Salesforce

Tender-and-contract-management-system

INTRODUCTION

SALESFORCE-Tender-and-contract-management-system
The traditional process of tendering and contract management in the civil engineering and construction industry is often manual, paper-based, and fragmented, leading to delays, miscommunication, and lack of transparency ,tracking multiple tenders and bid submissions real-time updates on contract approval status, Manual evaluation of bids.

INDUSTRY : Construction / Infrastructure / Civil Engineering Industry.

PROJECT TYPE : Salesforce Custom App Development Project (Admin + Developer).

TARGET USER : “The target users of this system include procurement managers, contractors, project managers, finance teams, and executives who require streamlined tendering, bidding, and contract lifecycle management.

Phase 1: Problem Understanding & Industry Analysis

👉Need : To understand what we have to building and why so it will help in project.

1.Problem statement : The traditional process of tendering and contract management in the civil engineering and construction industry is often manual, paper-based, and fragmented. This leads to:’

- Delays in processing tenders and contracts
- Miscommunication among stakeholders
- Lack of transparency in bid evaluations
- Challenges in tracking multiple tenders and bid submissions
- Absence of real-time updates on contract approval status

🎯 **Objectives :**

- Automate the tender creation and approval process
- Enable contractors to submit and track bids online

- Streamline contract awarding and payment tracking
- Provide dashboards for monitoring tender lifecycle and performance metrics.

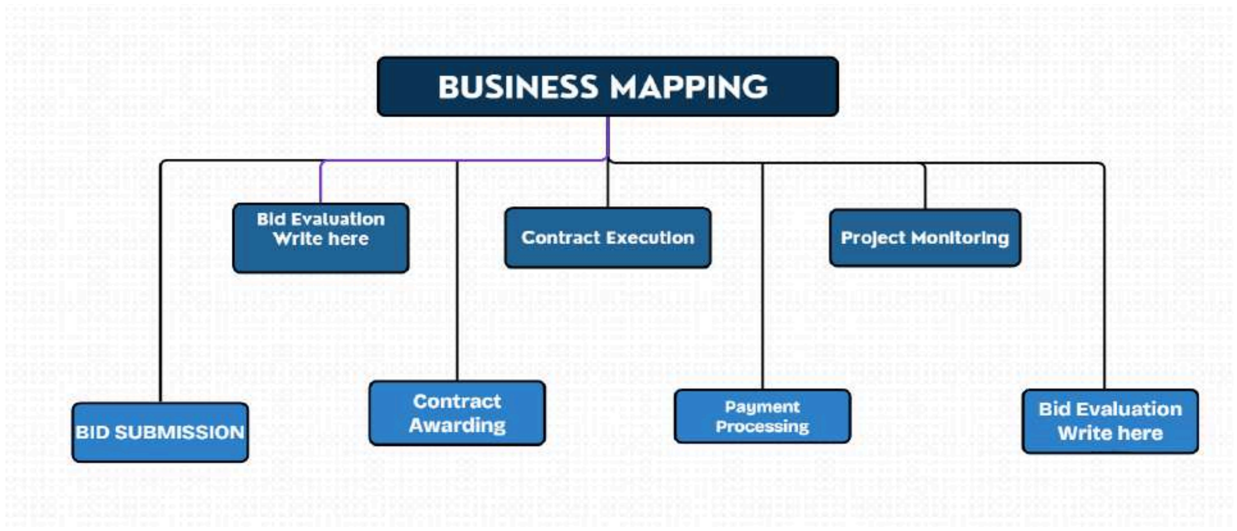
2. Requirement Gathering : Talk to stakeholders (contractor , engineers , government companies etc) .

Example

- Stakeholder Interviews: Conducted with procurement, finance, and project management teams
- Document Analysis: Reviewed existing tender and contract documents
- System Analysis: Assessed current manual processes and identified automation opportunities.

3.**Business Process Mapping:** Tender Creation: Procurement team creates and publishes tenders

- ❖ **Bid Submission**: Contractors submit bids through the system
- ❖ **Bid Evaluation**: Procurement team evaluates bids based on predefined criteria
- ❖ **Contract Awarding**: Selected contractor is awarded the contract
- ❖ **Contract Execution**: Contractor performs work as per contract terms
- ❖ **Payment Processing**: Finance department processes payments based on milestones
- ❖ **Project Monitoring**: Project managers track progress and ensure compliance
- ❖ **Contract Closure**: Upon completion, the contract is closed, and final reports are generated



4. **Industry-specific Use Case Analysis :**

- Government Infrastructure Projects: Managing tenders for road, bridge, and building construction
- Private Construction Companies: Handling contracts with multiple subcontractors
- Real Estate Developers: Automating tendering process for material supply
- Engineering Procurement & Construction (EPC) Firms: Managing large-scale.

5 **AppExchange Tools Explored :**

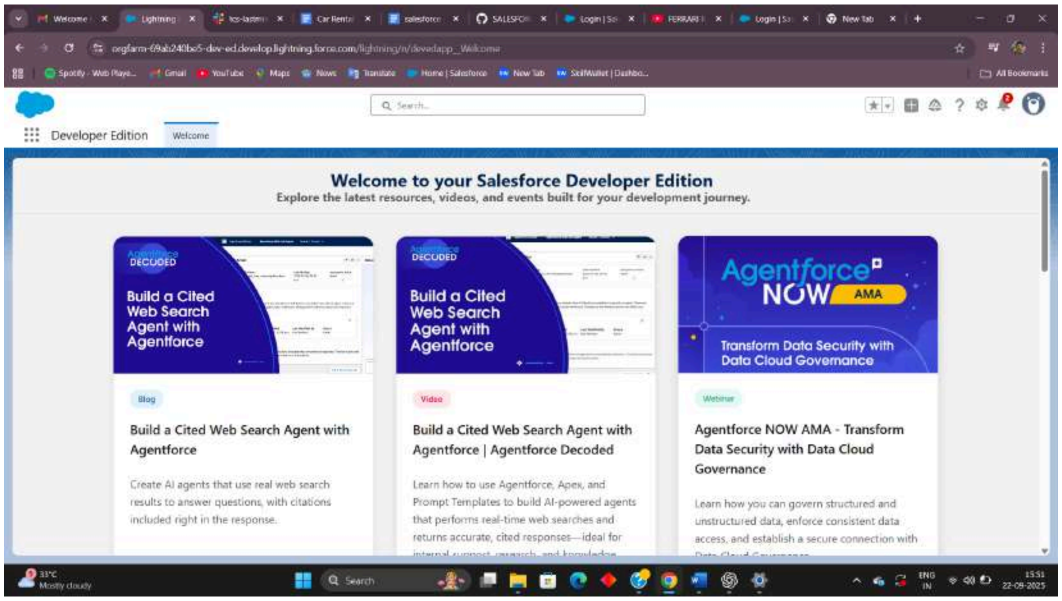
- DocuSign for Salesforce: For digital signing of contracts
- Conga Composer: To generate tender documents and reports
- Salesforce Maps: For visualizing project locations
- Accounting Seed / FinancialForce: For financial tracking and integration
- Formstack / Nintex: To create digital forms for bid submissions
- Tableau CRM (Einstein Analytics): For advanced analytics and dashboards

Phase 2 : Org Setup & Configuration

👉 Goal: Prepare Salesforce environment.

1. **Salesforce Editions :**

    - Select Developer Edition (free, best for practice) .
    - Justify why (for learning + testing Tender & Contract Management system).



Welcome to your Salesforce Developer Edition

Explore the latest resources, videos, and events built for your development journey.

Build a Cited Web Search Agent with Agentforce

Create AI agents that use real web search results to answer questions, with citations included right in the response.

Build a Cited Web Search Agent with Agentforce | Agentforce Decoded

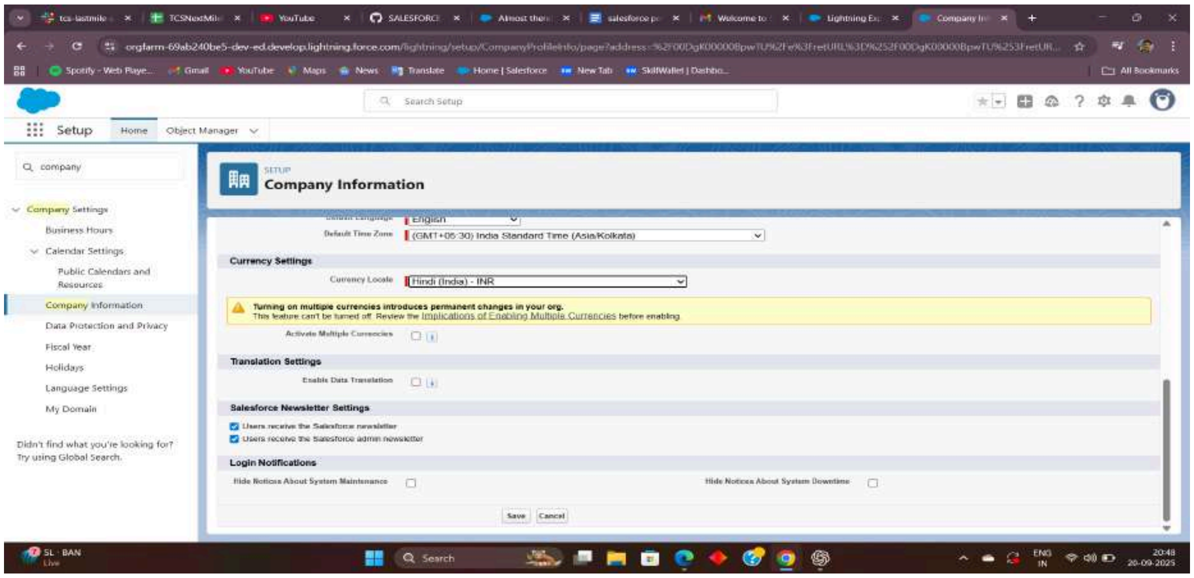
Learn how to use Agentforce, Apex, and Prompt Templates to build AI-powered agents that performs real-time web searches and returns accurate, cited responses—ideal for

Agentforce NOW AMA - Transform Data Security with Data Cloud Governance

Learn how you can govern structured and unstructured data, enforce consistent data access, and establish a secure connection with

2 . Company Profile Setup :

- Company Name: Tender & Contract Management System Pvt. Ltd.
- Primary Contact: System Administrator (Admin User)
- Default Currency: INR (₹) – Indian Rupee
- Default Locale: English (India)
- Default Time Zone: (GMT+5:30) Asia/Kolkata
- Default Language: English
- Corporate Address: (You can add a dummy address like New Delhi, India for practice)



Company Information

Default Language: English

Default Time Zone: (GMT+05:30) India Standard Time (Asia/Kolkata)

Currency Settings

Currency Locale: Hindi (India) - INR

Turning on multiple currencies introduces permanent changes in your org.
This feature can't be turned off. Review the Implications of Enabling Multiple Currencies before enabling.

Activate Multiple Currencies ☐

Translation Settings

Enable Data Translation ☐

Salesforce Newsletter Settings

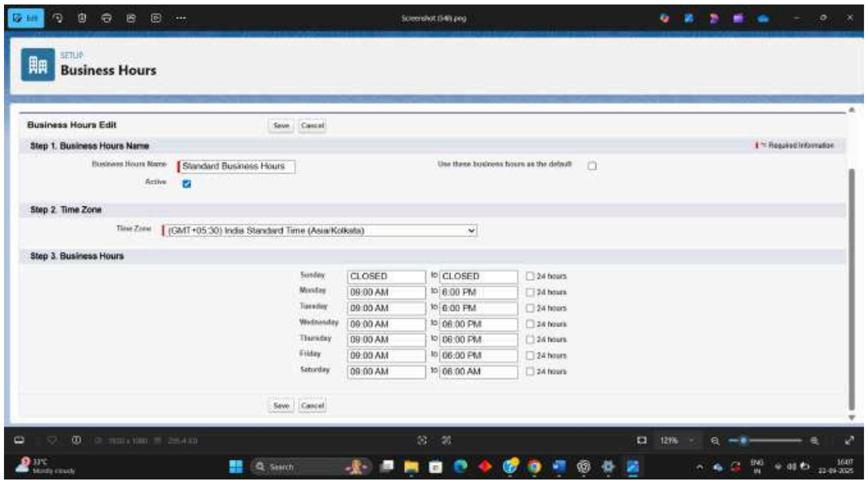
☑ Users receive the Salesforce newsletter
☑ Users receive the Salesforce admin newsletter

Login Notifications

Hide Notices About System Maintenance ☐ Hide Notices About System Downtime ☐

3. <u>**Business Hours & Holidays :**</u>

- Define Business Hours (Mon–Fri, 9:00 AM – 6:00 PM IST)
- Add Holidays (e.g., Independence Day, Diwali, New Year)



SETUP
Business Hours

Business Hours Edit Save Cancel

Step 1. Business Hours Name | = Required Information

Business Hours Name: Standard Business Hours
Use these business hours as the default: ☐
Active: ✓

Step 2. Time Zone

Time Zone: (GMT+05:30) India Standard Time (Asia/Kolkata)

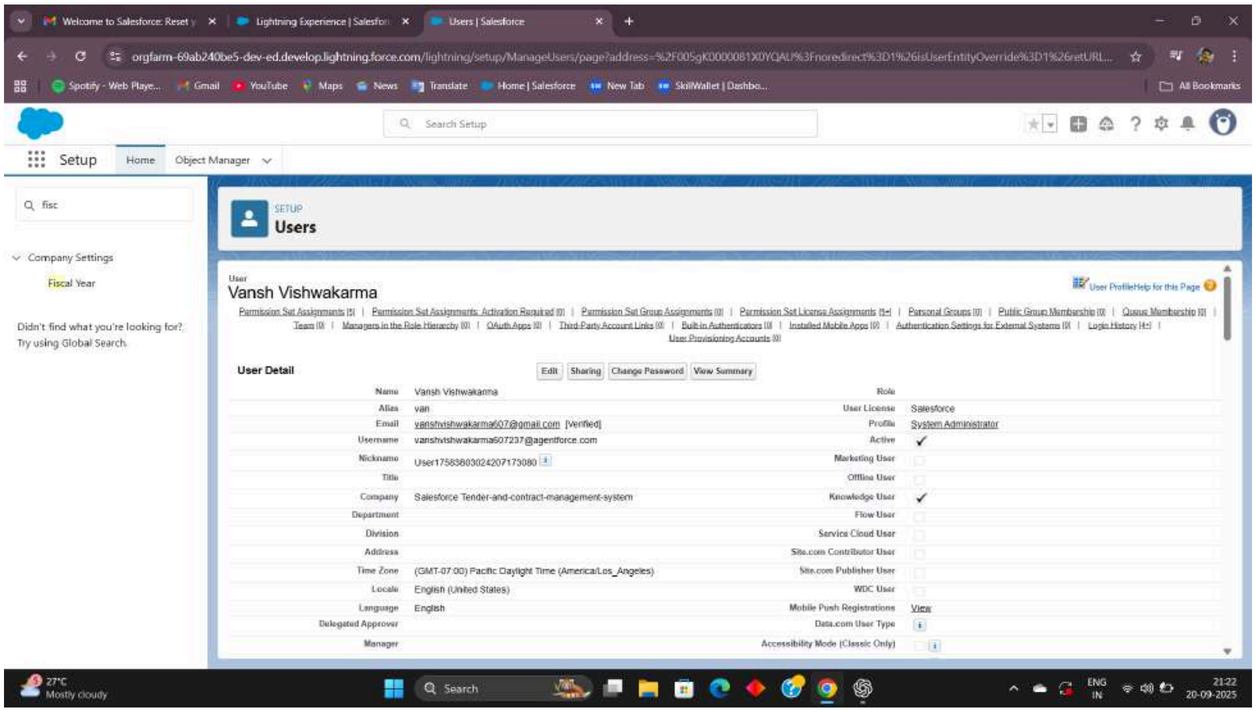
Step 3. Business Hours

Sunday	CLOSED	to	CLOSED	☐ 24 hours
Monday	09:00 AM	to	6:00 PM	☐ 24 hours
Tuesday	09:00 AM	to	6:00 PM	☐ 24 hours
Wednesday	09:00 AM	to	06:00 PM	☐ 24 hours
Thursday	09:00 AM	to	06:00 PM	☐ 24 hours
Friday	09:00 AM	to	06:00 PM	☐ 24 hours
Saturday	09:00 AM	to	06:00 AM	☐ 24 hours

Save Cancel

4. <u>**Fiscal Year Settings**</u> **:**

- Choose Standard Fiscal Year (Jan–Dec OR Apr–Mar, based on industry).



Welcome to Salesforce: Reset y
Lightning Experience | Salesfor
Users | Salesforce
orgfarm-69ab240be5-dev-ed.develop.lightning.force.com/lightning/setup/ManageUsers/page?address=%2F005gK0000081X0YQAU%3Fnoredirect%3D1%26isUserEntityOverride%3D1%26retURL...
Spotify - Web Playe... Gmail YouTube Maps News Translate Home | Salesforce New Tab SkillWallet | Dashbo... All Bookmarks
Search Setup
Setup Home Object Manager
fisc
Company Settings
Fiscal Year
Didn't find what you're looking for? Try using Global Search.

