



Capstone Project Report
On
“Salesforce application”
“Travel App & Code Playground”

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Abstract

Salesforce, Inc. is an American cloud-based software company headquartered in San Francisco, California. It provides customer relationship management (CRM) software and applications focused on sales, customer service, marketing automation, analytics, and application development.

Salesforce's main technologies are tools for customer management. Other products enable customers to create apps, integrate data from other systems, visualize data, and offer training courses.

Force.com applications are built using declarative tools, backed by Lightning and Apex, a proprietary Java-like programming language for Force.com, as well as Visualforce, a framework including an XML syntax typically used to generate HTML. The Force.com platform typically receives three complete releases a year. As the platform is provided as a service to its developers, every single development instance also receives all these updates.

In here we work on how to Set up the Company Profile, Configuring the user Interface, setting up Activities and Calendars, Configuring Search Settings, Setting up Chatter Groups, Mobile Access with salesforce.

Introduction

Salesforce is a cloud-based software company that provides its customers with a platform to develop their own applications without following the tough steps that they used to follow in the legacy system. The software or application once created can be uploaded onto the cloud allowing the end-users to view them.

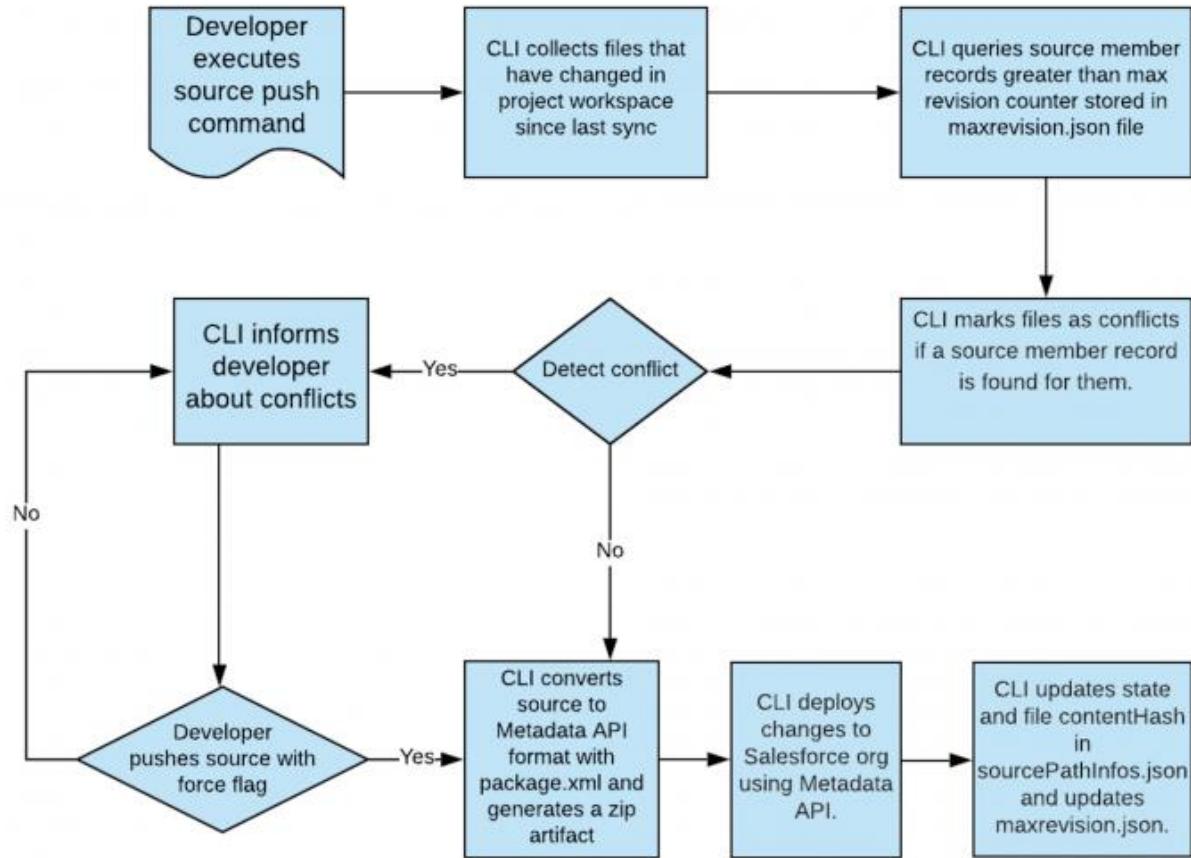
Salesforce is currently providing various software solutions and platforms for developers to create and distribute custom software/applications. Tech giants like Google, Twitter, Amazon, and Facebook are using Salesforce either in the form of SaaS or PaaS.



Salesforce developers can make an application on the cloud and share it with multiple companies across multiple domains by using Salesforce.

Talking about HR systems, every company across the globe has an HR team. Each HR team would require an HR application to store employee records. Almost all specifications for such an application would be common for all companies. So, as a developer, it would be very easy to create a Salesforce application for such specifications, post it onto the cloud, and provide it as a service to multiple clients at the same time. Maintenance of the same can be done altogether too. So basically, the problem of scalability gets eliminated.

Flow of the Project



Software Requirements

For the fastest and most stable experience, we recommend:

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

Minimum requirements are:

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

OR

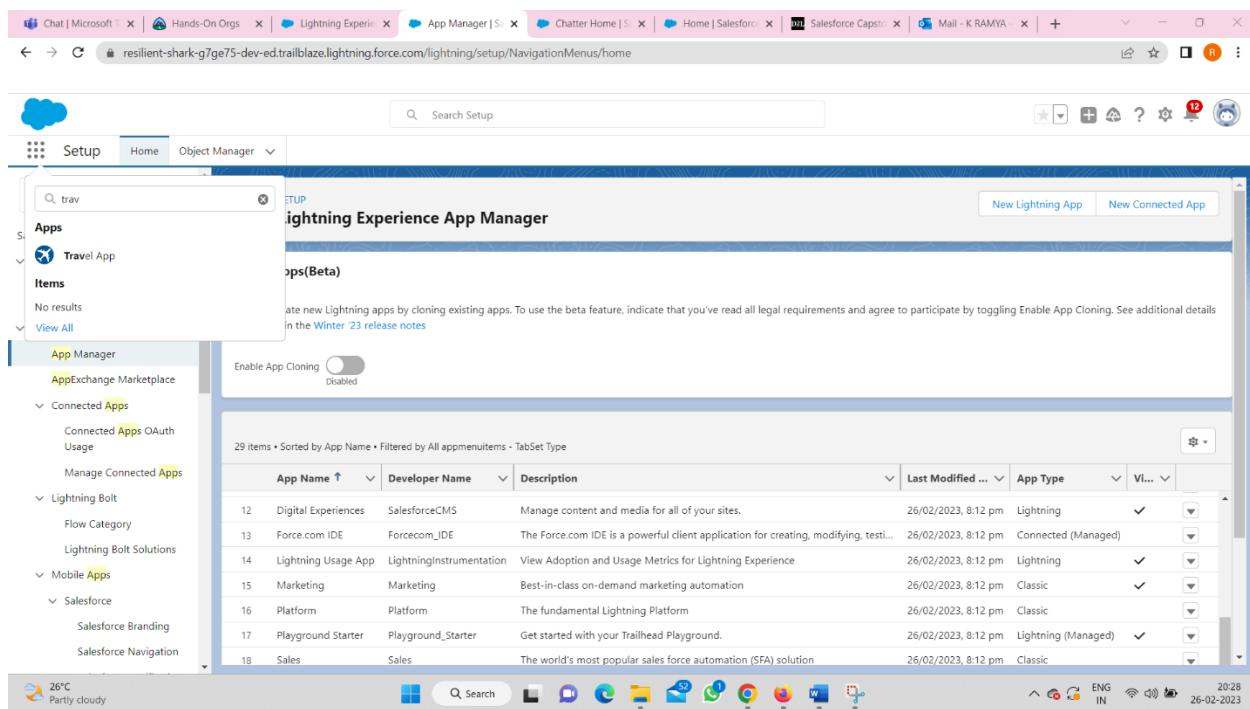
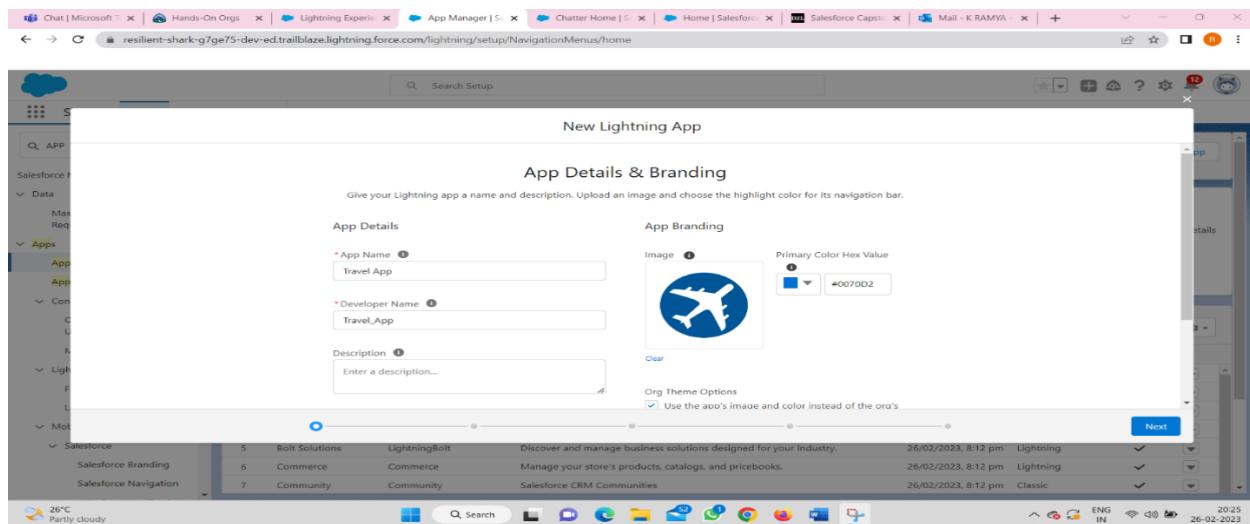
Requirements	
Windows	
Operating system	Windows 8.1 64-bit, Windows 8 64-bit, Windows 7 Service Pack 1 64-bit, Windows Vista Service Pack 2 64-bit
CPU	Core 2 Quad Q6600 at 2.4 GHz or AMD Phenom 9850 at 2.5 GHz
Memory	4 GB RAM
Free space	65 GB of free space
Graphics hardware	DirectX 10-compatible GPU: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

