



# Capstone Project Report On “Travel Approval App”

Submitted by:

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## Table of contents

1.	Abstract.....
2.	Introduction.....
3.	Flow of the project.....
4.	Software Requirements.....
5.	Screen shots.....
6.	Future enhancements.....
7.	References.....

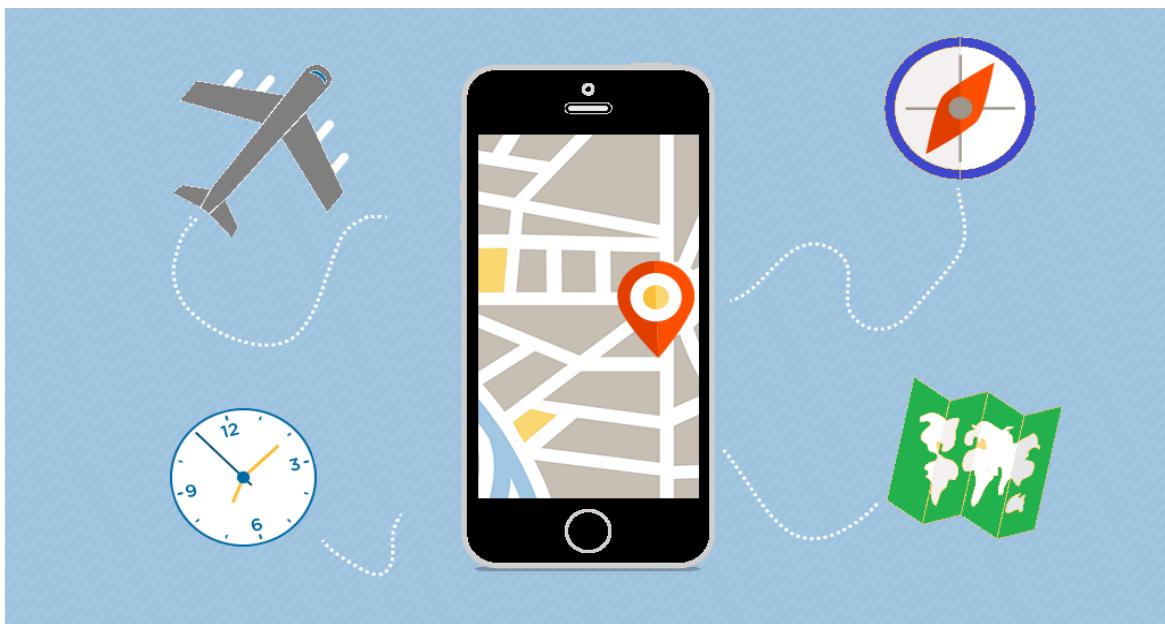
## **Abstract**

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 real time 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 representatives and managers while ensuring compliance and cost-effectiveness.

## Software Requirements

For the fastest and most stable experience, we recommend:

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

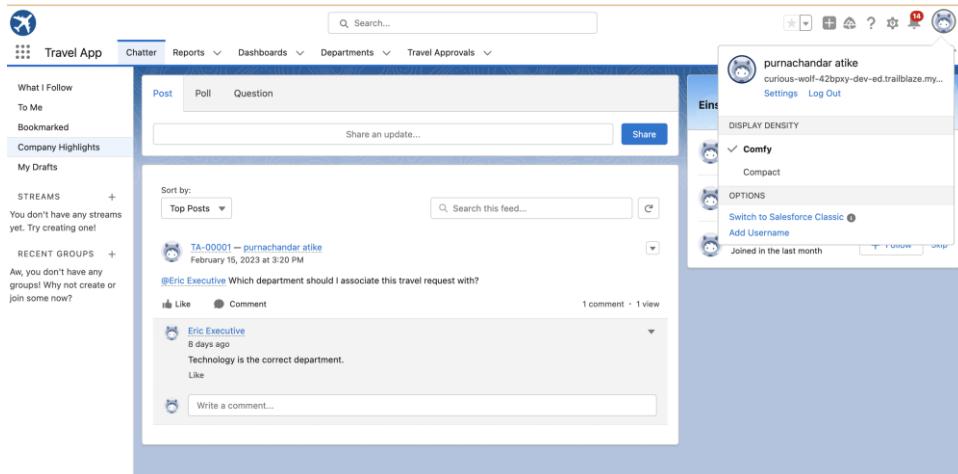
Minimum requirements are:

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

# Module - 1

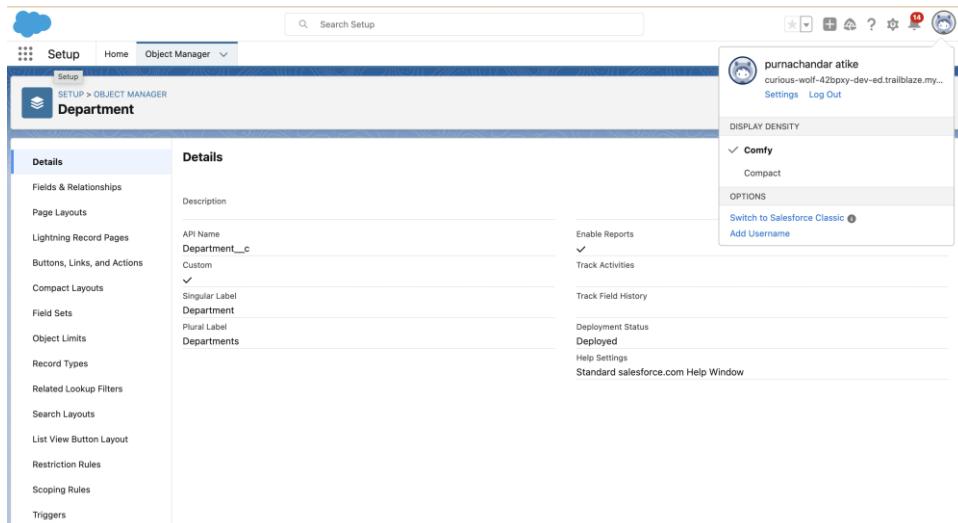
## Exercise – 1

### Step – 1 : Created Travel App Application



### Step – 2

### Created Department Custom Object



Created new Department custom Object tab

The screenshot shows the Salesforce Setup interface under the 'Tabs' section. A custom tab named 'Departments' has been created. The 'Custom Tab Definition Detail' table includes fields for Tab Label ('Departments'), Object ('Department'), Description ('Department'), Created By ('purnachandar.atike'), and Modified By ('purnachandar.atike'). The 'Tab Style' is set to 'Splash Page Custom Link'. The 'OPTIONS' section shows 'Books' selected. The top right corner displays the user's profile ('purnachandar atike') and navigation links.

## Step – 3

Created all the required Custom fields

The screenshot shows the Salesforce Setup interface under the 'Object Manager' section. A custom object named 'Department' has been created. The 'Fields & Relationships' table lists fields such as 'Created By', 'Department Code', 'Department Name', 'Department Type', 'Last Modified By', 'Location', and 'Owner'. The top right corner displays the user's profile ('purnachandar atike') and navigation links.

Created Field Dependency

The screenshot shows the Salesforce Setup interface under the 'Object Manager' section for the 'Department' object. The 'Field Dependencies' table shows a dependency where 'Department Type' is the controlling field and 'Location' is the dependent field. The top right corner displays the user's profile ('purnachandar atike') and navigation links.

## Step – 4

### Created the required Travel Approval Object

Setup > OBJECT MANAGER  
Travel Approval

**Details**

Description

API Name: Travel\_Approval\_\_c

Singular Label: Travel Approval

Plural Label: Travel Approvals

DISPLAY DENSITY: Comfy

OPTIONS:

- Enable Reports
- Track Activities
- Track Field History
- Deployment Status
- Help Settings

### Created the required fields

Setup > OBJECT MANAGER  
Travel Approval

**Fields & Relationships**

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLER
Created By	CreatedBy	Lookup(User)	
Department	Department__c	Lookup(Department)	
Destination State	Destination_State__c	Text(2)	
Last Modified By	LastModifiedBy	Lookup(User)	
Out-of-State	Out_of_State__c	Checkbox	
Owner	OwnerId	Lookup(User,Group)	
Purpose of Trip	Purpose_of_Trip__c	Text(50)	
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

The screenshot shows a Salesforce interface for a 'Travel Approval' record with ID TA-00001. The record details include:

- Travel Approval #**: TA-00001
- Status**: Approved
- Total Expenses**: \$1,320.00
- Status Indicator**: Green checkmark
- Created By**: purnachandar atike, 2/15/2023, 2:43 PM
- Last Modified By**: purnachandar atike, 2/15/2023, 4:10 PM

Under the **Trip Info** section:

- Purpose of Trip**: Attend Dreamforce
- Trip Start Date**: 2/15/2023
- Trip End Date**: 2/23/2023
- Out-of-State**: Checked
- Destination State**: CA

A sidebar on the right shows the user's profile (purnachandar atike) and activity feed, which is currently empty.

## Step – 5

Imported Departments.CSV file using Data import Wizard

The screenshot shows a Salesforce list view for 'Departments'. The list contains 16 items, each with a checkbox and a 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

A sidebar on the right shows the user's profile (purnachandar atike) and activity feed, which is currently empty.