SETUP
Users

User
Vansh Vishwakarma

User ProfileHelp for this Page

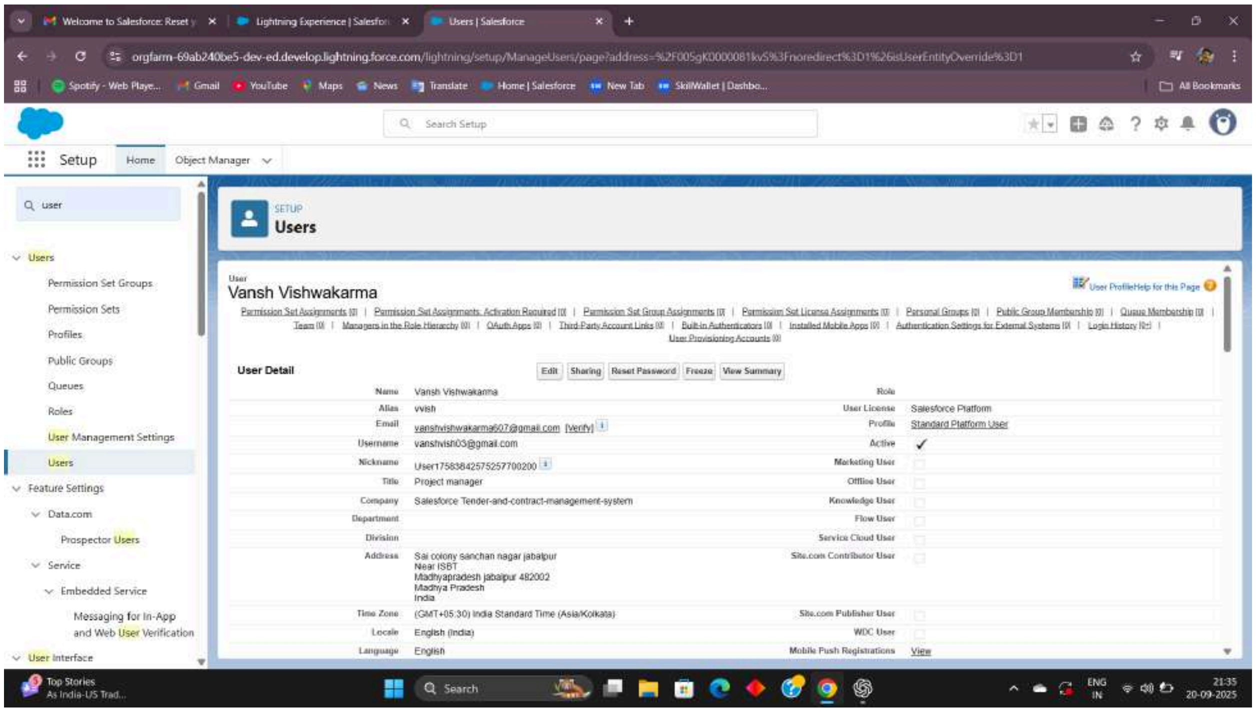
Permission Set Assignments [5] | Permission Set Assignments: Activation Required [0] | Permission Set Group Assignments [0] | Permission Set License Assignments [5+] | Personal Groups [0] | Public Group Membership [0] | Queue Membership [0] | Team [0] | Managers in the Role Hierarchy [0] | OAuth Apps [0] | Third-Party Account Links [0] | Built-in Authenticators [0] | Installed Mobile Apps [0] | Authentication Settings for External Systems [0] | Login History [4+] | User Provisioning Accounts [0]

User Detail Edit Sharing Change Password View Summary

Name	Vansh Vishwakarma	Role	
Alias	van	User License	Salesforce
Email	vanshvishwakarma607@gmail.com [Verified]	Profile	System Administrator
Username	vanshvishwakarma607237@agentforce.com	Active	✓
Nickname	User17583803024207173080	Marketing User	☐
Title		Offline User	☐
Company	Salesforce Tender-and-contract-management-system	Knowledge User	✓
Department		Flow User	☐
Division		Service Cloud User	☐
Address		Site.com Contributor User	☐
Time Zone	(GMT-07:00) Pacific Daylight Time (America/Los_Angeles)	Site.com Publisher User	☐
Locale	English (United States)	WDC User	☐
Language	English	Mobile Push Registrations	View
Delegated Approver		Data.com User Type	
Manager		Accessibility Mode (Classic Only)	☐

5. <u>User Setup & Licenses</u> :

- Create sample users:
- Procurement Manager
- -Contractor
- -Finance Officer
- -System Admin



User

Vansh Vishwakarma

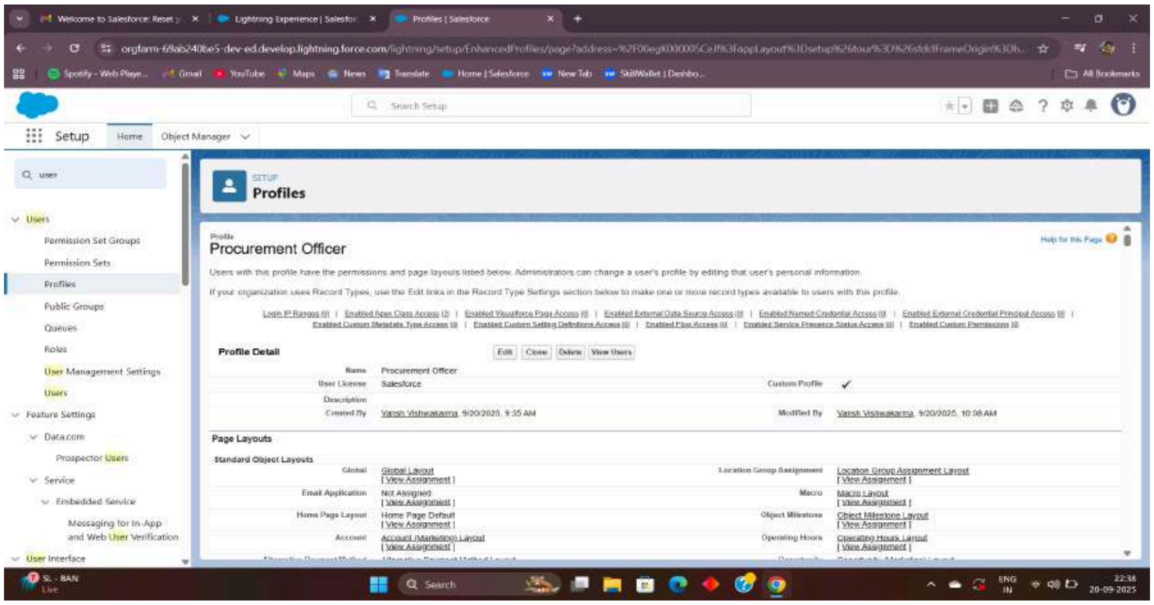
Permission Set Assignments [0] | Permission Set Assignments: Activation Required [0] | Permission Set Group Assignments [0] | Permission Set License Assignments [0] | Personal Groups [0] | Public Group Membership [0] | Queue Membership [0] | Team [0] | Managers in the Role Hierarchy [0] | OAuth Apps [0] | Third-Party Account Links [0] | Built-in Authenticators [0] | Installed Mobile Apps [0] | Authentication Settings for External Systems [0] | Login History [0+] | User Provisioning Accounts [0]

User Detail

Name	Vansh Vishwakarma	Role	
Alias	vvish	User License	Salesforce Platform
Email	vanshvishwakarma607@gmail.com [Verify]	Profile	Standard Platform User
Username	vanshvish03@gmail.com	Active	✓
Nickname	User17583842575257700200	Marketing User	☐
Title	Project manager	Offline User	☐
Company	Salesforce Tender-and-contract-management-system	Knowledge User	☐
Department		Flow User	☐
Division		Service Cloud User	☐
Address	Sai colony sanchan nagar jabalpur Near ISBT Madhyapradesh jabalpur 482002 Madhya Pradesh India	Site.com Contributor User	☐
Time Zone	(GMT+05:30) India Standard Time (Asia/Kolkata)	Site.com Publisher User	☐
Locale	English (India)	WDC User	☐
Language	English	Mobile Push Registrations	View

6 . <u>Profiles</u> :

- Standard Profiles: Admin, Standard User
- Custom Profile: Procurement User (restricted to Tender objects)



SETUP
Profiles

Profile
Procurement Officer

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.

Login IP Ranges [0] | Enabled Apex Class Access [2] | Enabled Visualforce Page Access [0] | Enabled External Data Source Access [0] | Enabled Named Credential Access [0] | Enabled External Credential Principal Access [0] | Enabled Custom Metadata Type Access [0] | Enabled Custom Setting Definitions Access [0] | Enabled Flow Access [0] | Enabled Service Presence Status Access [0] | Enabled Custom Permissions [0]

Profile Detail

Name	Procurement Officer		
User License	Salesforce	Custom Profile	✓
Description			
Created By	Vansh Vishwakarma, 9/20/2025, 9:35 AM	Modified By	Vansh Vishwakarma, 9/20/2025, 10:08 AM

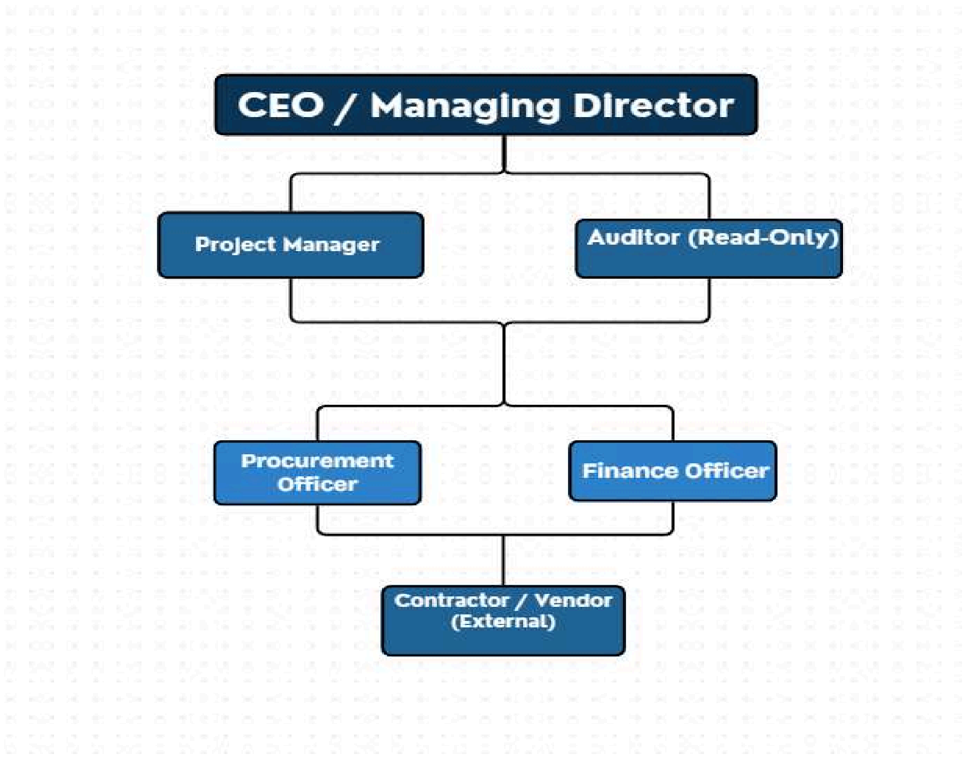
Page Layouts

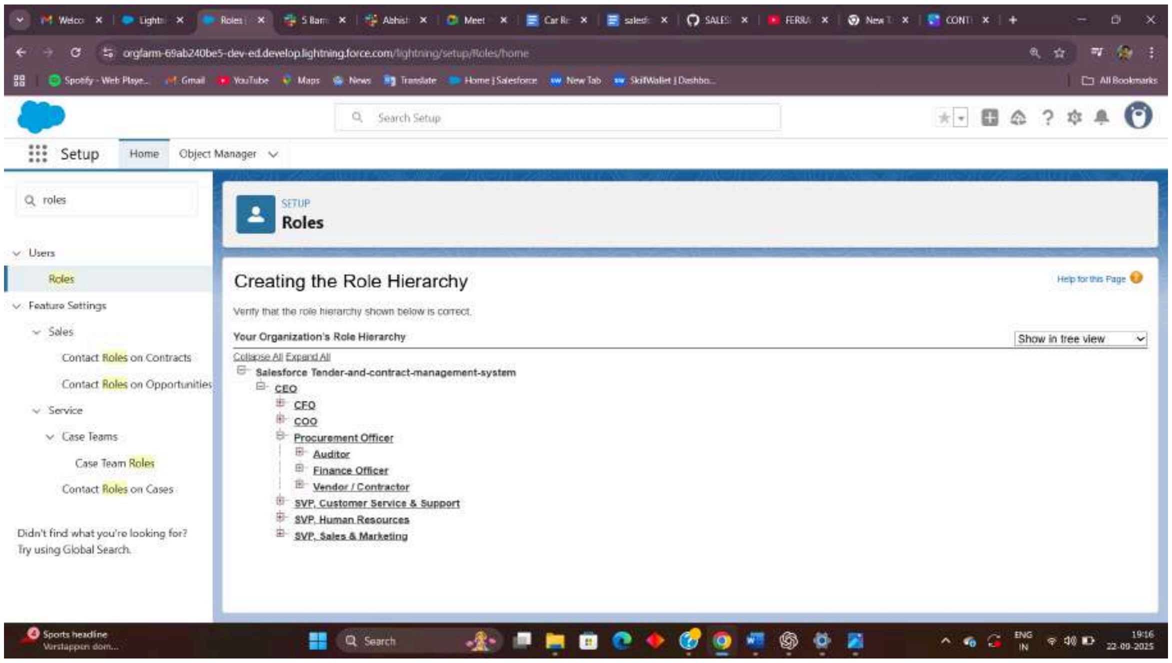
Standard Object Layouts

Global	Global Layout [View Assignment]	Location Group Assignment	Location Group Assignment Layout [View Assignment]
Email Application	Not Assigned [View Assignment]	Macro	Macro Layout [View Assignment]
Home Page Layout	Home Page Default [View Assignment]	Object Milestone	Object Milestone Layout [View Assignment]
Account	Account (Marketing) Layout [View Assignment]	Operating Hours	Operating Hours Layout [View Assignment]

7. **Roles** :

- Role Hierarchy:
- CEO → Procurement Head → Procurement Officer → Contractor




SETUP
Roles

Creating the Role Hierarchy

Verify that the role hierarchy shown below is correct.

Your Organization's Role Hierarchy — Show in tree view

Collapse All Expand All

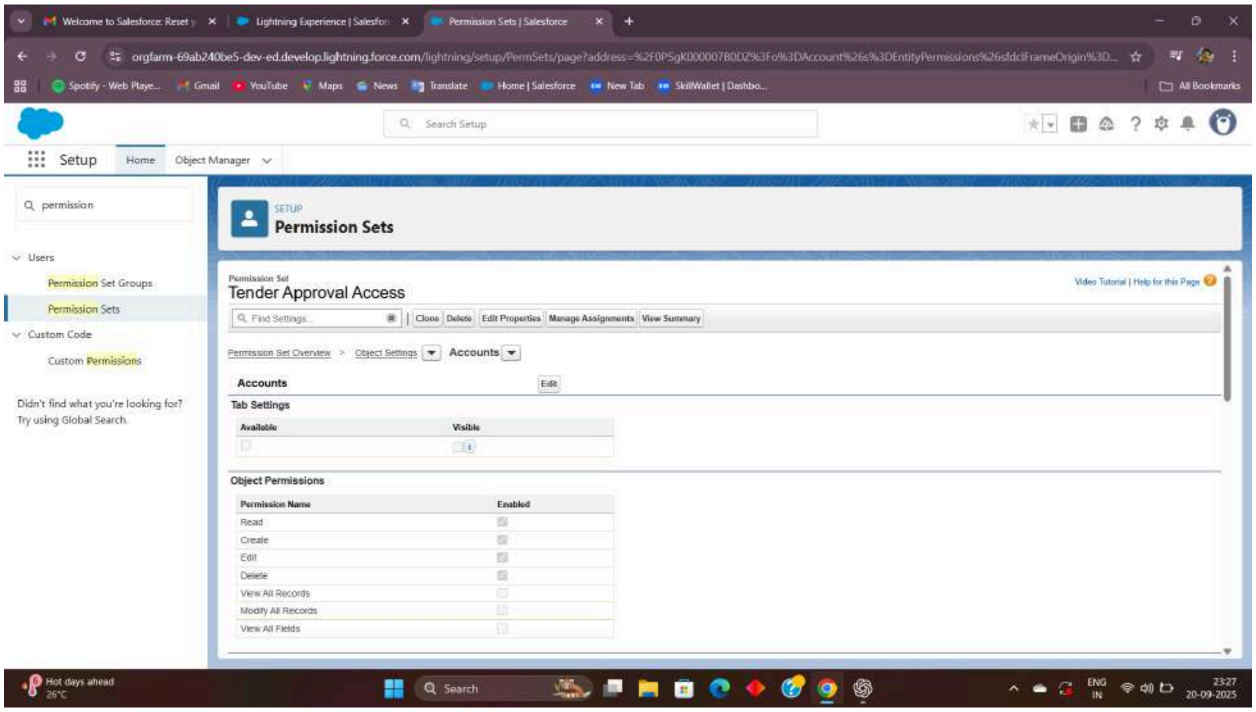
```
Salesforce Tender-and-contract-management-system
  CEO
    CFO
    COO
    Procurement Officer
      Auditor
      Finance Officer
      Vendor / Contractor
    SVP, Customer Service & Support
    SVP, Human Resources
    SVP, Sales & Marketing
```

\

8.

Permission Sets :

- Create extra permissions (e.g., Finance Approval, Contract Editing)


SETUP
Permission Sets

Permission Set
Tender Approval Access

Permission Set Overview > Object Settings > Accounts

Accounts

Tab Settings

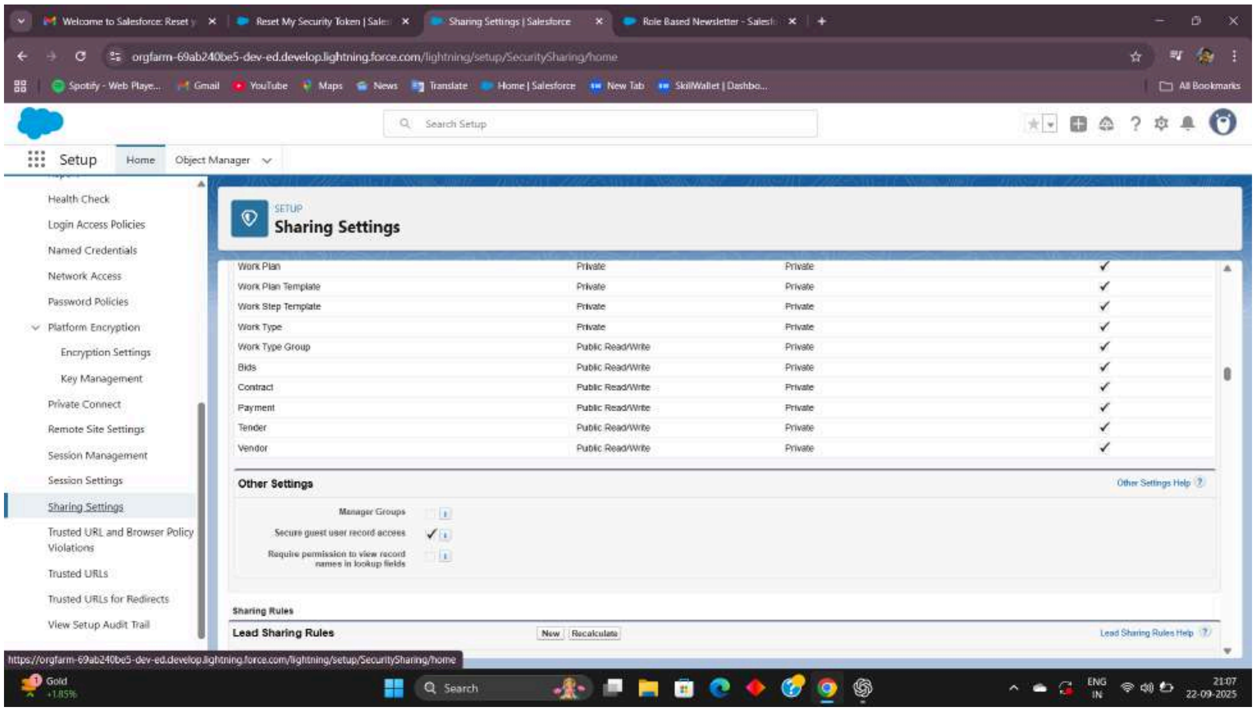
Available	Visible
☐	☐

Object Permissions

Permission Name	Enabled
Read	✓
Create	✓
Edit	✓
Delete	✓
View All Records	☐
Modify All Records	☐
View All Fields	☐

9. <u>OWD (Org-Wide Defaults)</u> :

- Tenders – Private
- Contracts – Private
- Bids – Private
- Payments – Private
- Vendors – Controlled by Parent
- Accounts – Private
- Contacts – Controlled by Parent