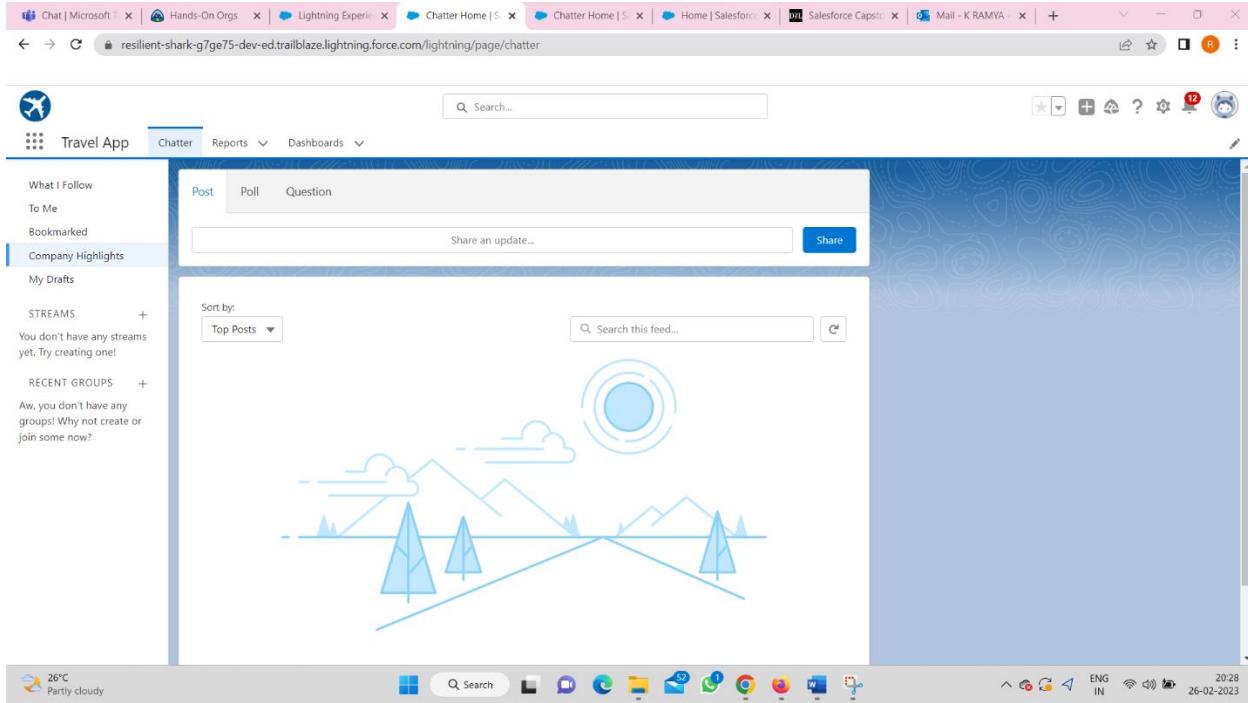
Screen shots

MODULE – 1

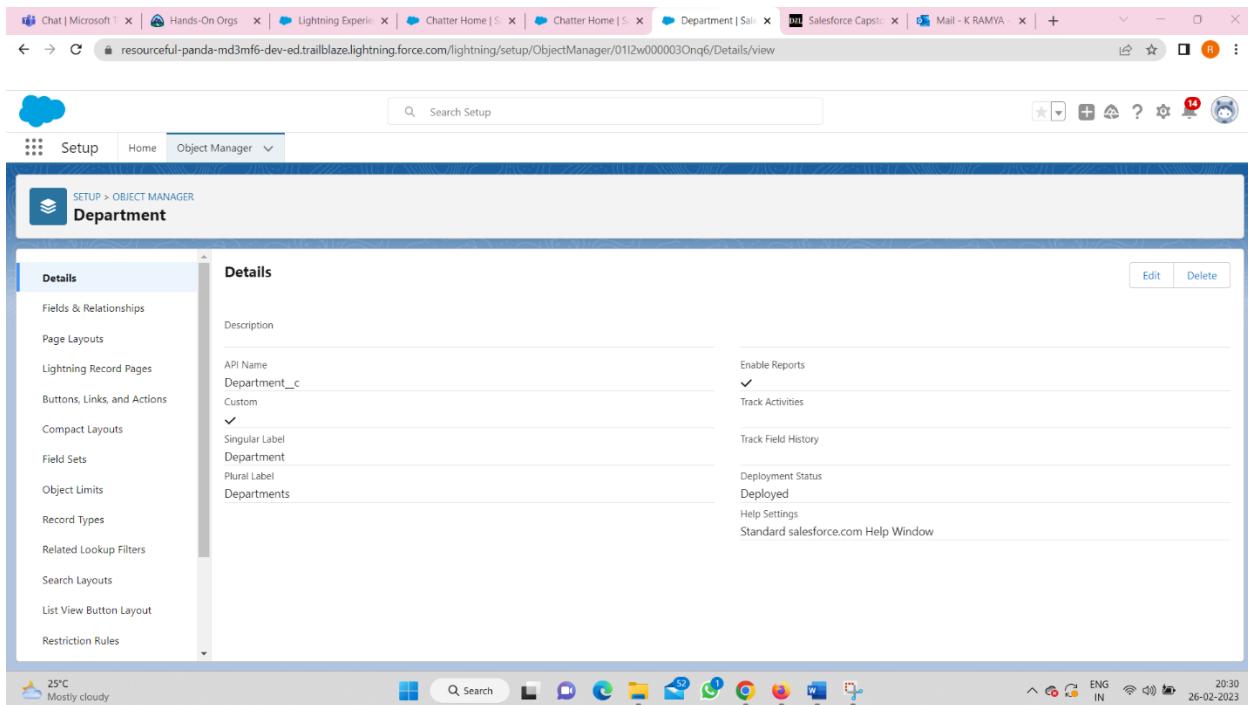
Exercise – 1

- Create a new custom lightning App, name: Travel App





➤ Create a Department custom object



- Create the following custom fields:
- Department Code
 - Location
 - Department Type
 - Field Dependency, Controlling field = Location, Dependent field = Department Type

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
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)		✓

- Create a Travel Approval Object

Description	Enable Reports
API Name Travel_Approval__c	✓
Custom	✓
✓	Track Activities
Singular Label Travel Approval	✓
Plural Label Travel Approvals	✓
Deployment Status Deployed	
Help Settings Standard salesforce.com Help Window	

➤ Create the following custom fields:

- Purpose of Trip
- Status
- Trip Start Date
- Trip End Date
- Out of State
- Destination State
- Department

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

- Header:** Chat | Microsoft, Hands-On Orgs, Lightning Experience, Chatter Home, Travel Approval, Chatter Home, Salesforce Caps, Mail - K RAMYA.
- Page Title:** SETUP > OBJECT MANAGER Travel Approval
- Left Sidebar:** Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules.
- Table:** Fields & Relationships (13 items, Sorted by Field Label)

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Department	Department__c	Lookup(Department)		▼
Destination State	Destination_State__c	Text(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)		▼
- Bottom:** Weather (25°C, Mostly cloudy), Search bar, Taskbar icons, Language (ENG IN), Date (26-02-2023), Time (20:52).

➤ Look of the Travel App

The screenshot shows a Salesforce Lightning Experience page for a Travel Approval record. The record ID is TA00001. The page has a header with various tabs and a search bar. The main content area is divided into sections: 'Related' (listing the Travel Approval #), 'Details' (showing fields like Status, Out Of State, Destination State, Total Expenses, and Status Indicator), and 'Trip Info' (listing Purpose Of Trip, Trip Start Date, and Trip End Date). To the right, there's a 'Chatter' section with activity filters and a weather widget showing 25°C and mostly cloudy conditions. The bottom of the screen shows the Windows taskbar and system tray.

➤ Importing the data of Departments from ‘Data Import Wizard’

The screenshot shows a Salesforce Lightning Experience page for the Department object. The page title is 'All'. It displays a list of 17 departments, each with a checkbox and a link to its detail page. The columns include 'Department Name' (sorted by name) and other standard list view columns. At the top right, there are buttons for 'New', 'Import', and 'Change Owner'. Below the list is a search bar and a toolbar with various icons. The bottom of the screen shows the Windows taskbar and system tray.

Exercise – 2

- Create Travel Approval record

The screenshot shows a Salesforce Lightning Experience page for a Travel Approval record. The record ID is TA00002. The page has a 'Details' tab selected, displaying fields such as Travel Approval # (TA00002), Status (Draft), and Trip Info (Attend Dreamforce). The 'Activity' sidebar shows no upcoming or overdue activities.

- Create Expense Item Object

The screenshot shows the Salesforce Setup page for creating a new object named 'Expense Item'. The 'Details' tab is selected, showing fields like API Name (Expense__Item__c) and Singular Label (Expense Item). Other tabs visible include Fields & Relationships, Page Layouts, and Lightning Record Pages.

➤ Create the following custom fields :

- Amount
- Expense Type
- Travel Approval Type

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

- Setup** tab selected.
- Object Manager** section selected.
- Expense Item** object selected.
- Fields & Relationships** tab selected.
- Fields & Relationships** table:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount_c	Currency(16, 2)		
Created By	CreatedById	Lookup(User)		
Expense Item Number	Name	Auto Number		✓
Expense Type	Expense_Type_c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Travel Approval	Travel_Approval_c	Master-Detail(Travel Approval)		✓
- Details** sidebar on the left.
- System Information** at the bottom: 25°C, Mostly cloudy, Search bar, Taskbar icons, ENG IN, 20:56, 26-02-2023.

➤ Create Expense Items

The screenshot shows the Travel App interface with the following details:

- Travel App** tab selected.
- Travel Approvals** section selected.
- Travel Approval** detail page for TA00001.
- Related** section:

Expense Item Number	Expense Type	Amount
E - 00001	Airfare	₹450.00
- Activity** section:
 - Follow, Edit, New Contact, New Opportunity buttons.
 - Activity feed: No activities to show.
 - Filters: All time • All activities • All types.
 - Refresh, Expand All, View All buttons.

➤ Create a User

The screenshot shows the Salesforce Setup interface with the 'Users' tab selected. A new user record is being created with the following details:

- User Detail:**
 - Name: Eric Executive
 - Alias: eexec
 - Email: ramya.77@wipro.com
 - Username: eexecutive@yellow12.com
 - Nickname: eexec
 - Title: (empty)
 - Company: (empty)
 - Department: (empty)
 - Division: (empty)
 - Address: (empty)
 - Time Zone: (GMT+05:30) India Standard Time (Asia/Kolkata)
 - Locale: English (India)
 - Language: English
 - Delegated Approver: (empty)
 - Manager: (empty)
 - Receive Approval Request Emails: Only if I am an approver
 - Federation ID: (empty)
- Role:** CEO
- User License:** Salesforce
- Profile:** System Administrator
- Active:** checked
- Marketing User:** (checkbox)
- Offline User:** (checkbox)
- Knowledge User:** (checkbox)
- Flow User:** (checkbox)
- Service Cloud User:** (checkbox)
- Site.com Contributor User:** (checkbox)
- Site.com Publisher User:** (checkbox)
- WDC User:** (checkbox)
- Mobile Push Registrations:** View
- Data.com User Type:** (checkbox)
- Accessibility Mode (Classic Only):** (checkbox)
- Debug Mode:** (checkbox)
- High-Contrast Palette on Charts:** (checkbox)

➤ Add user Eric Executive as your manager

The screenshot shows the Salesforce Setup interface with the 'Users' tab selected. The 'Approver Settings' section is visible, where the 'Manager' field is populated with 'Eric Executive'. Other settings include:

- Single Sign On Information:** Federation ID: (empty)
- Locale Settings:**
 - Time Zone: (GMT-09:00) Alaska Standard Time (America/Yakutat)
 - Locale: English (India)
 - Language: English
- Approver Settings:**
 - Delegated Approver: (empty)
 - Manager: Eric Executive
 - Receive Approval Request Emails: Only if I am an approver

➤ Enable Chatter on the Travel Approval Object

The screenshot shows the Salesforce Setup interface. On the left, the navigation pane is open with the path: Feature Settings > Chatter > Feed Item > Feed Tracking. The main content area is titled "Feed Tracking" and shows the "Fields in travel approvals" configuration. Under "Topic", the "Travel Approval" object is selected, which has 2 fields. The "Enable Feed Tracking" checkbox is checked. Other objects listed include Problem, Product, Report, Service Contract, Session Hijacking Event Store, Site, Solution, Task, Threat Detection Feedback, Topic (with 1 field), User, Web Cart Document, Work Order, Work Order Line Item, Work Plan, Work Plan Template, Work Plan Template Entry, Work Step, and Work Step Template. The status bar at the bottom indicates it's 21:06 on 26-02-2023.

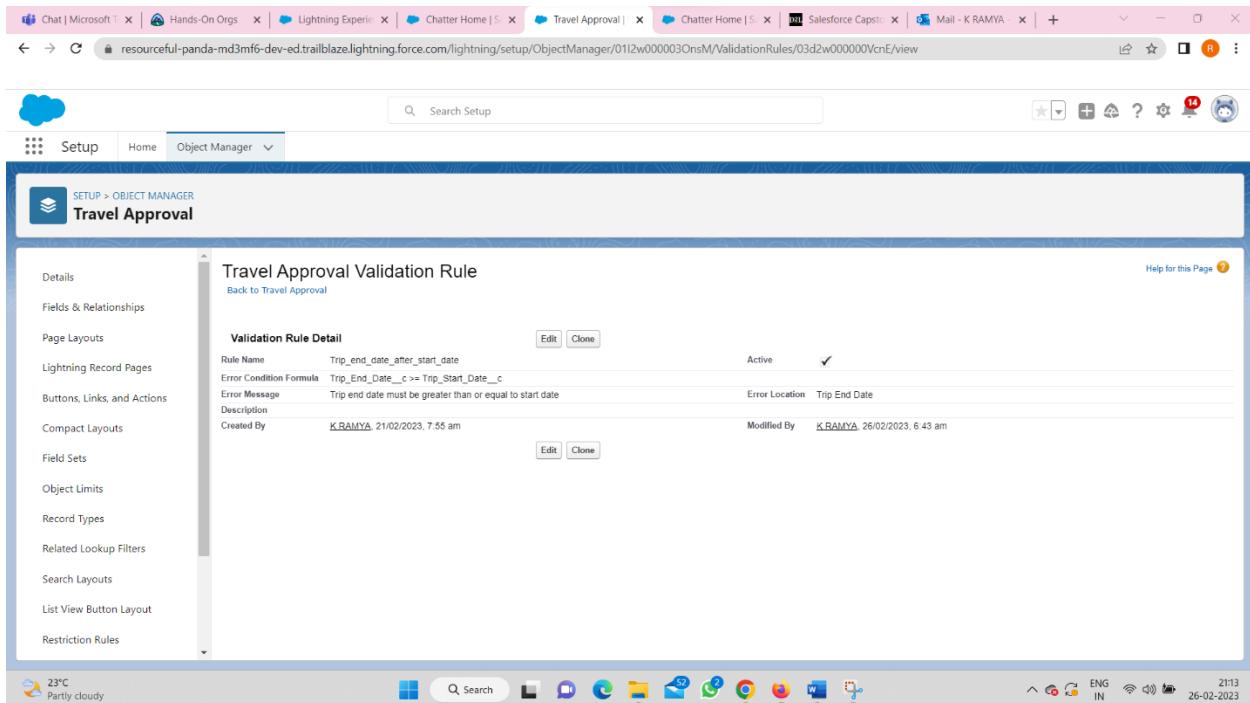
➤ Test Collaboration

The screenshot shows the Travel App Chatter feed. A post from user TA00002 - K RAMYA dated 21 February 2023 at 3:24 am asks, "Which Department should I associate this travel request with?". The post has 1 comment and 1 view. The comment is from Eric Executive, posted 5 days ago, stating, "Technology is the correct department". Below the comment input field, there is a placeholder "Write a comment...". To the right, the Einstein Recommendations section lists three users: Eric Executive, Integration User, and Security User, each with a "Follow" and "Skip" button. The status bar at the bottom indicates it's 21:08 on 26-02-2023.