## Exercise – 2

Step -1

Created Travel Approval Record

The screenshot shows a Salesforce page for a 'Travel Approval' record with ID TA-00001. The record details include:

- Travel Approval #**: TA-00001
- Status**: Approved
- Total Expenses**: \$1,320.00
- Created By**: purnachandar atike, 2/15/2023, 2:43 PM
- Last Modified By**: purnachandar atike, 2/15/2023, 4:10 PM
- Purpose of Trip**: Attend Dreamforce
- Trip Start Date**: 2/15/2023
- Trip End Date**: 2/23/2023
- Out-of-State**: Checked
- Destination State**: CA

A sidebar on the right shows the user's profile (purnachandar atike) and activity feed, which is currently empty.

## Step – 2

### Created Expense Item Custom Object

The screenshot shows the 'Object Manager' setup page for creating a new object named 'Expense Item'. The 'Details' tab is selected, showing the following configuration:

- Description**: None
- API Name**: Expense\_\_Item\_\_c
- Custom**: Checked
- Singular Label**: Expense Item
- Plural Label**: Expense Items
- Enable Reports**: Checked
- Track Activities**: Unchecked
- Track Field History**: Unchecked
- Deployment Status**: Deployed
- Help Settings**: Standard salesforce.com Help Window

A sidebar on the right shows the user's profile and activity feed, which is currently empty.

## Step – 3

### Created Custom fields

Setup > Object Manager

### Expense Item

**Fields & Relationships**

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

DISPLAY DENSITY

- ✓ Comfy
- Compact

OPTIONS

- Switch to Salesforce Classic ⓘ
- Add Username

## Step – 4

### Created Records

Travel App

### Travel Approval TA-00001

**Related**

**Expense Items (2)**

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

**Approval History (3)**

Step Name	Date	Status	Assigned To
Travel Coordinator Approval	2/15/2023, 4:10 PM	Approved	purnachandar atike
Step 1	2/15/2023, 4:05 PM	Approved	Eric Executive
Approval Request Submitted	2/15/2023, 4:03 PM	Submitted	purnachandar atike

DISPLAY DENSITY

- ✓ Comfy
- Compact

OPTIONS

- Switch to Salesforce Classic ⓘ
- Add Username

**Activity**

No activities to show. Get started by sending an email, scheduling a task, and more.

No past activity. Past meetings and tasks marked as done show up here.

### Created User Eric

User Detail

Name: Eric Executive  
Alias: eexec  
Email: curuchandaratake16@gmail.com  
Username: eric.purnachandaratake@wipro.com  
Nickname: eric.exec  
Title:   
Company:   
Department:   
Division:   
Address:   
Time Zone: (GMT+05:30) India Standard Time (Asia/Kolkata)  
Locale: English (India)  
Language: English  
Delegated Approver: Manager: Eric Executive  
Receive Approval Request Emails: Only if I am an approver  
Federation ID:   
App Registration: One-Time Password Authenticator:   
App Registration: Salesforce:

Role: System Administrator  
User License: Salesforce  
Profile: Active  
Marketing User:   
Offline User:   
Knowledge User:   
Flow User:   
Service Cloud User:   
Site.com Contributor User:   
Site.com Publisher User:   
WDC User:   
Mobile Push Registration:   
Data.com User Type:   
Accessibility Mode (Classic Only):   
Debug Mode:   
High-Contrast Palette on Charts:   
Load Lightning Pages While Scrolling:   
Send Apex Warning Emails:

## Step -6

Added Eric Executive as manager to System Administrator

Mailing Address

Street:   
City:   
State/Province:   
Zip/Postal Code:   
Country: IN

Single Sign On Information

Federation ID:

Locale Settings

Time Zone: (GMT+05:30) India Standard Time (Asia/Kolkata)  
Locale: English (United States)  
Language: English

Approver Settings

Delegated Approver: Manager: Eric Executive  
Receive Approval Request Emails: Only if I am an approver

## Step -7

Customized the Travel Approval Default Search

Travel Approval Search Results

Select the fields to include in this search layout. Note that your choices only determine the display of search results and do not affect the fields that are available to users when customizing their search results columns. Please refer to the online help for more information on search fields.

Available Fields	Selected Fields
Razor ID	Travel Approval #
Out-of-State	Department
Status Indicator	Destination State
Total Expenses	Purpose of Trip
Owner Alias	Status
Owner First Name	Trip End Date
Owner Last Name	Trip Start Date
Created By Alias	
Created Date	
Last Modified By Alias	

Override the search result column customizations for all users

Standard Buttons

There are no customizable standard buttons for this view.

Custom Buttons

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

## Step – 8

Selected all the fields to display

The screenshot shows the 'Select Fields to Display' dialog box from a Salesforce application. On the left, under 'Available Fields', there is a list of fields: Department, Created By Alias, Created Date, Destination State, Last Activity Date, Last Modified By, and Last Modified By Alias. On the right, under 'Visible Fields', these same fields are listed with their corresponding values. A 'Save' button at the bottom right is highlighted.

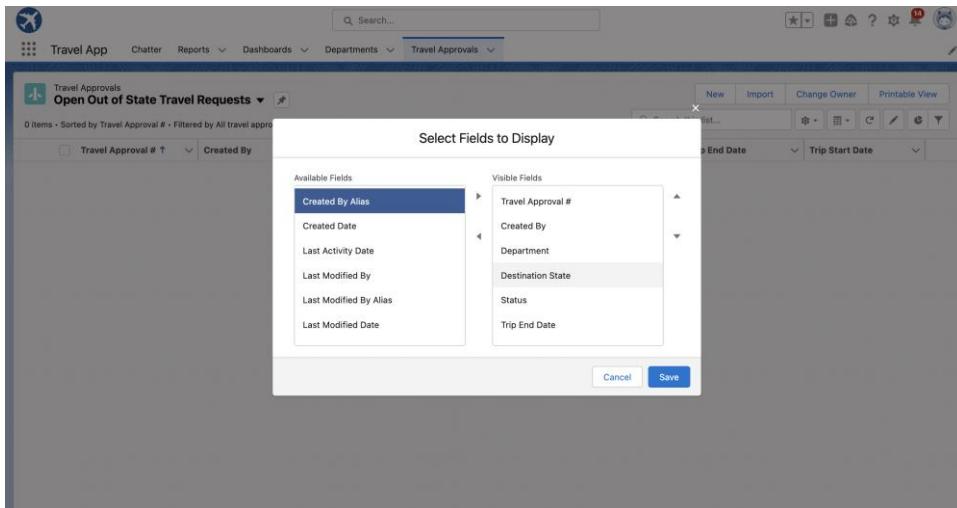
## Step-9

Created Travel approval custom List View Open Out of State Travel Requests

The screenshot shows a custom list view titled 'Open Out of State Travel Requests'. The filters sidebar on the right includes 'Filter by Owner: All travel approvals' and two filter conditions: 'Out-of-State equals True' and 'Status not equal to Approved, Rejected'. The main area displays a message: 'No items to display.'

## Step – 10

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



## Step – 11

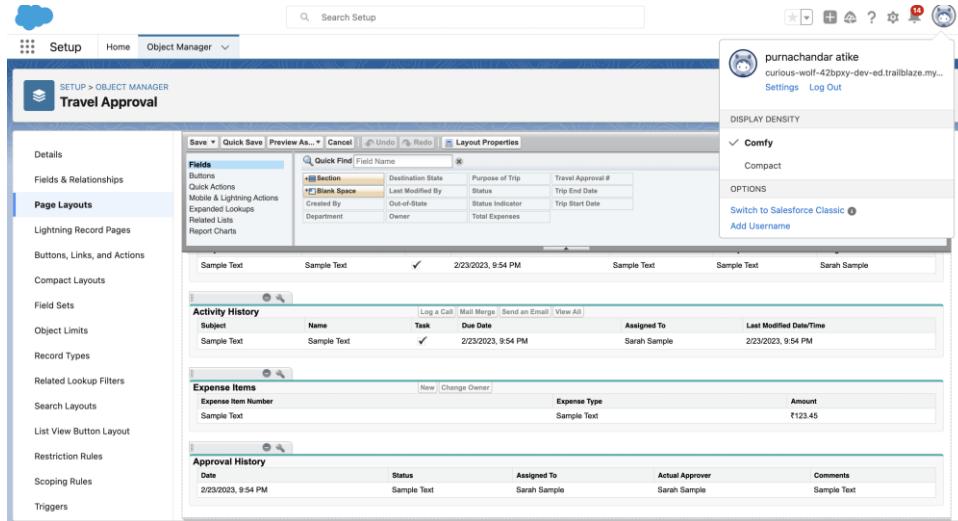
### Customized Travel Approval Page Layout

The top screenshot shows the 'Travel Approval Record Page' in the Lightning App Builder. The page layout includes a 'Related' section with fields like 'Travel Approval #', 'Name', 'Owner', 'Department', and 'Last Modified By'. Below it is an 'Activity' section titled 'Chatter' with a feed of posts. To the right, there's a sidebar with help text about record detail sections and buttons for 'Upgrade Now' and 'See How It Works'.

