input checked="" type="checkbox"/>	FL	9/20/2019	10/5/2019
	TA-00281	Approved	<input checked="" type="checkbox"/>	OK	9/2/2019	9/2/2019
	TA-00283	Approved	<input checked="" type="checkbox"/>	CA	3/19/2019	4/9/2019
	TA-00318	Approved	<input checked="" type="checkbox"/>	OK	7/7/2019	7/8/2019
	TA-00344	Approved	<input checked="" type="checkbox"/>	FL	8/6/2019	8/6/2019
	TA-00370	Approved	<input checked="" type="checkbox"/>	FL	2/17/2019	2/19/2019
	TA-00374	Approved	<input checked="" type="checkbox"/>	OK	11/3/2019	11/6/2019
	TA-00391	Rejected	<input checked="" type="checkbox"/>	FL	5/30/2019	6/3/2019
	TA-00209	Rejected	<input checked="" type="checkbox"/>	FL	8/8/2019	8/14/2019
	TA-00399	Approved	<input checked="" type="checkbox"/>	OK	7/7/2019	7/7/2019
	TA-00404	Rejected	<input checked="" type="checkbox"/>	CA	11/21/2019	11/27/2019
	TA-00428	Approved	<input checked="" type="checkbox"/>	FL	4/14/2019	4/14/2019
	TA-00219	Approved	<input type="checkbox"/>	TX	2/27/2019	3/5/2019
	TA-00491	Rejected	<input checked="" type="checkbox"/>	CA	4/6/2019	4/18/2019
	TA-00250	Approved	<input type="checkbox"/>	TX	4/29/2019	5/9/2019
<b>Subtotal</b>				14		

**Report Options:**

- Row Counts:
- Detail Rows:
- Subtotals:
- Grand Total:

Screenshot of the Salesforce Lightning interface showing the "Travel Requests by Department" report. The report displays travel approvals for various departments, with a total of 300 records and 231 out-of-state trips.

**Report Summary:**

- Total Records: 300
- Total Out-of-State: 231

**Bar Chart:**

The chart shows the sum of out-of-state trips by department. The x-axis represents the count of trips from 0 to 12. The y-axis lists the departments.

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

**Table Data:**

Department	Travel Approval	Status	Out-of-State	Destination State	Trip Start Date	Trip End Date
Audit Services (16)	TA-00269	Approved	<input checked="" type="checkbox"/>	OK	12/26/2019	1/9/2020
	TA-00278	Approved	<input checked="" type="checkbox"/>	FL	9/20/2019	10/5/2019
	TA-00281	Approved	<input checked="" type="checkbox"/>	OK	9/2/2019	9/2/2019
	TA-00283	Approved	<input checked="" type="checkbox"/>	CA	3/19/2019	4/9/2019

**Report Options:**

- Row Counts:
- Detail Rows:
- Subtotals:
- Grand Total:

# Step – 3

## Created a Travel Request by Monthly Report

Two screenshots of the Salesforce Lightning interface showing the creation of a monthly travel report.

**Screenshot 1: Travel Requests by Month (Standard View)**

The report displays travel requests from September 2019 to October 2019. The data is grouped by month and includes columns for Trip End Date, Travel Approval #, Department, Status, and Out-of-State indicator.

Trip End Date	Travel Approval #	Department	Status	Out-of-State
9/1/2019 (1)	TA-00266	Legislative Services	Approved	
9/1/2019 (1)	TA-00279	Division of Family Resources	Approved	
9/1/2019 (1)	TA-00268	Office of Early Childhood and Out-of-School Learning	Approved	
9/1/2019 (1)	TA-00269	Audit Services	Approved	
9/1/2019 (1)	TA-00270	Technology	Approved	
9/1/2019 (1)	TA-00271	Office of Communications and Media	Approved	
9/1/2019 (1)	TA-00272	Office of Early Childhood and Out-of-School Learning	Approved	
9/1/2019 (1)	TA-00273	Division of Disability and Rehabilitative Services	Approved	
9/1/2019 (1)	TA-00274	Legislative Services	Approved	
9/1/2019 (1)	TA-00275	Office of Communications and Media	Approved	
9/1/2019 (1)	TA-00276	Office of Communications and Media	Rejected	
9/1/2019 (1)	TA-00277	Disability Determination Bureau	Rejected	
9/1/2019 (1)	TA-00278	Audit Services	Approved	
9/1/2019 (1)	TA-00279	Division of Family Resources	Approved	
9/1/2019 (1)	TA-00280	Division of Finance	Approved	
9/1/2019 (1)	TA-00281	Audit Services	Approved	
9/1/2019 (1)	TA-00282	Office of General Counsel	Approved	
9/1/2019 (1)	TA-00283	Audit Services	Approved	

**Screenshot 2: Travel Requests by Month (Subtotal View)**

The report displays travel requests from September 2019 to October 2019, grouped by month. Subtotals are shown for each month, and individual records are listed below.

Trip End Date	Travel Approval #	Department	Status	Count
9/1/2019 (1)	TA-00266	Legislative Services	Approved	0
9/1/2019 (1)	TA-00279	Division of Family Resources	Approved	1
9/1/2019 (1)	TA-00268	Office of Early Childhood and Out-of-School Learning	Approved	1
9/1/2019 (1)	TA-00269	Audit Services	Approved	1
9/1/2019 (1)	TA-00270	Technology	Approved	1
9/1/2019 (1)	TA-00271	Office of Communications and Media	Approved	1
9/1/2019 (1)	TA-00272	Office of Early Childhood and Out-of-School Learning	Approved	1
9/1/2019 (1)	TA-00273	Division of Disability and Rehabilitative Services	Approved	1
9/1/2019 (1)	TA-00274	Legislative Services	Approved	1
9/1/2019 (1)	TA-00275	Office of Communications and Media	Approved	1
9/1/2019 (1)	TA-00276	Office of Communications and Media	Rejected	1
9/1/2019 (1)	TA-00277	Disability Determination Bureau	Rejected	1
9/1/2019 (1)	TA-00278	Audit Services	Approved	1
9/1/2019 (1)	TA-00279	Division of Family Resources	Approved	1
9/1/2019 (1)	TA-00280	Division of Finance	Approved	1
9/1/2019 (1)	TA-00281	Audit Services	Approved	1
9/1/2019 (1)	TA-00282	Office of General Counsel	Approved	1
9/1/2019 (1)	TA-00283	Audit Services	Approved	1

Report Builder | Salesforce | Process Automation Settings | Home | Salesforce

curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/r/Report/00O2w00000C6j1oEAB/edit?queryScope=userFolders

Travel App Chatter Reports Dashboards Departments Travel Approvals

REPORT Travel Requests by Month Travel Approvals

Outline Filters Previewing a limited number of records. Run the report to see everything.

Groups Trip End Date Travel Approval: Travel Approval # Department Status Out-of-State # Out-of-State

Trip End Date	Travel Approval: Travel Approval #	Department	Status	Out-of-State	# Out-of-State
January 2019 (1)	TA-00266	Legislative Services	Approved		0
<b>Subtotal</b>					1
February 2019 (1)	TA-00279	Division of Family Resources	Approved		0
<b>Subtotal</b>					1
April 2019 (3)	TA-00268	Office of Early Childhood and Out-of-School Learning	Approved		0
	TA-00276	Office of Communications and Media	Rejected		1
	TA-00283	Audit Services	Approved		1
<b>Subtotal</b>					3
June 2019 (1)	TA-00272	Office of Early Childhood and Out-of-School Learning	Approved		0
<b>Subtotal</b>					1
July 2019 (3)	TA-00275	Office of Communications and Media	Approved		0
	TA-00277	Disability Determination Bureau	Rejected		1
	TA-00284	Disability Determination Bureau	Approved		1
<b>Subtotal</b>					3
September 2019 (6)	TA-00265	Contract Management	Approved		0
	TA-00270	Technology	Approved		1
	TA-00273	Division of Disability and Rehabilitative Services	Approved		1
	TA-00280	Division of Finance	Approved		1
	TA-00281	Audit Services	Approved		1
<b>Subtotal</b>					6
Row Counts	Detail Rows	Subtotals	Grand Total		

DISPLAY DENSITY Comfy Compact

OPTIONS Switch to Salesforce Classic Add Username

Report: Travel Approvals

Travel Requests by Month

Total Records 300

Enable Field Editing

DISPLAY DENSITY Comfy Compact

OPTIONS Switch to Salesforce Classic Add Username

Travel Requests by Month Travel Approvals

Report: Travel Approvals

Travel Requests by Month

Total Records 300

Enable Field Editing

DISPLAY DENSITY Comfy Compact

OPTIONS Switch to Salesforce Classic Add Username

Report Builder | Salesforce | Process Automation Settings | Home | Salesforce

curious-wolf-tyvkhp-dev-ed.trailblaze.lightning.force.com/lightning/r/Report/00O2w00000C6j1oEAB/view?queryScope=userFolders

Travel App Chatter Reports Dashboards Departments Travel Approvals

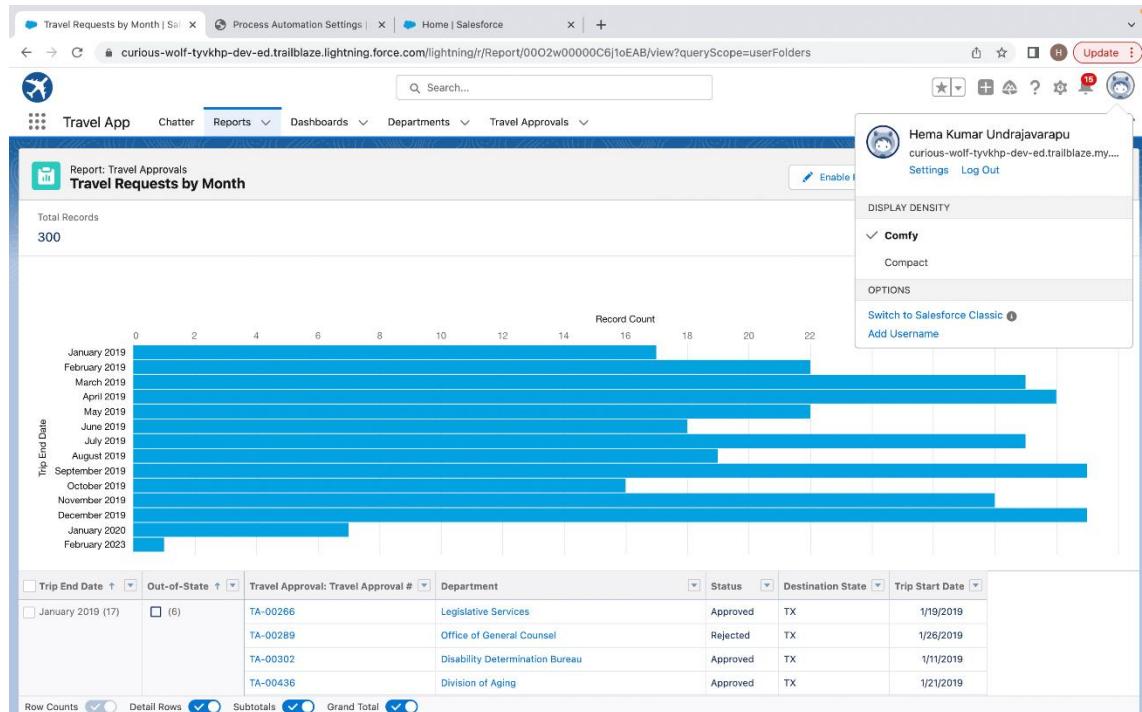
Outline Filters Previewing a limited number of records. Run the report to see everything.