MODULE – 2

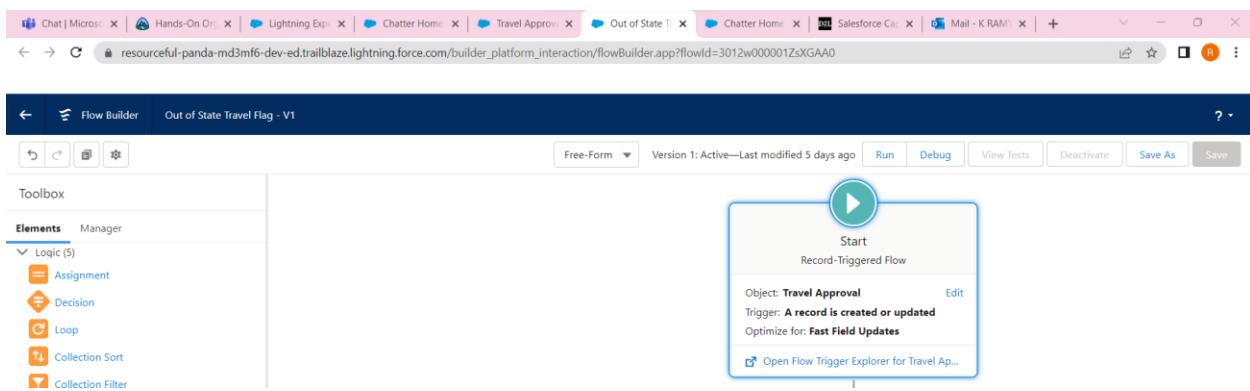
Exercise – 1

➤ Create Validation Rule



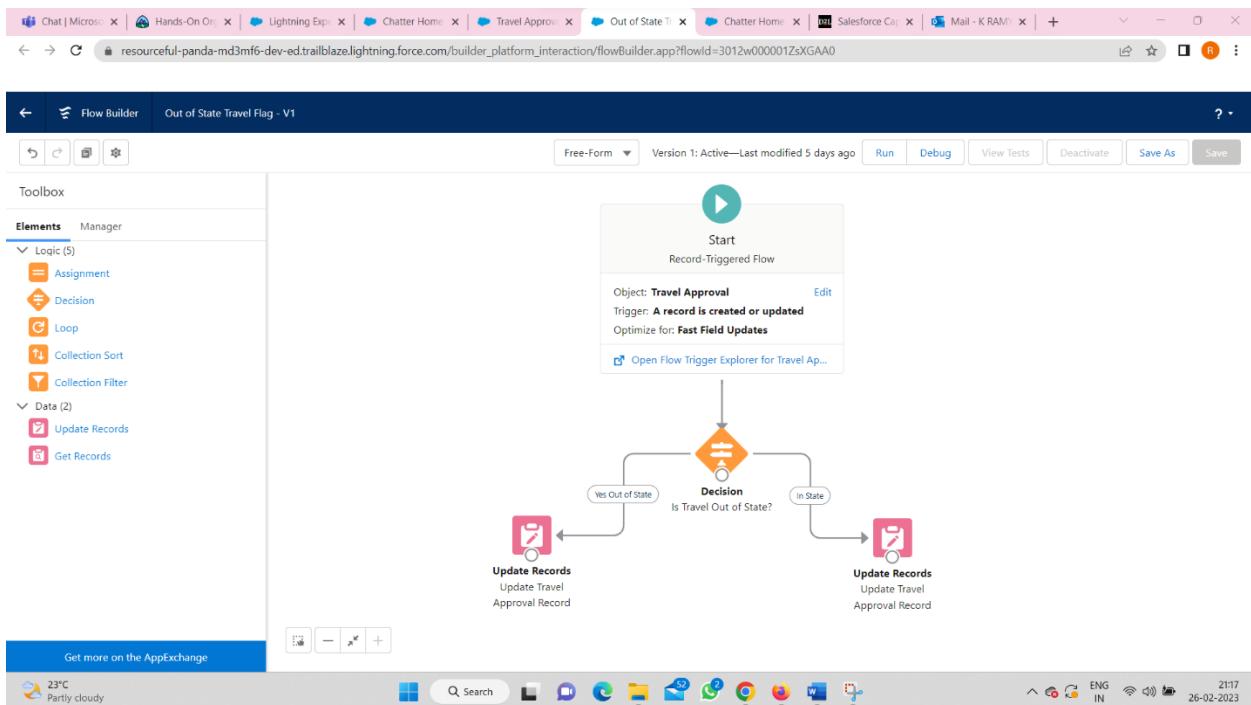
The screenshot shows the Salesforce Setup interface for the 'Travel Approval' object. On the left, a sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, and Lightning Record Pages. The main content area displays the 'Travel Approval Validation Rule' details. The rule is named 'Trip_end_date_after_start_date' and is active. The error condition formula is 'Trip_End_Date__c >= Trip_Start_Date__c', with the message 'Trip end date must be greater than or equal to start date'. The rule was created by 'K RAMYA' on 21/02/2023 at 7:55 am and modified by the same user on 26/02/2023 at 6:43 am.

➤ Create a Record – Triggered Flow



The screenshot shows the Salesforce Flow Builder interface for a flow named 'Out of State Travel Flag - V1'. The flow is triggered by 'A record is created or updated' on the 'Travel Approval' object. It is currently in 'Free-Form' mode, version 1, which is active. The flow consists of a single step: 'Start Record-Triggered Flow'. The 'Start' step is associated with the 'Travel Approval' object and the trigger 'A record is created or updated'. The 'Optimize for: Fast Field Updates' option is selected. The flow has been modified 5 days ago.

- Add a Decision Element to the Flow.
- Create an Action for the Flow Using Update Records Elements



- Create an Approval Process to send Travel approvals to Manager or Travel coordinator
- Create an Approval Step for Out-of-State Travel
- Create Final Approval action.
- Create Final Rejection action

The screenshot shows the Salesforce Approval Processes setup screen. The current process is "Travel Approval: Travel Approval Request". The "Process Definition Detail" section includes the following details:

- Process Name: Travel Approval Request
- Unique Name: Travel_Approval_Request
- Description:
- Entry Criteria: True
- Record Editability: Administrator ONLY
- Next Automated Approver Determined By: Manager of Record Submitter
- Allow Submitters to Recall Approval Requests:

 The "Initial Submission Actions" section contains an "Action Type" of "Record Lock" with a description "Lock the record from being edited". The "Approval Steps" section shows one step named "Step 1" with an assigned approver of "Manager" and a reject behavior of "Final Rejection". The left sidebar shows navigation options like Setup, Home, Object Manager, and Approval Requests. The bottom status bar indicates it's 23°C Partly cloudy, ENG IN, and the date is 26-02-2023.

The screenshot shows the Salesforce Setup interface for 'Approval Processes'. The left sidebar includes 'Data' (Mass Transfer, Approval Requests), 'Process Automation' (Approval Processes selected), and a search bar. The main content area displays the 'Approval Steps' section with two steps: 'Step 1' (Action: Show Actions, Step Number: 1, Name: Travel_Coordinator_Approval, Criteria: Travel Approval: Out Of State equals True, Assigned Approver: Manager, Reject Behavior: Final Rejection) and 'Step 2' (Action: Show Actions, Step Number: 2). Below this are sections for 'Final Approval Actions' (Record Lock: Lock the record from being edited, Set Status to Approved), 'Final Rejection Actions' (Record Lock: Unlock the record for editing, Set Status to Rejected), and 'Recall Actions' (Record Lock: Unlock the record for editing). The bottom right corner shows system status: 23°C, Partly cloudy; 21:18; 26-02-2023.

The screenshot shows the 'Travel Approval' app for TA00001. The top navigation bar includes 'Travel App', 'Chatter', 'Reports', 'Dashboards', 'Departments', and 'Travel Approvals'. The main content area has tabs for 'Related' (Expense Items, Approval History) and 'Details'. Under 'Expense Items (1)', there is one item: E - 00001 (Expense Type: Airfare, Amount: ₹450.00). Under 'Approval History (3)', three steps are listed: 'Travel_Coordinator_Approval' (Approved, Date: 21/02/2023, 10:00 am, Assigned To: Eric Executive), 'Step 1' (Approved, Date: 21/02/2023, 10:00 am, Assigned To: Eric Executive), and 'Approval Request Submitted' (Submitted, Date: 21/02/2023, 9:28 am, Assigned To: K RAMYA). The right side features an 'Activity' section with a calendar icon, filters for 'All time • All activities • All types', and a note: 'No activities to show. Get started by sending an email, scheduling a task, and more.' The bottom right corner shows system status: 23°C, Partly cloudy; 21:19; 26-02-2023.

Exercise – 2

- Use Data Import Wizard to import Travel Approval records

Travel Approvals

Department	Created By	Status	Trip Start Date	Trip End Date
Audit Services	K RAMYA	Approved	08/07/2019	08/07/2019
Audit Services	K RAMYA	Approved	11/04/2019	11/07/2019
Audit Services	K RAMYA	Approved	07/08/2019	07/09/2019
Audit Services	K RAMYA	Approved	07/08/2019	07/08/2019
Audit Services	K RAMYA	Approved	09/03/2019	09/03/2019
Audit Services	K RAMYA	Approved	07/08/2019	07/09/2019
Audit Services	K RAMYA	Approved	11/04/2019	11/07/2019
Audit Services	K RAMYA	Approved	07/08/2019	07/08/2019
Audit Services	K RAMYA	Approved	09/03/2019	09/03/2019
Audit Services	K RAMYA	Approved	08/07/2019	08/07/2019
Audit Services	K RAMYA	Approved	11/04/2019	11/07/2019
Audit Services	K RAMYA	Approved	07/08/2019	07/09/2019
Contract Management	K RAMYA	Approved	05/11/2019	05/11/2019
Contract Management	K RAMYA	Approved	07/04/2019	07/04/2019
Contract Management	K RAMYA	Approved	07/05/2019	07/08/2019

- Create a Travel Requests by Department Report

Report: Travel Approvals

Travel Requests by Department

Department	Status	Travel Approval: Travel Approval #	Out Of State	Destination State	Trip Start Date	Trip End Date
Audit Services (12)	Approved (12)	TA00112	<input checked="" type="checkbox"/>	FL	08/07/2019	08/07/2019
		TA00116	<input checked="" type="checkbox"/>	OK	11/04/2019	11/07/2019
		TA00121	<input checked="" type="checkbox"/>	OK	07/08/2019	07/08/2019
		TA00238	<input checked="" type="checkbox"/>	OK	09/03/2019	09/03/2019
		TA00246	<input checked="" type="checkbox"/>	OK	07/08/2019	07/09/2019
		TA00258	<input checked="" type="checkbox"/>	OK	11/04/2019	11/07/2019
		TA00263	<input checked="" type="checkbox"/>	OK	07/08/2019	07/08/2019
		TA00309	<input checked="" type="checkbox"/>	OK	09/03/2019	09/03/2019
		TA00325	<input checked="" type="checkbox"/>	FL	08/07/2019	08/07/2019
		TA00192	<input checked="" type="checkbox"/>	OK	07/08/2019	07/08/2019
		TA00329	<input checked="" type="checkbox"/>	OK	11/04/2019	11/07/2019
		TA00334	<input checked="" type="checkbox"/>	OK	07/08/2019	07/09/2019