The bottom screenshot shows the 'Travel Approval' object setup page in the classic interface. Under the 'Page Layouts' tab, a modal window is open for editing the 'Travel Approval Layout (previewed)'. The layout editor shows various sections and fields being arranged. A sidebar on the right provides options for 'DISPLAY DENSITY' (set to 'Comfy'), 'OPTIONS' (with 'Switch to Salesforce Classic' and 'Add Username' buttons), and other configuration settings.

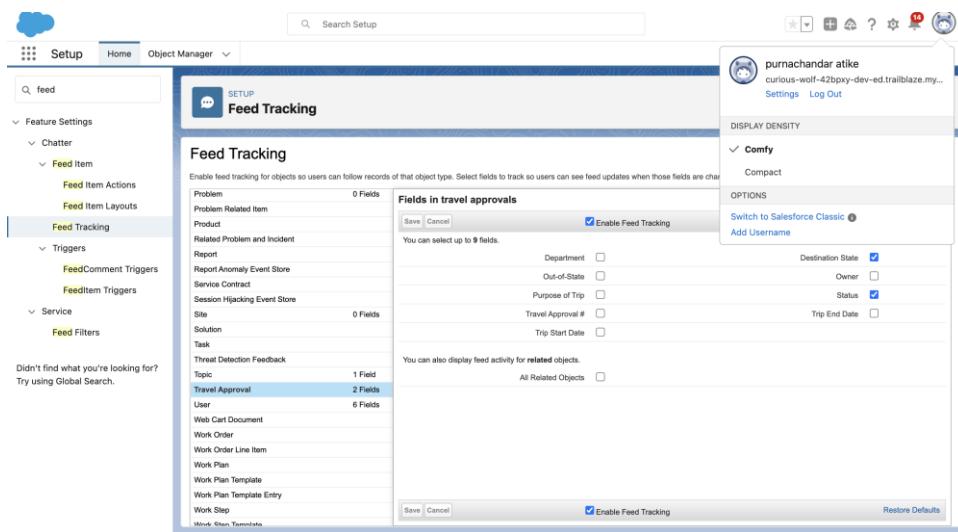
## Step -12

# Customized the Expense Item Related list under Travel Approval page layout



## Step – 13

### Enabled Feed Tracking



The screenshot shows the Chatter feed of the Travel App. A user named 'purnachandar atike' has posted a question asking which department to associate a travel request with. Another user, 'Eric Executive', has commented that 'Technology is the correct department.'

## Module - 2

### Exercise – 1

#### Step – 1

#### Created Trip end date after start date Validation Rule

The screenshot shows the 'Travel Approval Validation Rule' setup page. The validation rule detail section contains the following information:

- Rule Name:** Trip\_end\_date\_after\_start\_date
- Error Condition Formula:** Trip\_End\_Date\_\_c < Trip\_Start\_Date\_\_c
- Error Message:** Trip end date must be greater than or equal to start date
- Description:** Created By purnachandar atike, 2/15/2023, 3:27 PM
- Active:** checked
- Error Location:** Trip End Date
- Modified By:** purnachandar atike, 2/15/2023, 3:27 PM

#### Step – 2

#### Created a Roll Up summary Field Total Expenses

**Travel Approval Custom Field**  
**Total Expenses**

**Custom Field Definition Detail**

Field Information	Object Name
Field Label: Total Expenses Field Name: Total_Expenses API Name: Total_Expenses__c Description: Help Text: Data Owner: Field Usage: Data Sensitivity Level: Compliance Categorization: Created By: purnachandar.atile, 2/15/2023, 3:30 PM	Travel Approval
Modified By: purnachandar.atile, 2/15/2023, 3:30 PM	

**Roll-Up Summary Options**

Data Type	Summarized Object	Summary Type
Summarized Object	Expense Item	SUM
Field to Aggregate	Expense Item: Amount	
Filter Criteria		

## Step – 3

### Created a formula field StatusImages

**Static Resource**  
**StatusImages**

**Static Resource Detail**

Name	Statusimages
Namespace Prefix	
Description	
MIME Type	application/zip
Cache Control	Public
Size	39,130 bytes
View file	
Created By	purnachandar.atile, 2/15/2023, 3:33 PM
Last Modified By	purnachandar.atile, 2/15/2023, 3:33 PM

## Step – 4

### Created a formula field Status Indicator

**Travel Approval Custom Field Status Indicator**

**Custom Field Definition Detail**

**Field Information**

- Field Label: Status Indicator
- API Name: Status\_Indicator\_c
- Description:
- Help Text:
- Data Owner:
- Field Usage:
- Data Sensitivity Level:
- Compliance Categorization:
- Created By: purnachandar atike, 2/15/2023, 3:35 PM
- Modified By: purnachandar atike, 2/15/2023, 3:35 PM

**Formula Options**

```
IF(ISPICKVAL(Status_c, "Approved"), IMAGE("resource>StatusImages/thumb-up.png", "Accepted", 20, 20),
IF(ISPICKVAL(Status_c, "Rejected"), IMAGE("resource>StatusImages/thumb-down.png", "Rejected", 20, 20),
IMAGE("resource>StatusImages/inProg.png", "In-Process", 20, 20)))
```

## Step – 5

Created a Record – Triggered flow

**Flow Builder**    Out of State Travel Flag - V1

**Start**  
Record-Triggered Flow

**Object: Travel Approval**    **Edit**

**Trigger: A record is created or updated**

**Optimize for: Fast Field Updates**

**Decision**  
Is Travel Out of State?

**Yes Out of State**: Update Records  
Update Travel Approval Record

**In State**: Update Records  
Update Travel Approval Record

## Step – 6

Created an approval process Travel Approval Request

The screenshot shows the 'Approval Processes' page in Salesforce. The process name is 'Travel Approval: Travel Approval Request'. It has one step: 'Step 1' (Record Lock) and one approval action: 'Travel Coordinator Approval' (Record Lock). The approval criteria is 'Travel Approval: Total Expenses GREATER THAN 0'. The assigned approver is 'Manager' (User: purnachandar\_atike). The reject behavior is 'Final Rejection'.

## Final Approval Actions

This screenshot is identical to the previous one, showing the 'Approval Processes' page for 'Travel Approval Request'. It includes the same step ('Step 1' Record Lock) and approval action ('Travel Coordinator Approval' Record Lock). The approval criteria and assignee remain the same.

## Final Rejection Actions

This screenshot is identical to the previous ones, showing the 'Approval Processes' page for 'Travel Approval Request'. It includes the same step ('Step 1' Record Lock) and approval action ('Travel Coordinator Approval' Record Lock). The approval criteria and assignee remain the same.

# Testing the Approval Process

## Assigned to Eric Executive & Assigned to Current User

Travel Approvals > TA-00001  
Approval History

Step Name	Date	Status	Assigned To	Actual Approver	Comments
1 Travel Coordinator Approval	2/15/2023, 4:10 PM	Approved	purnachandar atike	purnachandar atike	Looks good. Have fun!
2 Step 1	2/15/2023, 4:05 PM	Approved	Eric Executive	Eric Executive	
3 Approval Request Submitted	2/15/2023, 4:03 PM	Submitted	purnachandar atike	purnachandar atike	test1

## Exercise – 2

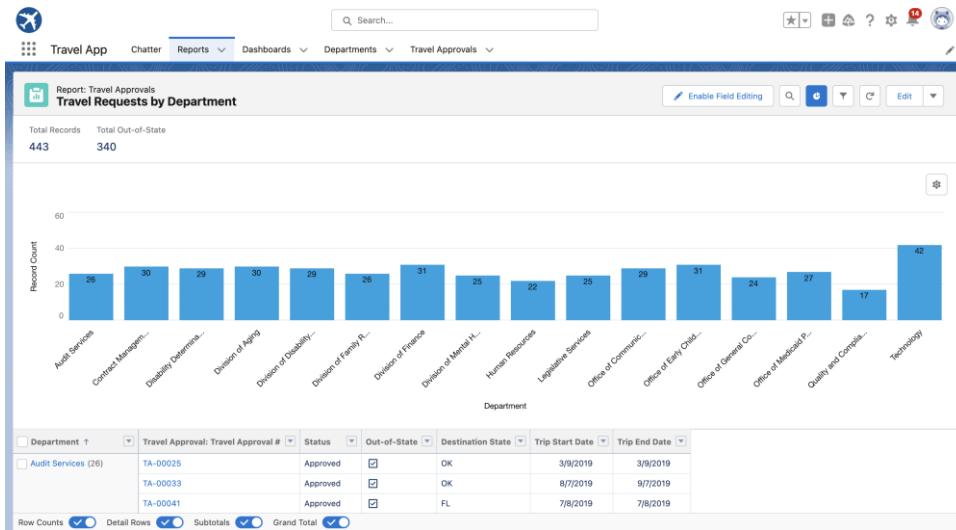
### Step -1

#### Imported Travel Approval Records

Travel Approvals  
All

Department	Created By	Status	Trip End Date
Audit Services	purnachandar atike	Approved	3/9/2019
Audit Services	purnachandar atike	Approved	9/7/2019
Audit Services	purnachandar atike	Approved	7/8/2019
Audit Services	purnachandar atike	Approved	7/11/2019
Audit Services	purnachandar atike	Approved	8/7/2019
Audit Services	purnachandar atike	Approved	3/9/2019
Audit Services	purnachandar atike	Approved	9/7/2019
Audit Services	purnachandar atike	Approved	7/8/2019
Audit Services	purnachandar atike	Approved	7/11/2019
Audit Services	purnachandar atike	Approved	8/7/2019
Audit Services	purnachandar atike	Rejected	8/15/2019
Audit Services	purnachandar atike	Approved	3/6/2019
Audit Services	purnachandar atike	Approved	5/10/2019
Audit Services	purnachandar atike	Approved	1/10/2020
Audit Services	purnachandar atike	Approved	10/6/2019
Audit Services	purnachandar atike	Approved	9/3/2019
Audit Services	purnachandar atike	Approved	4/10/2019
Audit Services	purnachandar atike	Approved	7/9/2019