Groups Trip End Date Out-of-State Travel Approval: Travel Approval # Department Status Destination State # Out-of-State

Trip End Date	Out-of-State	Travel Approval: Travel Approval #	Department	Status	Destination State	# Out-of-State
January 2019 (17)	(6)	TA-00266	Legislative Services	Approved	TX	0
		TA-00289	Office of General Counsel	Rejected	TX	0
		TA-00302	Disability Determination Bureau	Approved	TX	0
		TA-00436	Division of Aging	Approved	TX	0
		TA-00448	Quality and Compliance Office	Approved	TX	0
		TA-00457	Contract Management	Approved	TX	0
<b>Subtotal</b>						0
	(11)	TA-00304	Division of Aging	Approved	FL	1
		TA-00314	Division of Mental Health and Addiction	Approved	OK	1
		TA-00315	Contract Management	Approved	GA	1
		TA-00359	Division of Disability and Rehabilitative Services	Approved	FL	1
		TA-00395	Contract Management	Approved	FL	1
		TA-00408	Office of Early Childhood and Out-of-School Learning	Approved	GA	1
		TA-00410	Division of Family Resources	Approved	FL	1
		TA-00413	Office of Early Childhood and Out-of-School Learning	Rejected	OK	1
		TA-00223	Office of Communications and Media	Rejected	FL	1
		TA-00229	Division of Disability and Rehabilitative Services	Approved	OK	1
<b>Subtotal</b>						6
Row Counts	Detail Rows	Subtotals	Grand Total			

DISPLAY DENSITY Comfy Compact

OPTIONS Switch to Salesforce Classic Add Username



## Step – 4

### Created a Report and Dashboard for Travel Approvals

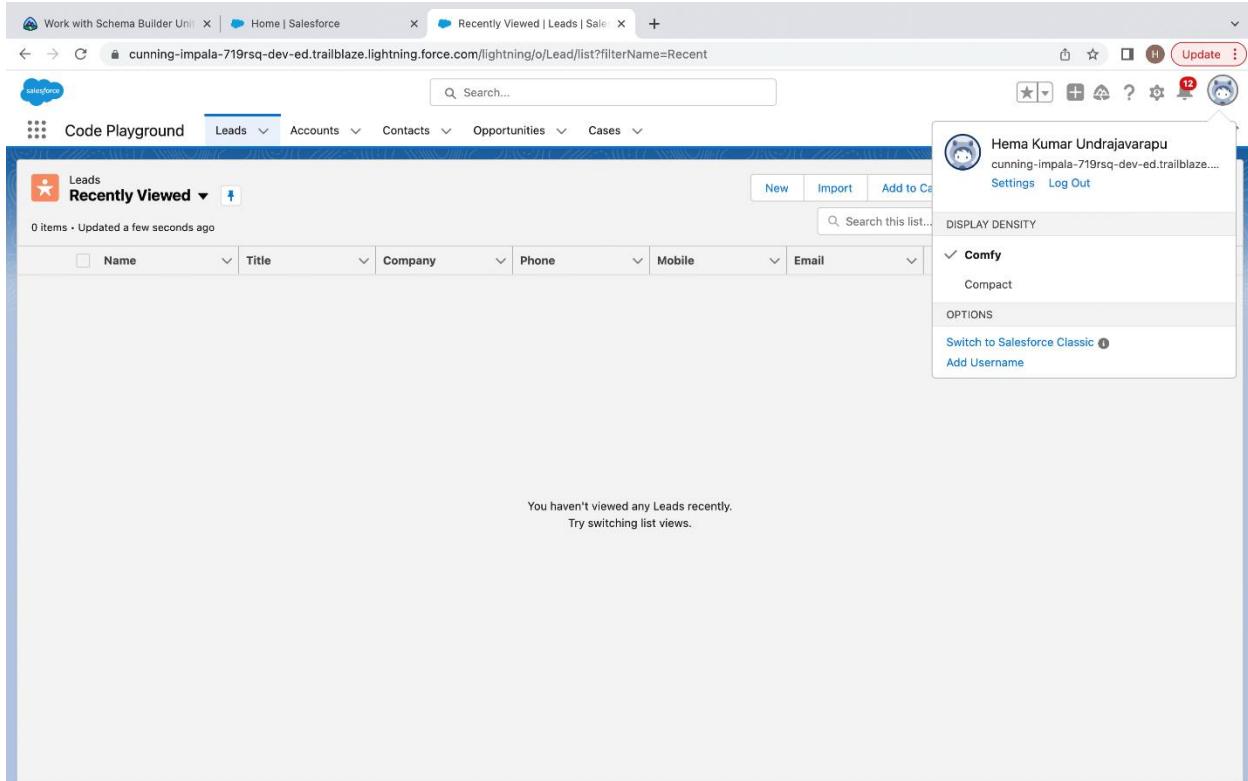
The screenshot shows the Salesforce Reports page. The top navigation bar includes 'Reports | Salesforce', 'Process Automation Settings', 'Home | Salesforce', and a search bar. The main content area displays a table of recent reports under the 'Recent' tab. The columns include 'Report Name', 'Description', 'Folder', 'Created By', and 'Created On'. The table lists several reports such as 'Travel Requests by Month', 'Travel Requests by Department', 'Sample Flow Report: Screen Flows', 'Supplies', 'Suggestions: By Status', 'Suggestions: Status of Open Suggestions', and others. A sidebar on the left shows categories like 'REPORTS', 'FOLDERS', and 'FAVORITES'. A user profile for 'Hema Kumar Undrajavarapu' is visible in the top right, along with options for 'DISPLAY DENSITY' (set to 'Comfy'), 'OPTIONS' (with 'Switch to Salesforce Classic' and 'Add Username' buttons), and a notification bell.

The screenshot shows the 'Travel Requests Dashboard' page. The top navigation bar includes 'Travel Requests Dashboard | S', 'Process Automation Settings', 'Home | Salesforce', and a search bar. The main content area displays two charts. The first chart, 'Travel Requests by Department', is a horizontal bar chart titled 'Sum of Out-of-State' showing the count of requests for various departments. The second chart, 'Travel Requests by Month', is a stacked bar chart showing the record count for each month, categorized by 'Out-of-State' status (false or true). A sidebar on the left shows a 'Dashboard' icon and the title 'Travel Requests Dashboard'. A message at the top indicates the dashboard was last refreshed 7 days ago. A note states 'As of Feb 16, 2023, 12:26 AM - Viewing as Hema Kumar Undrajavarapu'. A user profile for 'Hema Kumar Undrajavarapu' is visible in the top right, along with options for 'DISPLAY DENSITY' (set to 'Comfy'), 'OPTIONS' (with 'Switch to Salesforce Classic' and 'Add Username' buttons), and a notification bell.

# MODULE – 3

## Exercise – 1

### Created Code Playground App



# Created the Custom Object Customer as (SCustomer) as there is already a Standard Object Named Customer

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

- Page Header:** Work with Schema Builder Unit | Home | Salesforce | Recently Viewed | Leads | Sales | Customer | Salesforce
- User Profile:** Hema Kumar Undrajavarapu (cunning-impala-719rsq-dev-ed.trailblaze.lightning.force.com)
- Display Density:** Comfy (selected), Compact
- Options:** Switch to Salesforce Classic, Add Username
- Object Manager:** Customer
- Details Tab:** Selected
- Fields & Relationships:** 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, Flow Triggers.
- Details Section:** Description, API Name (Customer\_\_c), Singular Label (Customer), Plural Label (Customers).

# Created all the Custom Fields

The screenshot shows the Salesforce Object Manager interface for the 'Customer' object. On the left, a sidebar lists various setup categories like Page Layouts, Lightning Record Pages, and Field Sets. The main area displays a table titled 'Fields & Relationships' with 7 items. The columns are 'FIELD LABEL', 'FIELD NAME', 'DATA TYPE', and 'CONTROLLING'. The data includes:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING
Active	Active__c	Checkbox	
Created By	CreatedById	Lookup(User)	
Customer	Customer__c	Master-Detail(Customer)	
Customer Name	Name	Text(80)	
Customer Type	Customer_Type__c	Picklist	
Description	Description__c	Text Area(255)	
Last Modified By	LastModifiedById	Lookup(User)	

A context menu on the right side of the table header provides options like 'Comfy' (selected), 'Compact', 'Switch to Salesforce Classic', and 'Add Username'.

# Created a Custom Object named Billing

The screenshot shows the Salesforce Object Manager interface for the 'Billing' object. The left sidebar is identical to the previous screenshot. The main area displays the 'Details' tab for the 'Billing' object. The table contains the following fields:

Details	Details
Fields & Relationships	Description
Page Layouts	API Name
Lightning Record Pages	Billing__c
Buttons, Links, and Actions	Custom
Compact Layouts	✓
Field Sets	Singular Label
Object Limits	Billing
Record Types	Plural Label
Related Lookup Filters	Billings
Search Layouts	Deployment Status
List View Button Layout	Deployed
Restriction Rules	Help Settings
Scoping Rules	Standard salesforce.com Help Window
Triggers	
Flow Triggers	

A context menu on the right side of the table header provides options like 'Comfy' (selected), 'Compact', 'Switch to Salesforce Classic', and 'Add Username'.