➤ Create a Travel Requests by Month Report

Report: Travel Approvals
Travel Requests by Month

Total Records
302

Trip End Date	Out Of State	Department	Status	Destination State	Trip Start Date
January 2019 (18)	(14)	Office of General Counsel	Approved	TX	04/01/2019
		Division of Finance	Approved	TX	10/01/2019
		Division of Family Resources	Approved	TX	04/01/2019
		Division of Finance	Approved	TX	10/01/2019
		Division of Family Resources	Approved	TX	04/01/2019
		Division of Finance	Approved	TX	04/01/2019
		Division of Family Resources	Approved	TX	04/01/2019
		Division of Finance	Approved	TX	10/01/2019
		Office of General Counsel	Approved	TX	04/01/2019
		Division of Family Resources	Approved	TX	04/01/2019
		Office of General Counsel	Approved	TX	04/01/2019
		Office of General Counsel	Approved	TX	04/01/2019
		Office of General Counsel	Approved	TX	04/01/2019

Row Counts Detail Rows Subtotals Grand Total

21°C Partly cloudy ENG IN 26-02-2023

➤ Create a Travel Approvals Dashboard

Dashboard
Travel Requests Dashboard

Last refreshed 4 days ago. Refresh this dashboard to see the latest data.
As of 21-Feb-2023, 11:18 pm Viewing as K RAMYA

Travel Requests by Department

Department	Record Count
Audit Services	12
Contract Management	23
Disability Determination Board	17
Division of Aging	24
Division of Disability and Re...	15
Division of Family Resources	16
Division of Finance	24
Division of Mental Health an...	19
Human Resources	10
Legislative Services	14
Office of Communications a...	14
Office of Early Childhood an...	28

View Report (Travel Requests by Department)

Travel Requests by Month

Trip End Date	Record Count
January 2019	~10
February 2019	~10
March 2019	~15
April 2019	~55
May 2019	~25
June 2019	~25
July 2019	~25
August 2019	~25
September 2019	~25
October 2019	~25
November 2019	~25
December 2019	~25
January 2020	~25

Out Of State
false true

View Report (Travel Requests by Month)

21°C Partly cloudy ENG IN 26-02-2023

MODULE – 3

Exercise – 1

- Create a new custom lightning App, name: Code Playground

The screenshot shows a Microsoft Edge browser window with multiple tabs open. The active tab displays a list of accounts from a Salesforce Lightning App titled 'Code Playground'. The list includes 13 items, each with a checkbox, account name, account site, billing state/province, phone number, type, and account owner alias. The account names listed are Burlington Textiles Corp of America, Dickenson plc, Edge Communications, Express 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, and University of Arizona. The account owner alias for most entries is 'KRAMY'. The browser interface includes a search bar, a ribbon menu, and a system tray at the bottom.

- Create a Custom Object

The screenshot shows a Microsoft Edge browser window displaying the Salesforce Setup Object Manager. A new object named 'Customer' is being created. The 'Details' tab is selected, showing fields like API Name (Customer__c), Singular Label (Customer), Plural Label (Customers), and Deployment Status (Deployed). The left sidebar lists various configuration options such as 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, and Restriction Rules. The browser interface includes a search bar, a ribbon menu, and a system tray at the bottom.

➤ Create a Custom fields for Customer Object

- Active
- Customer Type
- Description
- Customer

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
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)		

➤ Create a Custom Object

Description	Enable Reports
API Name Billing__c	✓
Custom	Track Activities
✓	Track Field History
Singular Label Billing	Deployment Status
Plural Label Billings	Deployed
	Help Settings
	Standard salesforce.com Help Window

➤ Create a Custom fields for Billing Object :

- Amount Paid
- Customer Type
- Status

The screenshot shows the Salesforce Object Manager interface for the Billing object. The left sidebar lists various setup options like Page Layouts, Lightning Record Pages, and Field Sets. The main area is titled 'Fields & Relationships' and displays a table of fields. The table has columns for FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount 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		

Exercise – 2

1 . Define a String Variable & use string method ‘endsWith’ to display the output.

The screenshot shows the Salesforce Developer Console interface. In the top navigation bar, there are tabs for File, Edit, Debug, Test, Workspace, Help, and a search bar. Below the navigation bar is a toolbar with icons for Log, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The main area is divided into two panes: 'Enter Apex Code' on the left and 'Execution Log' on the right. The 'Enter Apex Code' pane contains the following Apex code:

```
1 String s = 'Ramya Kichappa';
2 if(s.endsWith('Kichappa'))
3 {
4     system.debug('True');
5 }else{
6     system.debug('False');
7 }
```

The 'Execution Log' pane shows the execution details:

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:10:14 PM	Success		2.38 KB

Below the log table is a status bar with weather information (26°C, Mostly cloudy), system icons, and the date (23-02-2023).

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

The screenshot shows the Salesforce Developer Console interface. In the top navigation bar, there are tabs for File, Edit, Debug, Test, Workspace, Help, and a search bar. Below the navigation bar is a toolbar with icons for Log, Tests, Checkpoints, Query Editor, View State, Progress, and Problems. The main area is divided into two panes: 'Enter Apex Code' on the left and 'Execution Log' on the right. The 'Enter Apex Code' pane contains the following Apex code:

```
1 Date todaysdate = date.today();
2 Date newdate = todaysdate.addDays(30);
3 system.debug(newdate);
4
```

The 'Execution Log' pane shows the execution details:

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:30:14 PM	Success		2.42 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:29:12 PM	Success		2.46 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:27:36 PM	Attempt to de-reference a null object	Unread	2.34 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:26:39 PM	Success		2.74 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:22:12 PM	Success		2.39 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAnon...	2/23/2023, 8:10:14 PM	Success		2.38 KB

Below the log table is a status bar with weather information (26°C, Mostly cloudy), system icons, and the date (23-02-2023).

3 . Display the output of an Integer variable from string ‘10’ and then add 20 to it.

The screenshot shows the Salesforce Developer Console interface. In the top navigation bar, there are tabs for 'File', 'Edit', 'Debug', 'Test', 'Workspace', and 'Help'. Below the tabs, the URL is 'empathetic-goat-otbluu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCsPage'. A sub-header 'Log executeAnonymous @2/23/2023, 8:34:54 PM' is displayed. The main area is titled 'Execution Log' with columns for 'Timestamp', 'Event', and 'Details'. A timestamp '20:34:54:002' and event 'USER_DEBUG [3]DEBUG[30]' are shown. An 'Enter Apex Code' window is open, containing the following Apex code:

```
1 String s = '10';
2 Integer i = Integer.valueOf(s);
3 system.debug(i + 20);
```

Below the code window, there are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. At the bottom of the page, there is a toolbar with icons for various applications and a status bar showing '26°C Mostly cloudy' and the date '23-02-2023'.

4. Define a String Variable & use string method length() to display the output.

The screenshot shows the Salesforce Developer Console interface. The top navigation bar and URL are identical to the previous screenshot. The sub-header 'Log executeAnonymous @2/23/2023, 8:38:14 PM' is displayed. The main area is titled 'Execution Log' with columns for 'Timestamp', 'Event', and 'Details'. A timestamp '20:38:39:003' and event 'USER_DEBUG [3]DEBUG[14]' are shown. An 'Enter Apex Code' window is open, containing the following Apex code:

```
1 String s = 'Ramya Kichappa';
2 Integer l = s.length();
3 system.debug('length = ' + l);
```

Below the code window, there are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. At the bottom of the page, there is a toolbar with icons for various applications and a status bar showing '26°C Mostly cloudy' and the date '23-02-2023'.

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

The screenshot shows the Salesforce Developer Console interface. At the top, there are several tabs: 'Salesforce Capstone Project - M...', 'Hands-On Orgs', 'Developer Console', 'Data Class | Apex Reference Guide', 'List Data Structure in Apex | Ap...', and 'Log executeAnonymous @2/23/2023, 8:57:39 PM'. Below the tabs, the main area has a title bar with 'File • Edit • Debug • Test • Workspace • Help' and a URL 'empathetic goat ot@luu dev-ed.trailblaze.my.salesforce.com/ui/common/apex/debug/ApexCsPage'. The central part of the screen displays the 'Logs' tab of the Developer Console. It includes a 'Logs' section with a table of log entries, a 'Logs Editor' section with an 'Enter Apex Code' input field containing the following Apex code, and a 'Logs' table below it.

```
1 List<Integer> numbers = new List<Integer>{1,2,3,4,5};
2 system.debug(numbers);
3 numbers.add(6);
4 system.debug(numbers);
5 Integer i = numbers.get(0);
6 system.debug(i);
7 numbers.set(0,7);
8 system.debug(numbers);
9 numbers.clear();
10 system.debug(numbers);
11
```

The 'Logs' table shows the following log entries:

User	Application	Operator	Time	Status	Size
K RAMYA	Unknown	/services/data/v57.0/tracking/entries/...	2/23/2023, 8:57:37 PM	Running	3.58 KB
K RAMYA	Unknown	/services/data/v57.0/tracking/entries/...	2/23/2023, 8:57:45 PM	Success	3.61 KB
K RAMYA	Unknown	/services/data/v57.0/tracking/entries/...	2/23/2023, 8:57:48 PM	Success	3.49 KB
K RAMYA	Unknown	/services/data/v57.0/tracking/entries/...	2/23/2023, 8:57:51 PM	Success	2.44 KB
K RAMYA	Unknown	/services/data/v57.0/tracking/entries/...	2/23/2023, 8:58:17 PM	Success	3.44 KB
K RAMYA	Unknown	/services/data/v57.0/tracking/entries/...	2/23/2023, 8:58:24 PM	Success	2.21 KB

Exercise – 2

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

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

```
1 Integer x = 20;
2 for(Integer x=0;x<10;x=x+1)
3 {
4     system.debug('Value of x is: '+x);
5 }
```

Below the modal, the "Execution Log" pane displays the following log entries:

Timestamp	Event	Details
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 0
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 1
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 2
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 3
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 4
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 5
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 6
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 7
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 8
11:32:49:003	USER_DEBUG	[4]DEBUG Value of x is: 9

At the bottom of the developer console, there is a status bar showing weather information (32°C, Sunny), system icons, and the date/time (24-02-2023, 11:34).

Exercise – 3

Answer the following in True Or False:

The screenshot shows the Salesforce Developer Console interface. At the top, there are three tabs: 'Hands-On Orgs', 'Recently Viewed | Leads | Sales...', and 'Developer Console'. Below the tabs, the URL is 'empathetic-goat-otbluu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'. The main area is titled 'Execution Log' with tabs for 'Timestamp', 'Event', and 'Details'. A log entry is shown: '11:37:46:005 USER_DEBUG [3]@DEBUG|false'. An 'Enter Apex Code' dialog box is open, displaying the following Apex code:

```
1 Integer myluckyNumber = 15;
2 Integer myunluckyNumber = 7;
3 system.debug(myluckyNumber != myunluckyNumber + 8);
```

Below the code, there are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. Underneath the log table, there is a 'Logs' tab selected, followed by 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Logs' table lists four entries from user 'K RAMYA':

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:37:46 AM	Success		2.4 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:37:24 AM	Success		2.5 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:36:41 AM	Success		2.4 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:32:49 AM	Success		5.6 KB

At the bottom of the interface, there is a toolbar with icons for search, refresh, and other functions, along with system status indicators like weather (32°C, Sunny), language (ENG IN), and date/time (24-02-2023, 11:38).

Exercise – 4

Answer the following in True Or False:

The screenshot shows the Salesforce Developer Console interface. At the top, there are three tabs: 'Hands-On Orgs', 'Recently Viewed | Leads | Salesfo...', and 'Developer Console'. Below the tabs, the URL is 'empathetic-goat-otBluu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'. The main area is titled 'Execution Log' with tabs for 'Timestamp', 'Event', and 'Details'. A timestamp row shows '11:40:34:002' for 'USER_DEBUG' and '[3]||DEBUG|true'. Below this is a code editor window titled 'Enter Apex Code' containing the following code:

```
1 Boolean.isTrue = True;
2 Boolean.isFalse = false;
3 system.debug(isTrue || isFalse);
4
5
```

At the bottom of the code editor are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. Below the code editor is a table titled 'Logs' with columns: User, Application, Operation, Time, Status, Read, and Size. The table contains five rows for the user 'K RAMYA', each showing a successful execution of the provided Apex code. The status is 'Success' and the size is between 2.37 KB and 5.6 KB. At the bottom of the page, there is a weather widget showing '32°C Sunny', a search bar, and various system icons.