### Step -2 Created a Report on Travel Requests by Department



## Step – 3

Created a Travel Requests by Monthly Report

**Report: Travel Approvals**  
**Travel Requests by Month**

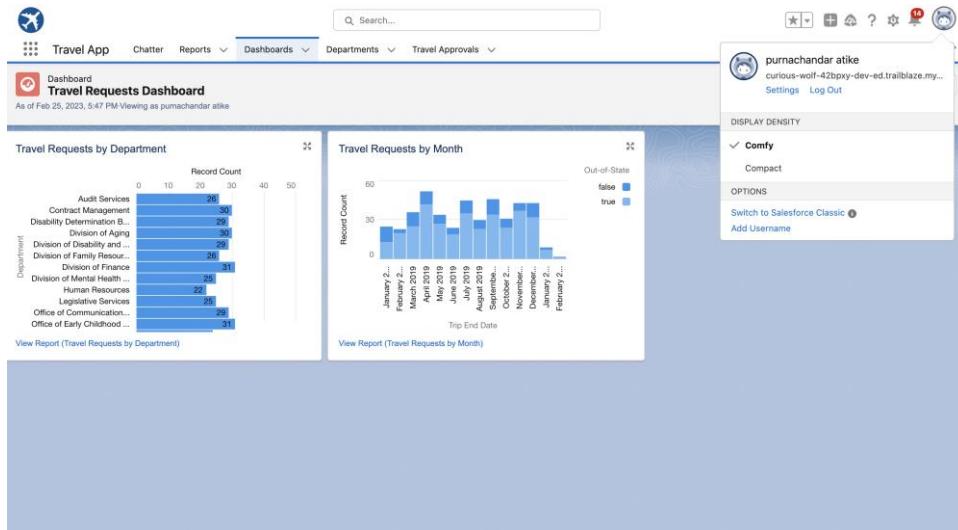
Total Records: 443

Trip End Date	Out-of-State	Travel Approval: Travel Approval #	Department	Status	Destination State	Trip Start Date
January 2019 (25)	(12)	TA-00014	Division of Family Resources	Approved	TX	1/4/2019
		TA-00040	Division of Finance	Approved	TX	1/10/2019
		TA-00073	Office of General Counsel	Approved	TX	1/4/2019
		TA-00144	Office of General Counsel	Approved	TX	1/4/2019
		TA-00085	Division of Family Resources	Approved	TX	1/4/2019
		TA-00111	Division of Finance	Approved	TX	1/10/2019
		TA-00445	Disability Determination Bureau	Approved	TX	1/12/2019
		TA-00579	Division of Aging	Approved	TX	1/22/2019
		TA-00591	Quality and Compliance Office	Approved	TX	1/14/2019
		TA-00600	Contract Management	Approved	TX	1/18/2019
		TA-00409	Legislative Services	Approved	TX	1/20/2019
		TA-00432	Office of General Counsel	Rejected	TX	1/27/2019
Subtotal		TA-00003	Disability Determination Bureau	Approved	OK	1/10/2019
		TA-00074	Disability Determination Bureau	Approved	OK	1/10/2019
		TA-00447	Division of Aging	Approved	FL	1/3/2019

Row Counts: Detail Rows: Subtotals: Grand Total:

## Step – 4

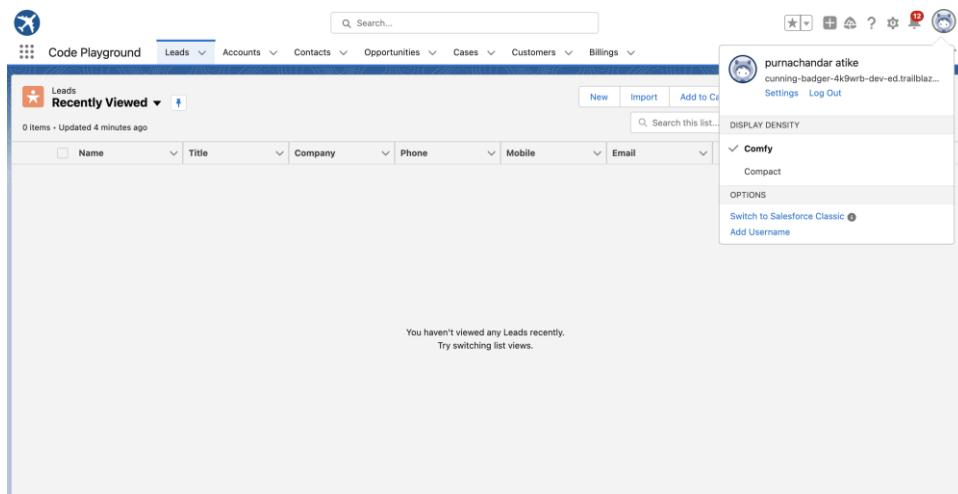
Created a Report and Dashboard for Travel Approvals



## Module 3

### Exercise – 1

#### Created Code Playground App



#### Created the Custom Object Customer

## Created all the custom fields

## Created a Custom Object named Billing

## Created Custom fields for billing object

The screenshot shows the Salesforce Setup interface under the Object Manager for the Billing object. On the left, there's a sidebar with various layout options like Page Layouts, Lightning Record Pages, Buttons, etc. 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	

## Code Playground App

The screenshot shows the Code Playground app interface. At the top, there's a navigation bar with Leads, Accounts, Contacts, Opportunities, Cases, Customers, and Billings. Below it, a sub-navigation bar shows 'Leads Recently Viewed'. The main area displays a list view for Leads. A message at the top says '0 items · Updated 12 minutes ago'. The list has columns for Name, Title, Company, Phone, Mobile, and Email. A message at the bottom says 'You haven't viewed any Leads recently. Try switching list views.' On the right, there's a user profile and a 'DISPLAY DENSITY' dropdown set to 'Comfy'.

## Exercise – 2

String Variable using endsWith() method

The screenshot shows the Salesforce Log executeAnonymous interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and a back arrow. The main area has tabs for Execution Log, Enter Apex Code, Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Execution Log table lists timestamp, event, and details. The Enter Apex Code window contains the following code:

```

1 String myName = 'Purnachandar Atike';
2 System.debug(myName.endsWith('a'));

```

The Logs table shows two entries from the user 'purnachandar atike' with application 'Unknown'. The first entry was successful with a size of 2.17 KB. The second entry was also successful with a size of 2.17 KB.

## Used Date Method and displayed the date

The screenshot shows the Salesforce Log executeAnonymous interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and a back arrow. The main area has tabs for Execution Log, Enter Apex Code, Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Execution Log table lists timestamp, event, and details. The Enter Apex Code window contains the following code:

```

1 Date d8= Date.today();
2 System.debug(d8);
3 Date d82=d8.addDays(30);
4 System.debug(d82);

```

The Logs table shows two entries from the user 'purnachandar atike' with application 'Unknown'. Both entries were successful with sizes of 2.52 KB and 2.17 KB respectively.

## Converted the string into integer and added 20 to it

The screenshot shows the Salesforce Log executeAnonymous interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and a back arrow. The main area has tabs for Execution Log, Enter Apex Code, Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Execution Log table lists timestamp, event, and details. The Enter Apex Code window contains the following code:

```

1 String str = '10';
2 Integer x = Integer.valueOf(str);
3 System.debug(x);
4 System.debug(x+20);
5

```

The Logs table shows three entries from the user 'purnachandar atike' with application 'Unknown'. The first two entries were successful with sizes of 2.44 KB and 2.52 KB respectively. The third entry was successful with a size of 2.17 KB.

## Used length method to display String length

The screenshot shows the Salesforce IDE interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and tabs for Log executeAnonymous @24/02/2023, 15:28:41, Log executeAnonymous @24/02/2023, 15:33:45, Log executeAnonymous @24/02/2023, 15:36:23, and Log executeAnonymous @24/02/2023, 15:38:17.