# Created Custom Fields for Billing Object

The screenshot shows the Salesforce Setup interface for the Billing object. On the left, a sidebar lists various setup categories like Page Layouts, Lightning Record Pages, and Field Sets. The main area displays a table titled "Fields & Relationships" with 7 items. The columns are FIELD LABEL, FIELD NAME, DATA TYPE, and CONTROLLING. The data is as follows:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING
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)	
Owner	OwnerId	Lookup(User,Group)	✓
Status	Status__c	Picklist	

A context menu is open on the right side of the screen, showing options like "DISPLAY DENSITY" (set to "Comfy"), "OPTIONS" (with "Switch to Salesforce Classic" and "Add Username" buttons), and user information for Hema Kumar Undrajavarapu.

# Code Playground App

The screenshot shows the Salesforce Code Playground app interface. At the top, there's a navigation bar with tabs for Leads, Accounts, Contacts, Opportunities, Cases, Customers, and Billings. Below it is a sub-navigation bar for Accounts, showing "All Accounts". The main area displays a table of 13 account records. The columns are Account Name, Account Site, Billing State/Province, Phone, and Type. The data is as follows:

	Account Name	Account Site	Billing State/Province	Phone	Type
1	Burlington Textiles Corp of America		NC	(336) 222-7000	Customer - Direct
2	Dickenson plc		KS	(785) 241-6200	Customer - Channel
3	Edge Communications		TX	(512) 757-6000	Customer - Direct
4	Express Logistics and Transport		OR	(503) 421-7800	Customer - Channel
5	GenePoint		CA	(650) 867-3450	Customer - Channel
6	Grand Hotels & Resorts Ltd		IL	(312) 596-1000	Customer - Direct
7	Pyramid Construction Inc.			(014) 427-4427	Customer - Channel
8	Sample Account for Entitlements				autopro
9	sForce	CA		(415) 901-7000	HUndr
10	United Oil & Gas Corp.	NY		(212) 842-5500	Customer - Direct
11	United Oil & Gas, Singapore	Singapore		(650) 450-8810	Customer - Direct
12	United Oil & Gas, UK	UK		+44 191 4956203	Customer - Direct
13	University of Arizona	AZ		(520) 773-9050	Customer - Direct

A context menu is open on the right side of the screen, showing options like "DISPLAY DENSITY" (set to "Comfy"), "OPTIONS" (with "Switch to Salesforce Classic" and "Add Username" buttons), and user information for Hema Kumar Undrajavarapu.

## Exercise – 2

### String Variable Using endsWith() method

The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for Work with Schema Builder Unit, Home | Salesforce, All Accounts | Accounts | Sales, Developer Console, and Billing | Salesforce. The main area has tabs for Log executeAnonymous @23/02/2023, 21:29:19 and Update.

**Execution Log:**

```

Timestamp Event Details
21:29:19:003 USER_INFO [EXTERNAL]0052w00000EFnEf|hema.undrajavarapu1@cunning-impala-719rsq.com|(GMT-08:00) Pacific Standard Time (America/Los_Angeles)|GMT-08:00
21:29:19:003 EXECUTION_ST...
21:29:19:003 CODE_UNIT_ST... [EXTERNAL]execute_anonymous_apex
21:29:19:003 VARIABLE_SCO... [1][x]String:false:false
21:29:19:004 HEAP_ALLOCATE [79]||Bytes:3
21:29:19:004 HEAP_ALLOCATE [94]||Bytes:152
21:29:19:004 HEAP_ALLOCATE [399]||Bytes:408
21:29:19:004 HEAP_ALLOCATE [412]||Bytes:408
21:29:19:004 HEAP_ALLOCATE [520]||Bytes:48
21:29:19:004 HEAP_ALLOCATE [139]||Bytes:6
21:29:19:004 HEAP_ALLOCATE [EXTERNAL]||Bytes:3
21:29:19:004 STATEMENT_EX... [1]
21:29:19:004 STATEMENT_EX... [1]
21:29:19:004 HEAP_ALLOCATE [1]||Bytes:10
21:29:19:004 VARIABLE_ASSI... [1][x]'Hema Kumar'
21:29:19:004 STATEMENT_EX... [2]
21:29:19:004 HEAP_ALLOCATE [2]||Bytes:1
21:29:19:004 HEAP_ALLOCATE [52]||Bytes:5
21:29:19:004 HEAP_ALLOCATE [58]||Bytes:5
21:29:19:004 HEAP_ALLOCATE [66]||Bytes:7
21:29:19:004 USER_DEBUG [2]||DEBUG|false
21:29:19:004 CUMULATIVE_L...
21:29:19:004 LIMIT_USAGE... (default)
  
```

**Enter Apex Code:**

```

1 String x= 'Hema Kumar';
2 System.debug(x.endsWith('a'));
  
```

**Logs:**

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:29:19	Success		2.15 KB

### Used Data Method and Displayed the Date

The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for Work with Schema Builder Unit, Home | Salesforce, All Accounts | Accounts | Sales, Developer Console, and Billing | Salesforce. The main area has tabs for Log executeAnonymous @23/02/2023, 21:31:50 and Update.

**Execution Log:**

```

Timestamp Event Details
21:31:50:001 USER_INFO [EXTERNAL]0052w00000EFnEf|hema.undrajavarapu1@cunning-impala-719rsq.com|(GMT-08:00) Pacific Standard Time (America/Los_Angeles)|GMT-08:00
21:31:50:001 EXECUTION_ST...
21:31:50:001 CODE_UNIT_ST... [EXTERNAL]execute_anonymous_apex
21:31:50:001 VARIABLE_SCO... [1][s1]Date:false:false
21:31:50:001 VARIABLE_SCO... [3][s2]Date:false:false
21:31:50:002 HEAP_ALLOCATE [79]||Bytes:3
21:31:50:002 HEAP_ALLOCATE [84]||Bytes:152
21:31:50:002 HEAP_ALLOCATE [399]||Bytes:408
21:31:50:002 HEAP_ALLOCATE [412]||Bytes:408
21:31:50:002 HEAP_ALLOCATE [520]||Bytes:48
21:31:50:002 HEAP_ALLOCATE [139]||Bytes:6
21:31:50:002 HEAP_ALLOCATE [EXTERNAL]||Bytes:7
21:31:50:002 STATEMENT_EX... [1]
21:31:50:002 STATEMENT_EX... [1]
21:31:50:002 HEAP_ALLOCATE [1]||Bytes:4
21:31:50:002 VARIABLE_ASSI... [1][s1]'2023-02-23T00:00:00'
21:31:50:002 STATEMENT_EX... [2]
21:31:50:002 HEAP_ALLOCATE [52]||Bytes:5
21:31:50:002 HEAP_ALLOCATE [58]||Bytes:5
21:31:50:002 HEAP_ALLOCATE [66]||Bytes:7
21:31:50:002 USER_DEBUG [2]||DEBUG|2023-02-23 00:00:00
21:31:50:002 STATEMENT_EX... [3]
21:31:50:002 HEAP_ALLOCATE [3]||Bytes:4
  
```

**Enter Apex Code:**

```

1 Date s1 = Date.today();
2 System.debug(s1);
3 Date s2 = s1.addDays(30);
4 System.debug(s2);
  
```

**Logs:**

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:31:50	Success		2.52 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:29:19	Success		2.15 KB

## Converted the String to Integer and Added 20 to it

The screenshot shows the Salesforce Developer Console interface. At the top, there are four tabs: 'Work with Schema Builder Unit' (closed), 'Home | Salesforce', 'All Accounts | Accounts | Sales' (closed), 'Developer Console', and 'Billing | Salesforce'. Below the tabs is a toolbar with icons for File, Edit, Debug, Test, Workspace, Help, and a refresh button. A status bar at the bottom right shows 'Update'.

The main area has a title bar 'Log executeAnonymous @23/02/2023, 21:33:52' and a sub-bar 'Log executeAnonymous @23/02/2023, 21:34:16'. Below these are two sections: 'Execution Log' and 'Enter Apex Code'.

**Execution Log:**

Timestamp	Event	Details
21:34:16:003	USER_DEBUG	[3] DEBUG 10
21:34:16:003	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);
```

Below the code editor are buttons: 'Open Log', 'Execute', and 'Execute Highlighted'. There are also checkboxes for 'This Frame', 'Executable', 'Debug Only', and 'Filter'.

**Log Tab:**

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:34:16	Success		2.45 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:33:52	Success		2.45 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:31:50	Success		2.52 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:29:19	Success		2.15 KB

**Logs:** This Frame Executable Debug Only Filter Click h Open Log Execute Execute Highlighted

**Click here to filter the log list**

## Used Length method to display String length

The screenshot shows the Salesforce Developer Console interface, identical to the previous one but with different log entries.

The main area has a title bar 'Log executeAnonymous @23/02/2023, 21:33:52' and a sub-bar 'Log executeAnonymous @23/02/2023, 21:36:09'. Below these are two sections: 'Execution Log' and 'Enter Apex Code'.

**Execution Log:**

Timestamp	Event	Details
21:36:09:003	USER_DEBUG	[2] DEBUG size:10

**Enter Apex Code:**

```
1 String str = 'Hema Kumar';
2 System.debug('size:' +str.length());
```

Below the code editor are buttons: 'Open Log', 'Execute', and 'Execute Highlighted'. There are also checkboxes for 'This Frame', 'Executable', 'Debug Only', and 'Filter'.

**Log Tab:**

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:36:09	Success		2.25 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:34:16	Success		2.45 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:33:52	Success		2.45 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:31:50	Success		2.52 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:29:19	Success		2.15 KB

**Logs:** This Frame Executable Debug Only Filter Click h Open Log Execute Execute Highlighted

**Click here to filter the log list**

## Defined a list and displayed the output using different methods

The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for 'Work with Schema Builder Unit', 'Home | Salesforce', 'All Accounts | Accounts | Sales', 'Developer Console', and 'Billing | Salesforce'. Below the navigation is a toolbar with file operations like 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and a refresh button.

The main area displays the 'Execution Log' and the 'Enter Apex Code' editor. The Execution Log table shows the following entries:

Timestamp	Event	Details
21:46:09:005	USER_DEBUG	[7] DEBUG After using add() method(0, 1, 2, 3, 4)
21:46:09:005	USER_DEBUG	[8] DEBUG After using get() method0
21:46:09:005	USER_DEBUG	[10] DEBUG After using set() method(0, 100, 2, 3, 4)
21:46:09:005	USER_DEBUG	[12] DEBUG After clearing all elements()

The 'Enter Apex Code' editor contains the following Apex code:

```
1 List<Integer> l = new List<Integer>();
2 l.add(0);
3 l.add(1);
4 l.add(2);
5 l.add(3);
6 l.add(4);
7 System.debug('After using add() method'+l);
8 System.debug('After using get() method'+l.get(0));
9 l.set(1,100);
10 System.debug('After using set() method'+l);
11 l.clear();
12 System.debug('After clearing all elements'+l);
```

Below the code editor is a toolbar with buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. The bottom section features a table of logs with columns for User, Application, Operation, Time, Status, Read, and Size. A filter bar at the bottom allows users to search and sort the log list.

## Printed numbers between 0 to 9

The screenshot shows the Salesforce Developer Console interface, similar to the previous one but with a different log entry.

The Execution Log table shows the following entries:

Timestamp	Event	Details
21:48:10:002	USER_DEBUG	[4] DEBUG Value of x is: 0
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 1
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 2
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 3
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 4
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 5
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 6
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 7
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 8
21:48:10:003	USER_DEBUG	[4] DEBUG Value of x is: 9

The 'Enter Apex Code' editor contains 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 }
```

Below the code editor is a toolbar with buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. The bottom section features a table of logs with columns for User, Application, Operation, Time, Status, Read, and Size. A filter bar at the bottom allows users to search and sort the log list.

## Exercise – 3

The screenshot shows the Salesforce Developer Console interface. At the top, there are four tabs: 'Work with Schema Builder Unit' (closed), 'Home | Salesforce', 'All Accounts | Accounts | Sales' (closed), 'Developer Console', and 'Billing | Salesforce'. Below the tabs is a navigation bar with links like 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and 'Update'. The main area has a title 'Execution Log' with columns 'Timestamp', 'Event', and 'Details'. A log entry is present: '21:52:33:002 USER\_DEBUG [7] DEBUG|True'. Below this is an 'Enter Apex Code' window containing the following 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 }
```

At the bottom of the page is a log table with the following data:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:52:33	Success		2.65 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:52:24	Success		2.65 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:48:10	Success		5.63 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:46:09	Success		4.41 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:36:09	Success		2.25 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:34:16	Success		2.45 KB

## Exercise - 4

The screenshot shows the Salesforce Developer Console interface. At the top, there are four tabs: 'Work with Schema Builder Unit' (closed), 'Home | Salesforce', 'All Accounts | Accounts | Sales' (closed), 'Developer Console', and 'Billing | Salesforce'. Below the tabs is a navigation bar with links like 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and 'Update'. The main area has a title 'Execution Log' with columns 'Timestamp', 'Event', and 'Details'. A log entry is present: '21:52:33:002 USER\_DEBUG [7] DEBUG|True'. Below this is an 'Enter Apex Code' window containing the following code:

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

At the bottom of the page is a log table with the following data:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:54:22	Success	Unread	2.35 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:52:33	Success		2.65 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:52:24	Success		2.65 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:48:10	Success		5.63 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:46:09	Success		4.41 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:36:09	Success		2.25 KB

## Exercise – 5

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for Work with Schema Builder Unit, Home | Salesforce, All Accounts | Accounts | Sales, Developer Console, and Billing | Salesforce. The URL in the address bar is `cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`. The main area has a title bar "Execution Log" with tabs for Timestamp, Event, and Details. A log entry is shown: "21:56:43:003 USER\_DEBUG [3]DEBUG|today!=tomorrow". Below this 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 are buttons: "Open Log", "Execute", and "Execute Highlighted". Underneath the code editor is a toolbar with checkboxes for "This Frame", "Executable", "Debug Only", "Filter", and "Click here to filter the log list". The "Logs" tab is selected in the navigation bar. The log table displays the following entries:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:56:43	Success		2.52 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:56:43	Success	Unread	2.36 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:52:33	Success		2.65 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:52:24	Success		2.65 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:48:10	Success		5.63 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	23/02/2023, 21:46:09	Success		4.41 KB

# Exercise – 6

## Program for Finding the Grade Based on Score

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for Work with Schema Builder, Recently Viewed, Billing, Developer Console, and ApexCSIPage. The URL is [cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\\_ui/common/apex/debug/ApexCSIPage](https://cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage). Below the tabs, there are file navigation buttons (File, Edit, Debug, Test, Workspace, Help) and a search bar.

The main area displays the Apex code for `StudentGrade.apxc`:

```
1 public class StudentGrade {
2
3     public static void gradeCalculation(){
4         Integer score = 85;
5         System.debug('Your score is: '+score);
6         if(score==100){
7             System.debug('Grade: A+');
8         }
9         else if(score>=90){
10            System.debug('Grade: A');
11        }
12        else if(score>=80){
13            System.debug('Grade: B');
14        }
15        else{
16            System.debug('Grade: Failed');
17        }
18    }
19 }
```

Below the code, there is a table titled "Logs" showing the execution history:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:18:18	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Success	Unread	1 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Assertion Failed: Expected: 0, Actual: 85	Unread	231.25 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Maximum stack depth has been rea...	Unread	116.12 KB

At the bottom of the logs table, there is a "Filter" button and a "Click here to filter the log list" link.

The screenshot shows the same Salesforce Developer Console interface. The URL is now [cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\\_ui/common/apex/debug/ApexCSIPage](https://cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage). The tabs at the top are identical.

The main area displays the Apex code for `StudentGrade.apxc` and the execution log:

Execution Log

Timestamp	Event	Details
11:20:52:005	USER_DEBUG	[5] DEBUG Your score is: 85
11:20:52:006	USER_DEBUG	[13] DEBUG Grade: B

At the bottom of the log table, there is a "This Frame" checkbox, an "Executable" checkbox, a "Debug Only" checkbox, a "Filter" button, and a "Click here to filter the log list" link.

The screenshot shows the same Salesforce Developer Console interface. The URL is now [cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\\_ui/common/apex/debug/ApexCSIPage](https://cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage). The tabs at the top are identical.

The main area displays the Apex code for `StudentGrade.apxc` and the logs table:

Logs

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:20:52	Success		3.08 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:18:18	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Success	Unread	1 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Assertion Failed: Expected: 0, Actual: 85	Unread	231.25 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Maximum stack depth has been rea...	Unread	116.12 KB

At the bottom of the logs table, there is a "Filter" button and a "Click here to filter the log list" link.

## Exercise - 7

### Program to execute Apex – for loop

```
public class BillingObj {
    public static void getPaidBillings(){
        List<Billing__c> billingList = [Select Id,Name,Status__c from Billing__c Where CreatedDate=today];
        if(!billingList.isEmpty()){
            List<String> paidBillingList = new List<String>();
            for(Billing__c billing : billingList){
                if(billing.Status__c=='Paid'){
                    System.debug('Value of current record on which loop is iterating is Billing__c:'+billing);
                    paidBillingList.add(billing.Name);
                }
            }
            System.debug('Billing records are:'+paidBillingList);
        }
    }
}
```

Logs						
User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:20:52	Success		3.08 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:18:18	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Success	Unread	1 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Assertion Failed: Expected: 0, Actua...	Unread	231.25 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Maximum stack depth has been rea...	Unread	116.12 KB

Filter [Click here to filter the log list](#)

Execution Log

Timestamp	Event	Details
11:21:26:015	USER_DEBUG	[8]DEBUGValue of current record on which loop is iterating is Billing__c:Billing__c:{Id=a012w000017YSWDA4, Name=B - 0002, Status__c=Paid}
11:21:26:015	USER_DEBUG	[8]DEBUGValue of current record on which loop is iterating is Billing__c:Billing__c:{Id=a012w000017YSW8AAO, Name=B - 0001, Status__c=Paid}
11:21:26:015	USER_DEBUG	[12]DEBUGBilling records are:(B - 0002, B - 0001)

Logs

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:21:26	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:20:52	Success		3.08 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:18:18	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Assertion Failed: Expected: 0, Actua...	Unread	231.25 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Success	Unread	1 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Maximum stack depth has been rea...	Unread	116.12 KB

This Frame  Executable  Debug Only  Filter [Click here to filter the log list](#)

## Exercise – 8

### Created a Class to demonstrate constants in Apex

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Work with Schema Builder Unit' (selected), 'Recently Viewed | Billings | Sales', 'Billing | Salesforce', and 'Developer Console'. Below the tabs, the URL is [cunning-impara-719rsq-dev-ed.trailblaze.my.salesforce.com/\\_ui/common/apex/debug/ApexCSIPage](https://cunning-impara-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage). The main area displays the code for 'DiscountClass.apxc':

```
1 public class DiscountClass {
2
3     final decimal regularDiscount = 0.5;
4     decimal finalPrice = 0;
5
6     public decimal calculateDiscount(Integer price){
7         finalPrice = price - price*regularDiscount;
8         System.debug('final price: '+finalPrice);
9         return finalPrice;
10    }
11 }
```

A modal window titled 'Enter Apex Code' is open, containing the following code:

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

At the bottom of the developer console, there are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. Below the developer console, there is a log table with the following data:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:12	Success	Unread	4.66 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:21:26	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:20:52	Success		3.08 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:18:18	Success		6.48 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Assertion Failed: Expected: 0, Actual: 100.0	Unread	231.25 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:13:49	Success	Unread	1 KB

Below this, another developer console window is shown, with the log table containing the following data:

Timestamp	Event	Details
11:24:48:007	USER_DEBUG	[8][DEBUG]final price: 100.0

## Exercise – 9

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Work with Schema Builder Unit', 'Recently Viewed | Billings | Sales', 'Billing | Salesforce', and 'Developer Console'. Below the tabs, there are file navigation buttons and a toolbar with icons for 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and 'More'. A status bar at the bottom shows 'Code Coverage: None' and 'API Version: 57'. The main area displays the Apex code for the 'InterfaceExample' interface:

```
1 public interface InterfaceExample {
2     Double percentageDiscountTobeApplied();
3 }
4 }
```

Below the code editor is a log viewer titled 'Logs'. It has tabs for 'Logs', 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Logs' tab is selected. The log table has columns: User, Application, Operation, Time, Status, Read, and Size. The log entries are:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actua...	Unread	230.74 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:31	Success	Unread	1.01 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:48	Success	Unread	4.6 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:12	Success	Unread	4.66 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:21:26	Success	Unread	6.48 KB

At the bottom of the log viewer is a 'Filter' button and a link 'Click here to filter the log list'.

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Work with Schema Builder Unit', 'Recently Viewed | Billings | Sales', 'Billing | Salesforce', and 'Developer Console'. Below the tabs, there are file navigation buttons and a toolbar with icons for 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and 'More'. A status bar at the bottom shows 'Code Coverage: None' and 'API Version: 57'. The main area displays the Apex code for the 'PremiumCustomer' class:

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

Below the code editor is a log viewer titled 'Logs'. It has tabs for 'Logs', 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Logs' tab is selected. The log table has columns: User, Application, Operation, Time, Status, Read, and Size. The log entries are:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actua...	Unread	230.74 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:31	Success	Unread	1.01 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:48	Success	Unread	4.6 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:12	Success	Unread	4.66 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:21:26	Success	Unread	6.48 KB

At the bottom of the log viewer is a 'Filter' button and a link 'Click here to filter the log list'.

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Work with Schema Builder Unit', 'Recently Viewed | Billings | Sales', 'Billing | Salesforce', and 'Developer Console'. Below the tabs, there are file navigation buttons and a toolbar with icons for 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help', and 'More'. A status bar at the bottom shows 'Code Coverage: None' and 'API Version: 57'. The main area displays the Apex code for the 'PremiumCustomer' class:

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

Below the code editor is a log viewer titled 'Logs'. It has tabs for 'Logs', 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Logs' tab is selected. The log table has columns: User, Application, Operation, Time, Status, Read, and Size. The log entries are:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actua...	Unread	230.74 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:31	Success	Unread	1.01 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:48	Success	Unread	4.6 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:24:12	Success	Unread	4.66 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:21:26	Success	Unread	6.48 KB

At the bottom of the log viewer is a 'Filter' button and a link 'Click here to filter the log list'. To the right of the log viewer, there is a small screenshot of the 'Schema Builder Unit' interface, showing a list of objects and their details.

Developer Console

Execution Log

Timestamp	Event	Details
11:44:22:009	USER_DEBUG	[3] DEBUG Discount is 0.3

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:44:22	Success		4.02 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:43:53	Success		3.86 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:42:24	Success		3.65 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actual: 1	Unread	230.74 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:31	Success	Unread	1.01 KB

Filter Click here to filter the log list

Developer Console

Code Coverage: None API Version: 57 Go To

```
1 public class NormalCustomer implements InterfaceExample{
2     public Double percentageDiscountTobeApplied() {
3         return 0.10;
4     }
5 }
```

Enter Apex Code

```
1 rfaceExample premCust = new NormalCustomer()
2 le dis = premCust.percentageDiscountTobeAppl
3 em.debug('Discount is '+dis);
```

Open Log Execute Execute Highlighted

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:44:22	Success		4.02 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:43:53	Success		3.86 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:42:24	Success		3.65 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actual: 1	Unread	230.74 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:31	Success	Unread	1.01 KB

Filter Click here to filter the log list

Work with Schema Builder Unit | Recently Viewed | Billings | Sales | Billing | Salesforce | Developer Console

cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\_ui/common/apex/debug/ApexCSIPage

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

↳ jpxc [Log executeAnonymous @24/02/2023, 11:42:24] Log executeAnonymous @24/02/2023, 11:43:53 Log executeAnonymous @24/02/2023, 11:44:22 NormalCustomer.apxc Log executeAnonymous @24/02/2023, 11:46:59

**Execution Log**

Timestamp	Event	Details
11:46:59:019	USER_DEBUG	[3][DEBUG]Discount is 0.1

This Frame Executable Debug Only Filter Click here to filter the log

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:46:59	Success		4.07 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:44:22	Success		4.02 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:43:53	Success		3.86 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:42:24	Success		3.65 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actual: 1	Unread	230.74 KB
Hema Kumar Undrajavarapu	Unknown	ApexTestHandler	24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB

Filter Click here to filter the log list

## Exercise – 10

### Demo on DML Insert Operation Using Database Methods

The screenshot shows two separate instances of the Salesforce Developer Console. Both instances have the same URL: `cunning-impala-719sq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`.

**Code Snippet 1 (Top):**

```
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    }
25
26 }
27 }
```

**Code Snippet 2 (Bottom):**

```
7 List<Billing__c> billings = new List<Billing__c>{
8     new Billing__c(Status__c='Paid',Amount_Paid__c =5000000,Customer__c =cust_id)
9 };
10 Database.SaveResult[] srList= Database.insert(billings,false);
11
12 for(Database.SaveResult li : srList){
13     if(li.isSuccess()){
14         System.debug('Record Inserted , Billing ID: '+li.getId());
15     }
16     else{
17         for(Database.Error e: li.getErrors()){
18             System.debug(e.getStatusCode() + ': ' + e.getMessage());
19             System.debug('Billing fields which are having errors: '+e.getFields());
20         }
21     }
22 }
23
24
25
26 }
27 }
```

**Logs Tab (Top Console):**

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:46:59	Success		4.07 KB
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:44:22	Success		4.02 KB
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:43:53	Success		3.86 KB
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:42:24	Success		3.65 KB
Hema Kumar Undravarapu	ApexTestHandler		24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actual: 1	Unread	230.74 KB
Hema Kumar Undravarapu	ApexTestHandler		24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB

**Logs Tab (Bottom Console):**

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:46:59	Success		4.07 KB
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:44:22	Success		4.02 KB
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:43:53	Success		3.86 KB
Hema Kumar Undravarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:42:24	Success		3.65 KB
Hema Kumar Undravarapu	ApexTestHandler		24/02/2023, 11:40:32	Assertion Failed: Expected: 0, Actual: 1	Unread	230.74 KB
Hema Kumar Undravarapu	ApexTestHandler		24/02/2023, 11:40:32	Maximum stack depth has been rea...	Unread	116.95 KB

The screenshot shows a macOS desktop environment with two Salesforce Developer Console windows open in a browser tab and a Billings page in another window.

**Developer Console (Top Window):**

- URL: [cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\\_ui/common/apex/debug/ApexCSIPage](https://cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage)
- Tab Title: Developer Console
- Content: Execution Log showing a single entry: "11:49:53:080 USER\_DEBUG [15]DEBUG|Record Inserted , Billing ID: a012w000017YSh5AAG"

**Developer Console (Second Tab):**

- URL: [cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\\_ui/common/apex/debug/ApexCSIPage](https://cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage)
- Tab Title: Log executeAnonymous @24/02/2023, 11:44:22
- Content: Execution Log showing multiple entries related to tooling API calls.

**Billings Page (Bottom Window):**

- URL: [cunning-impala-719rsq-dev-ed.trailblaze.lightning.force.com/lightning/r/Billing\\_\\_c/a012w000017YSh5AAG/view](https://cunning-impala-719rsq-dev-ed.trailblaze.lightning.force.com/lightning/r/Billing__c/a012w000017YSh5AAG/view)
- Title: Billing  
B - 0005
- Details:
  - Billing Number: B - 0005
  - Amount Paid: \$5,000,000
  - Customer Type:
  - Status: Paid
  - Customer: Wipro
  - Created By: Hema Kumar Undrajavarapu, 2/23/2023, 10:19 PM
  - Last Modified By: Hema Kumar Undrajavarapu, 2/23/2023, 10:19 PM
- Right Sidebar:
  - User Profile: Hema Kumar Undrajavarapu
  - Display Density: Comfy (selected)
  - Options:
    - Switch to Salesforce Classic
    - Add Username

# Exercise – 11

## Displaying Records According to the required Conditions

The screenshot shows the Salesforce Developer Console interface. At the top, there are several tabs: Work with Schema Builder, Chatter Home | Salesforce, Developer Console, All Opportunities | Opportu..., Billing | Salesforce, and another Developer Console tab. Below the tabs, the URL is curious-wolf-tyvkhp-dev-ed.trailblaze.my.salesforce.com/\_ui/common/apex/debug/ApexCSIPage.

The main area displays a query result grid titled "Query Results - Total Rows: 10". The columns are Id, AccountId, Amount, Name, StageName, Account.Industry, and Account.Website. The results show 10 rows of data, all belonging to the "Energy" industry with AnnualRevenue > 5000.

Id	AccountId	Amount	Name	StageName	Account.Industry	Account.Website
0062w00000HtceRAAR	0012w00001DUqKyAAL	125000	United Oil Office Portable Generators	Negotiation/Review	Energy	http://www.uos.com
0062w00000HtceVAAR	0012w00001DUqKyAAL	270000	United Oil Refinery Generators	Proposal/Price Quote	Energy	http://www.uos.com
0062w00000HtceWAAR	0012w00001DUqKyAAL	120000	United Oil SLA	Closed Won	Energy	http://www.uos.com
0062w00000HtceaAAB	0012w00001DUqKyAAL	270000	United Oil Installations	Negotiation/Review	Energy	http://www.uos.com
0062w00000HtcejAAB	0012w00001DUqKyAAL	915000	United Oil Installations	Closed Won	Energy	http://www.uos.com
0062w00000HtceoAAB	0012w00001DUqKyAAL	235000	United Oil Refinery Generators	Closed Won	Energy	http://www.uos.com
0062w00000HtcepAAB	0012w00001DUqKyAAL	440000	United Oil Emergency Generators	Closed Won	Energy	http://www.uos.com
0062w00000HtcerAAB	0012w00001DUqKyAAL	120000	United Oil Standby Generators	Closed Won	Energy	http://www.uos.com
0062w00000HtcetAAB	0012w00001DUqKyAAL	675000	United Oil Plant Standby Generators	Needs Analysis	Energy	http://www.uos.com

Below the grid, there are buttons for Query Grid, Save Rows, Insert Row, Delete Row, Refresh Grid, Access in Salesforce, Create New, Open Detail Page, and Edit Page. The "Logs" tab is selected in the navigation bar.

The "Query Editor" tab is active, showing the query: "SELECT Id, AccountId, Amount, Name, StageName, Account.Industry, Account.Website FROM Opportunity WHERE Account.Industry = 'Energy' AND Account.AnnualRevenue > 5000". The "History" section shows the query was executed and lists the SELECT statement.

At the bottom, there are "Execute" and "Use Tooling API" buttons.

# Exercise – 12

## Created a Trigger for Billing Named CustomerTrigger