SETUP
Sharing Settings

Work Plan	Private	Private	✓
Work Plan Template	Private	Private	✓
Work Step Template	Private	Private	✓
Work Type	Private	Private	✓
Work Type Group	Public Read/Write	Private	✓
Bids	Public Read/Write	Private	✓
Contract	Public Read/Write	Private	✓
Payment	Public Read/Write	Private	✓
Tender	Public Read/Write	Private	✓
Vendor	Public Read/Write	Private	✓

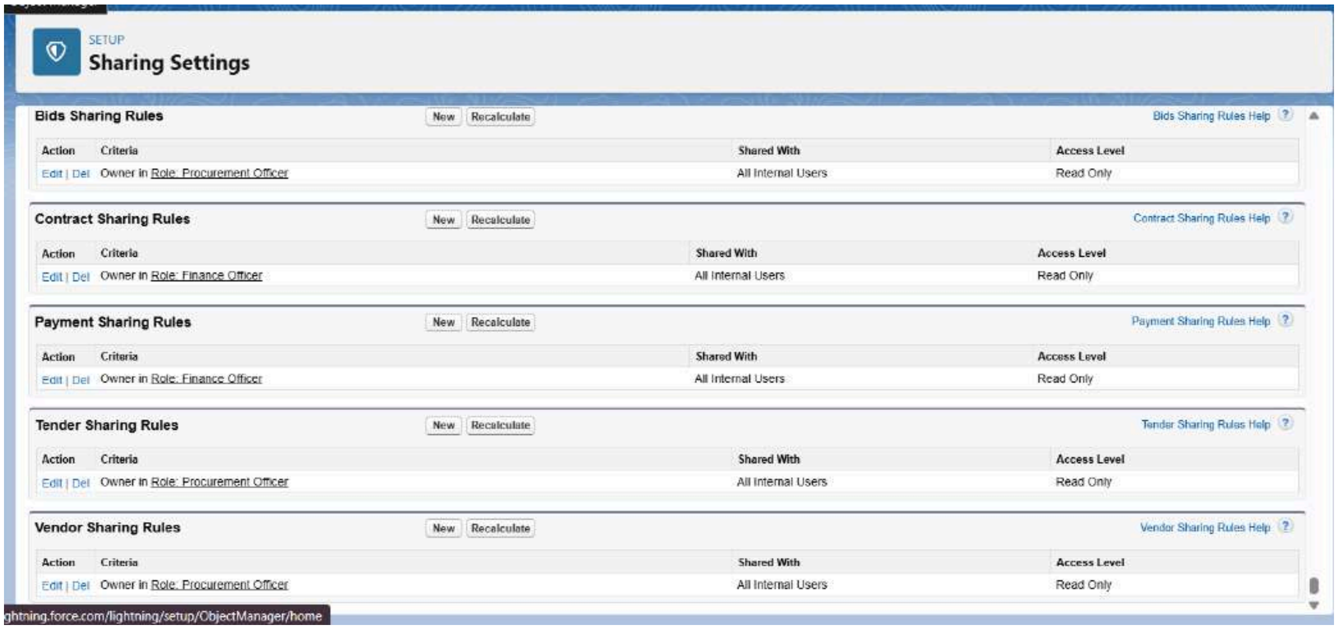
Other Settings

Manager Groups
Secure guest user record access ✓
Require permission to view record names in lookup fields

Sharing Rules
Lead Sharing Rules

10. <u>Sharing Rules</u> :

- Allow Procurement Head to see all Contracts
- Contractors can only see their own tenders



SETUP

Sharing Settings

Bids Sharing Rules

Action	Criteria	Shared With	Access Level
Edit | Del	Owner in Role: Procurement Officer	All Internal Users	Read Only

Contract Sharing Rules

Action	Criteria	Shared With	Access Level
Edit | Del	Owner in Role: Finance Officer	All Internal Users	Read Only

Payment Sharing Rules

Action	Criteria	Shared With	Access Level
Edit | Del	Owner in Role: Finance Officer	All Internal Users	Read Only

Tender Sharing Rules

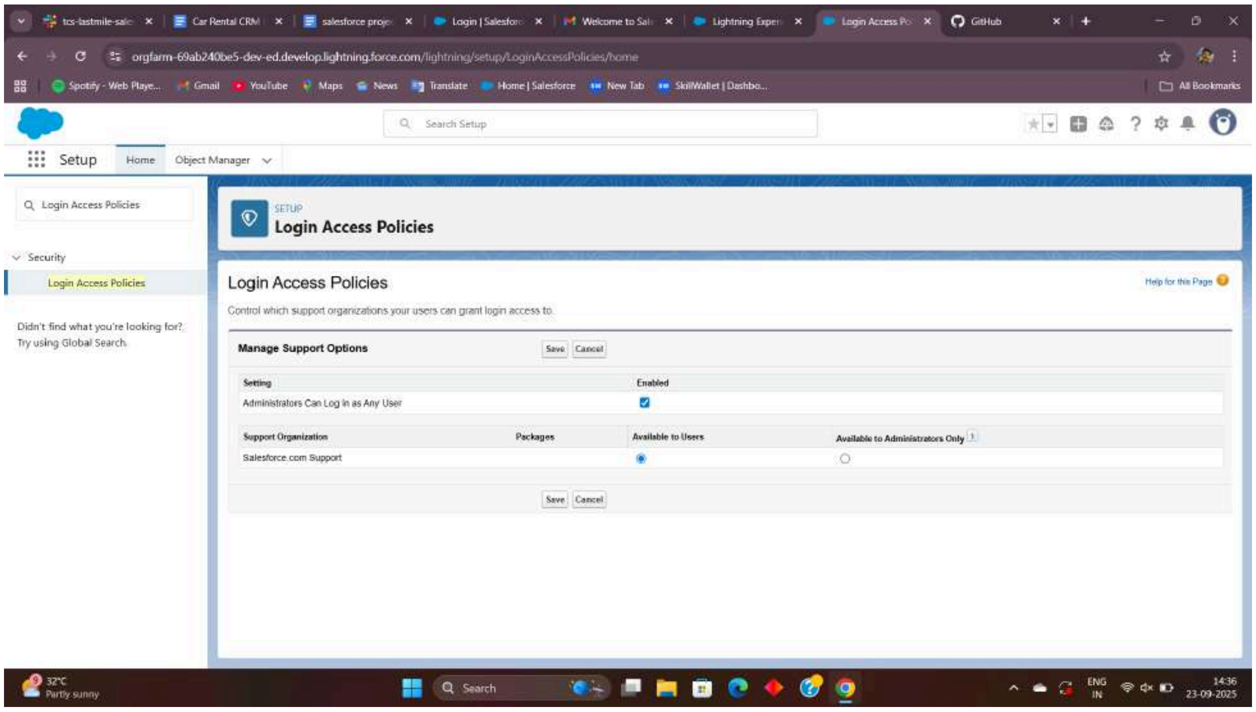
Action	Criteria	Shared With	Access Level
Edit | Del	Owner in Role: Procurement Officer	All Internal Users	Read Only

Vendor Sharing Rules

Action	Criteria	Shared With	Access Level
Edit | Del	Owner in Role: Procurement Officer	All Internal Users	Read Only

11. Login Access Policies :

- Define IP Ranges (office-based)
- Set Login Hours (9:00 AM – 7:00 PM)



orgfarm-69ab240be5-dev-ed.develop.lightning.force.com/lightning/setup/LoginAccessPolicies/home

SETUP

Login Access Policies

Login Access Policies

Control which support organizations your users can grant login access to.

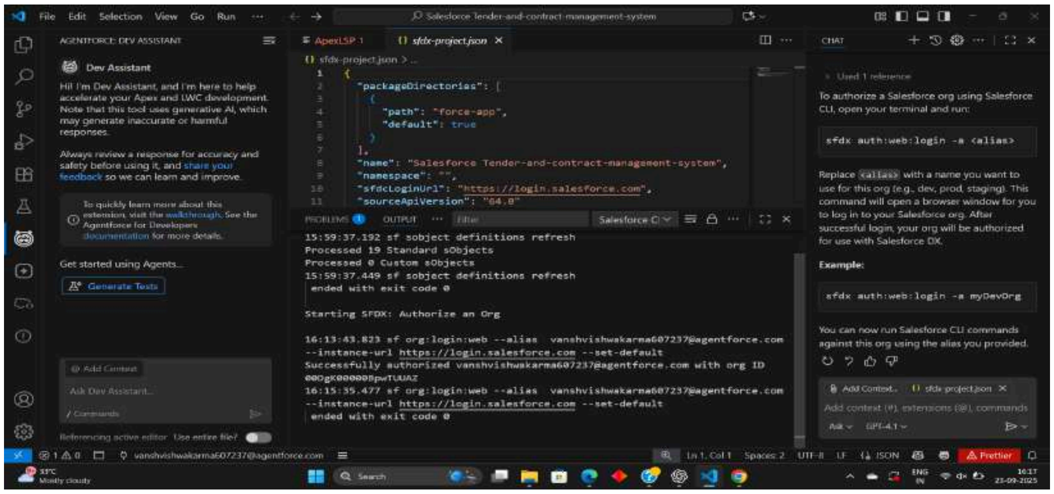
Manage Support Options

Setting	Enabled
Administrators Can Log in as Any User	✓

Support Organization	Packages	Available to Users	Available to Administrators Only
Salesforce.com Support		●	○

12. **Dev Org Setup** :

- Create Developer Org
- Install Salesforce Extensions in VS Code
- Connect Org with Salesforce CLI



AGENTFORCE: DEV ASSISTANT

Dev Assistant

Hi! I'm Dev Assistant, and I'm here to help accelerate your Apex and LWC development. Note that this tool uses generative AI, which may generate inaccurate or harmful responses.

Always review a response for accuracy and safety before using it, and share your feedback so we can learn and improve.

To quickly learn more about this extension, visit the walkthrough. See the Agentforce for Developers documentation for more details.

Get started using Agents...

```
{
  "packageDirectories": [
    {
      "path": "force-app",
      "default": true
    }
  ],
  "name": "Salesforce Tender-and-contract-management-system",
  "namespace": "",
  "sfdcLoginUrl": "https://login.salesforce.com",
  "sourceApiVersion": "64.0"
```

```
15:59:37.192 sf sobject definitions refresh
Processed 19 Standard sObjects
Processed 0 Custom sObjects
15:59:37.449 sf sobject definitions refresh
 ended with exit code 0

Starting SFDX: Authorize an Org

16:13:43.823 sf org:login:web --alias  vanshvishwakarma607237@agentforce.com
--instance-url https://login.salesforce.com --set-default
Successfully authorized vanshvishwakarma607237@agentforce.com with org ID
00DgK000008pwTUUAZ
16:15:35.477 sf org:login:web --alias  vanshvishwakarma607237@agentforce.com
--instance-url https://login.salesforce.com --set-default
 ended with exit code 0
```

CHAT

To authorize a Salesforce org using Salesforce CLI, open your terminal and run:

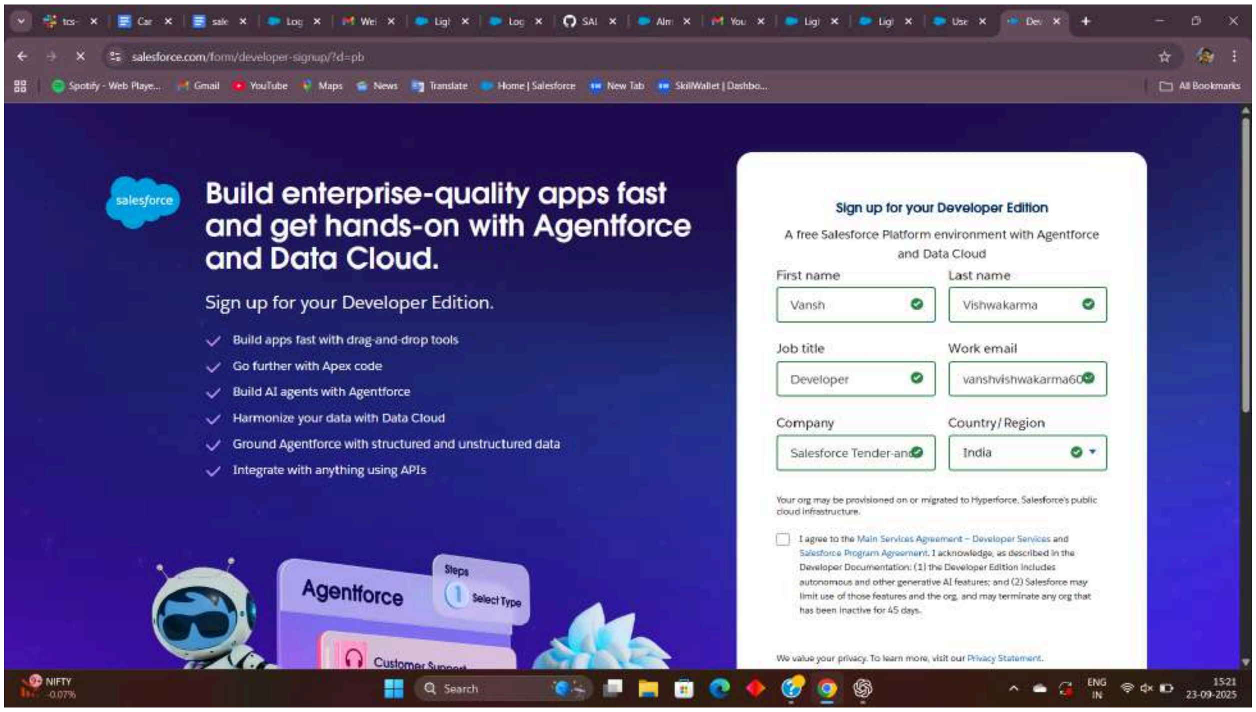
```
sfdx auth:web:login -a <alias>
```

Replace `<alias>` with a name you want to use for this org (e.g., dev, prod, staging). This command will open a browser window for you to log in to your Salesforce org. After successful login, your org will be authorized for use with Salesforce DX.

Example:

```
sfdx auth:web:login -a myDevOrg
```

You can now run Salesforce CLI commands against this org using the alias you provided.



salesforce.com/form/developer-signup/?d=pb

Build enterprise-quality apps fast and get hands-on with Agentforce and Data Cloud.

Sign up for your Developer Edition.

- ✓ Build apps fast with drag-and-drop tools
- ✓ Go further with Apex code
- ✓ Build AI agents with Agentforce
- ✓ Harmonize your data with Data Cloud
- ✓ Ground Agentforce with structured and unstructured data
- ✓ Integrate with anything using APIs

Sign up for your Developer Edition

A free Salesforce Platform environment with Agentforce and Data Cloud

First name: Vansh	Last name: Vishwakarma
Job title: Developer	Work email: vanshvishwakarma60
Company: Salesforce Tender-and	Country/Region: India

Your org may be provisioned on or migrated to Hyperforce, Salesforce's public cloud infrastructure.

☐ I agree to the Main Services Agreement – Developer Services and Salesforce Program Agreement. I acknowledge, as described in the Developer Documentation: (1) the Developer Edition includes autonomous and other generative AI features; and (2) Salesforce may limit use of those features and the org, and may terminate any org that has been inactive for 45 days.

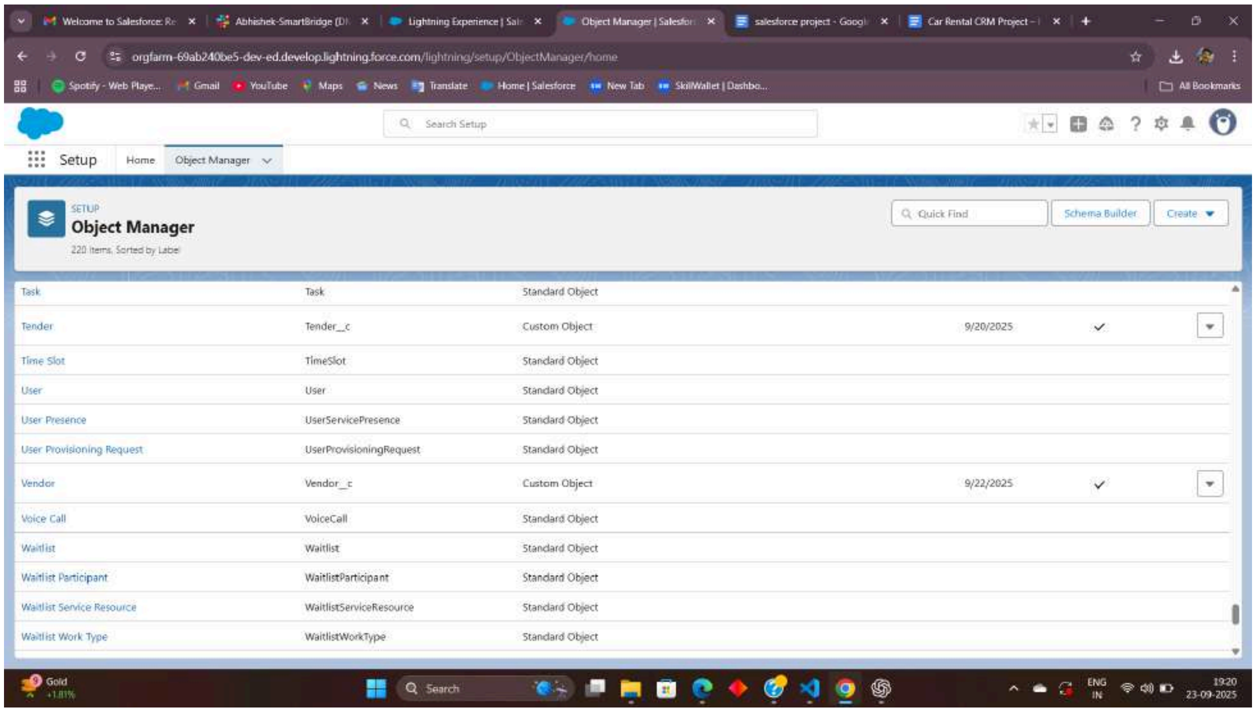
We value your privacy. To learn more, visit our Privacy Statement.

Phase 3: Data Modeling & Relationships

👉 Goal: Build data structure.

1. **Standard & Custom Objects** :
    - Standard Objects
        i. Account → Represents Contractor/Company
        ii. Contact → Represents People (Contract Manager, Procurement Officer)
    - User → Internal Salesforce Users (roles like Manager, Bidder)
        i. Tender__c → Stores tender details
        ii. Bid__c → Stores bids submitted by contractors
        iii. Contract__c → Stores awarded contract details
        iv. Project__c → Tracks the project execution linked to contracts
        v. Payment__c → Stores payments made against contracts

NOTE: Here we are creating the object which will help in showing relationship in project.