**Execution Log:**

```

Timestamp Event Details
15:38:17:0001 USER_INFO [EXTERNAL]0052w00000fAjIT|purnachandar atike[com.cunning-badger~4dwrb.com][GMT+05:30] India Standard Time (Asia/Kolkata)[GMT+05:30]
15:38:17:0001 EXECUTION_ST...
15:38:17:0001 CODE_UNIT_ST...
15:38:17:0001 VARIABLE_SCO...
15:38:17:0001 HEAP_ALLOCATE [79]lbytes3
15:38:17:0002 HEAP_ALLOCATE [412]lbytes408
15:38:17:0002 HEAP_ALLOCATE [520]lbytes48
15:38:17:0002 HEAP_ALLOCATE [139]lbytes6
15:38:17:0002 HEAP_ALLOCATE [EXTERNAL]lbytes3
15:38:17:0002 STATEMENT_EX...
15:38:17:0002 STATEMENT_EX...
15:38:17:0002 HEAP_ALLOCATE [13]lbytes18
15:38:17:0002 VARIABLE_ASSL...
15:38:17:0002 STATEMENT_EX...
15:38:17:0002 HEAP_ALLOCATE [31]lbytes7
15:38:17:0002 HEAP_ALLOCATE [31]lbytes2
15:38:17:0002 HEAP_ALLOCATE [31]lbytes9
15:38:17:0002 HEAP_ALLOCATE [52]lbytes5
15:38:17:0002 HEAP_ALLOCATE [58]lbytes5
15:38:17:0002 HEAP_ALLOCATE [64]lbytes7

```

**Enter Apex Code:**

```

1 String str = 'purnachandar atike';
2
3 System.debug('size : ' + str.length());
4

```

**Logs:**

User	Application	Operation	Time	Status	Read	Size
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:38:17	Success	2.28 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:36:23	Success	2.44 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:33:45	Success	2.52 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:28:41	Success	2.17 kB	

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

The screenshot shows the Salesforce IDE interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and tabs for Log executeAnonymous @24/02/2023, 15:28:41, Log executeAnonymous @24/02/2023, 15:33:45, Log executeAnonymous @24/02/2023, 15:36:23, Log executeAnonymous @24/02/2023, 15:38:17, and Log executeAnonymous @24/02/2023, 15:55:18.

**Execution Log:**

```

Timestamp Event Details
15:55:18:0001 USER_INFO [EXTERNAL]0052w00000fAjIT|purnachandar atike[com.cunning-badger~4dwrb.com][GMT+05:30] India Standard Time (Asia/Kolkata)[GMT+05:30]
15:55:18:0001 EXECUTION_ST...
15:55:18:0001 CODE_UNIT_ST...
15:55:18:0001 VARIABLE_SCO...
15:55:18:0001 HEAP_ALLOCATE [79]lbytes3
15:55:18:0002 HEAP_ALLOCATE [94]lbytes152
15:55:18:0002 HEAP_ALLOCATE [399]lbytes408
15:55:18:0002 HEAP_ALLOCATE [412]lbytes408
15:55:18:0002 HEAP_ALLOCATE [520]lbytes48
15:55:18:0002 HEAP_ALLOCATE [139]lbytes6
15:55:18:0002 HEAP_ALLOCATE [EXTERNAL]lbytes26
15:55:18:0002 STATEMENT_EX...
15:55:18:0002 STATEMENT_EX...
15:55:18:0002 HEAP_ALLOCATE [11]lbytes4
15:55:18:0002 HEAP_ALLOCATE [EXTERNAL]lbytes4
15:55:18:0002 VARIABLE_ASSL...
15:55:18:0002 STATEMENT_EX...
15:55:18:0003 HEAP_ALLOCATE [2]lbytes4
15:55:18:0003 HEAP_ALLOCATE [2]lbytes4
15:55:18:0003 STATEMENT_EX...
15:55:18:0003 STATEMENT_EX...
15:55:18:0003 HEAP_ALLOCATE [3]lbytes4
15:55:18:0003 STATEMENT_EX...
15:55:18:0003 HEAP_ALLOCATE [3]lbytes4
15:55:18:0003 HEAP_ALLOCATE [EXTERNAL]lbytes4

```

**Enter 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'+1);
8 System.debug('After using get() method'+1.get());
9 l.set(1,26);
10 System.debug('After using set() method'+1);
11 l.clear();
12 System.debug('After using clear() method'+1);
13
14

```

**Logs:**

User	Application	Operation	Time	Status	Read	Size
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:55:18	Success	4.42 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:38:17	Success	2.28 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:36:23	Success	2.44 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:33:45	Success	2.52 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:28:41	Success	2.17 kB	

## Printed numbers between 0 to 9

The screenshot shows the Salesforce IDE interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and tabs for Log executeAnonymous @24/02/2023, 15:33:45, Log executeAnonymous @24/02/2023, 15:36:23, Log executeAnonymous @24/02/2023, 15:38:17, Log executeAnonymous @24/02/2023, 15:55:18, and Log executeAnonymous @24/02/2023, 15:59:00.

**Execution Log:**

```

Timestamp Event Details
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 0
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 1
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 2
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 3
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 4
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 5
15:59:00:0003 USER_DEBUG [4]DEBUGValue of x : 6
15:59:00:0004 USER_DEBUG [4]DEBUGValue of x : 7
15:59:00:0004 USER_DEBUG [4]DEBUGValue of x : 8
15:59:00:0004 USER_DEBUG [4]DEBUGValue of x : 9

```

**Enter Apex Code:**

```

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

```

**Logs:**

User	Application	Operation	Time	Status	Read	Size
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:59:00	Success	5.63 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:55:18	Success	4.42 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:38:17	Success	2.28 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:36:23	Success	2.44 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:33:45	Success	2.52 kB	
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:28:41	Success	2.17 kB	

## Exercise – 3

The screenshot shows the Salesforce IDE interface. At the top, there are tabs for File, Edit, Debug, Test, Workspace, Help, and several open logs. The current log is titled "Log executeAnonymous @24/02/2023, 16:05:15". Below the tabs is a table for the Execution Log:

Timestamp	Event	Details
16:05:15:003	USER_DEBUG	[7]DEBUG true

Below the log is the "Enter Apex Code" editor with 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 editor are buttons for Open Log, Execute, and Execute Highlighted.

Below the editor is a toolbar with checkboxes for This Frame, Executable, Debug Only, Filter, and Click here to filter the log.

Finally, there is a table for the Logs tab:

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 16:05:15	Success		2.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:59:00	Success		5.63 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:55:18	Success		4.42 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:38:17	Success		2.28 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:36:23	Success		2.44 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:33:45	Success		2.52 KB

## Exercise – 4

The screenshot shows the Salesforce IDE interface. At the top, there are tabs for File, Edit, Debug, Test, Workspace, Help, and several open logs. The current log is titled "Log executeAnonymous @24/02/2023, 16:31:21". Below the tabs is a table for the Execution Log:

Timestamp	Event	Details
16:31:21:002	USER_DEBUG	[3]DEBUG true

Below the log is the "Enter Apex Code" editor with the following code:

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

At the bottom of the editor are buttons for Open Log, Execute, and Execute Highlighted.

Below the editor is a toolbar with checkboxes for This Frame, Executable, Debug Only, Filter, and Click here to filter the log.

Finally, there is a table for the Logs tab:

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 16:31:21	Success		2.35 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 16:05:15	Success		2.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:59:00	Success		5.63 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:55:18	Success		4.42 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:38:17	Success		2.28 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:36:23	Success		2.44 KB

## Exercise – 5

The screenshot shows the Salesforce IDE interface. At the top, there are tabs for File, Edit, Debug, Test, Workspace, Help, and several open logs. The current log is titled "Log executeAnonymous @24/02/2023, 16:38:20". Below the tabs is a table for the Execution Log:

Timestamp	Event	Details
16:38:20:004	USER_DEBUG	[3]DEBUG true

Below the log is the "Enter Apex Code" editor with the following code:

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

At the bottom of the editor are buttons for Open Log, Execute, and Execute Highlighted.

Below the editor is a toolbar with checkboxes for This Frame, Executable, Debug Only, Filter, and Click here to filter the log.

Finally, there is a table for the Logs tab:

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 16:38:20	Success		2.46 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 16:31:21	Success		2.35 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 16:05:15	Success		2.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:59:00	Success		5.63 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:55:18	Success		4.42 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	24/02/2023, 15:38:17	Success		2.28 KB

## Exercise – 6

### Program for finding the Grade based on the Score

The screenshot shows the Salesforce IDE interface. At the top, there is a menu bar with File, Edit, Debug, Test, Workspace, Help, and a search bar. Below the menu is a toolbar with Code Coverage: None, API Version: 57, and a Go To button. The main area contains the Apex code for GradeCalculator:

```
1 * public class GradeCalculator {  
2  
3     public static void gradeCalculation(){  
4         Integer score = 76;  
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 editor is a log viewer window titled "Logs". It shows a single log entry from "GradeCalculator.apex" at "Log executeAnonymous @25/02/2023, 10:10:44". The log details are as follows:

User	Application	Operation	Time	Status	Read	Size
puranachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 10:10:44	Success		3.13 KB

At the bottom of the log viewer is a filter bar with "Filter Click here to filter the log list".

Below the log viewer is another log viewer window titled "Execution Log". It also shows the same log entry from "GradeCalculator.apex" at "Log executeAnonymous @25/02/2023, 10:10:44". The log details are:

Timestamp	Event	Details
10:10:44:019	USER_DEBUG	[5]DEBUG Your score is: 76
10:10:44:019	USER_DEBUG	[16]DEBUG Grade: Failed

At the bottom of the execution log is a filter bar with "This Frame Executable Debug Only Filter Click here to filter the log".