```
trigger CustomerTrigger on Customer__c (after update) {
    if(Trigger.isUpdate && Trigger.isAfter){
        List<Customer__c> customers = Trigger.New;
        for(Customer__c customer: customers){
            if(customer.Active__c == True){
                Billing__c billing = new Billing__c();
                billing.Customer__c = customer.Id;
                billing.Status__c = 'Paid';
                billing.Amount_Paid__c = 1000000;
                insert billing;
            }
        }
    }
}
```

The screenshot shows the Salesforce Developer Console with the code for the CustomerTrigger apex class. The code triggers on the Customer\_\_c object after an update. It checks if the trigger is after and if the record is updated. If so, it creates a new Billing\_\_c record, sets its Customer\_\_c field to the current customer, sets the Status\_\_c field to 'Paid', and sets the Amount\_Paid\_\_c field to 1,000,000. Finally, it inserts the new Billing\_\_c record.

Updated Salesforce Customer from in active to active

The screenshot shows a Customer record page in the Salesforce Lightning Experience. The record belongs to Wipro and has the name Hema Kumar Undrajavarapu. The Active checkbox is checked. The Customer Type is Premium. The record was created by Hema Kumar Undrajavarapu on 2/23/2023 at 10:19 PM and last modified by her on the same date and time. A context menu is open on the right side, showing options like Comfy, Compact, and Switch to Salesforce Classic.

The screenshot shows the Salesforce Lightning interface. The top navigation bar includes tabs for Work with Schema Builder, Chatter Home, Developer Console, Siddhu | Salesforce, Billing | Salesforce, and another Developer Console tab. The main content area displays a Customer record for 'Siddhu'. The 'Details' tab is selected, showing fields like Customer Name (Siddhu), Active (checked), Customer Type (Premium), and a Description field. The Owner is listed as Hema Kumar Undrajavarapu. The bottom of the card shows Created By (Hema Kumar Undrajavarapu) and Last Modified By (Hema Kumar Undrajavarapu) on 2/23/2023, 9:46 PM. A sidebar on the right shows the user's profile (Hema Kumar Undrajavarapu) and options for DISPLAY DENSITY (Comfy, Compact), OPTIONS (Switch to Salesforce Classic, Add Username), and a notification count of 12.

## New Record Created in Billing Object with Salesforce Customer

The screenshot shows the Salesforce Lightning interface. The top navigation bar includes tabs for Chrome, File, Edit, View, History, Bookmarks, Profiles, Tab, Window, Help, and a date/time indicator (Sun 26 Feb 20:47). The main content area displays a new Billing record with the ID B - 0006. The 'Details' tab is selected, showing fields like Billing Number (B - 0006), Amount Paid (\$1,000,000), and Customer Type (Customer Wipro). The Status is set to Paid. The bottom of the card shows Created By (Hema Kumar Undrajavarapu) and Last Modified By (Hema Kumar Undrajavarapu) on 2/23/2023, 10:30 PM. A sidebar on the right shows the user's profile (Hema Kumar Undrajavarapu) and options for DISPLAY DENSITY (Comfy, Compact), OPTIONS (Switch to Salesforce Classic, Add Username), and a notification count of 12. The Mac OS Dock is visible at the bottom.

# Exercise – 13

## Created a Test Class for CustomTrigger

Screenshot of the Salesforce Developer Console showing the creation of a test class for a custom trigger.

The code in the editor is:

```

1  @isTest
2  public class CustomerTriggerTest {
3
4      @isTest
5      static void testCustomer(){
6          //Creating Customer
7          Customer__c cust1 = new Customer__c();
8          cust1.Name='test1';
9          cust1.Customer_Type__c = 'Premium';
10         insert cust1;
11
12         //Updating Customer
13         cust1.Active__c = True;
14         update cust1;
15
16         //After Updating, changing the billing information
17         if(cust1.Active__c == True){
18             Test.startTest();
19             Billing__c billing = new Billing__c();
20             billing.Status__c = 'Paid';
21             billing.Amount_Paid__c = 1000000;
22             Test.stopTest();
}
}

```

The log table shows the following entries:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:23:06	Success	Unread	10.19 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:20:29	Success		10.17 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:00:51	Success	Unread	4.51 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:49:53	Success		5.58 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:46:59	Success		4.07 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:41:22	Success		4.02 KB

Filter: Click here to filter the log list

Screenshot of the Salesforce Developer Console showing the addition of assertions to the test class.

The code in the editor is:

```

8  cust1.Name='test1';
9  cust1.Customer_Type__c = 'Premium';
10  insert cust1;
11
12  //Updating Customer
13  cust1.Active__c = True;
14  update cust1;
15
16  //After Updating, changing the billing information
17  if(cust1.Active__c == True){
18      Test.startTest();
19      Billing__c billing = new Billing__c();
20      billing.Status__c = 'Paid';
21      billing.Amount_Paid__c = 1000000;
22      Test.stopTest();
23      system.assertEquals('Paid', billing.Status__c);
24      system.assertEquals(1000000, billing.Amount_Paid__c);
25  }
26
27 }

```

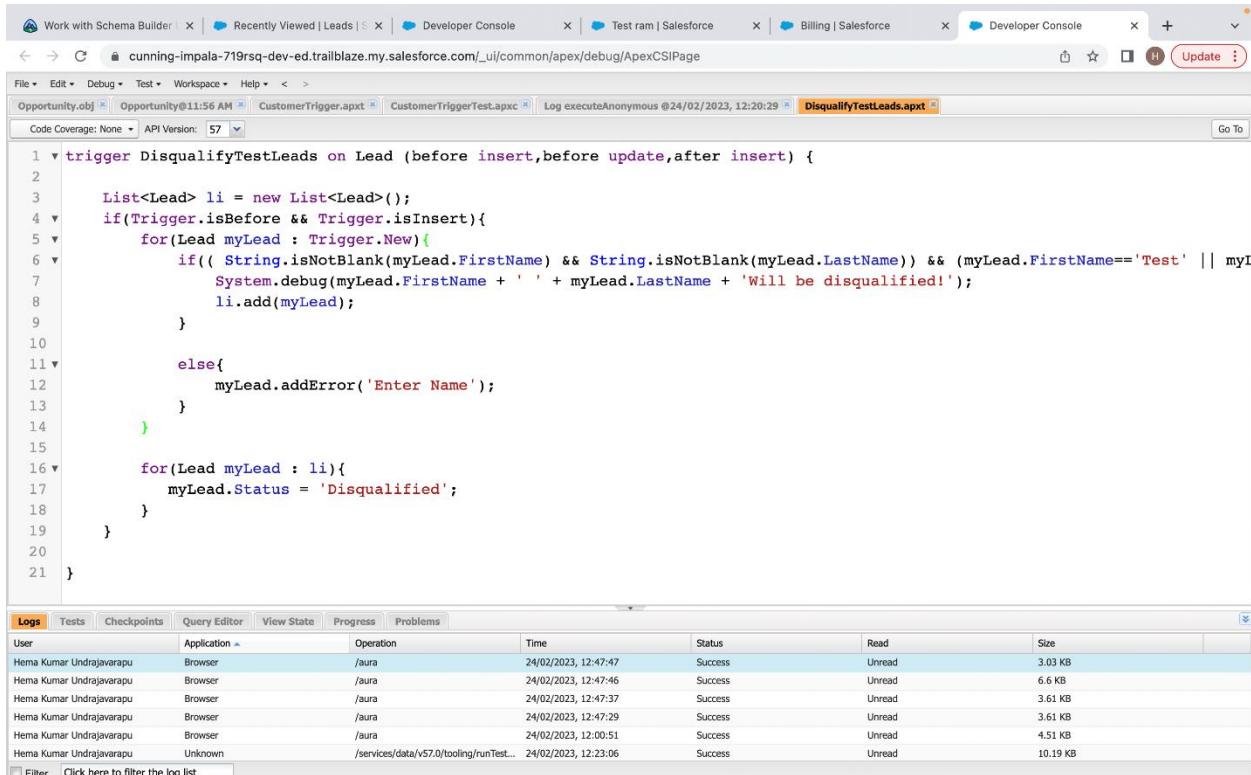
The log table shows the following entries:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:23:06	Success	Unread	10.19 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:20:29	Success		10.17 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:00:51	Success	Unread	4.51 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:49:53	Success		5.58 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:46:59	Success		4.07 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 11:41:22	Success		4.02 KB

Filter: Click here to filter the log list

# Exercise – 14

## Create a Trigger for Leads Named DisqualifyTestLeads

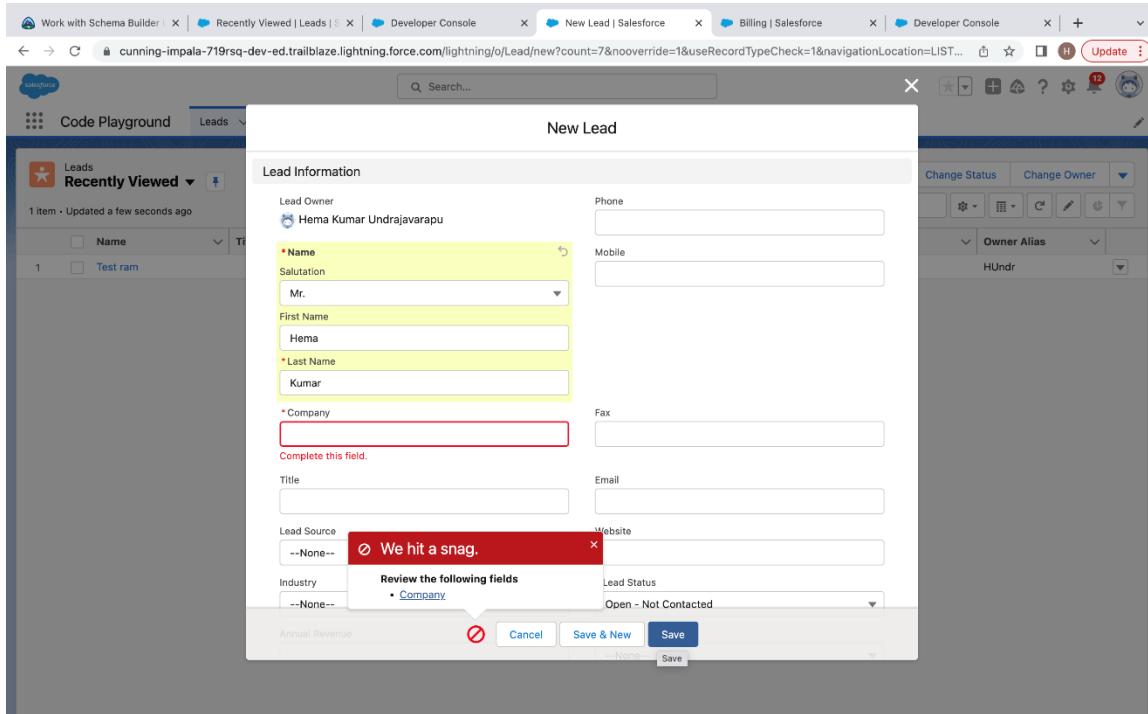