Exercise – 5

Answer the following in True Or False:

The screenshot shows the Salesforce Developer Console interface. At the top, there are three tabs: 'Hands-On Orgs', 'Recently Viewed | Leads | Salesfo...', and 'Developer Console'. Below the tabs, the URL is 'empathetic-goat-otBluu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'. The main area is titled 'Execution Log' and contains a table with columns: Timestamp, Event, and Details. A single row is shown: '11:42:38:002' under Timestamp, 'USER_DEBUG' under Event, and '[3]||DEBUG|true' under Details. Below this table is a modal window titled 'Enter Apex Code' containing the following Apex code:

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

At the bottom of the modal are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. Below the modal is a toolbar with checkboxes for 'This Frame', 'Executable', 'Debug Only', 'Filter', and a link 'Click here to filter the log'. The 'Logs' tab is selected in the toolbar. The log table has columns: User, Application, Operation, Time, Status, Read, and Size. The data in the table is as follows:

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:42:38 AM	Success		2.45 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:40:34 AM	Success		2.37 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:37:46 AM	Success		2.4 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:37:24 AM	Success		2.5 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:36:41 AM	Success		2.4 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/24/2023, 11:32:49 AM	Success		5.6 KB

At the bottom of the page, there is a weather widget showing '32°C Sunny', a search bar, and various system status icons. The date and time are also displayed at the bottom right.

Exercise – 6

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

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales|...', 'Developer Console', and 'Salesforce Capstone Project - M...'. Below the tabs, the URL is 'empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'. The main area is divided into sections:

- Execution Log:** A table with columns 'Timestamp', 'Event', and 'Details'. One entry is shown: '11:47:26:002 USER_DEBUG [7] DEBUG(Grade: B'.
- Enter Apex Code:** A modal window containing the following Apex code:

```
1 Integer Score = 85;
2 if(Score == 100){
3     system.debug('Grade: A+');
4 }else if(Score >= 90){
5     system.debug('Grade: A');
6 }else if(Score >= 80){
7     system.debug('Grade: B');
8 }else{
9     system.debug('Grade: Failed');
10 }
```
- Logs:** A table titled 'Logs' with columns 'User', 'Application', 'Operation', 'Time', 'Status', 'Read', and 'Size'. The data is as follows:

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	/services/data/v57.0/tooling/executeA...	2/24/2023, 11:47:26 AM	Success		2.48 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeA...	2/24/2023, 11:47:38 AM	Success		2.45 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeA...	2/24/2023, 11:48:34 AM	Success		2.37 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeA...	2/24/2023, 11:49:46 AM	Success		2.4 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeA...	2/24/2023, 11:37:24 AM	Success		2.5 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeA...	2/24/2023, 11:36:41 AM	Success		2.4 KB

At the bottom, there are buttons for 'Open Log', 'Execute', and 'Execute Highlighted'. The status bar at the bottom right shows '28°C Sunny', 'ENG IN', and the date '24-02-2023'.

Exercise – 7

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

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Hands-On Orgs', 'Recently Viewed | Billings | Sales...', 'Home | Salesforce', and 'Developer Console'. Below the tabs, the URL is 'empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCIPage'. The main area displays the Apex code for 'Billingloop' class:

```
1 public class Billingloop {
2     public static void viewBills(){
3         List<Billing__c> listOfBills = [select Id, Name, Status__c FROM Billing__c];
4         List<String> billRecords = new list<String>();
5         for(Billing__c bill : listOfBills){
6             system.debug('Value of Current Record in the Loop'+ listOfBills);
7             if(bill.Status__c == 'paid'){
8                 billRecords.add(bill.Name);
9             }
10        }
11        system.debug('Billing Records are: ' + billRecords);
12    }
13 }
```

To the right of the code editor, a modal window titled 'Enter Apex Code' contains the single line of code: '1 Billingloop.viewbills();'. Below the code editor, there is a 'Logs' tab selected, showing a test run with no failures. The 'Overall Code Coverage' table shows 28% coverage across several classes, with Billingloop at 0%. The status bar at the bottom indicates it's 31°C and sunny.

The screenshot shows the Salesforce Developer Console interface, similar to the previous one but with different log output. The 'Logs' tab is still selected, showing the execution log with three entries:

Timestamp	Event	Details
15:28:44:014	USER_DEBUG	[5]DEBUG Value of Current Record in the Loop(Billing__c:[Id=a012w0000017qWcAAI, Name=B - 0001, Status__c=Paid], Billing__c:[Id=a012w0000017qWcAAI, Name=B - 0002, Status__c=Paid])
15:28:44:014	USER_DEBUG	[6]DEBUG Value of Current Record in the Loop(Billing__c:[Id=a012w0000017qWcAAI, Name=B - 0001, Status__c=Paid], Billing__c:[Id=a012w0000017qWcAAI, Name=B - 0002, Status__c=Paid])
15:28:44:014	USER_DEBUG	[11]DEBUG Billing Records are: (B - 0001, B - 0002)

The 'Overall Code Coverage' table remains the same, showing 28% coverage. The status bar at the bottom indicates it's 31°C and sunny.

Exercise – 8

Write a Class to demo the use of Constants in Apex

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales...', 'Developer Console', and 'Salesforce Capstone Project - M...'. Below the tabs, the URL is `empathetic-goat-ot8luu-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     public static Decimal calculateDiscount(Integer price){
3         Decimal regDiscount = 0.1;
4         Decimal finprice = price - price*regDiscount;
5         return finprice;
6     }
7 }
8 }
```

Below the code, a log entry is shown:

Logs	Tests	Checkpoints	Query Editor	View State	Progress	Problems
User K RAMYA Application Unknown Operation /services/data/v57.0/tooling/executeAn... Time 2/26/2023, 11:21:01 AM Status Success Read Size 3.69 KB						

At the bottom, there is a toolbar with various icons and system status information.

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales...', 'Developer Console', and 'Salesforce Capstone Project - M...'. Below the tabs, the URL is `empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage`. The main area displays the code for `DiscountClass.apxc` and an 'Execution Log' window:

Execution Log

Timestamp	Event	Details
11:21:01:023	USER_DEBUG	[2]DEBUG:[finalprice:90.0]

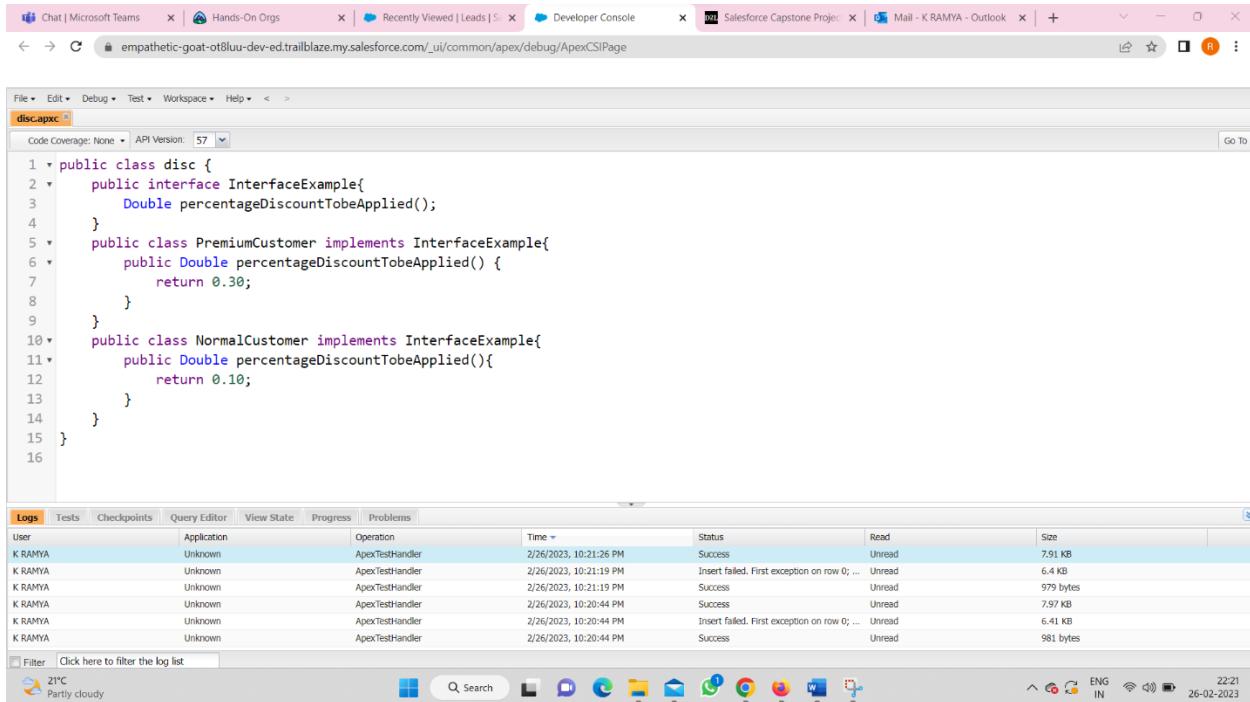
The 'Enter Apex Code' window contains the following code:

```
1 Decimal finprice = DiscountClass.calculateDiscount(100);
2 system.debug('finalprice:' +finprice);
```

At the bottom, there is a toolbar with various icons and system status information.

Exercise – 9

Write a Class to demo the use of Interface in Apex



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

Logs	Tests	Checkpoints	Query Editor	View State	Progress	Problems
User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	ApexTestHandler	2/26/2023, 10:21:26 PM	Success	Unread	7.91 KB
K RAMYA	Unknown	ApexTestHandler	2/26/2023, 10:21:19 PM	Insert failed. First exception on row 0; ...	Unread	6.4 KB
K RAMYA	Unknown	ApexTestHandler	2/26/2023, 10:21:19 PM	Success	Unread	979 bytes
K RAMYA	Unknown	ApexTestHandler	2/26/2023, 10:20:44 PM	Success	Unread	7.97 KB
K RAMYA	Unknown	ApexTestHandler	2/26/2023, 10:20:44 PM	Insert failed. First exception on row 0; ...	Unread	6.41 KB
K RAMYA	Unknown	ApexTestHandler	2/26/2023, 10:20:44 PM	Success	Unread	981 bytes

Filter: Click here to filter the log list

21°C Partly cloudy

Search

ENG IN 22:21 26-02-2023

Exercise – 10

Demo on DML Insert Operation Using Database methods

The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for 'Hands-On Orgs', 'Recently Viewed | Travel', 'Travel Approval | Sale', 'Customer | Salesforce', 'Developer Console', 'PALLAMKUPPAM', 'Recently Viewed | Cu', and a '+' button. Below the tabs, the URL is empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/Debug/ApexCSIPage.

The main area displays the Apex code for 'Exc10.apxc':