Below the execution log is a third log viewer window titled "Logs". It shows the same log entry from "GradeCalculator.apex" at "Log executeAnonymous @25/02/2023, 10:10:44". The log details are:

User	Application	Operation	Time	Status	Read	Size
puranachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 10:10:44	Success		3.13 KB

At the bottom of the logs is a filter bar with "Filter Click here to filter the log list".

## Exercise – 7

### Program to execute Apex – for loop

The screenshot shows the Salesforce IDE interface. At the top, there's a menu bar with File, Edit, Debug, Test, Workspace, Help, and a Go To button. Below the menu is a code editor window titled "BillingObj.apc" with the following Apex code:

```

1 public class BillingObj {
2     public static void getPaidBillings(){
3         List<Billing__c> billingList = [Select Id,Name,Status__c from Billing__c Where CreatedDate=today];
4         if(!billingList.isEmpty()){
5             List<String> paidBillingList = new List<String>();
6             for(Billing__c billing : billingList){
7                 if(billing.Status__c=='Paid'){
8                     System.debug('Value of current record on which loop is iterating is Billing__c:'+billing);
9                     paidBillingList.add(billing.Name);
10                }
11            }
12        }
13    }
14 }
15
16

```

Below the code editor is a log viewer titled "Logs". It shows a single log entry:

User	Application	Operation	Time	Status	Read	Size
purnachandar atke	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:33:03	Success		3.08 KB

At the bottom of the log viewer is a "Filter" input field.

This screenshot is similar to the one above, showing the same code and log entry. The log entry details the execution of the code:

Timestamp	Event	Details
18:04:23:015	USER_DEBUG	[8]  DEBUG Value of current record on which loop is iterating is Billing__c:Billing__c:{Id=a012w0000017zJMSA2, Name=B - 0001, Status__c=Paid}
18:04:23:015	USER_DEBUG	[9]  DEBUG Value of current record on which loop is iterating is Billing__c:Billing__c:{Id=a012w0000017zJMSA2, Name=B - 0002, Status__c=Paid}
18:04:23:016	USER_DEBUG	[12]  DEBUG (Billing records are:(B - 0001, B - 0002)

## Exercise – 8

### Created a Class to demonstrate constants in Apex

The screenshot shows the Salesforce IDE interface. At the top, there's a menu bar with File, Edit, Debug, Test, Workspace, Help, and a Go To button. Below the menu is a code editor window titled "DiscountClass.apc" with the following Apex code:

```

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 }

```

Below the code editor is a log viewer titled "Logs". It shows two log entries corresponding to the two executions of the code:

User	Application	Operation	Time	Status	Read	Size
purnachandar atke	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:40:05	Success		6.01 KB
purnachandar atke	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:01:04	Success		3.08 KB
purnachandar atke	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:40:05	Success		4.64 KB
purnachandar atke	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:33:03	Success		3.08 KB

At the bottom of the log viewer is a "Filter" input field.

The screenshot shows the SAP IDE Log viewer interface. At the top, there's a toolbar with File, Edit, Debug, Test, Workspace, Help, and a timestamp of 16:40:05-016. Below the toolbar is a title bar for 'BillingObj.apxc' and 'Log executeAnonymous @25/02/2023, 16:40:05'. A sub-header 'Execution Log' is followed by a table with columns: Timestamp, Event, and Details. One entry is shown: '16:40:05-016 USER\_DEBUG [8] DEBUG[final price: 61.5]'. Below this is a log table with tabs for Logs, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The Logs tab is selected. It shows a list of log entries with columns: User, Application, Operation, Time, Status, Read, and Size. The log entries are:

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:40:05	Success		4.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:33:03	Success		3.08 KB

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

## Exercise – 9

The screenshot shows the SAP IDE interface with three code editor panes and a log viewer below them.

- InterfaceExample.apxc:** Contains the following Java code:

```
1 public Interface InterfaceExample {
2     Double percentageDiscountToBeApplied();
3 }
4 }
```
- PremiumCustomer.apxc:** Contains the following Java code:

```
1 public class PremiumCustomer implements InterfaceExample{
2     public Double percentageDiscountToBeApplied(){
3         return 0.30;
4     }
5 }
6 }
```
- Log Viewer:** Below the code editors, there are three log tables corresponding to the code in each editor.

**Log 1 (InterfaceExample.apxc):**

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:04:23	Success		6.01 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:01:04	Success		3.08 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:40:05	Success		4.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:33:03	Success		3.08 KB

**Log 2 (PremiumCustomer.apxc):**

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:04:23	Success		6.01 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:01:04	Success		3.08 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:40:05	Success		4.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:33:03	Success		3.08 KB

**Log 3 (Combined):**

User	Application	Operation	Time	Status	Read	Size
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:04:23	Success		6.01 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:01:04	Success		3.08 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:40:05	Success		4.64 KB
purnachandar atk	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 16:33:03	Success		3.08 KB

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

The screenshot displays four vertically stacked screenshots of the Salesforce IDE interface, illustrating the execution log and code editor across three different exercises.

- Exercise 1 (Top Screenshot):** Shows the execution log for "Log executeAnonymous @25/02/2023, 18:32:58". The log table has columns: Timestamp, Event, and Details. One entry is shown: 18:32:58:008 USER\_DEBUG [2]DEBUG|0.3.
- Exercise 2 (Second Screenshot):** Shows the execution log for "Log executeAnonymous @25/02/2023, 18:35:26". The log table has columns: User, Application, Operation, Time, Status, Read, and Size. Multiple entries are listed, all showing Success status and various sizes (e.g., 3.62 KB, 3.57 KB, 3.57 KB, 3.61 KB, 6.01 KB, 3.08 KB).
- Exercise 3 (Third Screenshot):** Shows the code editor for the "normalCustomer.apxc" file. The code implements the "InterfaceExample" interface with a single method "percentageDiscountToBeApplied" returning 0.10.
- Exercise 4 (Bottom Screenshot):** Shows the execution log for "Log executeAnonymous @25/02/2023, 18:35:26". The log table has columns: Timestamp, Event, and Details. One entry is shown: 18:35:26:012 USER\_DEBUG [2]DEBUG|0.1.