SETUP
Object Manager
220 Items, Sorted by Label

Task	Task	Standard Object		
Tender	Tender__c	Custom Object	9/20/2025	✓
Time Slot	TimeSlot	Standard Object		
User	User	Standard Object		
User Presence	UserServicePresence	Standard Object		
User Provisioning Request	UserProvisioningRequest	Standard Object		
Vendor	Vendor__c	Custom Object	9/22/2025	✓
Voice Call	VoiceCall	Standard Object		
Waitlist	Waitlist	Standard Object		
Waitlist Participant	WaitlistParticipant	Standard Object		
Waitlist Service Resource	WaitlistServiceResource	Standard Object		
Waitlist Work Type	WaitlistWorkType	Standard Object		

orgfarm-69ab240be5-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/home
Setup
Home
Object Manager
Search Setup
Quick Find
Schema Builder
Create

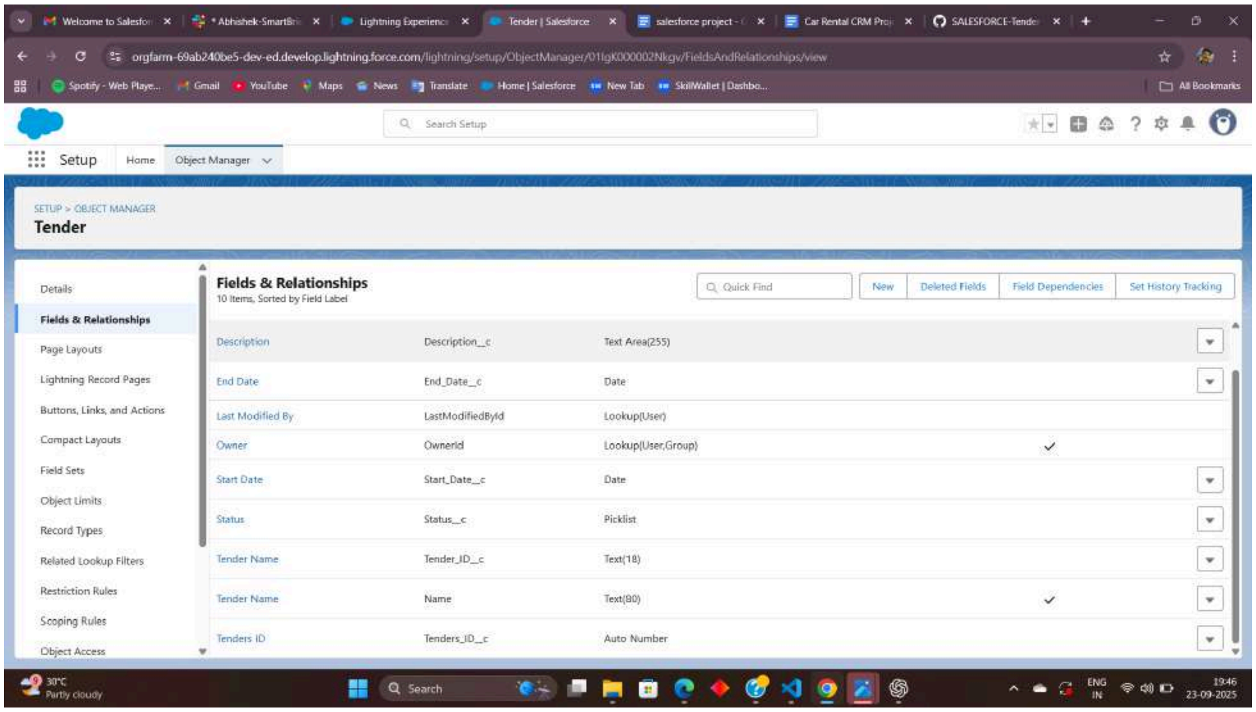
2. **Fields** :

- Tender__c → Tender ID (Auto Number), Tender Name (Text), Status (Picklist: Open/Closed/Awarded)
- Bid__c → Bid ID (Auto Number), Amount (Currency), Status (Picklist: Pending/Approved/Rejected)
- Contract__c → Contract Value (Currency), Start Date (Date), End Date (Date)
- Project__c → Project Name (Text), Location (Text), Progress (%)
- Payment__c → Payment Date (Date), Payment Amount (Currency), Mode (Picklist: Bank Transfer, Cheque, Online)

NOTE : Fields are essentially data containers in Salesforce objects. They define what information you want to store about an object

- **Tender__c**

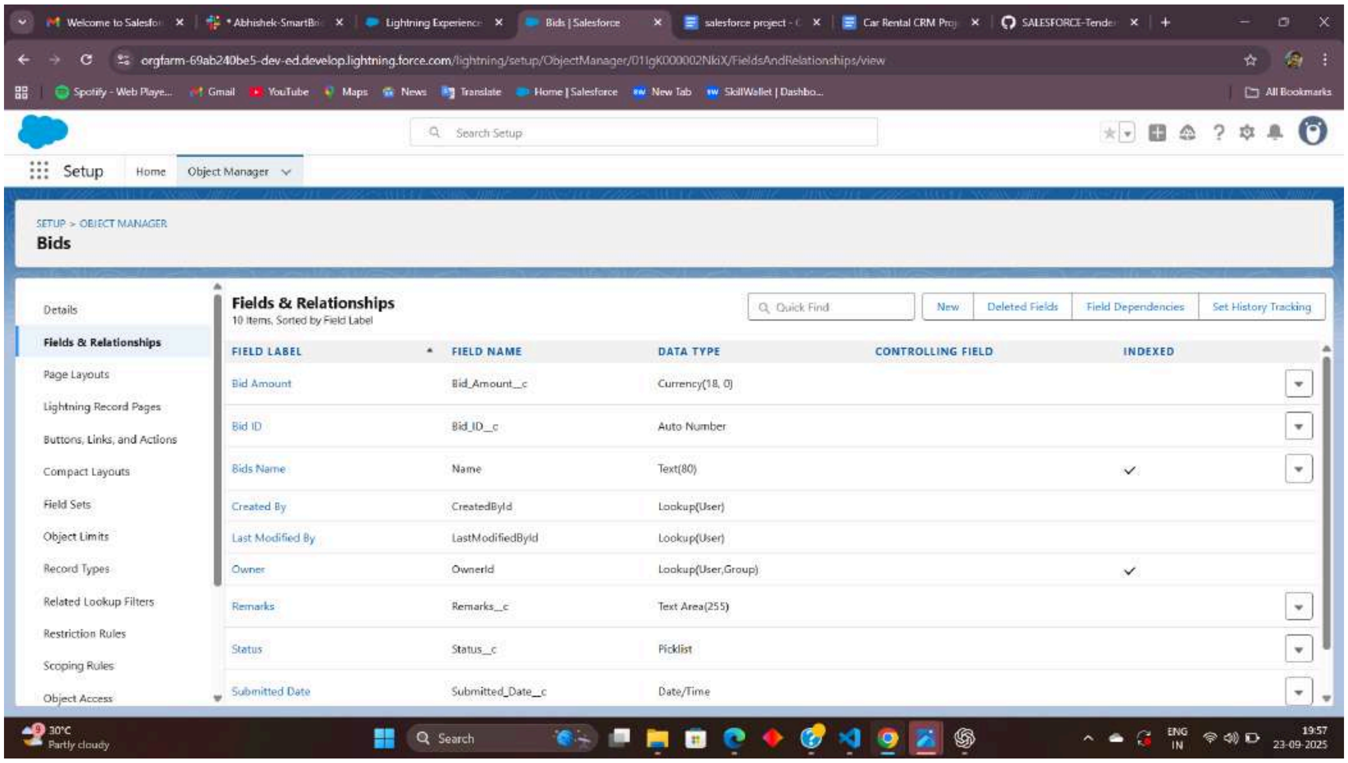
`


SETUP > OBJECT MANAGER
Tender

Fields & Relationships
10 Items, Sorted by Field Label

Description	Description__c	Text Area(255)	
End Date	End_Date__c	Date	
Last Modified By	LastModifiedById	Lookup(User)	
Owner	OwnerId	Lookup(User,Group)	✓
Start Date	Start_Date__c	Date	
Status	Status__c	Picklist	
Tender Name	Tender_ID__c	Text(18)	
Tender Name	Name	Text(80)	✓
Tenders ID	Tenders_ID__c	Auto Number	

- **Bid__c**


SETUP > OBJECT MANAGER

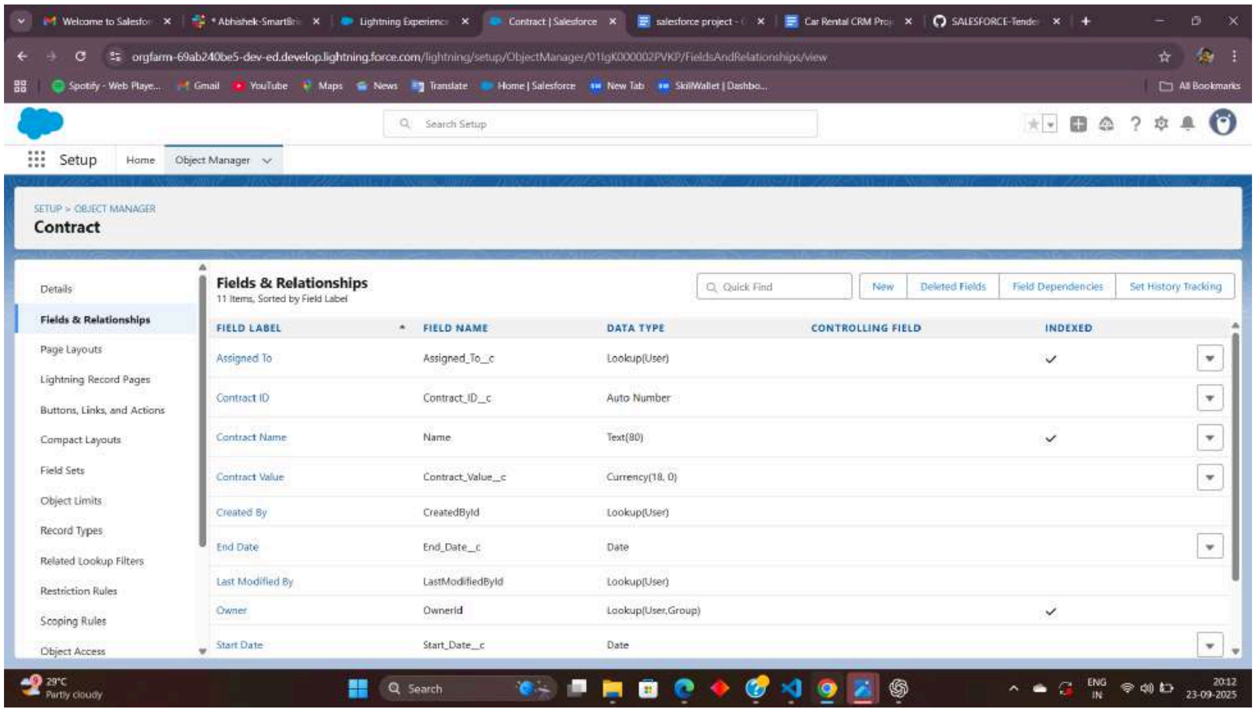
Bids

Details · **Fields & Relationships** · Page Layouts · Lightning Record Pages · Buttons, Links, and Actions · Compact Layouts · Field Sets · Object Limits · Record Types · Related Lookup Filters · Restriction Rules · Scoping Rules · Object Access

Fields & Relationships
10 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Bid Amount	Bid_Amount__c	Currency(18, 0)		
Bid ID	Bid_ID__c	Auto Number		
Bids Name	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Remarks	Remarks__c	Text Area(255)		
Status	Status__c	Picklist		
Submitted Date	Submitted_Date__c	Date/Time		

- **Contract__c :**


SETUP > OBJECT MANAGER

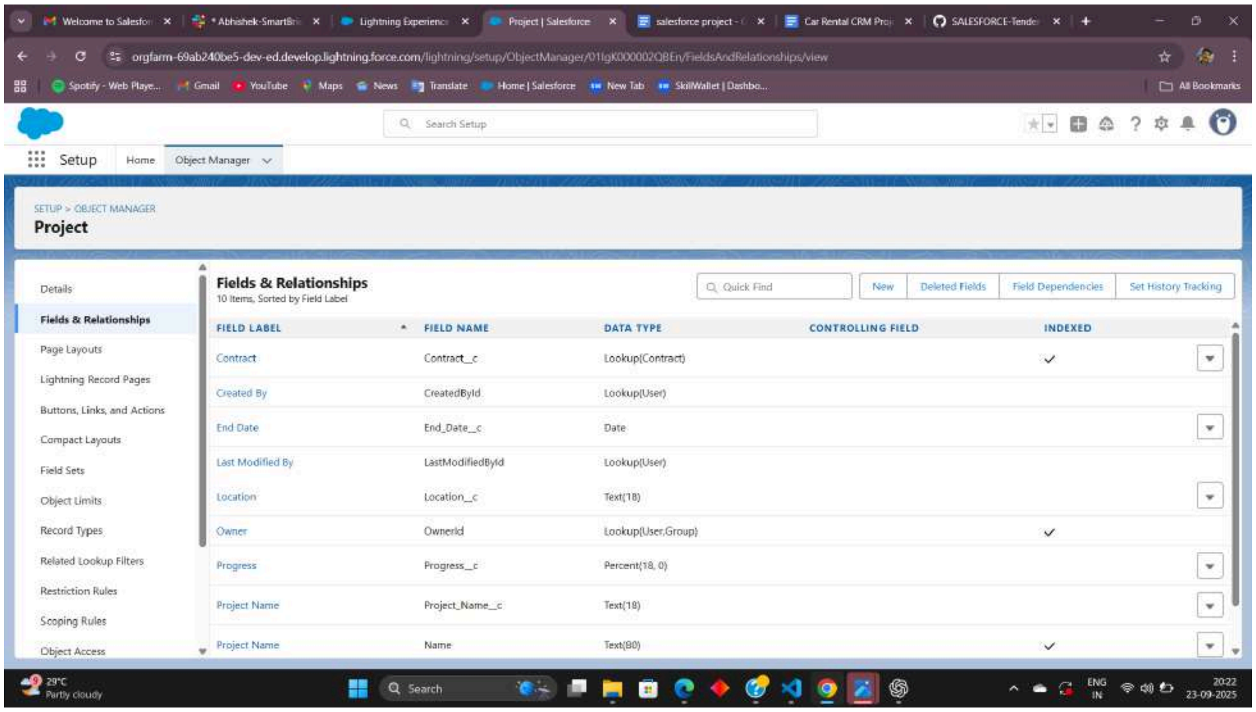
Contract

Details · **Fields & Relationships** · Page Layouts · Lightning Record Pages · Buttons, Links, and Actions · Compact Layouts · Field Sets · Object Limits · Record Types · Related Lookup Filters · Restriction Rules · Scoping Rules · Object Access

Fields & Relationships
11 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Assigned To	Assigned_To__c	Lookup(User)		✓
Contract ID	Contract_ID__c	Auto Number		
Contract Name	Name	Text(80)		✓
Contract Value	Contract_Value__c	Currency(18, 0)		
Created By	CreatedById	Lookup(User)		
End Date	End_Date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Start Date	Start_Date__c	Date		

- **Project__c :**



SETUP > OBJECT MANAGER

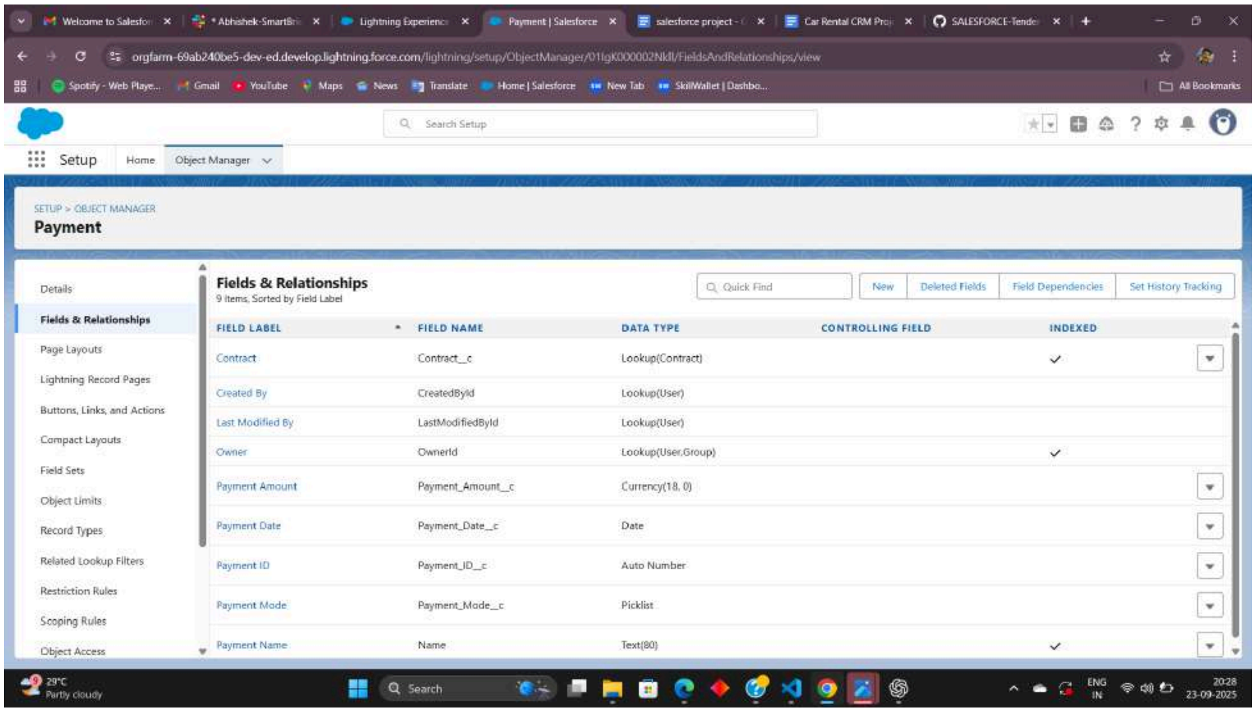
Project

Fields & Relationships

10 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Contract	Contract__c	Lookup(Contract)		✓
Created By	CreatedById	Lookup(User)		
End Date	End_Date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Location	Location__c	Text(18)		
Owner	OwnerId	Lookup(User,Group)		✓
Progress	Progress__c	Percent(18, 0)		
Project Name	Project_Name__c	Text(18)		
Project Name	Name	Text(80)		✓