```
1 public class Exc10 {
2     public static void test()
3     {
4         customer__c cust = new customer__c();
5         cust.Name = 'Wipro';
6         cust.Customer_Type__c = 'Premium';
7         try{
8             insert cust;
9         }
10        catch(Exception e){
11            system.debug(e);
12        }
13
14        List<Billing__c> Billinglist = new List<Billing__c>();
15        Billing__c Br = new Billing__c();
16        Br.Status__c = 'Paid';
17        Br.Amount_Paid__c = 5000000;
18        Br.Id = cust.CreatedById;
19        Billinglist.add(Br);
20        Database.SaveResult[] srList = Database.insert(Billinglist, false);
21        Integer i=0;
22        For(Database.SaveResult sr:srList){
23            if(sr.isSuccess()){
24                system.debug('Successfully inserted bill. Billing ID = '+sr.getId());
25            }
26        }
27    }
28}
```

The status bar at the bottom shows the weather as '29°C Sunny' and the date/time as '13:23 27-02-2023'.

The screenshot shows the Salesforce Developer Console interface, similar to the previous one but with a different tab selected. The top navigation bar includes tabs for 'Hands-On Orgs', 'B - 0037 | Salesforce', 'Developer Console', 'Recently Viewed | Travel Ap...', 'Home | Salesforce', 'Training Invitation | Wi...', and a '+' button. Below the tabs, the URL is empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/Debug/ApexCSIPage.

The main area displays the 'Execution Log' for 'Exc10.apxc' at 'Log executeAnonymous @2/27/2023, 1:58:38 PM':

Timestamp	Event	Details
13:58:38:099	USER_DEBUG	[23][DEBUG]Successfully inserted bill. Billing ID = a012w0000185Rd0AAE

Below the log, there is a table titled 'Logs' showing a list of operations:

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/27/2023, 1:58:38 PM	Success		9.61 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/27/2023, 1:48:03 PM	Success		9.6 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/27/2023, 1:47:41 PM	Success		9.62 KB
K RAMYA	Unknown	/services/data/v57.0/tooling/executeAn...	2/27/2023, 1:46:37 PM	Success		9.85 KB

The status bar at the bottom shows the weather as '30°C Sunny' and the date/time as '13:58 27-02-2023'.

Exercise – 11

Write and execute SOQL queries from Developer Console

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs: Logs, Tests, Checkpoints, **Query Editor**, View State, Progress, and Problems. Below the tabs, a query is written:

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

Below the query, a message says "Any query errors will appear here...". At the bottom, there are two buttons: "Execute" and "Use Tooling API".

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs: File, Edit, Debug, Test, Workspace, Help, and **Opportunity@7:43 PM**. Below the tabs, a query is written:

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

Below the query, a table titled "Query Results - Total Rows: 10" displays the results:

ID	Amount	StageName	AccountId	Account.Website	Account.Industry
0062w00000k8mVWA1	125000	Negotiation/Review	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVaAAL	270000	Proposal/Price Quote	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVbAAL	120000	Closed Won	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVjAAL	270000	Negotiation/Review	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVmAAL	270000	Closed Won	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVnAAL	915000	Closed Won	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVqAAL	235000	Closed Won	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVuAAL	440000	Closed Won	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVwAAL	120000	Closed Won	0012w00001LunObAAJ	http://www.uos.com	Energy
0062w00000k8mVyAAL	675000	Needs Analysis	0012w00001LunObAAJ	http://www.uos.com	Energy

At the bottom, there are buttons for "Query Grid", "Save Rows", "Insert Row", "Delete Row", "Refresh Grid", "Logs", "Tests", "Checkpoints", **Query Editor**, "View State", "Progress", and "Problems". On the right, there is a "History" section showing the executed query. The system status bar at the bottom shows "28°C Partly cloudy", "ENG IN", and the date "26-02-2023".

Exercise – 12

Write an Apex Trigger, Name = CustomerTrigger

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales...', 'Developer Console', and 'Salesforce Capstone Project - M...'. Below the tabs, the URL is 'empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'. The main area displays the code for 'CustomerTrigger.aprx'.

```
trigger CustomerTrigger on Customer__c (before insert) {
    List<Billing__c> Billinglist = new List<Billing__c>();
    for (Customer__c objCustomer: Trigger.new)
    {
        if (objCustomer.Active__c == False)
        {
            Billing__c objbill = new Billing__c();
            objbill.Status__c = 'Paid';
            objbill.Amount_Paid__c=1000000;
            BillingList.add(objbill);
        }
    }
    insert BillingList;
}
```

Below the code editor, there is a 'Tests' tab selected, showing a table of test runs:

Status	Test Run	Enqueued Time	Duration	Failures	Total
x	7072w00008M6XHJ	Sun Feb 26 2023 11:40:15 GM...		2	4
x	7072w00008M6Y0c	Sun Feb 26 2023 11:40:51 GM...		1	1

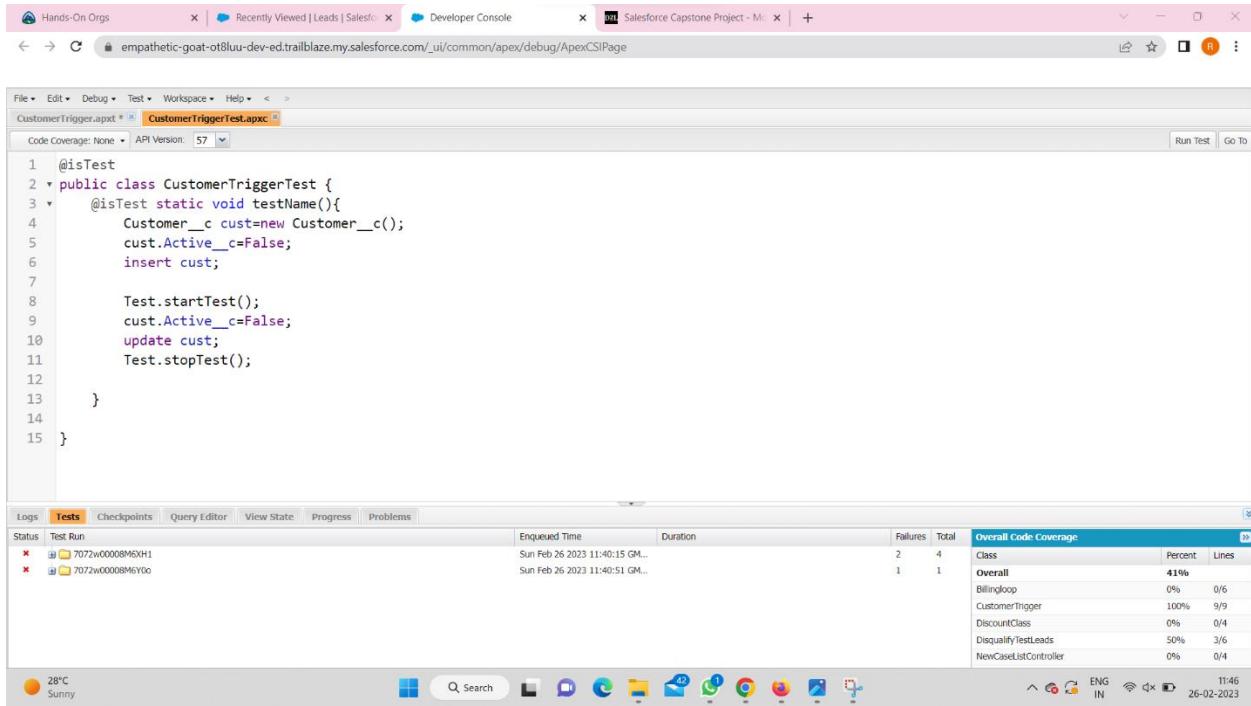
On the right side of the interface, there is an 'Overall Code Coverage' summary table:

Class	Percent	Lines
Overall	41%	
Billingloop	0%	0/6
CustomerTrigger	100%	9/9
DiscountClass	0%	0/4
DisqualifyTestLeads	50%	3/6
NewCaseListController	0%	0/4

The bottom of the screen shows the Windows taskbar with various icons and the system tray indicating it's 11:46 on 26-02-2023.

Exercise – 13

Write a Test Class for CustomerTrigger



```
1 @isTest
2 public class CustomerTriggerTest {
3     @isTest static void testName(){
4         Customer__c cust=new Customer__c();
5         cust.Active__c=False;
6         insert cust;
7
8         Test.startTest();
9         cust.Active__c=True;
10        update cust;
11        Test.stopTest();
12    }
13 }
14
15 }
```

Status	Test Run	Enqueued Time	Duration	Failures	Total
✗	7072w000008M6XH1	Sun Feb 26 2023 11:40:15 GM...		2	4
✗	7072w000008M6Y0c	Sun Feb 26 2023 11:40:51 GM...		1	1

Overall Code Coverage		
Class	Percent	Lines
Overall	41%	
Billingloop	0%	0/6
CustomerTrigger	100%	9/9
DiscountClass	0%	0/4
DisqualifyTestLeads	50%	3/6
NewCaseListController	0%	0/4

Exercise – 14

Write an Apex Trigger, Name = DisqualifyTestLeads

The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes 'Hands-On Orgs', 'Recently Viewed | Leads | Sales...', 'Developer Console', and 'Salesforce Capstone Project - M...'. The URL is 'empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'.

The code editor window displays the 'DisqualifyTestLeads.apxc' file:

```
trigger DisqualifyTestLeads on Lead (after insert) {
    List<Lead> disqualify=new List<Lead>();
    for(Lead leads:trigger.new){
        if(leads.FirstName.containsIgnoreCase('test') || String.isBlank(leads.FirstName)|| leads.LastName.containsIgnoreCase('test')|| String.isBlank(leads.LastName)){
            System.debug('Disqualified: '+leads.FirstName+ ' '+leads.LastName);
            disqualify.add(leads);
        }
    }
    for(Lead le:disqualify){
        le.Status='Disqualified';
    }
}
```

The 'Tests' tab in the bottom navigation bar is selected, showing the following test run details:

Status	Test Run	Enqueued Time	Duration	Failures	Total	Overall Code Coverage
x	7072v000008M6KH	Sun Feb 26 2023 11:40:15 GM...		2	4	Class
x	7072v000008M6Y0	Sun Feb 26 2023 11:40:51 GM...		1	1	Overall
x	7072v000008M6ZL0	Sun Feb 26 2023 11:55:52 GM...		1	4	BillingLoop
x	7072v000008M6yYe	Sun Feb 26 2023 12:08:03 GM...		1	4	CustomerTrigger
✓	7072v000008M6yYe	Sun Feb 26 2023 12:08:03 GM...		0	2	DiscountClass
x	7072v000008M6yYe	Sun Feb 26 2023 12:08:03 GM...		1	1	DisqualifyTestLeads
✓	7072v000008M6yYe	Sun Feb 26 2023 12:08:03 GM...		0	1	NewCaseListController

The status bar at the bottom shows '29°C Sunny', system icons, and the date '26-02-2023'.

Exercise – 15

Write a Test Class for DisqualifyTestLeads

The screenshot shows the Salesforce Developer Console interface. At the top, there are tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales...', 'Developer Console', and 'Salesforce Capstone Project - M...'. Below the tabs, the URL is 'empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage'. The main area displays the code for 'TestDisqualifyLeadsClass.apxc'.