## Exercise – 10

### Demo on DML Insert Operation Using Database Methods

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

BillingCustomerRecordInsertion.apc Log executeAnonymous @25/02/2023, 18:50:47

Code Coverage: None • API Version: 57

```

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

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Status	Read	Size
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:50:47	Success		5.59 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:35:26	Success		3.65 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:32:58	Success		3.62 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:20:31	Success		3.57 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:19:43	Success		3.57 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:18:57	Success		3.61 KB

Filter Click here to filter the log list

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

BillingCustomerRecordInsertion.apc Log executeAnonymous @25/02/2023, 18:50:47

Execution Log

Timestamp	Event	Details
18:50:47.082	USER_DEBUG	[15]:DEBUG:Record Inserted , Billing ID: a012w000017zMSAAU

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
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:50:47	Success		5.59 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:35:26	Success		3.65 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:32:58	Success		3.62 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:20:31	Success		3.57 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:19:43	Success		3.57 KB
purnachandar atike	Unknown	/services/data/v57.0/tooling/execut...	25/02/2023, 18:18:57	Success		3.61 KB

Filter Click here to filter the log list

## Exercise – 11

Displaying Records according to required conditions

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

BillingCustomerRecordInsertion.apc Opportunity@6:57 PM

select AccountId, Amount, Name, StageName, Account.Industry, Account.website from Opportunity where Account.Industry = 'Energy' AND Account.AnnualRevenue>5000

Query Results - Total Rows: 18

AccountId	Amount	Name	StageName	Account.Industry	Account.Website
0012w00001MBhBAAR	125000	United Oil Office Portable Generators	Negotiation/Review	Energy	http://www.us.com
0012w00001MBhBAAR	270000	United Oil Refinery Generators	Proposal/Price Quote	Energy	http://www.us.com
0012w00001MBhBAAR	120000	United Oil SCA	Closed Won	Energy	http://www.us.com
0012w00001MBhBAAR	270000	United Oil Installations	Negotiation/Review	Energy	http://www.us.com
0012w00001MBhBAAR	270000	United Oil Installations	Closed Won	Energy	http://www.us.com
0012w00001MBhBAAR	915000	United Oil Refinery Generators	Closed Won	Energy	http://www.us.com
0012w00001MBhBAAR	235000	United Oil Installations	Closed Won	Energy	http://www.us.com
0012w00001MBhBAAR	440000	United Oil Emergency Generators	Closed Won	Energy	http://www.us.com
0012w00001MBhBAAR	120000	United Oil Standby Generators	Closed Won	Energy	http://www.us.com
0012w00001MBhBAAR	675000	United Oil Plant Standby Generators	Needs Analysis	Energy	http://www.us.com

Query Grid: Save Rows Insert Row Delete Row Refresh Grid

Access in Salesforce: Create New Open Detail Page Edit Page

Logs Tests Checkpoints **Query Editor** View State Progress Problems

History Executed

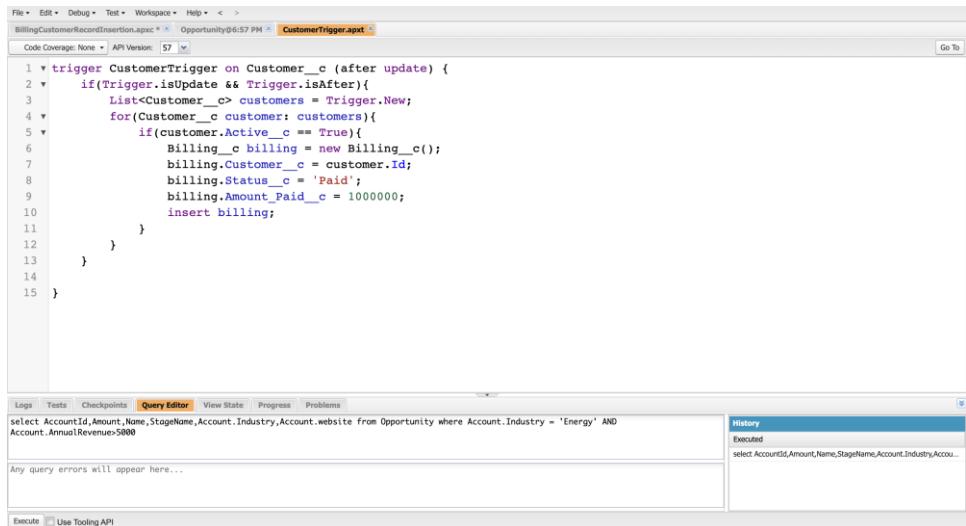
select AccountId, Amount, Name, StageName, Account.Industry, Account.website from Opportunity where Account.Industry = 'Energy' AND Account.AnnualRevenue>5000

Any query errors will appear here...

Execute  Use Tooling API

## Exercise – 12

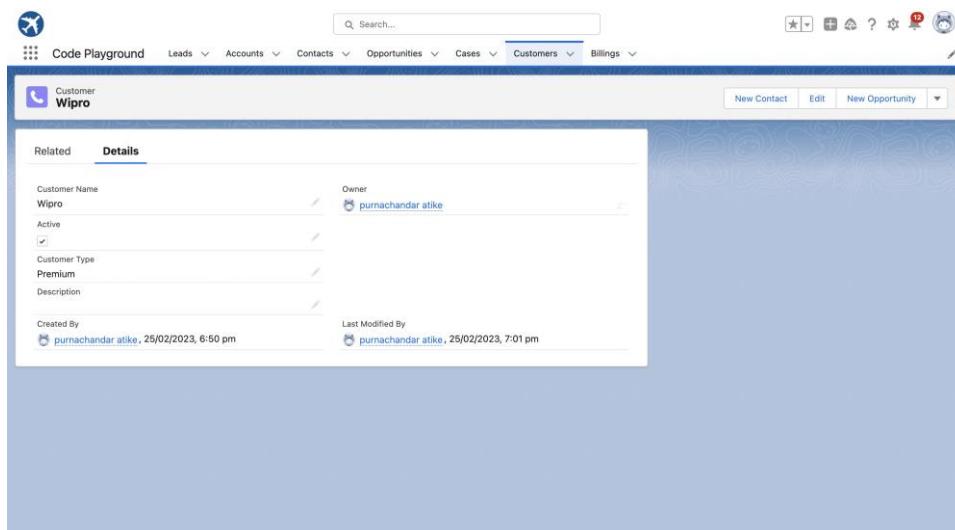
### Created a Trigger for Billing Named Customer Trigger



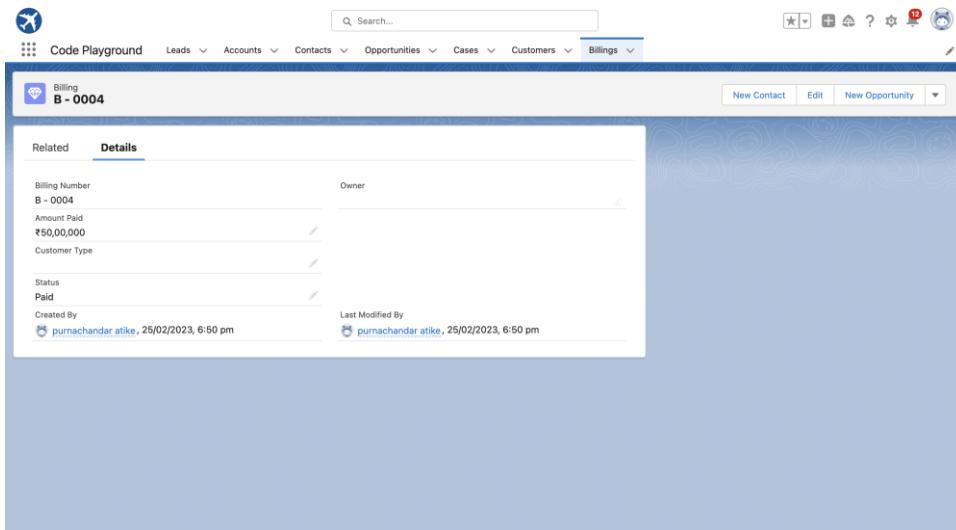
```
trigger CustomerTrigger on Customer__c (after update) {
    if(Trigger.isUpdate && Trigger.isAfter){
        List<Customer__c> customers = Trigger.New;
        for(Customer__c customer: customers){
            if(customer.Active__c == True){
                Billing__c billing = new Billing__c();
                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 trigger code for CustomerTrigger.apxt. The code is a standard Apex trigger that runs after an update on the Customer\_\_c object. It loops through the updated records, checks if the Active\_\_c field is true, creates a new Billing\_\_c record, sets its Customer\_\_c field to the current customer, marks it as 'Paid', sets the Amount\_Paid\_\_c field to 1,000,000, and inserts the new Billing record.

Updated Salesforce Customer from inactive to active



New Record Created in Billing Object with Salesforce as Customer



## Exercise – 13

Created a Test Class for Customer Trigger

The screenshot shows the Salesforce Code Playground interface. At the top, there are tabs for File, Edit, Debug, Test, Workspace, Help, and several open files: BillingCustomerRecordInsertion.apxc, Opportunity@6:57 PM, CustomerTrigger.apxc (highlighted in orange), DisqualifyTestLeads.apxc, DisqualifyTestLead.apxc, and OppView.vfp. Below the tabs, the code editor contains a test class named 'CustomerTriggerTest' with the following code:

```

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

```

Below the code editor is a 'Logs' section with a 'Tests' tab selected. It shows a table of test runs:

Status	Test Run	Enqueued Time	Duration	Failures	Total	Overall Code Coverage
✓	7072w00008MGLIB	Sat Feb 25 2023 19:07:34 GMT		0	3	Class BillingCustomerRecordInsertion 0% 0/10
*	7072w00008KGHqP	Sat Feb 25 2023 19:18:12 GMT		0	2	BillingObj 0% 0/7

At the bottom of the coverage table, it says: 'CustomerTrigger 100% 9/9', 'Disqualification 0% 0/5', 'DisqualifyTestLeads 100% 8/8', and 'GradeCalculator 0% 0/5'.

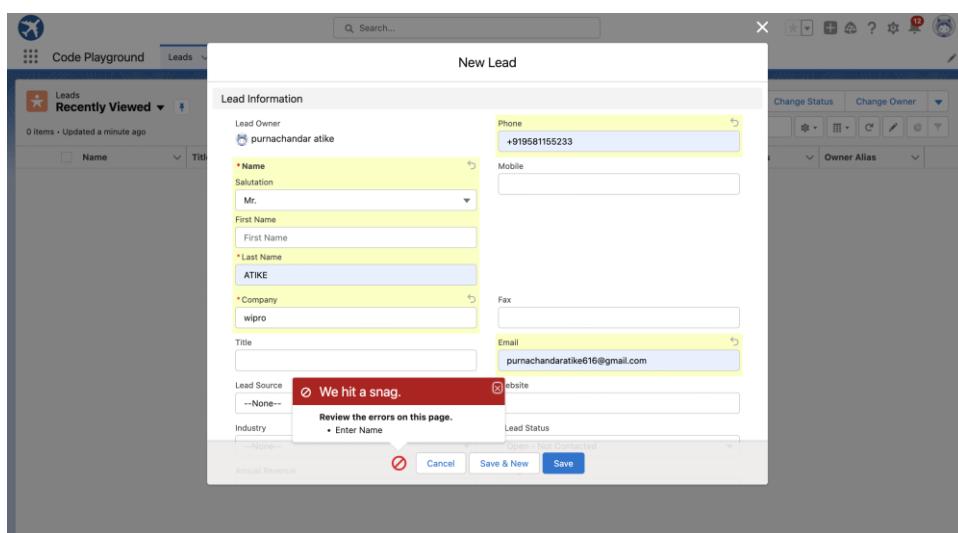
## Exercise – 14

Created a Trigger for Leads Named DisqualifiedTestLeads

```

1 v 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=='Test')){
7                 System.debug(myLead.FirstName + ' ' + myLead.LastName + ' Will be disqualified!');
8                 li.add(myLead);
9             }
10        }
11    } else{
12        myLeadaddError('Enter Name');
13    }
14
15    for(Lead myLead : li){
16        myLead.Status = 'Disqualified';
17    }
18 }
19
20
21 }
```