  - **Payment__c :**



SETUP > OBJECT MANAGER

Payment

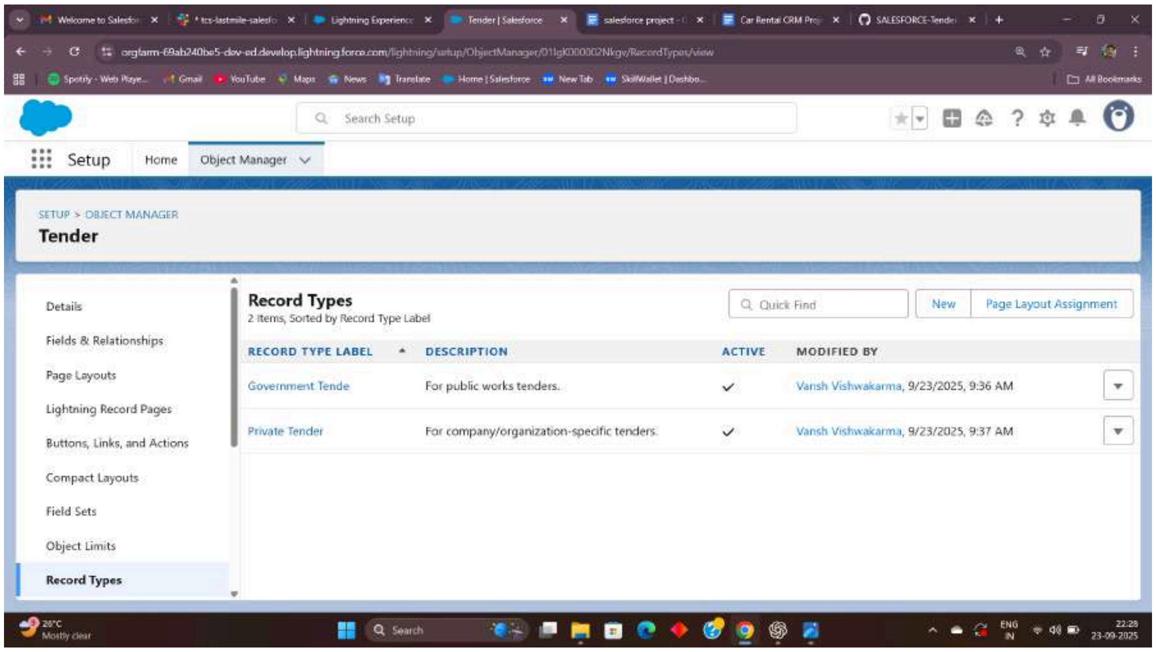
Fields & Relationships

9 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Contract	Contract__c	Lookup(Contract)		✓
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Payment Amount	Payment_Amount__c	Currency(18, 0)		
Payment Date	Payment_Date__c	Date		
Payment ID	Payment_ID__c	Auto Number		
Payment Mode	Payment_Mode__c	Picklist		
Payment Name	Name	Text(80)		✓

3. Record Types :

- Tender__c → Govt Tender, Private Tender
- Contract__c → Short-Term, Long-Term



SETUP > OBJECT MANAGER

Tender

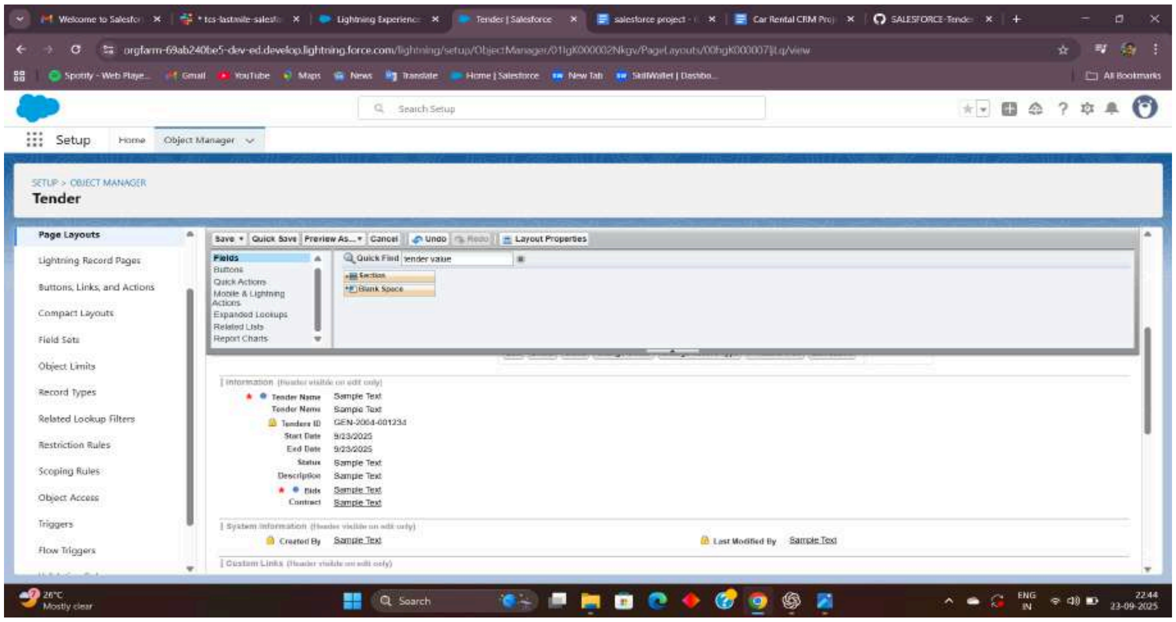
Record Types

2 Items, Sorted by Record Type Label

RECORD TYPE LABEL	DESCRIPTION	ACTIVE	MODIFIED BY
Government Tende	For public works tenders.	✓	Vansh Vishwakarma, 9/23/2025, 9:36 AM
Private Tender	For company/organization-specific tenders.	✓	Vansh Vishwakarma, 9/23/2025, 9:37 AM

4 . <u>Page Layouts</u> :

- Tender__c → Fields arranged for Procurement Officers (Name, Status, Start/End Dates, Related Bids)
- Bid__c → Layout for Bidders (Amount, Submitted Date, Tender Reference)
- Contract__c → Layout for Managers (Contract Value, Status, Related Payments/Projects)



SETUP > OBJECT MANAGER

Tender

Information (Header visible on edit only)

Tender Name	Sample Text
Tender Name	Sample Text
Tenders ID	GEN-2004-001234
Start Date	9/23/2025
End Date	9/23/2025
Status	Sample Text
Description	Sample Text
Bids	Sample Text
Contract	Sample Text

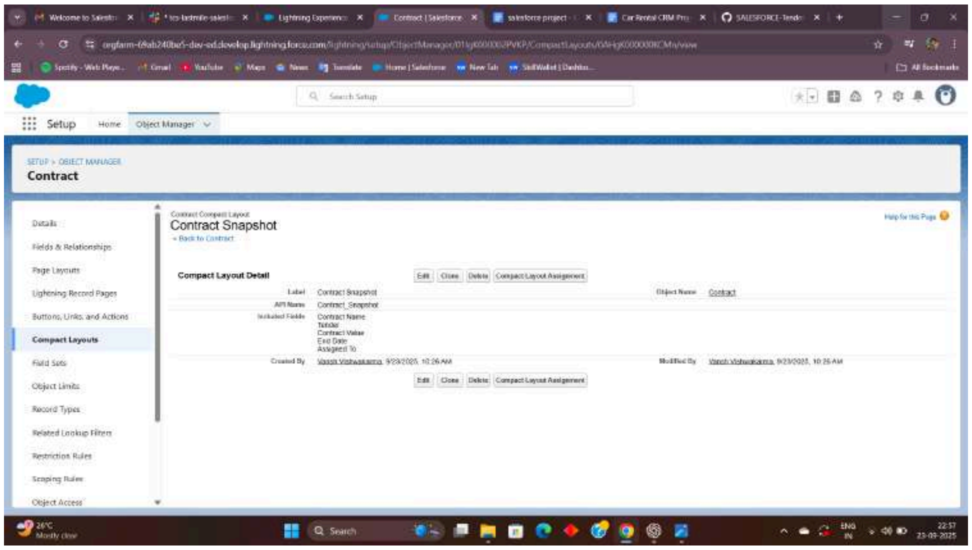
System Information (Header visible on edit only)

Created By Sample Text   Last Modified By Sample Text

Custom Links (Header visible on edit only)

5. <u>Compact Layouts</u> :

- Tender__c → Show Tender Name, Status, Start Date, End Date
- Bid__c → Show Bid ID, Amount, Status
- Contract__c → Show Contract ID, Value, Status



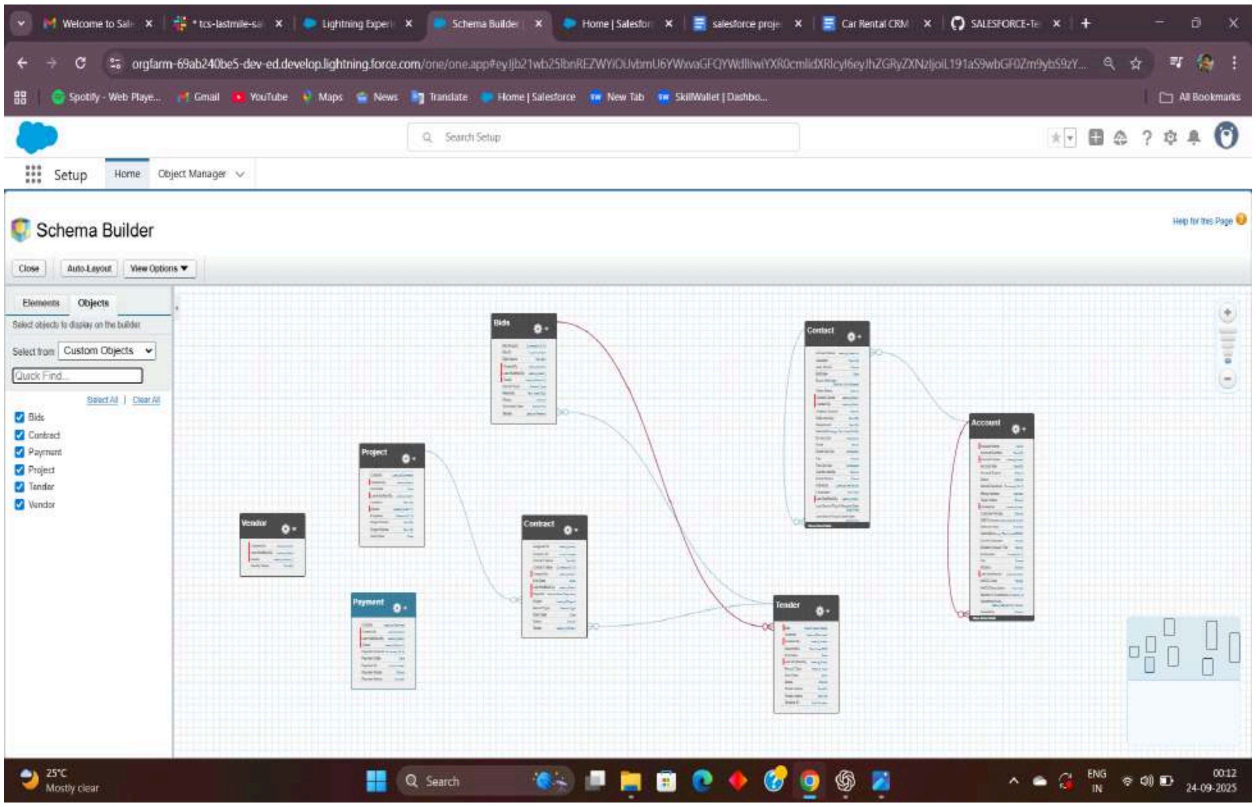
Contract Compact Layout
Contract Snapshot
« Back to Contract

Compact Layout Detail

Label	Contract Snapshot	Object Name	Contract
API Name	Contract_Snapshot		
Included Fields	Contract Name Tender Contract Value End Date Assigned To		
Created By	Vansh Vishwakarma, 9/23/2025, 10:26 AM	Modified By	Vansh Vishwakarma, 9/23/2025, 10:26 AM

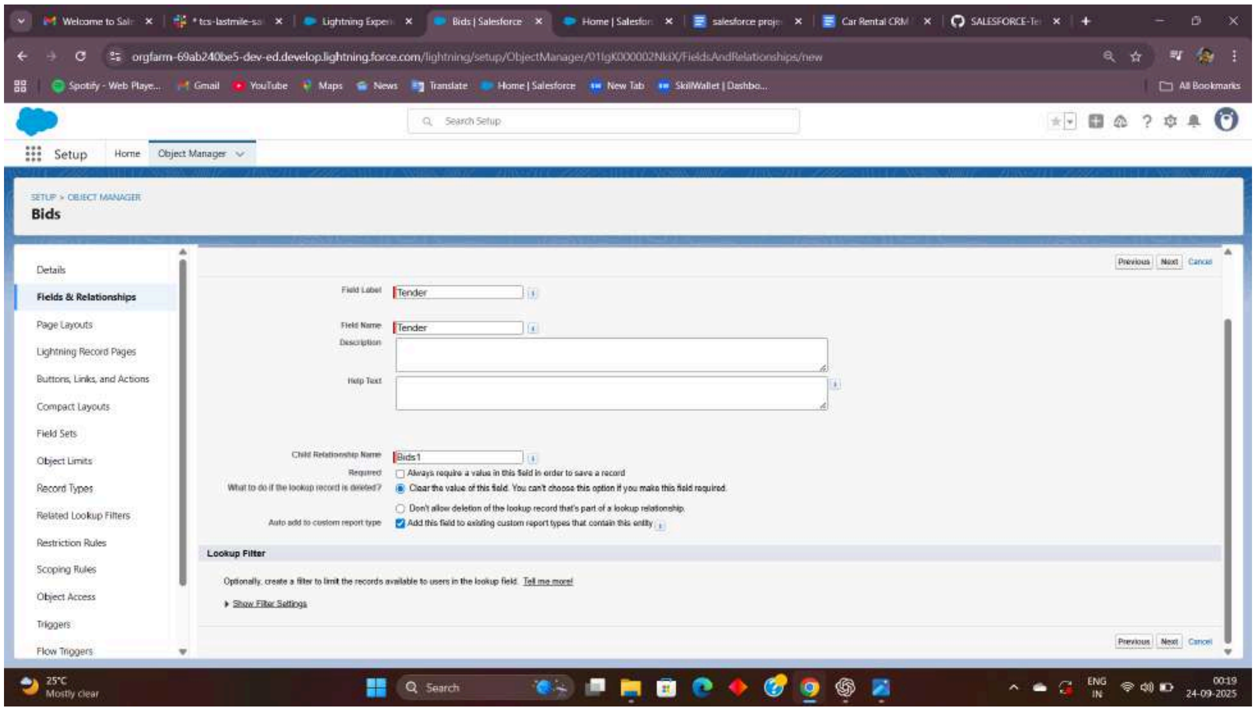
6. <u>Schema Builder</u> :

- Use Setup → Schema Builder
- Add Tender__c, Bid__c, Contract__c, Project__c, Payment__c
- Draw relationships between them → this acts as your ERD (Entity Relationship Diagram).



7. <u>Lookup vs Master-Detail vs Hierarchical</u> :

- Tender__c → Bid__c = Master-Detail (One Tender, many Bids)
- Tender__c → Contract__c = Lookup (One Tender leads to one Contract)
- Contract__c → Payment__c = Master-Detail (One Contract has many Payments)
- Contract__c → Project__c = Lookup (Link Project execution to Contract)
- User Hierarchy (Role Reporting) = Hierarchical



Field Label	Tender
Field Name	Tender
Description	
Help Text	
Child Relationship Name	Bids1
Required	☐ Always require a value in this field in order to save a record
What to do if the lookup record is deleted?	[✓ Clear the value of this field. You can't choose this option if you make this field required.]
	Don't allow deletion of the lookup record that's part of a lookup relationship.
Auto add to custom report type	☑ Add this field to existing custom report types that contain this entity

Lookup Filter

Optionally, create a filter to limit the records available to users in the lookup field. Tell me more!

Show Filter Settings

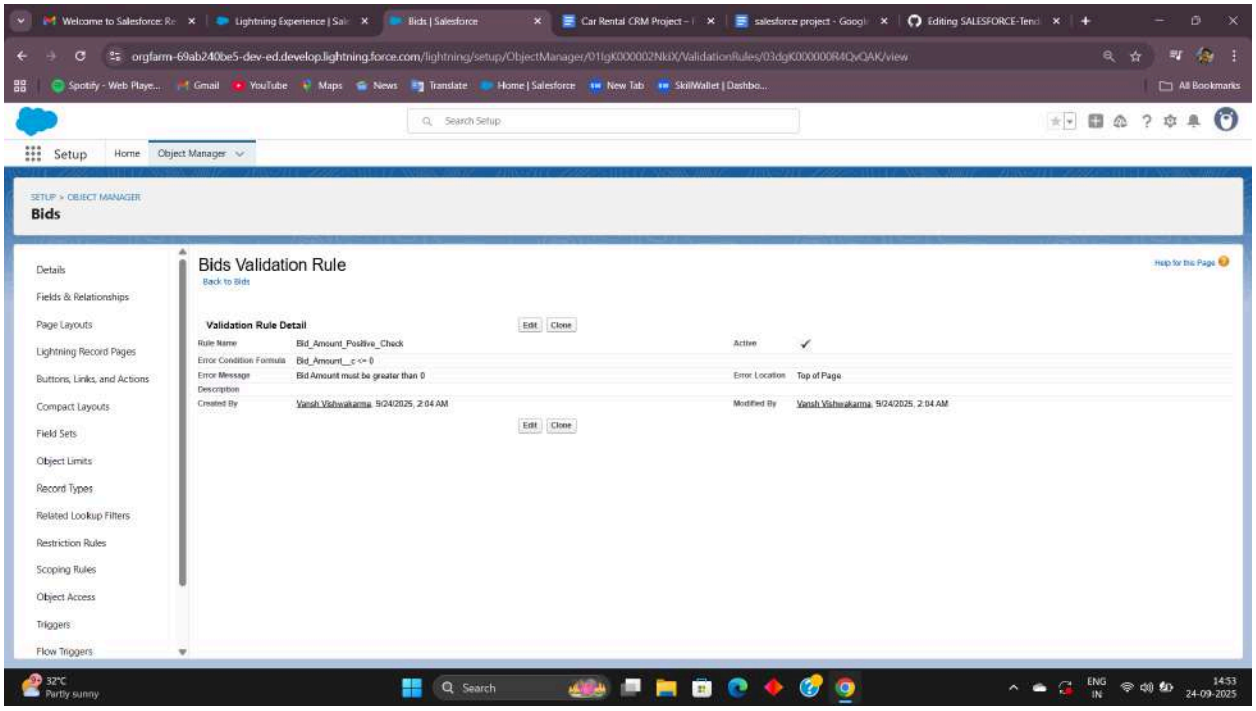
Phase 4: Process Automation (Admin)

👉 Goal: Automate tasks.