```

1 trigger DisqualifyTestLeads on Lead (before insert,before update,after insert) {
2
3     List<Lead> li = new List<Lead>();
4     if(Trigger.isBefore && Trigger.isInsert){
5         for(Lead myLead : Trigger.New){
6             if(( String.isNotBlank(myLead.FirstName) && String.isNotBlank(myLead.LastName)) && (myLead.FirstName=='Test' || myLead.LastName == 'Will be disqualified')){
7                 System.debug(myLead.FirstName + ' ' + myLead.LastName + ' Will be disqualified!');
8                 li.add(myLead);
9             }
10        }
11    }
12    else{
13        myLead.addError('Enter Name');
14    }
15
16    for(Lead myLead : li){
17        myLead.Status = 'Disqualified';
18    }
19
20}
21

```

The screenshot shows the Salesforce Developer Console with the code editor open. The code defines a trigger named 'DisqualifyTestLeads' on the 'Lead' object. It handles three types of triggers: before insert, before update, and after insert. The logic checks if the trigger is before insert and if it's a new lead. If so, it iterates through the leads and adds them to a list if their first name and last name are not blank and either the first name is 'Test' or the last name is 'Will be disqualified'. A debug statement is included to log these leads. Finally, it loops through the list and sets the status of each lead to 'Disqualified'. The code editor also shows a log tab at the bottom with several log entries from a user named Hema Kumar Undrajavarapu.



The screenshot shows the Salesforce Lightning interface for creating a new lead. The 'New Lead' form is displayed, and there are several validation errors highlighted in red. The errors are:

- 'Name' is required.
- 'Last Name' is required.
- 'Company' is required.

The 'Name' and 'Last Name' fields are currently empty and highlighted in yellow. The 'Company' field is also empty and has a red border. A modal dialog box titled 'We hit a snag.' is overlaid on the form, containing the message 'Review the following fields' and a list of the required fields: 'Name', 'Last Name', and 'Company'. The 'Save' button at the bottom right of the dialog is disabled due to the validation errors.

## Exercise – 15

### Created a test class for DisqualifyTestLeads Trigger

The screenshot shows the Salesforce developer console interface. At the top, there are several tabs: 'Work with Schema Builder', 'Recently Viewed | Leads', 'Developer Console', 'Recently Viewed | Leads', 'Billing | Salesforce', and another 'Developer Console'. Below the tabs, the title bar shows the file path: 'cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\_ui/common/apex/debug/ApexCSIPage'. The main area displays the trigger code:

```
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';
    }
}
```

Below the code, there is a 'Logs' tab which shows the following log entries:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:47	Success	Unread	3.03 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:46	Success	Unread	6.6 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:37	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:29	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:00:51	Success	Unread	4.51 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:23:06	Success	Unread	10.19 KB

At the bottom of the logs table, it says 'Insert failed. First exception on row ... Unread 18.84 KB'.

The second part of the screenshot shows the developer console again. The title bar is identical. The main area displays the test class code:

```
@isTest
public class DisqualifyTestLeads {
    @isTest
    private static void insertData(){
        Lead l1 = new Lead();
        l1.FirstName = 'Test';
        l1.LastName = 'Test';
        l1.Company = 'Test';
        Test.startTest();
        insert l1;
        Test.stopTest();
        System.assertEquals('Test', l1.FirstName);
        System.assertEquals('Test', l1.LastName);
        System.assertEquals('Test', l1.Company);
    }

    @isTest
    private static void insertData2(){
        Lead l2 = new Lead();
        l2.LastName = 'Test';
    }
}
```

Below the code, there is a 'Logs' tab which shows the following log entries:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:47	Success	Unread	3.03 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:46	Success	Unread	6.6 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:37	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:29	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:00:51	Success	Unread	4.51 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:58:32	Insert failed. First exception on row ...	Unread	18.84 KB

At the bottom of the logs table, it says 'Insert failed. First exception on row ... Unread 18.84 KB'.

Work with Schema Builder | Recently Viewed | Leads | Developer Console | Recently Viewed | Leads | Billing | Salesforce | Developer Console

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

DisqualifyTestLeads.apxc DisqualifyTestLeads.apxc

Code Coverage: None API Version: 57 Run Test Go To

```

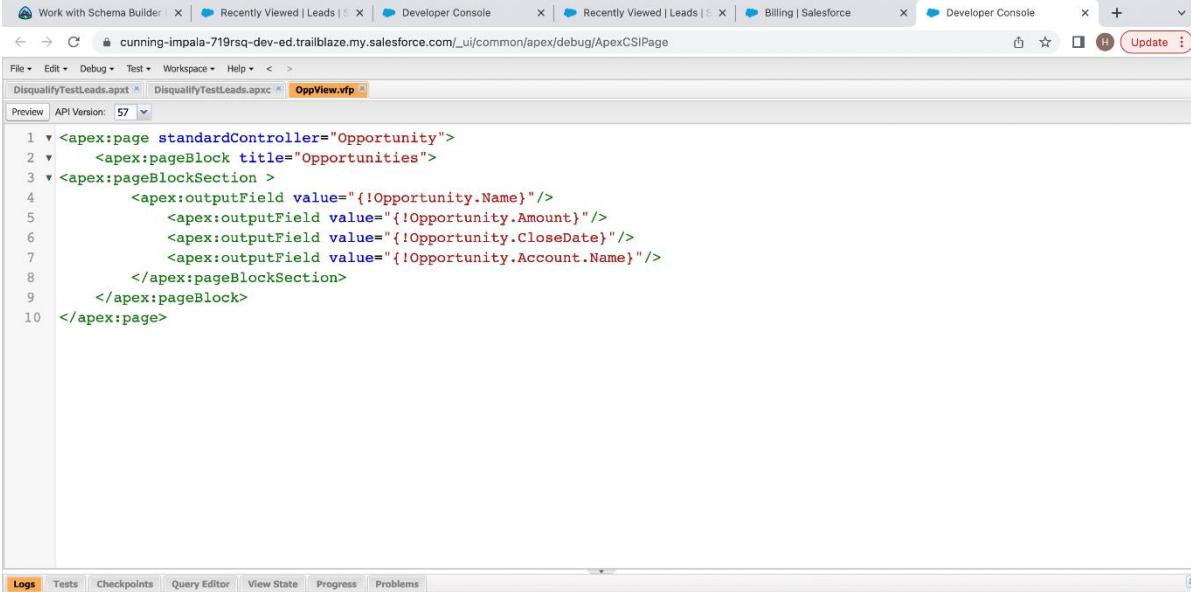
12     Test.stopTest();
13     System.assertEquals('Test', ll.FirstName);
14     System.assertEquals('Test', ll.LastName);
15     System.assertEquals('Test', ll.Company);
16 }
17
18 @isTest
19 private static void insertData2(){
20     Lead l2 = new Lead();
21     l2.LastName = 'Test';
22     l2.Company = 'Wipro';
23     Test.startTest();
24     insert l2;
25     Test.stopTest();
26     System.assertEquals(null, l2.FirstName);
27     System.assertEquals('Test', l2.LastName);
28     System.assertEquals('Test', l2.Company);
29 }
30
31
32 }
33 }
```

Logs Tests Checkpoints Query Editor View State Progress Problems

Status	Test Run	Enqueued Time	Duration	Failures	Total	Overall Code Coverage																					
✗	7072w00000Lbyan	Fri Feb 24 2023 11:13:48 GMT...		1	2	<table border="1"> <thead> <tr> <th>Class</th> <th>Percent</th> <th>Lines</th> </tr> </thead> <tbody> <tr> <td>DiscountClass</td> <td>0%</td> <td>0/5</td> </tr> <tr> <td>DisqualifyTestLeads</td> <td>100%</td> <td>8/8</td> </tr> <tr> <td>NormalCustomer</td> <td>0%</td> <td>0/2</td> </tr> <tr> <td>OrderExtension</td> <td>91%</td> <td>93/102</td> </tr> <tr> <td>OrderHelper</td> <td>100%</td> <td>21/21</td> </tr> <tr> <td>orderTrigger</td> <td>0%</td> <td>0/1</td> </tr> </tbody> </table>	Class	Percent	Lines	DiscountClass	0%	0/5	DisqualifyTestLeads	100%	8/8	NormalCustomer	0%	0/2	OrderExtension	91%	93/102	OrderHelper	100%	21/21	orderTrigger	0%	0/1
Class	Percent	Lines																									
DiscountClass	0%	0/5																									
DisqualifyTestLeads	100%	8/8																									
NormalCustomer	0%	0/2																									
OrderExtension	91%	93/102																									
OrderHelper	100%	21/21																									
orderTrigger	0%	0/1																									
✓	TestRun @ 12:20:28 pm			0	1																						
✓	CustomerTrigger			0	1																						
✓	testCustomer		0:00																								
✓	TestRun @ 12:23:05 pm			0	1																						
✓	CustomerTriggerTest			0	1																						
✓	TestRun @ 12:57:15 pm			0	1																						

# Exercise – 16

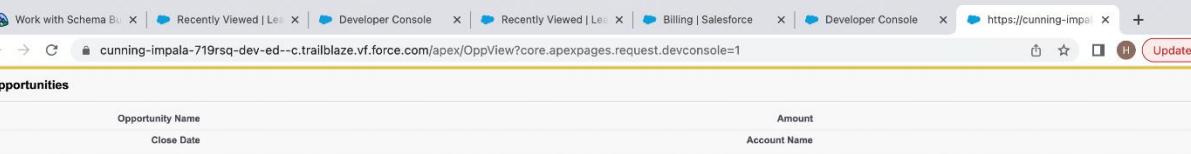
## Created a Visualforce Page OppView and Displayed Four apex: outputfields