Status	Test Run	Enqueued Time	Duration	Failures	Total	Overall Code Coverage
✓	7072w00008MGLB	Sat Feb 25 2023 19:07:34 GMT...		0	3	Class BillingCustomerRecordInsertion BillingObj CustomerTrigger DiscountClass DisqualifyTestLeads GradeCalculator Percent 0% 0/10 0% 0/7 100% 9/9 0% 0/5 100% 8/8 0% 0/5
*	7072w00008MGHPq	Sat Feb 25 2023 19:18:12 GMT...		0	2	



## Exercise – 15

### Create a test class for DisqualifyTestLeads trigger

```

1 @isTest
2 v public class DisqualifyTestLead {
3     @isTest
4     private static void insertData(){
5         Lead l1 = new Lead();
6         l1.FirstName = 'Test';
7         l1.LastName = 'Test';
8         l1.Company = 'Test';
9         Test.startTest();
10        insert l1;
11        Test.stopTest();
12        System.assertEquals('Test', l1.FirstName);
13        System.assertEquals('Test', l1.LastName);
14        System.assertEquals('Test', l1.Company);
15    }
16    @isTest
17    private static void insertData2(){
18        Lead l2 = new Lead();
19        l2.LastName = 'Test';
20        l2.Company = 'Wipro';
21        Test.startTest();
22 }
```

Status	Test Run	Enqueued Time	Duration	Failures	Total	Overall Code Coverage
✓	7072w00008MGLB	Sat Feb 25 2023 19:07:34 GMT...		0	3	Class BillingCustomerRecordInsertion BillingObj CustomerTrigger DiscountClass DisqualifyTestLeads GradeCalculator Percent 0% 0/10 0% 0/7 100% 9/9 0% 0/5 100% 8/8 0% 0/5
*	7072w00008MGHPq	Sat Feb 25 2023 19:18:12 GMT...		0	2	

The screenshot shows the Salesforce IDE interface. At the top, there are several tabs: 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help'. Below the tabs, the 'Execution Log' tab is active, showing a single entry:

Timestamp	Event	Details
19:18:12:098	USER_DEBUG	[7] DEBUG Test Will be disqualified!

Below the log is a 'Logs' tab, which displays a table of log entries:

User	Application	Operation	Time	Status	Read	Size
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Insert failed. First exception on row ...	Unread	18.86 KB
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Success	Unread	8.74 KB
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:07:35	Success	Unread	998 bytes
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:07:35	Success	Unread	8.74 KB
puruchandar atik	Browser	/aura	25/02/2023, 19:01:03	Success	Unread	4.5 KB

## Exercise – 16

Created a Visualforce Page OppView and displayed four apex : outputfields

The screenshot shows the Salesforce IDE interface. The top navigation bar includes 'File', 'Edit', 'Debug', 'Test', 'Workspace', 'Help'. The main area displays the page source code for 'OppView.vfp':

```

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

```

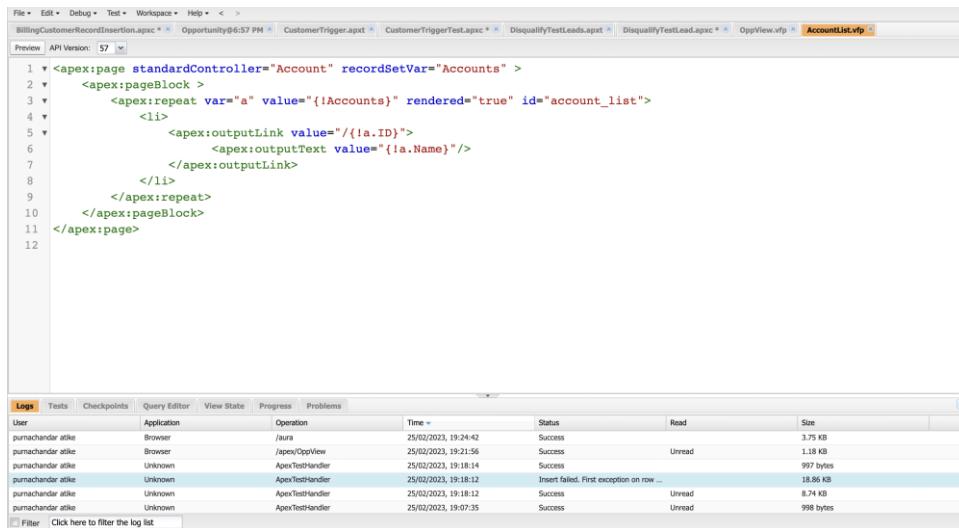
Below the page source is the 'Logs' tab, showing the execution log:

User	Application	Operation	Time	Status	Read	Size
puruchandar atik	Browser	/aura	25/02/2023, 19:24:42	Success		3.75 KB
puruchandar atik	Browser	/apex/OppView	25/02/2023, 19:21:56	Success	Unread	1.18 KB
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:18:14	Success		997 bytes
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Insert failed. First exception on row ...		18.86 KB
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Success	Unread	8.74 KB
puruchandar atik	Unknown	ApexTestHandler	25/02/2023, 19:07:35	Success	Unread	998 bytes

Opportunities			
Opportunity Name		Amount	
Close Date		Account Name	

## Exercise – 17

Created a Visualforce Page that shows a list of Accounts linked to their record Pages



The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and tabs for BillingCustomerRecordInsertion.apxc, Opportunity@6:57 PM, CustomerTrigger.apxt, CustomerTriggerTestLapxc, DisqualificationTestLeads.apxc, DisqualificationTestLead.apxc, OppView.vfp, and AccountList.vfp. The API Version is set to 57.

The code in the AccountList.vfp tab is:

```

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>
12

```

The Logs tab at the bottom shows the following log entries:

User	Application	Operation	Time	Status	Read	Size
purnachandar atlike	Browser	/aura	25/02/2023, 19:24:42	Success		3.75 KB
purnachandar atlike	Browser	/apex/OppView	25/02/2023, 19:21:56	Success	Unread	1.18 KB
purnachandar atlike	Unknown	ApexTestHandler	25/02/2023, 19:18:14	Success		997 bytes
purnachandar atlike	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Insert failed. First exception on row ...		18.86 KB
purnachandar atlike	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Success	Unread	8.74 KB
purnachandar atlike	Unknown	ApexTestHandler	25/02/2023, 19:07:35	Success	Unread	998 bytes

Filter Click here to filter the log list

Burlington Textiles Corp of America
Dickenson Inc
Edwin Communications
Express Logistics and Transport
GlobePort
Global Business & Resorts Ltd
Pyramid Construction Inc.
Senate Account for Entitlements
Siemens AG
United Oil & Gas Corp.
United Oil & Gas, Singapore
United States Dept of Ed
University of Arizona

## Exercise – 18

Created a VF page that uses a Apex class to display a list of cases with the status of ‘New’.

The screenshot shows the Salesforce IDE interface. At the top, there are tabs for various pages like CustomerTriggerTest.apxc, DisqualificationTestLead.apxc, OppView.vfp, AccountList.vfp, and NewCaseList.vfp (which is currently selected). Below the tabs, the code for NewCaseList.vfp is displayed:

```

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>

```

At the bottom of the screen, there is a log viewer tab showing the following log entries:

User	Application	Operation	Time	Status	Read	Size
purnachandar atke	Browser	/apex/NewCaseList	25/02/2023, 20:01:09	Success	Unread	3.46 kB
purnachandar atke	Browser	/apex/AccountList	25/02/2023, 19:58:18	Success	Unread	1.19 kB
purnachandar atke	Browser	/aura	25/02/2023, 19:24:42	Success		3.75 kB
purnachandar atke	Browser	/apex/OppView	25/02/2023, 19:21:56	Success	Unread	1.18 kB
purnachandar atke	Unknown	Apex Test Handler	25/02/2023, 19:18:14	Success	Unread	997 bytes
purnachandar atke	Unknown	Apex Test Handler	25/02/2023, 19:18:12	Success	Unread	8.74 kB

The screenshot shows the Salesforce IDE interface. The top navigation bar includes File, Edit, Debug, Test, Workspace, Help, and a dropdown for Code Coverage and API Version (set to 57). Below the navigation is a code editor window containing the following Apex code:

```
1 v 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 }
```

Below the code editor is a logs table with the following data:

User	Application	Operation	Time	Status	Read	Size
purnachandar atike	Browser	/apex/NewCaseList	25/02/2023, 20:01:09	Success	Unread	3.46 kB
purnachandar atike	Browser	/apex/AccountList	25/02/2023, 19:58:18	Success	Unread	1.19 kB
purnachandar atike	Browser	/aura	25/02/2023, 19:24:42	Success		3.75 kB
purnachandar atike	Browser	/apex/OppView	25/02/2023, 19:21:56	Success	Unread	1.18 kB
purnachandar atike	Unknown	ApexTestHandler	25/02/2023, 19:18:14	Success		997 bytes
purnachandar atike	Unknown	ApexTestHandler	25/02/2023, 19:18:12	Success	Unread	8.74 kB

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

5002w@000000shH5cQ 00001024  
5002w@000000shoyAAA 00001052  
5002w@000000shoy9AAA 00001016

## **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](#)