1. Validation Rules :

- Validation rules are used to ensure data integrity by preventing users from saving invalid data. Below are the rules created for each object:
- Tender__c (End Date Check)
  - Logic: The End Date cannot be earlier than the Start Date.
  - Error Message: *"End Date cannot be before Start Date."*
- Bid__c (Bid Amount Positive Check)
  - Logic: The Bid Amount should always be greater than zero.
  - Error Message: *"Bid Amount must be greater than 0."*

- Contract__c (Contract Value Positive Check)
    - Logic: The Contract Value must be greater than zero.
    - Error Message: *“Contract Value must be greater than 0.”*
- Payment__c (Payment Date Check)
    - Logic: The Payment Date should not be later than the Contract End Date.
    - Error Message: *“Payment Date cannot exceed Contract End Date.”*



Bids Validation Rule

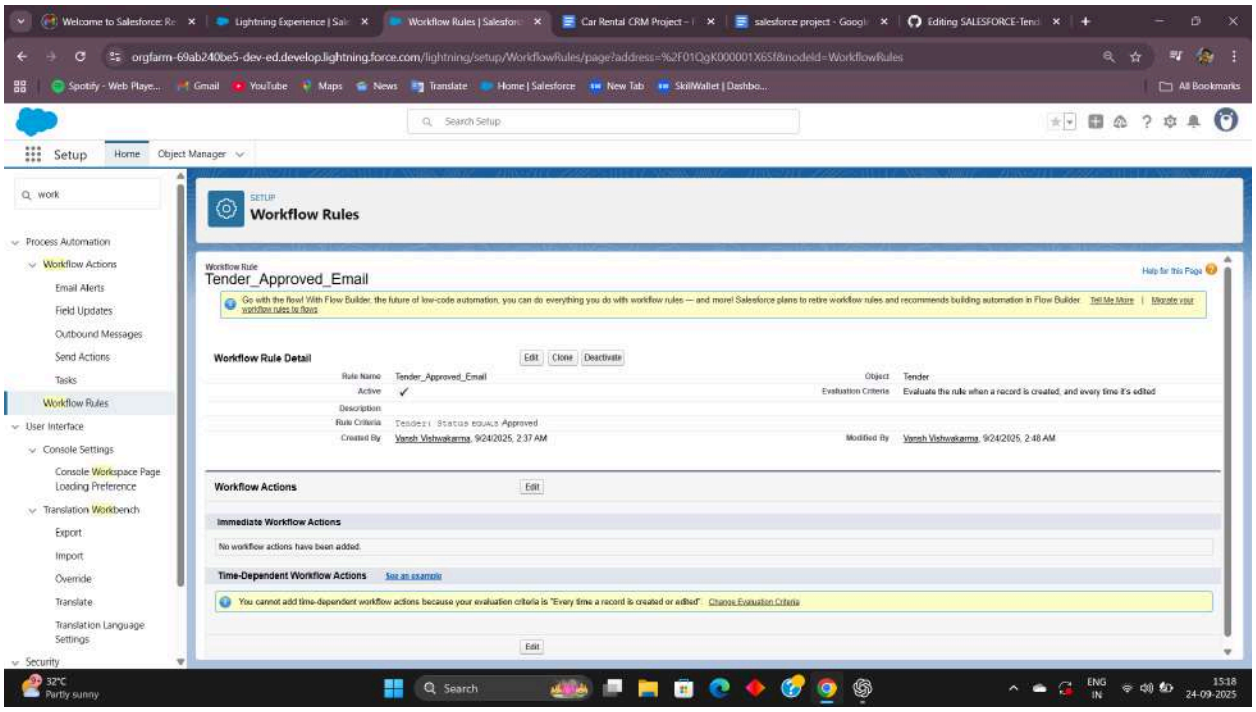
Back to Bids

Validation Rule Detail

Rule Name	Bid_Amount_Positive_Check	Active	✓
Error Condition Formula	Bid_Amount__c <= 0		
Error Message	Bid Amount must be greater than 0	Error Location	Top of Page
Description			
Created By	Vansh Vishwakarma, 9/24/2025, 2:04 AM	Modified By	Vansh Vishwakarma, 9/24/2025, 2:04 AM

2. <u>**Workflow Rules** (legacy)</u> :

- <u>Tender Object (Tender__c)</u>:
  When the Status of a Tender becomes Approved, the system will automatically send an Email Alert to the Procurement Officer.
- <u>Bid Object (Bid__c):</u>
  When the Status of a Bid is set to Submitted, a Task will be generated to notify the Project Manager about the new bid.
- <u>Contract Object (Contract__c):</u>
  When the Status of a Contract is marked as Signed, a Field Update will occur automatically, changing the related Tender’s status to Closed.


SETUP
Workflow Rules

Workflow Rule
Tender_Approved_Email

Go with the flow! With Flow Builder, the future of low-code automation, you can do everything you do with workflow rules — and more! Salesforce plans to retire workflow rules and recommends building automation in Flow Builder. Tell Me More | Migrate your workflow rules to flows

Workflow Rule Detail

Rule Name	Tender_Approved_Email	Object	Tender
Active	✓	Evaluation Criteria	Evaluate the rule when a record is created, and every time it's edited
Description			
Rule Criteria	Tender: Status EQUALS Approved		
Created By	Vansh Vishwakarma, 9/24/2025, 2:37 AM	Modified By	Vansh Vishwakarma, 9/24/2025, 2:48 AM

Workflow Actions

Immediate Workflow Actions

No workflow actions have been added.

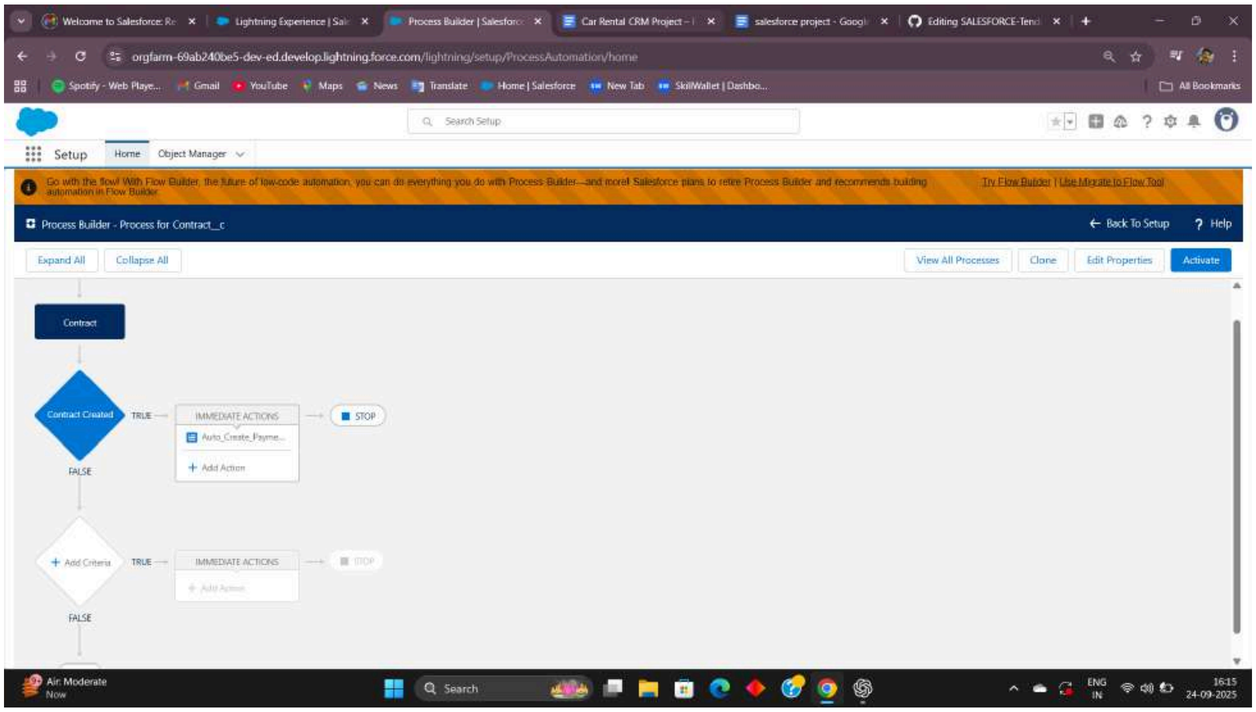
Time-Dependent Workflow Actions See an example

You cannot add time-dependent workflow actions because your evaluation criteria is "Every time a record is created or edited". Change Evaluation Criteria

3. **<u>Process Builder</u>** <u>(legacy)</u> :

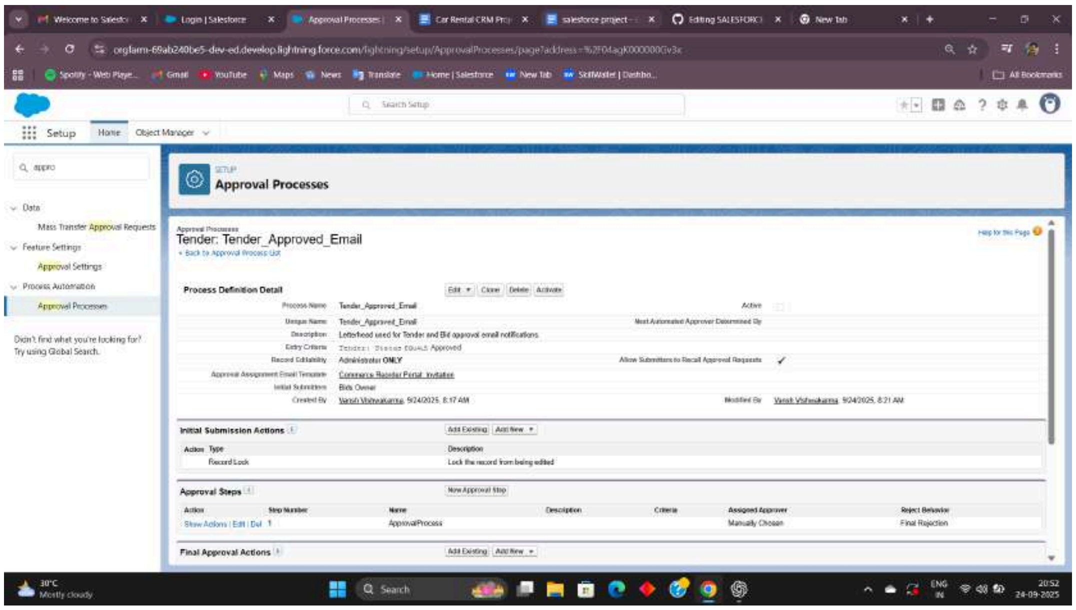
Automate multi-step business logic.

Object	Criteria	Action
Bid__c	Status = Submitted	Update Tender Status → "Bids Received", Send Email Notification
Contract__c	Contract Created	Auto-create Payment records for milestones
Tender__c	Status = Cancelled	Update all related Bids → Status = Cancelled



4. <u>Approval Process</u> :

- Automate approvals for Tenders and Bids.
- Tender Approval Flow:
- Procurement Officer submits Tender → Project Manager approval
- Project Manager approves → Director approval
- Final Approval → Status = Approved + Email notification
- Rejection → Status = Rejected + Email notification
- Bid Approval Flow:
- Bid submitted → Procurement Officer review
- Approval → Status = Approved, Tender updated
- Rejection → Status = Rejected, Bidder notified


Approval Processes

Tender: Tender_Approved_Email

« Back to Approval Process List

Process Definition Detail

Process Name	Tender_Approved_Email	Active	
Unique Name	Tender_Approved_Email	Next Automated Approver Determined By	
Description	Letterhead used for Tender and Bid approval email notifications		
Entry Criteria	Tender: Status EQUALS Approved		
Record Editability	Administrator ONLY	Allow Submitters to Recall Approval Requests	✓
Approval Assignment Email Template	Commerce Reorder Portal: Invitation		
Initial Submitters	Bids Owner		
Created By	Vansh Vishwakarma, 9/24/2025, 8:17 AM	Modified By	Vansh Vishwakarma, 9/24/2025, 8:21 AM

Initial Submission Actions

Action	Type	Description
	Record Lock	Lock the record from being edited

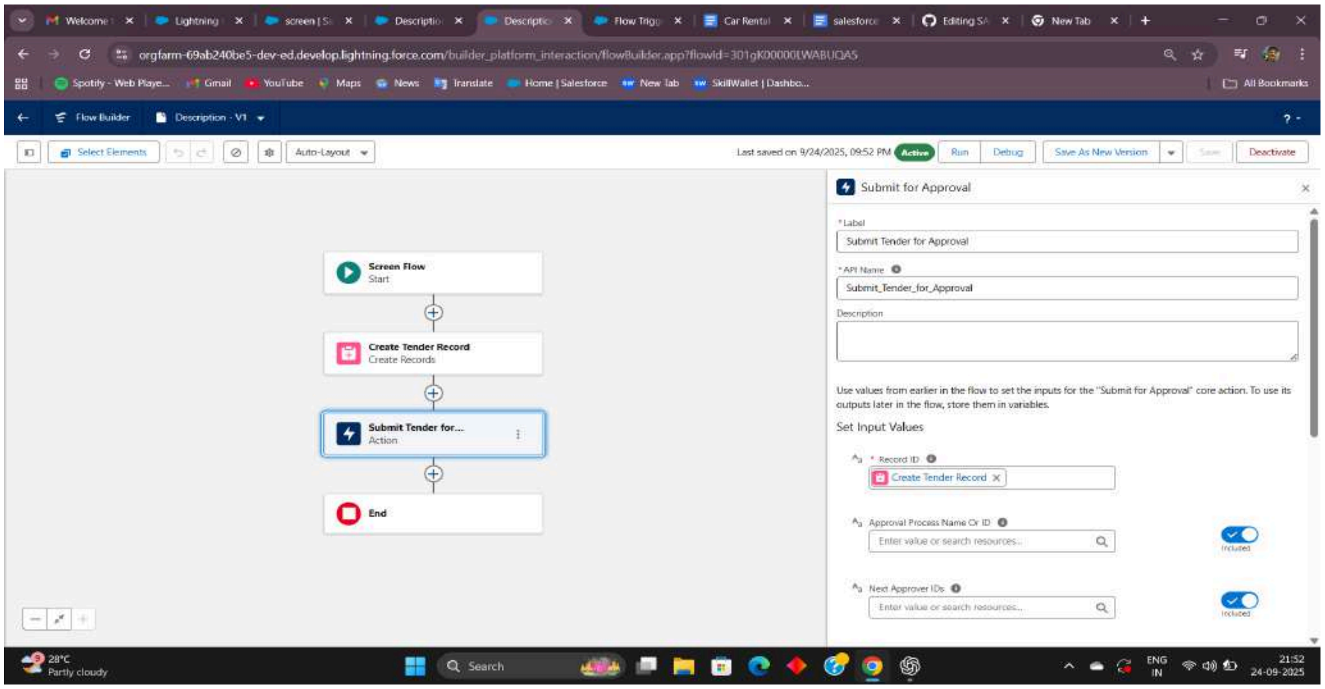
Approval Steps

Action	Step Number	Name	Description	Criteria	Assigned Approver	Reject Behavior
Show Actions | Edit | Del	1	ApprovalProcess			Manually Chosen	Final Rejection

Final Approval Actions

5. <u>**Flow Builder**</u> :

- Automate complex processes using flows.
- Flow Type Object Purpose Key Steps
- Screen Flow Tender__c Submission form for Procurement Officer Input Tender details → Upload documents → Submit for Approval.



Submit for Approval

*Label
Submit Tender for Approval

*API Name
Submit_Tender_for_Approval

Description

Use values from earlier in the flow to set the inputs for the "Submit for Approval" core action. To use its outputs later in the flow, store them in variables.

Set Input Values

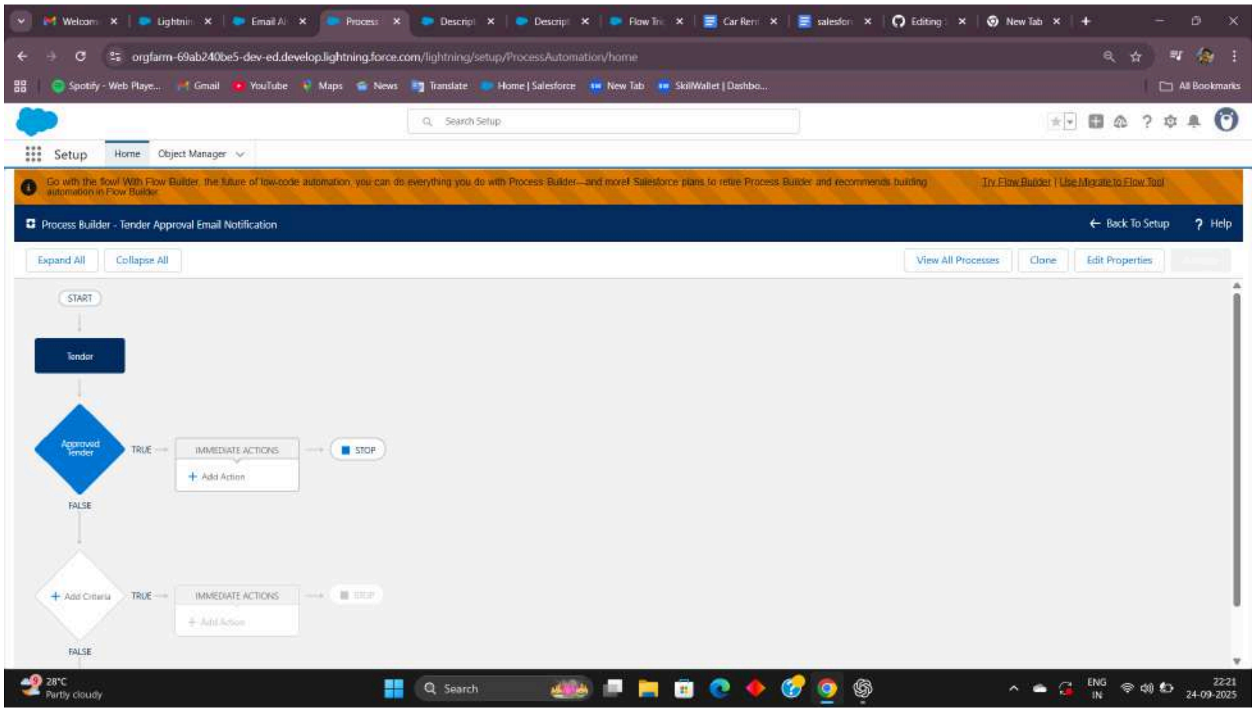
* Record ID
Create Tender Record

Approval Process Name Or ID
Enter value or search resources...
Included

Next Approver IDs
Enter value or search resources...
Included

6. <u>Email Alerts</u> :

Customer email after approval.



Go with the flow! With Flow Builder, the future of low-code automation, you can do everything you do with Process Builder—and more! Salesforce plans to retire Process Builder and recommends building automation in Flow Builder. Try Flow Builder | Use Migrate to Flow Tool

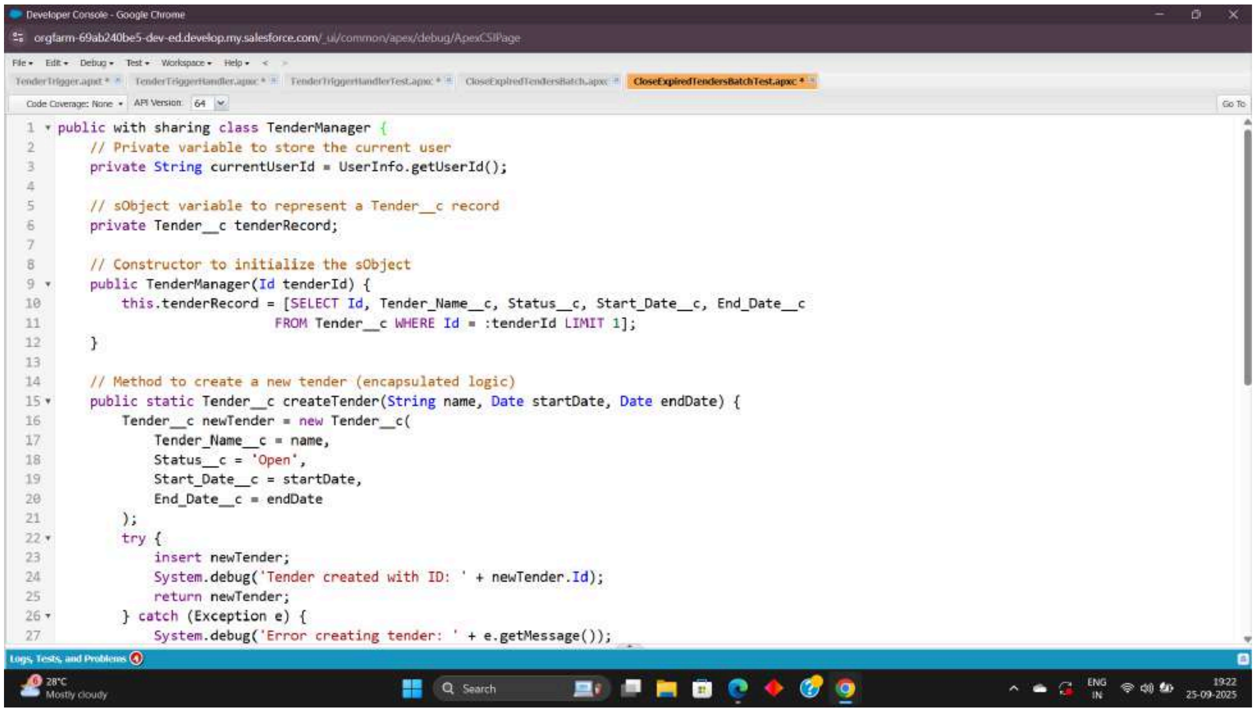
Process Builder - Tender Approval Email Notification

○

Phase 5: Apex Programming (Developer)

1. Classes & Objects

- Encapsulate logic in Apex Classes for reusability and modularity.
- Create objects (variables, sObjects) to represent and manipulate Salesforce
- records.