```
1 @isTest
2 public class TestDisqualifyLeadsClass {
3     @isTest static void test(){
4         Lead le=new Lead();
5         le.FirstName='Ramyta';
6         le.LastName='Kichappa';
7         le.Company='wipro';
8
9         Test.startTest();
10        insert le;
11        Test.stopTest();
12    }
13
14
15 }
```

Below the code editor, there is a 'Logs' tab followed by a 'Tests' tab, which is currently selected. The 'Tests' tab shows a list of test runs:

Status	Test Run	Enqueued Time	Duration	Failures	Total
x	7072v000008M6KH	Sun Feb 26 2023 11:40:15 GM...		2	4
x	7072v000008M6Y0	Sun Feb 26 2023 11:40:51 GM...		1	1
x	7072v000008M6ZLP	Sun Feb 26 2023 11:55:52 GM...		1	4
x	7072v000008M6yYe	Sun Feb 26 2023 12:08:03 GM...		1	4
✓	trifhttps_t_UtilityControllerTest			0	2
x	CustomerTriggerTest			1	1
✓	TestDisqualifyLeadsClass			0	1

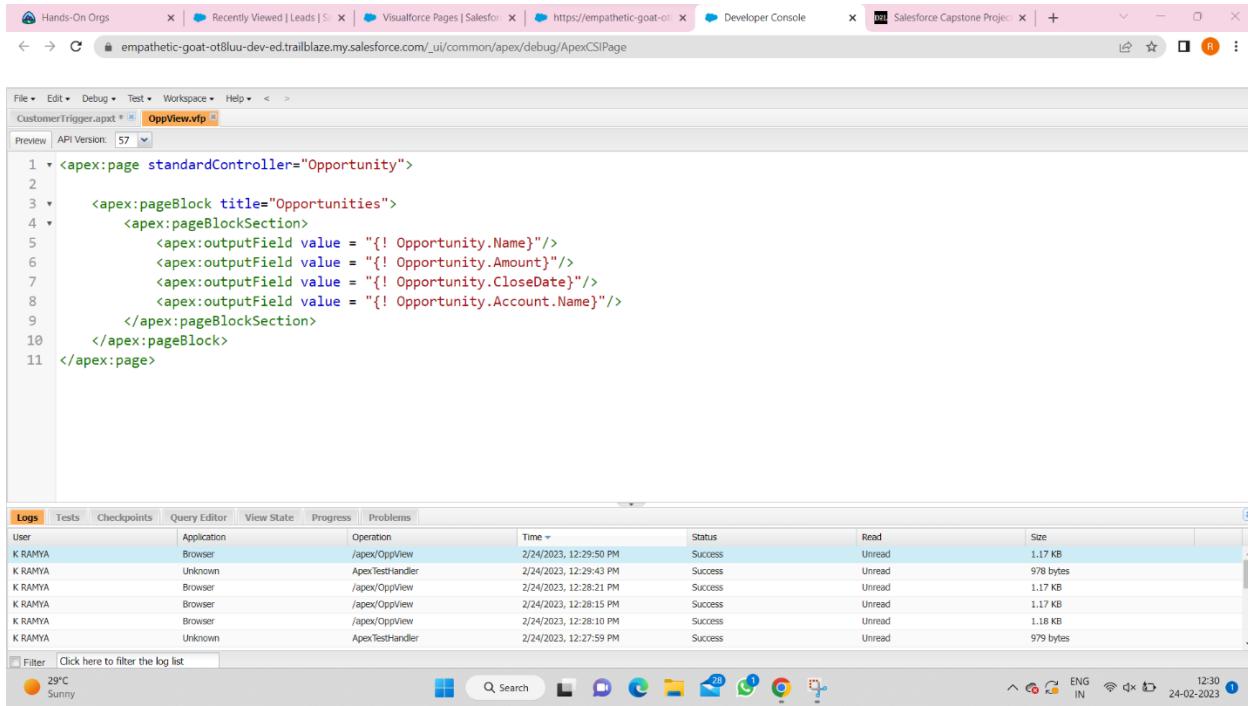
On the right side of the interface, there is an 'Overall Code Coverage' summary:

Class	Percent	Lines
Overall	44%	
BillingLoop	0%	0/6
CustomerTrigger	100%	9/9
DiscountClass	0%	0/4
DisqualifyTestLeads	66%	4/6
NewCaseListController	0%	0/4

The bottom of the screen shows the Windows taskbar with various icons and system status information.

Exercise – 16

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



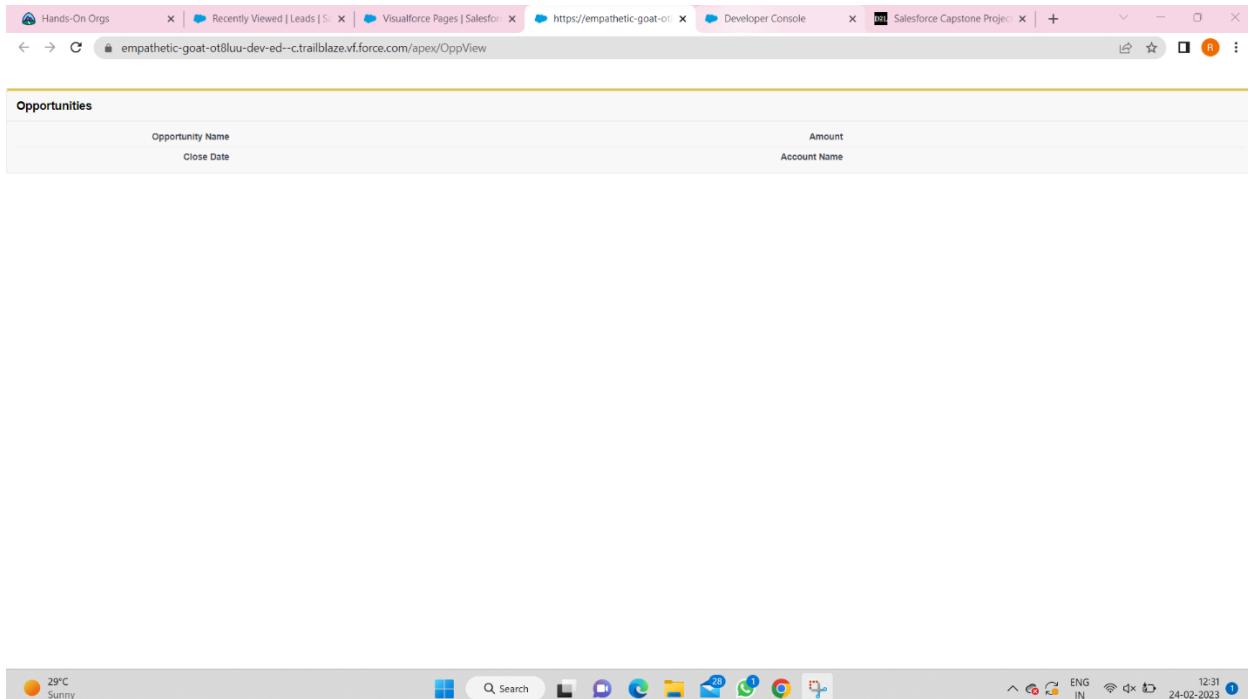
The screenshot shows the Salesforce Developer Console interface. The top navigation bar includes tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales', 'Visualforce Pages | Salesforce', 'https://empathetic-goat-ot8luu-dev-ed.trailblaze.my.salesforce.com/_ui/common/apex/debug/ApexCIPage', and 'Developer Console'. Below the navigation is a toolbar with file operations like 'File', 'Edit', 'Debug', 'Test', 'Workspace', and 'Help'. A dropdown menu shows 'CustomerTrigger.apxt' and 'OppView.vfp' is selected. The main area displays the Visualforce page code:

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

Below the code editor is a 'Logs' tab in the navigation bar, followed by 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Logs' tab displays a table of log entries:

User	Application	Operation	Time	Status	Read	Size
K RAMYA	Browser	/apex/OppView	2/24/2023, 12:29:50 PM	Success	Unread	1.17 KB
K RAMYA	Unknown	ApexTestHandler	2/24/2023, 12:29:43 PM	Success	Unread	978 bytes
K RAMYA	Browser	/apex/OppView	2/24/2023, 12:28:21 PM	Success	Unread	1.17 KB
K RAMYA	Browser	/apex/OppView	2/24/2023, 12:28:15 PM	Success	Unread	1.17 KB
K RAMYA	Browser	/apex/OppView	2/24/2023, 12:28:10 PM	Success	Unread	1.18 KB
K RAMYA	Unknown	ApexTestHandler	2/24/2023, 12:27:59 PM	Success	Unread	979 bytes

The bottom of the screen shows a Windows taskbar with icons for File Explorer, Search, Task View, Microsoft Edge, Mail, Calendar, and File Explorer. The system tray shows the date and time as 24-02-2023 12:30.



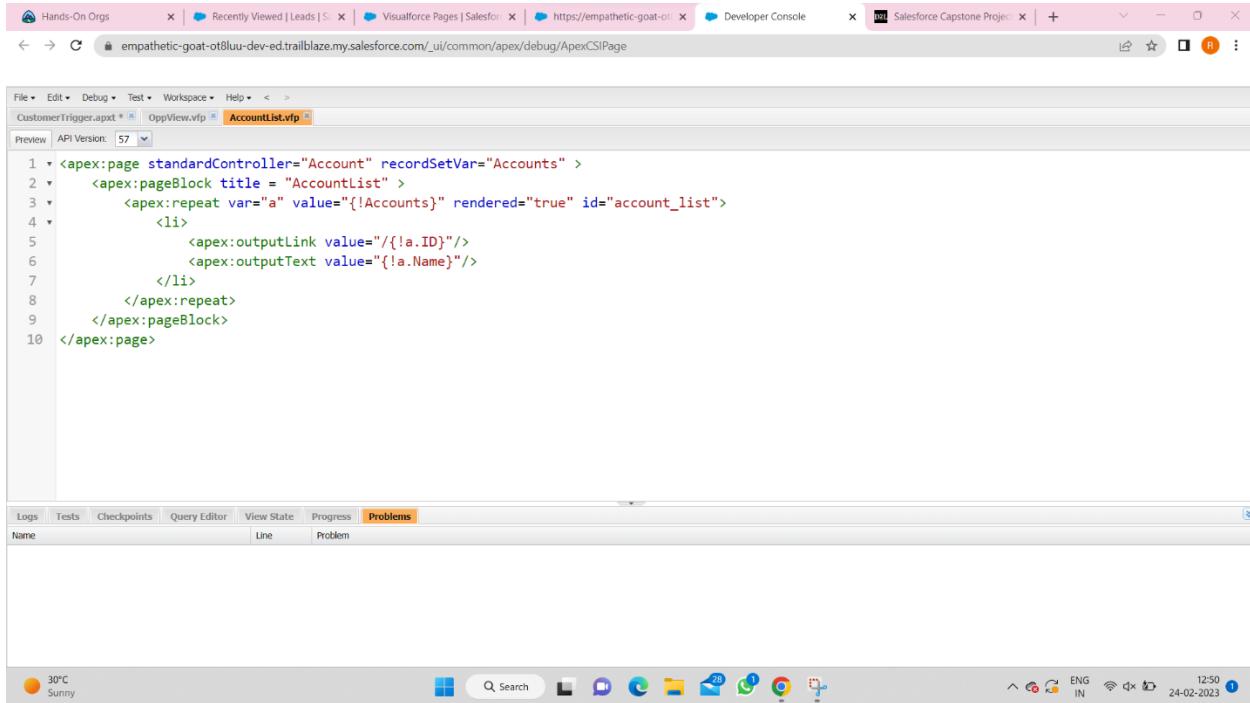
The screenshot shows the Salesforce browser interface. The top navigation bar includes tabs for 'Hands-On Orgs', 'Recently Viewed | Leads | Sales', 'Visualforce Pages | Salesforce', 'https://empathetic-goat-ot8luu-dev-ed--c.trailblaze.vf.force.com/apex/OppView', and 'Developer Console'. Below the navigation is a toolbar with file operations like 'File', 'Edit', 'Debug', 'Test', 'Workspace', and 'Help'. A dropdown menu shows 'CustomerTrigger.apxt' and 'OppView.vfp' is selected. The main area displays the Visualforce page output:

Opportunity Name	Amount
Close Date	Account Name

The bottom of the screen shows a Windows taskbar with icons for File Explorer, Search, Task View, Microsoft Edge, Mail, Calendar, and File Explorer. The system tray shows the date and time as 24-02-2023 12:31.

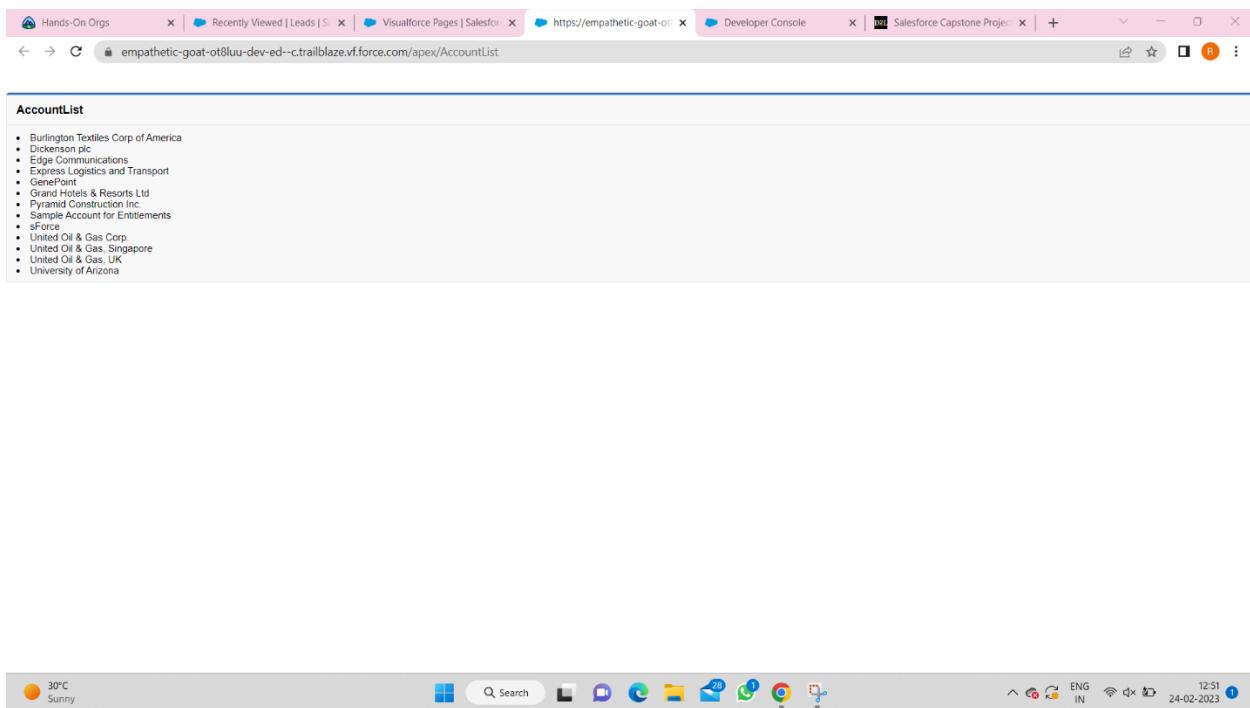
Exercise – 17

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



The screenshot shows the Salesforce developer console interface. The top navigation bar includes tabs for File, Edit, Debug, Test, Workspace, Help, and several recent items like 'Recently Viewed | Leads | Sales' and 'Visualforce Pages | Salesforce'. Below the navigation is a toolbar with icons for back, forward, search, and developer tools. The main area displays the Visualforce page code for 'AccountList.vfp'. The code uses the standard controller 'Account' and a repeat block to iterate over a list of accounts, outputting links and names. At the bottom of the code editor is a 'Logs' tab and a 'Problems' tab, which is currently selected. The status bar at the bottom right shows the date and time as 24-02-2023 12:50.

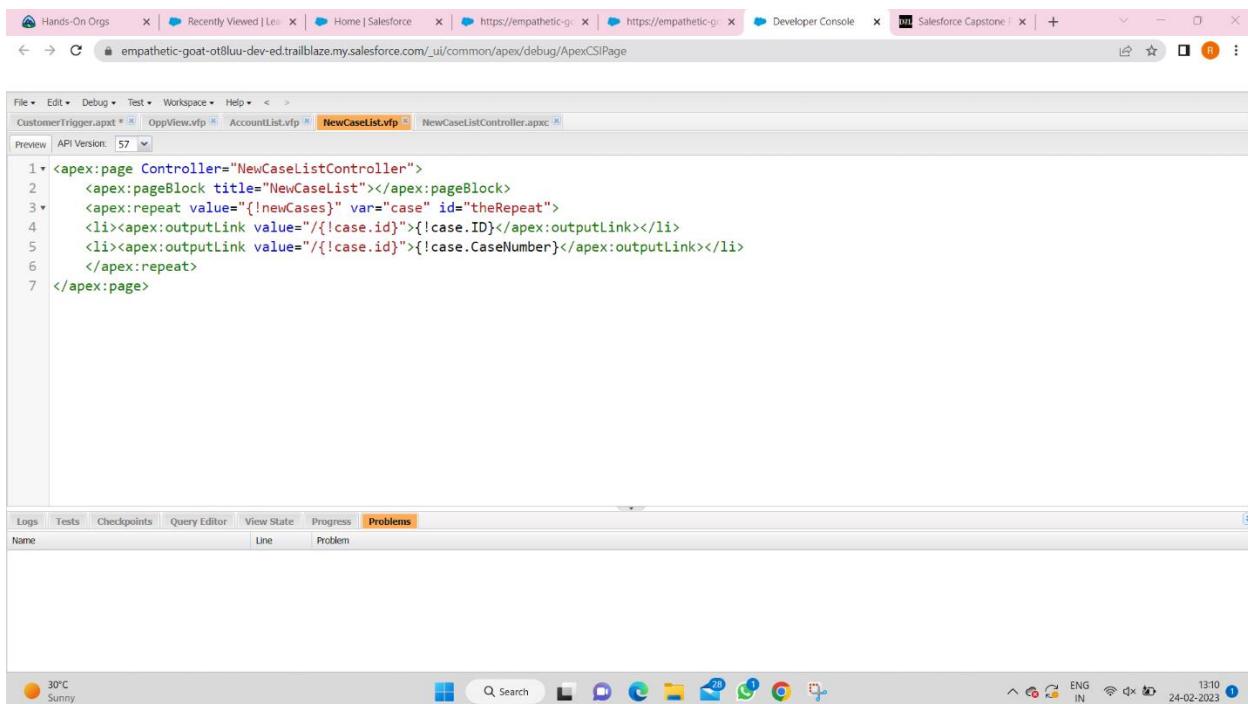
```
File ▾ Edit ▾ Debug ▾ Test ▾ Workspace ▾ Help ▾ < ▾ >
CustomerTrigger.aprx * | OppView.vfp | AccountList.vfp *
Preview | API Version: 57 ▾
1  <apex:page standardController="Account" recordSetVar="Accounts" >
2  <apex:pageBlock title = "AccountList" >
3  <apex:repeat var="a" value="{!Accounts}" rendered="true" id="account_list">
4    <li>
5      <apex:outputLink value="/{!a.ID}"/>
6      <apex:outputText value="{!a.Name}"/>
7    </li>
8  </apex:repeat>
9 </apex:pageBlock>
10 </apex:page>
```



The screenshot shows a browser window displaying the generated Visualforce page content. The title bar indicates the URL is 'https://empathetic-goat-otBluu-dev-ed--c.trailblaze.vf.force.com/apex/AccountList'. The page itself is titled 'AccountList' and contains a list of account names: Burlington Textiles Corp of America, Dickenson plc, Edge Communications, EDS 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, and University of Arizona. The browser status bar at the bottom right shows the date and time as 24-02-2023 12:51.

Exercise – 18

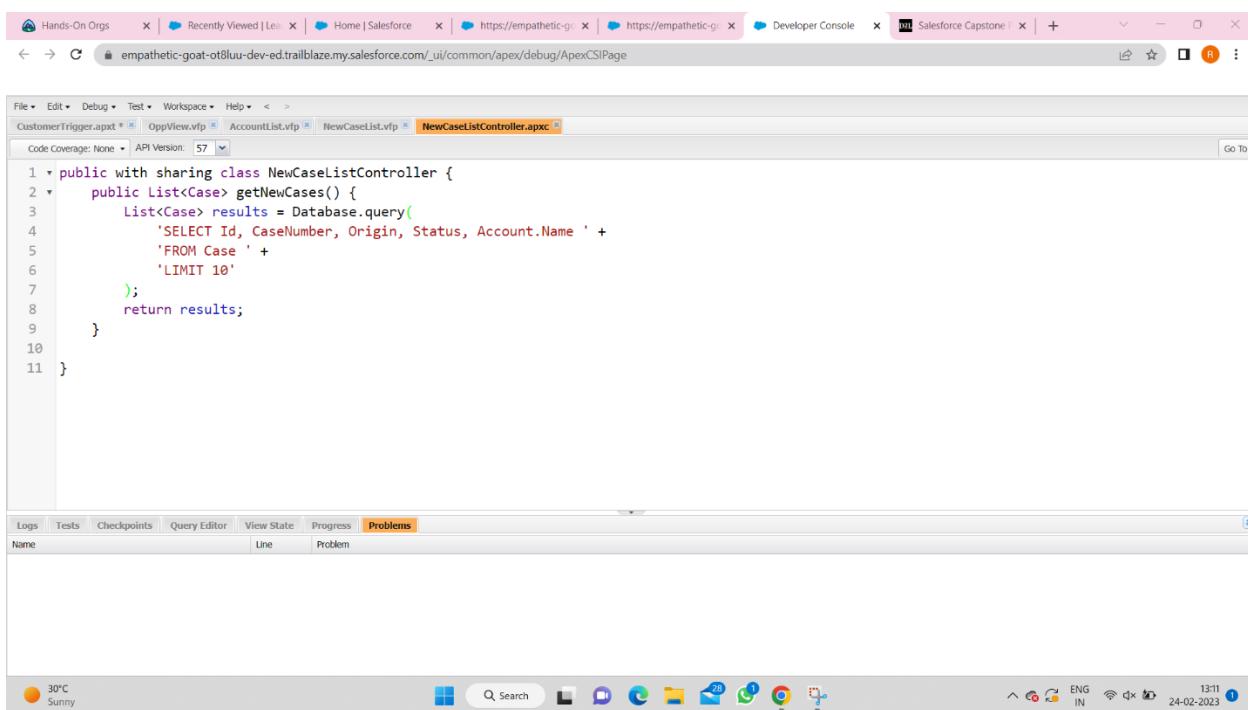
Create a Visualforce page that uses a custom controller to display a list of cases with the status of 'New'. The page must be named NewCaseList.



The screenshot shows the Salesforce developer console interface. The top navigation bar includes tabs for 'Hands-On Orgs', 'Recently Viewed | Lead', 'Home | Salesforce', 'https://empathetic-goat...', 'Developer Console', and 'Salesforce Capstone'. Below the navigation is a file list with 'CustomerTrigger.apxt', 'OppView.vfp', 'AccountList.vfp', 'NewCaseList.vfp' (which is selected and highlighted in orange), and 'NewCaseListController.apxc'. A dropdown menu shows 'API Version: 57'. The main area displays the Visualforce page code:

```
1 <apex:page Controller="NewCaseListController">
2     <apex:pageBlock title="NewCaseList"></apex:pageBlock>
3     <apex:repeat value="{!newCases}" var="case" id="theRepeat">
4         <li><apex:outputLink value="/{!case.id}"/>{!case.ID}</apex:outputLink></li>
5         <li><apex:outputLink value="/{!case.id}"/>{!case.CaseNumber}</apex:outputLink></li>
6     </apex:repeat>
7 </apex:page>
```

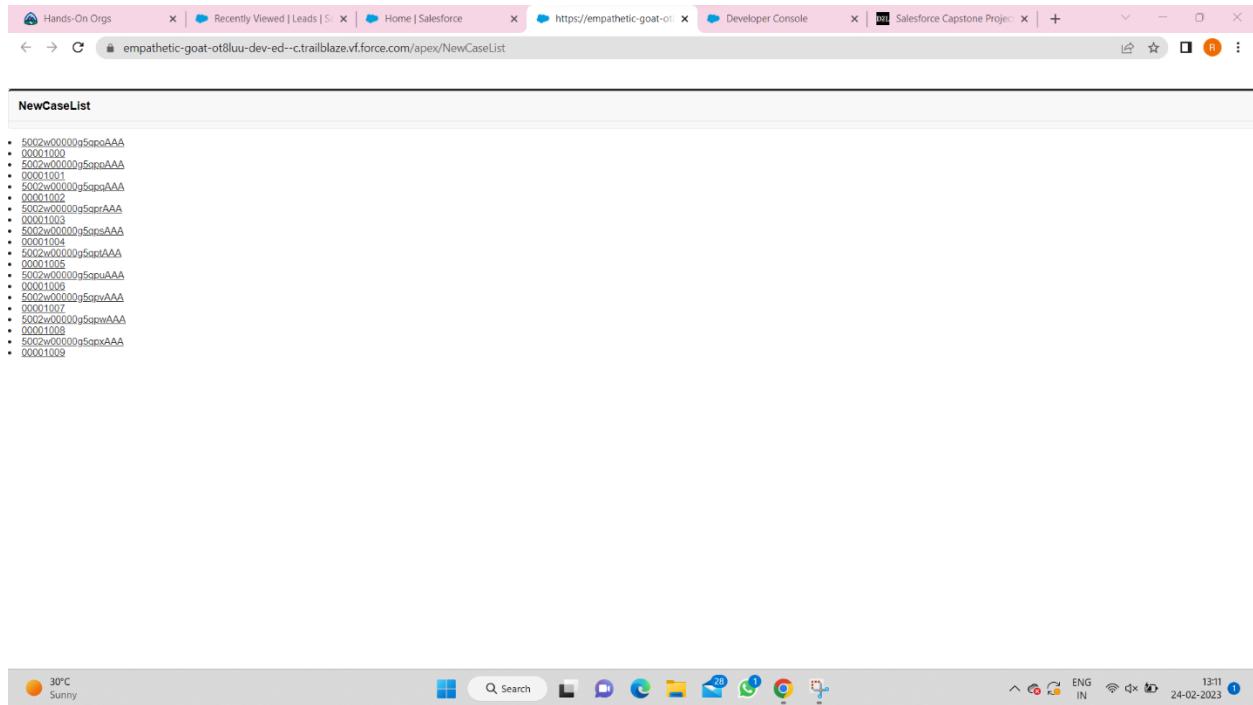
Below the code editor are tabs for 'Logs', 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Problems' tab is selected. The status bar at the bottom shows '30°C Sunny', system icons, and the date '24-02-2023'.



The screenshot shows the Salesforce developer console interface. The top navigation bar includes tabs for 'Hands-On Orgs', 'Recently Viewed | Lead', 'Home | Salesforce', 'https://empathetic-goat...', 'Developer Console', and 'Salesforce Capstone'. Below the navigation is a file list with 'CustomerTrigger.apxt', 'OppView.vfp', 'AccountList.vfp', 'NewCaseList.vfp', and 'NewCaseListController.apxc' (which is selected and highlighted in orange). A dropdown menu shows 'API Version: 57'. The main area displays the Apex controller code:

```
1 public with sharing class NewCaseListController {
2     public List<Case> getNewCases() {
3         List<Case> results = Database.query(
4             'SELECT Id, CaseNumber, Origin, Status, Account.Name ' +
5             'FROM Case ' +
6             'LIMIT 10'
7         );
8         return results;
9     }
10 }
```

Below the code editor are tabs for 'Logs', 'Tests', 'Checkpoints', 'Query Editor', 'View State', 'Progress', and 'Problems'. The 'Problems' tab is selected. The status bar at the bottom shows '30°C Sunny', system icons, and the date '24-02-2023'.



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](#)