```
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>
```

The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for Work with Schema Builder, Recently Viewed Leads, Developer Console, Recently Viewed Leads, Billing | Salesforce, and another Developer Console tab. Below the tabs, there are buttons for File, Edit, Debug, Test, Workspace, Help, and Update. The main area displays the Visualforce page code for OppView.vfp. The code defines an apex:page with a standardController of Opportunity. It contains an apex:pageBlock with a title of "Opportunities". Inside the page block is an apex:pageBlockSection which contains four apex:outputField components, each displaying a different field from the Opportunity object: Name, Amount, CloseDate, and Account.Name.

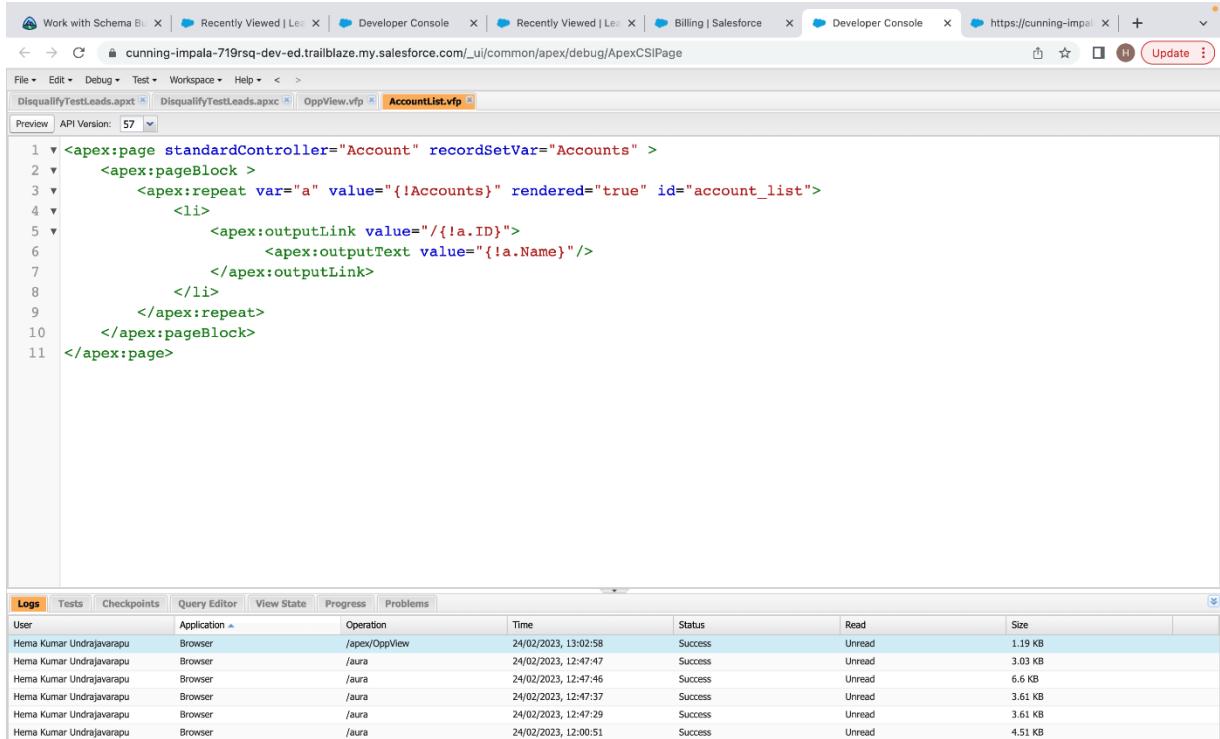
User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:47	Success	Unread	3.03 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:46	Success	Unread	6.6 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:37	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:29	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:00:51	Success	Unread	4.51 KB
Hema Kumar Undrajavarapu	Unknown	/services/data/v57.0/tooling/runTest...	24/02/2023, 12:58:32	Insert failed. First exception on row ...	Unread	18.84 KB



The screenshot shows a browser window displaying the OppView page. The URL is https://cunning-impala-719rsq-dev-ed--c.trailblaze.vf.force.com/apex/OppView?core.apexpages.request.devconsole=1. The page has a header titled "Opportunities". Below the header is a table with columns: Opportunity Name, Close Date, Amount, and Account Name. The table currently has one row of data.

## Exercise – 17

Created a Visualforce page that shows a list of Account linked to their record pages



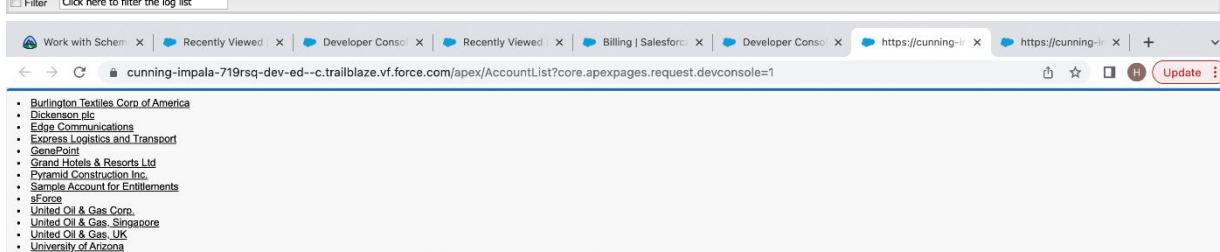
The screenshot shows the Salesforce Developer Console interface. At the top, there are several tabs: 'Work with Schema Bl...', 'Recently Viewed | Le...', 'Developer Console', 'Recently Viewed | Le...', 'Billing | Salesforce', 'Developer Console', and 'https://cunning-impala...'. Below the tabs, the URL is 'cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\_ui/common/apex/debug/ApexCSIPage'. The main area displays the Visualforce page code:

```
1 <apex:page standardController="Account" recordSetVar="Accounts" >
2   <apex:pageBlock >
3     <apex:repeat var="a" value={!Accounts}" rendered="true" id="account_list">
4       <li>
5         <apex:outputLink value="/{!a.ID}">
6           <apex:outputText value="{!!a.Name}" />
7         </apex:outputLink>
8       </li>
9     </apex:repeat>
10   </apex:pageBlock>
11 </apex:page>
```

Below the code, there is a 'Logs' tab in the navigation bar. The 'Logs' table contains the following data:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Browser	/apex/OppView	24/02/2023, 13:02:58	Success	Unread	1.19 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:47	Success	Unread	3.03 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:46	Success	Unread	6.6 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:37	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:29	Success	Unread	3.61 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:00:51	Success	Unread	4.51 KB

At the bottom, there is another browser window showing the generated Visualforce page:



The page lists the following accounts:

- Burlington Textiles Corp of America
- Dickenson plc
- Edge Communications
- EMC Logistics and Transport
- GenePoint
- Grand Hotels & Resorts Ltd
- Pyramid Construction Inc
- Sample Account for Entitlements
- sForce
- United Oil & Gas Corp.
- United Oil & Gas, Singapore
- United Oil & Gas, UK
- University of Arizona

## Exercise – 18

Created Vf page that uses an Apex class to Display  
A list of cases with the status of ‘New’

The screenshot shows the Salesforce developer console interface. At the top, there are several tabs: DisqualifyTestLeads.apxt, DisqualifyTestLeads.apxc, OppView.vfp, AccountList.vfp, **NewCaseListController.apxc**, and NewCaseListController.vfp. Below the tabs, the code for **NewCaseListController.apxc** is displayed:

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

At the bottom of the screen, there is a log table titled "Log". The table has columns: User, Application, Operation, Time, Status, Read, and Size. The log entries are as follows:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Browser	/apex/NewCaseListController	24/02/2023, 14:32:38	Success	Unread	3.49 KB
Hema Kumar Undrajavarapu	Browser	/apex/AccountList	24/02/2023, 13:06:20	Success	Unread	1.2 KB
Hema Kumar Undrajavarapu	Browser	/apex/OppView	24/02/2023, 13:02:58	Success	Unread	1.19 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:47	Success	Unread	3.03 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:46	Success	Unread	6.6 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:37	Success	Unread	3.61 KB

The screenshot shows the Salesforce Dev Console interface. At the top, there are several tabs and links: Work with Sch, Recently View, Developer Con, Recently View, Billing | Sales, Developer Con, https://cunning..., https://cunning..., https://cunning... (with three instances). Below the tabs, the page title is "cunning-impala-719rsq-dev-ed.trailblaze.my.salesforce.com/\_ui/common/apex/debug/ApexCSIPage". The main content area displays the Apex code for NewCaseListController.vfp:

```
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>
```

Below the code, there is a "Logs" tab selected, followed by Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Logs table contains the following data:

User	Application	Operation	Time	Status	Read	Size
Hema Kumar Undrajavarapu	Browser	/apex/NewCaseListController	24/02/2023, 14:32:38	Success	Unread	3.49 KB
Hema Kumar Undrajavarapu	Browser	/apex/AccountList	24/02/2023, 13:06:20	Success	Unread	1.2 KB
Hema Kumar Undrajavarapu	Browser	/apex/OppView	24/02/2023, 13:02:58	Success	Unread	1.19 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:47	Success	Unread	3.03 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:46	Success	Unread	6.6 KB
Hema Kumar Undrajavarapu	Browser	/aura	24/02/2023, 12:47:37	Success	Unread	3.61 KB

At the bottom left of the logs table, there is a "Filter" button and a placeholder "Click here to filter the log list".

The screenshot shows the Salesforce Dev Console interface. The URL in the address bar is "cunning-impala-719rsq-dev-ed--c.trailblaze.vf.force.com/apex/NewCaseListController?core.apexpages.request.devconsole=1". The page content area displays a list of IDs:

- 5002w000000M4huAAC 00001002
- 5002w000000M4j8AAC 00001016
- 5002w000000M4jGAAS 00001024

## 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](#)