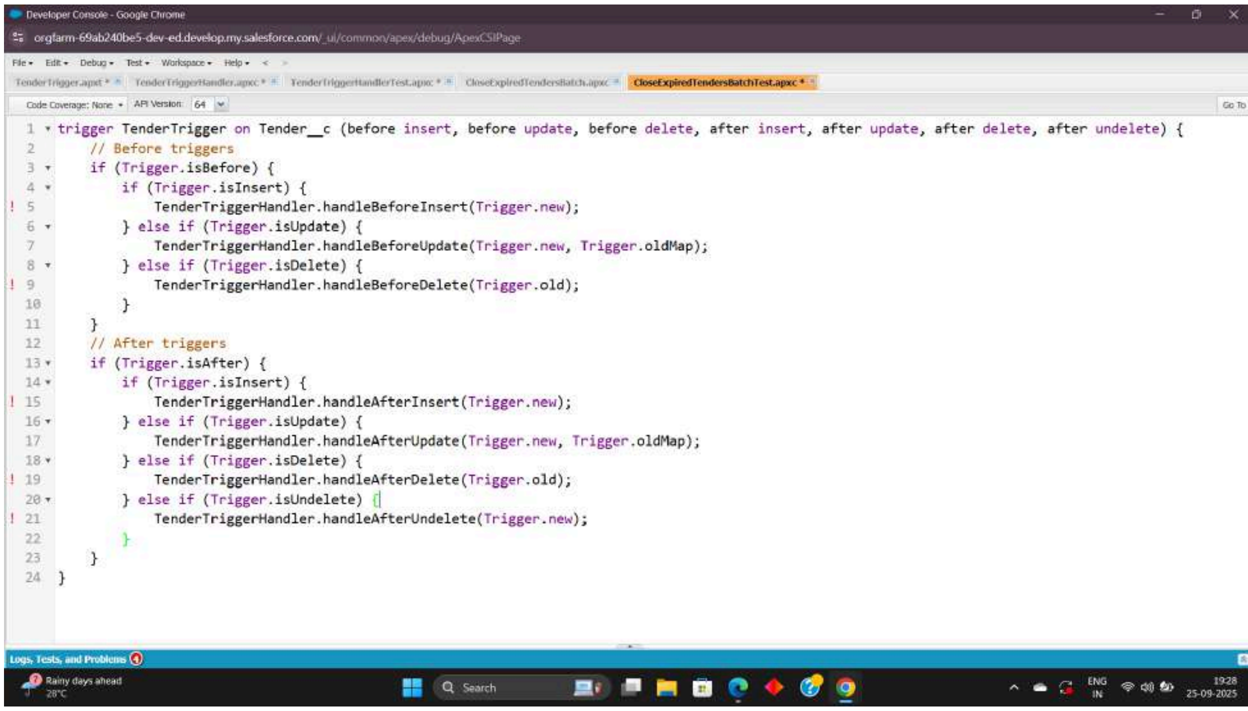


Developer Console - Google Chrome
orgfarm-69ab240be5-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage
File Edit Debug Test Workspace Help
TenderTrigger.apxt TenderTriggerHandler.apxc TenderTriggerHandlerTest.apxc CloseExpiredTendersBatch.apxc CloseExpiredTendersBatchTest.apxc
Code Coverage: None API Version: 64
Go To
Logs, Tests, and Problems

```
public with sharing class TenderManager {
    // Private variable to store the current user
    private String currentUserId = UserInfo.getUserId();

    // sObject variable to represent a Tender__c record
    private Tender__c tenderRecord;

    // Constructor to initialize the sObject
    public TenderManager(Id tenderId) {
        this.tenderRecord = [SELECT Id, Tender_Name__c, Status__c, Start_Date__c, End_Date__c
                             FROM Tender__c WHERE Id = :tenderId LIMIT 1];
    }

    // Method to create a new tender (encapsulated logic)
    public static Tender__c createTender(String name, Date startDate, Date endDate) {
        Tender__c newTender = new Tender__c(
            Tender_Name__c = name,
            Status__c = 'Open',
            Start_Date__c = startDate,
            End_Date__c = endDate
        );
        try {
            insert newTender;
            System.debug('Tender created with ID: ' + newTender.Id);
            return newTender;
        } catch (Exception e) {
            System.debug('Error creating tender: ' + e.getMessage());
```

2. Apex Triggers (before/after insert/update/delete)

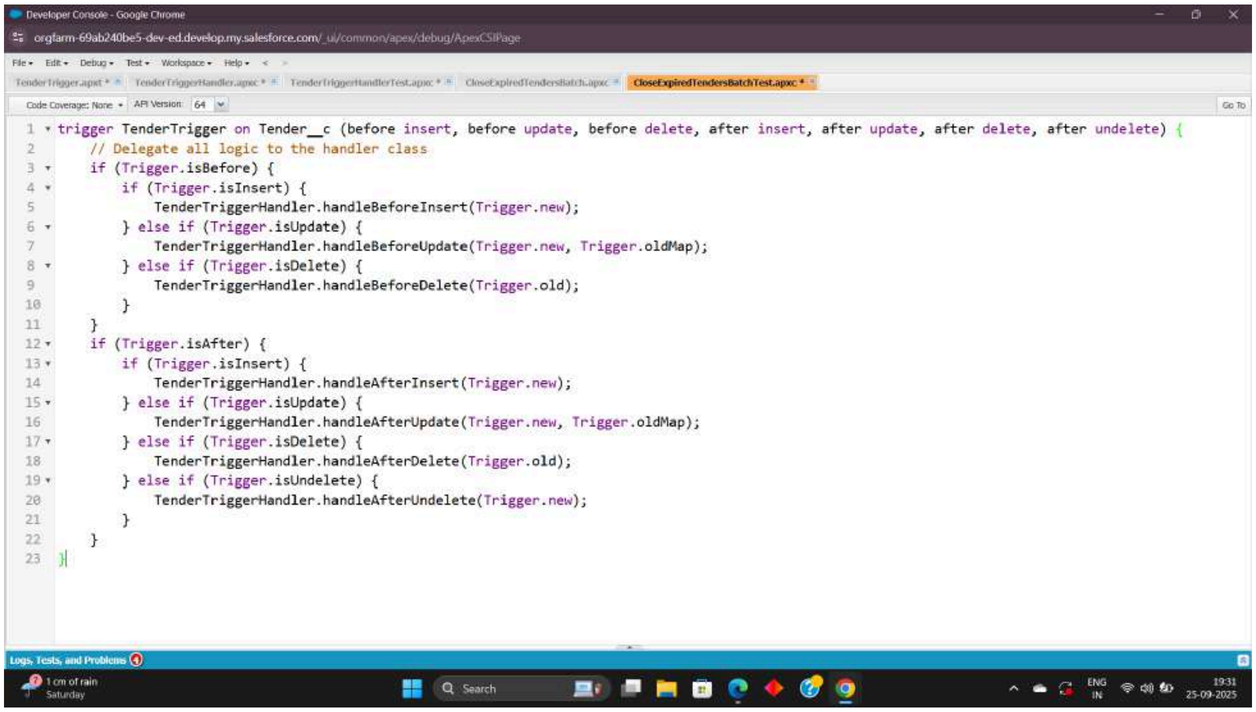
- Automate actions on Salesforce records when they are created, updated, deleted, or undeleted



```
trigger TenderTrigger on Tender__c (before insert, before update, before delete, after insert, after update, after delete, after undelete) {
    // Before triggers
    if (Trigger.isBefore) {
        if (Trigger.isInsert) {
            TenderTriggerHandler.handleBeforeInsert(Trigger.new);
        } else if (Trigger.isUpdate) {
            TenderTriggerHandler.handleBeforeUpdate(Trigger.new, Trigger.oldMap);
        } else if (Trigger.isDelete) {
            TenderTriggerHandler.handleBeforeDelete(Trigger.old);
        }
    }
    // After triggers
    if (Trigger.isAfter) {
        if (Trigger.isInsert) {
            TenderTriggerHandler.handleAfterInsert(Trigger.new);
        } else if (Trigger.isUpdate) {
            TenderTriggerHandler.handleAfterUpdate(Trigger.new, Trigger.oldMap);
        } else if (Trigger.isDelete) {
            TenderTriggerHandler.handleAfterDelete(Trigger.old);
        } else if (Trigger.isUndelete) {
            TenderTriggerHandler.handleAfterUndelete(Trigger.new);
        }
    }
}
```

3. <u>Trigger Design Pattern</u> :

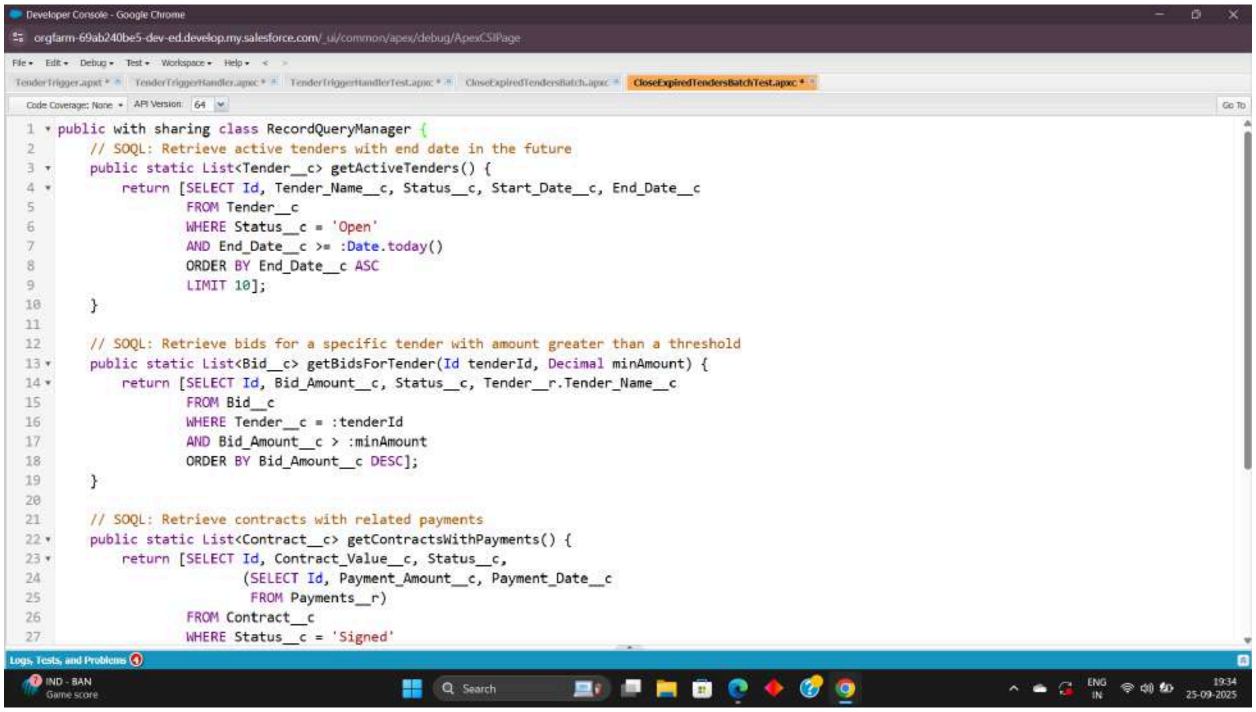
- Use one trigger per object.
- Delegate logic to a handler class to keep triggers clean and maintainable.



```
trigger TenderTrigger on Tender__c (before insert, before update, before delete, after insert, after update, after delete, after undelete) {
    // Delegate all logic to the handler class
    if (Trigger.isBefore) {
        if (Trigger.isInsert) {
            TenderTriggerHandler.handleBeforeInsert(Trigger.new);
        } else if (Trigger.isUpdate) {
            TenderTriggerHandler.handleBeforeUpdate(Trigger.new, Trigger.oldMap);
        } else if (Trigger.isDelete) {
            TenderTriggerHandler.handleBeforeDelete(Trigger.old);
        }
    }
    if (Trigger.isAfter) {
        if (Trigger.isInsert) {
            TenderTriggerHandler.handleAfterInsert(Trigger.new);
        } else if (Trigger.isUpdate) {
            TenderTriggerHandler.handleAfterUpdate(Trigger.new, Trigger.oldMap);
        } else if (Trigger.isDelete) {
            TenderTriggerHandler.handleAfterDelete(Trigger.old);
        } else if (Trigger.isUndelete) {
            TenderTriggerHandler.handleAfterUndelete(Trigger.new);
        }
    }
}
```

4. SOQL & SOSL :

- SOQL (Salesforce Object Query Language) → Query Salesforce records.
- SOSL (Salesforce Object Search Language) → Search text across multiple objects.

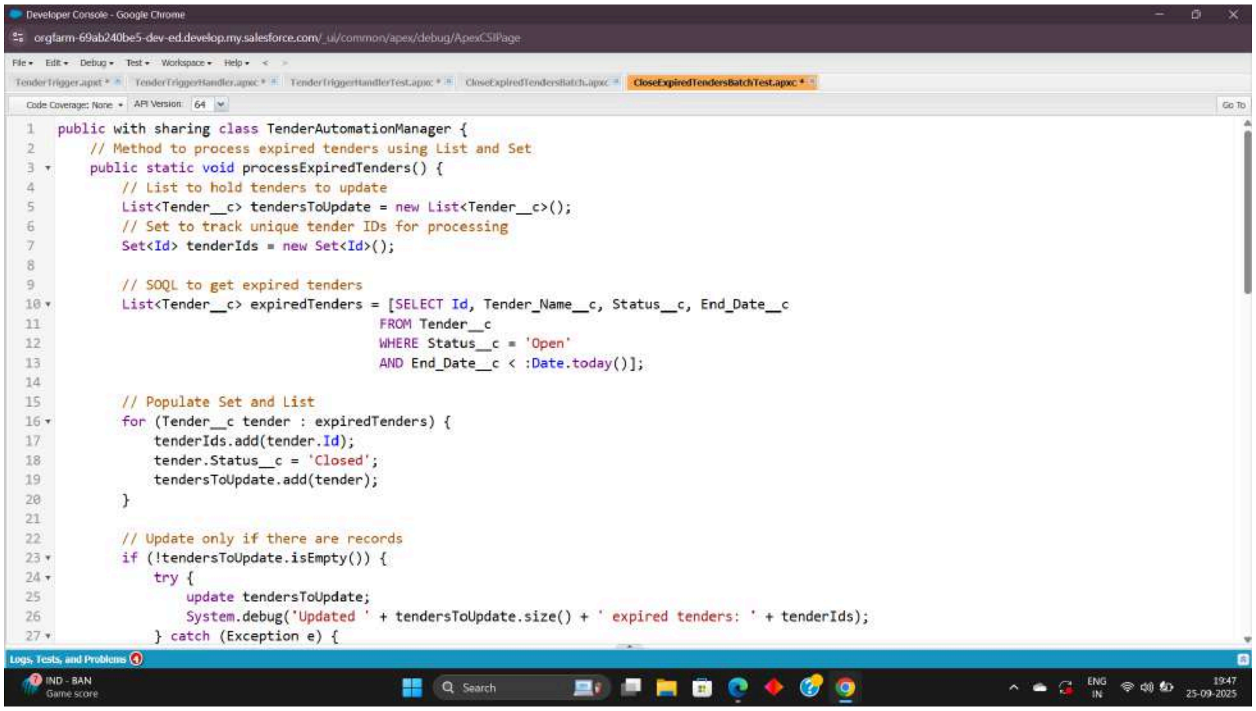


Developer Console - Google Chrome
orgfarm-69ab240be5-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage
File Edit Debug Test Workspace Help
TenderTrigger.apxt * TenderTriggerHandler.apxc * TenderTriggerHandlerTest.apxc * CloseExpiredTendersBatch.apxc CloseExpiredTendersBatchTest.apxc *
Code Coverage: None API Version: 64
Go To
Logs, Tests, and Problems

```
public with sharing class RecordQueryManager {
    // SOQL: Retrieve active tenders with end date in the future
    public static List<Tender__c> getActiveTenders() {
        return [SELECT Id, Tender_Name__c, Status__c, Start_Date__c, End_Date__c
                FROM Tender__c
                WHERE Status__c = 'Open'
                AND End_Date__c >= :Date.today()
                ORDER BY End_Date__c ASC
                LIMIT 10];
    }

    // SOQL: Retrieve bids for a specific tender with amount greater than a threshold
    public static List<Bid__c> getBidsForTender(Id tenderId, Decimal minAmount) {
        return [SELECT Id, Bid_Amount__c, Status__c, Tender__r.Tender_Name__c
                FROM Bid__c
                WHERE Tender__c = :tenderId
                AND Bid_Amount__c > :minAmount
                ORDER BY Bid_Amount__c DESC];
    }

    // SOQL: Retrieve contracts with related payments
    public static List<Contract__c> getContractsWithPayments() {
        return [SELECT Id, Contract_Value__c, Status__c,
                       (SELECT Id, Payment_Amount__c, Payment_Date__c
                        FROM Payments__r)
                FROM Contract__c
                WHERE Status__c = 'Signed'
```

5. Collections: List, Set, Map :

- List: Ordered collection of records.
- Set: Unique collection of values.
- Map: Key-value pair collection, useful for fast lookups.
- Automate periodic tasks, like daily updates, reminders, or calculations.



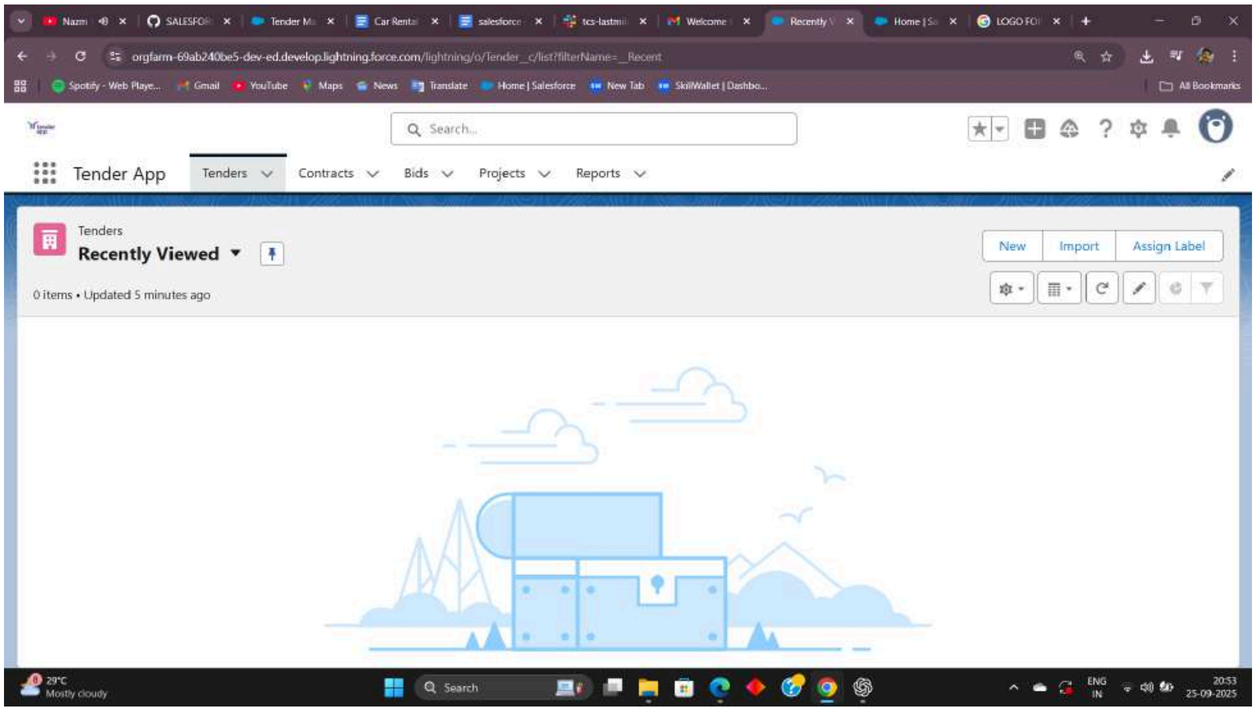
```
public with sharing class TenderAutomationManager {
    // Method to process expired tenders using List and Set
    public static void processExpiredTenders() {
        // List to hold tenders to update
        List<Tender__c> tendersToUpdate = new List<Tender__c>();
        // Set to track unique tender IDs for processing
        Set<Id> tenderIds = new Set<Id>();

        // SOQL to get expired tenders
        List<Tender__c> expiredTenders = [SELECT Id, Tender_Name__c, Status__c, End_Date__c
                                          FROM Tender__c
                                          WHERE Status__c = 'Open'
                                          AND End_Date__c < :Date.today()];

        // Populate Set and List
        for (Tender__c tender : expiredTenders) {
            tenderIds.add(tender.Id);
            tender.Status__c = 'Closed';
            tendersToUpdate.add(tender);
        }

        // Update only if there are records
        if (!tendersToUpdate.isEmpty()) {
            try {
                update tendersToUpdate;
                System.debug('Updated ' + tendersToUpdate.size() + ' expired tenders: ' + tenderIds);
            } catch (Exception e) {
```

Phase 6: User Interface Development

👉 Goal: Make it user-friendly.

1. **Lightning App Builder :**

    ○ Purpose: Build custom user interfaces without coding.
    ○ What to Do:
    ○ Navigate to Setup → Lightning App Builder.
    ○ Create Custom Pages for different user groups (Procurement Officer, Project Manager, Director).
    ○ Add components like Related Lists, Tabs, Reports, and LWCs.

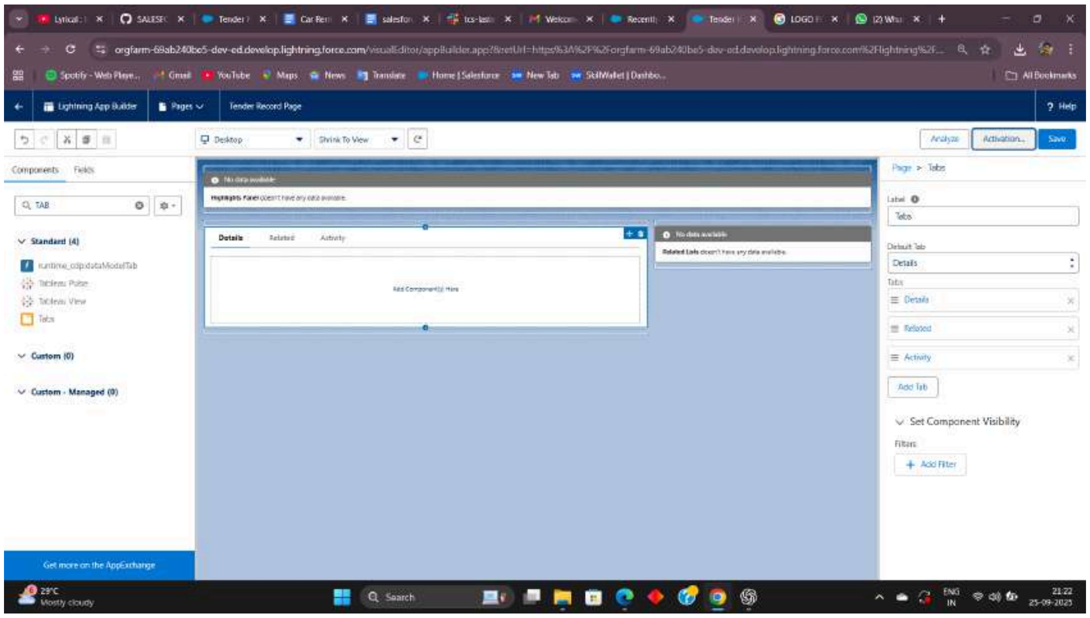


2. Record Pages :

- Purpose: Customize how records (Tender, Bid, Contract, Payment) appear

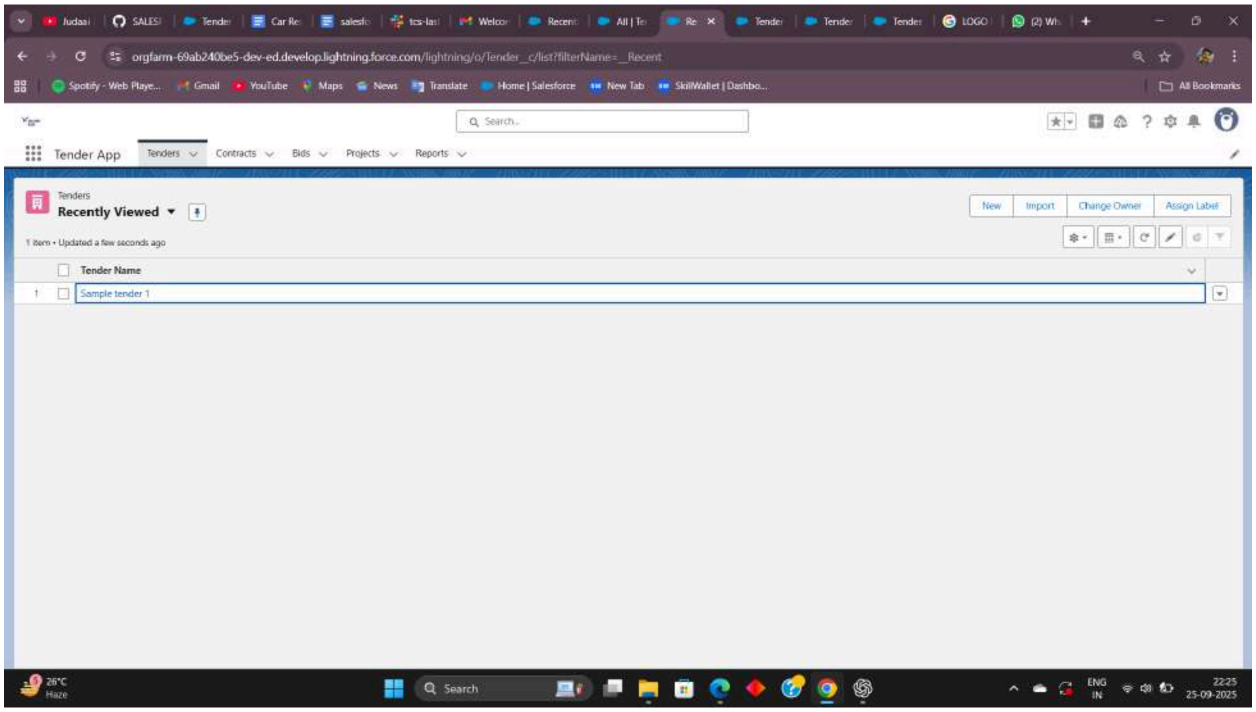
Steps:

- Go to Object Manager → Tender → Lightning Record Pages
- Add Highlights Panel, Tabs (Details, Related, Notes).
- Insert Custom LWCs (like Tender Summary).



3. <u>Tabs</u> :

- Purpose: Provide quick navigation for custom objects.
- Steps:
- Setup → Tabs → New Custom Object Tab.
- Add Tabs for Tender, Bid, Contract, Payment.
- Assign to App Navigation.

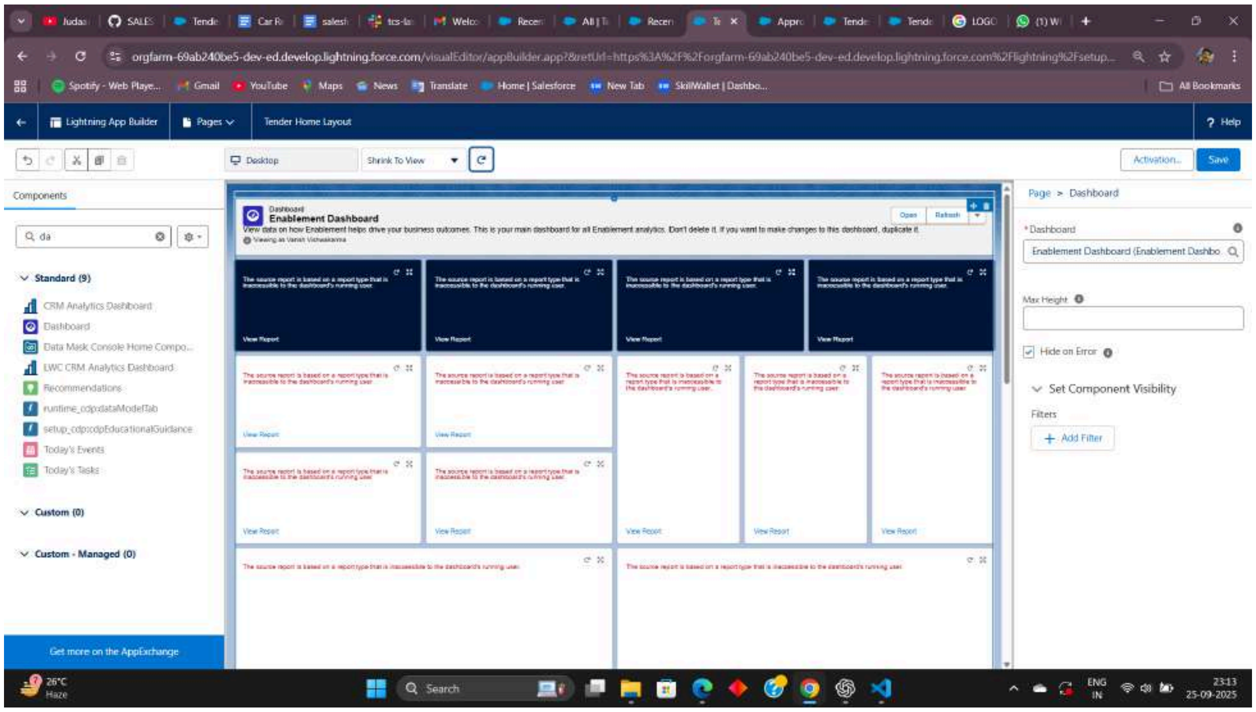


4. <u>Home Page Layouts</u> :

- Purpose: Customize the Salesforce Home page.

<u>Steps</u>:

- Setup → Lightning App Builder → Home Page.
- Add
- Reports/Charts
- Tasks List.
- Approvals Pending.
- Custom Notifications panel.



Dashboard
Enablement Dashboard
View data on how Enablement helps drive your business outcomes. This is your main dashboard for all Enablement analytics. Don't delete it. If you want to make changes to this dashboard, duplicate it.
Viewing as Vansh Vishwakarma

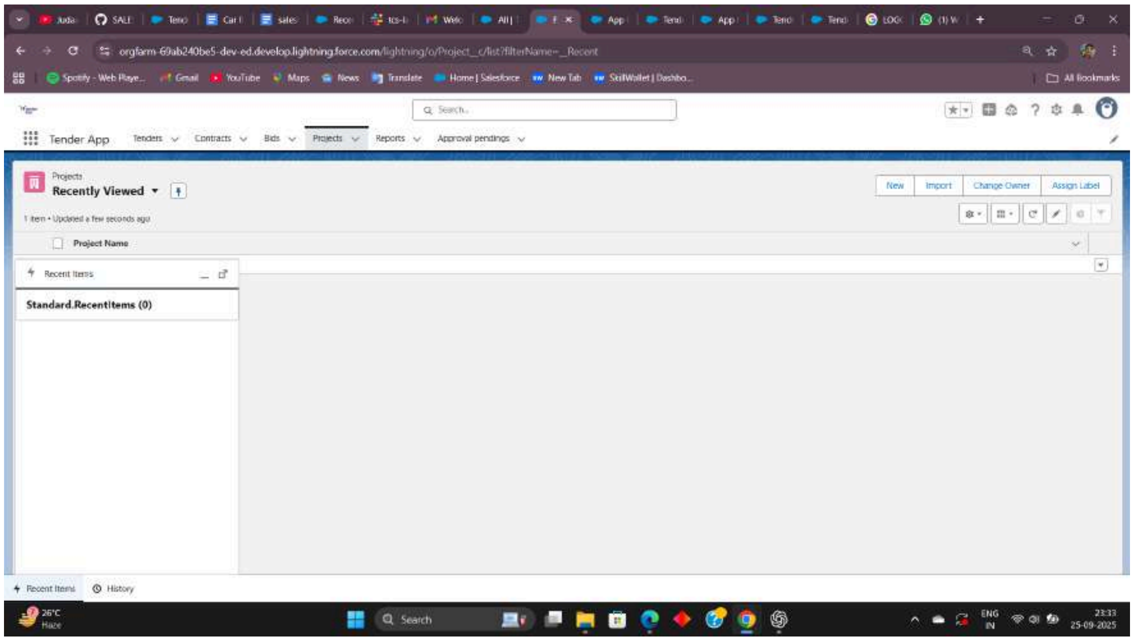
The source report is based on a report type that is inaccessible to the dashboard's running user.

5. <u>Utility Bar</u> :

- Purpose: Provide quick access to tools at the bottom of the screen.

<u>Examples</u>:

- Add Notes.
- Add Recent Items.
- Add History .

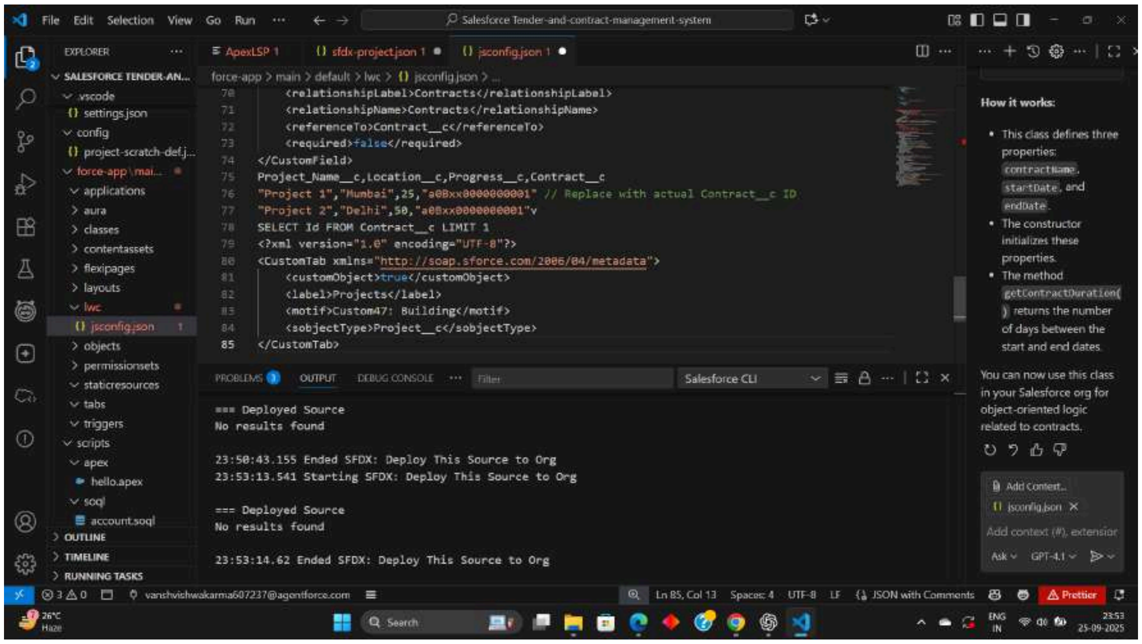


6. <u>LWC</u> :

- Purpose: Build custom UI with JavaScript, HTML, and Apex integration.

<u>Examples for Tender App</u>:

- Tender Summary Component → Displays all bids and total amount.
- Bid Submission Form → Allows users to enter and submit a bid.
- Contract Dashboard → Shows contract progress and payments.



```
        <relationshipLabel>Contracts</relationshipLabel>
        <relationshipName>Contracts</relationshipName>
        <referenceTo>Contract__c</referenceTo>
        <required>false</required>
    </CustomField>
    Project_Name__c,Location__c,Progress__c,Contract__c
    "Project 1","Mumbai",25,"a0Bxx0000000001" // Replace with actual Contract__c ID
    "Project 2","Delhi",50,"a0Bxx0000000001"v
    SELECT Id FROM Contract__c LIMIT 1
    <?xml version="1.0" encoding="UTF-8"?>
    <CustomTab xmlns="http://soap.sforce.com/2006/04/metadata">
        <customObject>true</customObject>
        <label>Projects</label>
        <motif>Custom47: Building</motif>
        <sobjectType>Project__c</sobjectType>
    </CustomTab>
```

```
=== Deployed Source
No results found

23:50:43.155 Ended SFDX: Deploy This Source to Org
23:53:13.541 Starting SFDX: Deploy This Source to Org

=== Deployed Source
No results found

23:53:14.62 Ended SFDX: Deploy This Source to Org
```

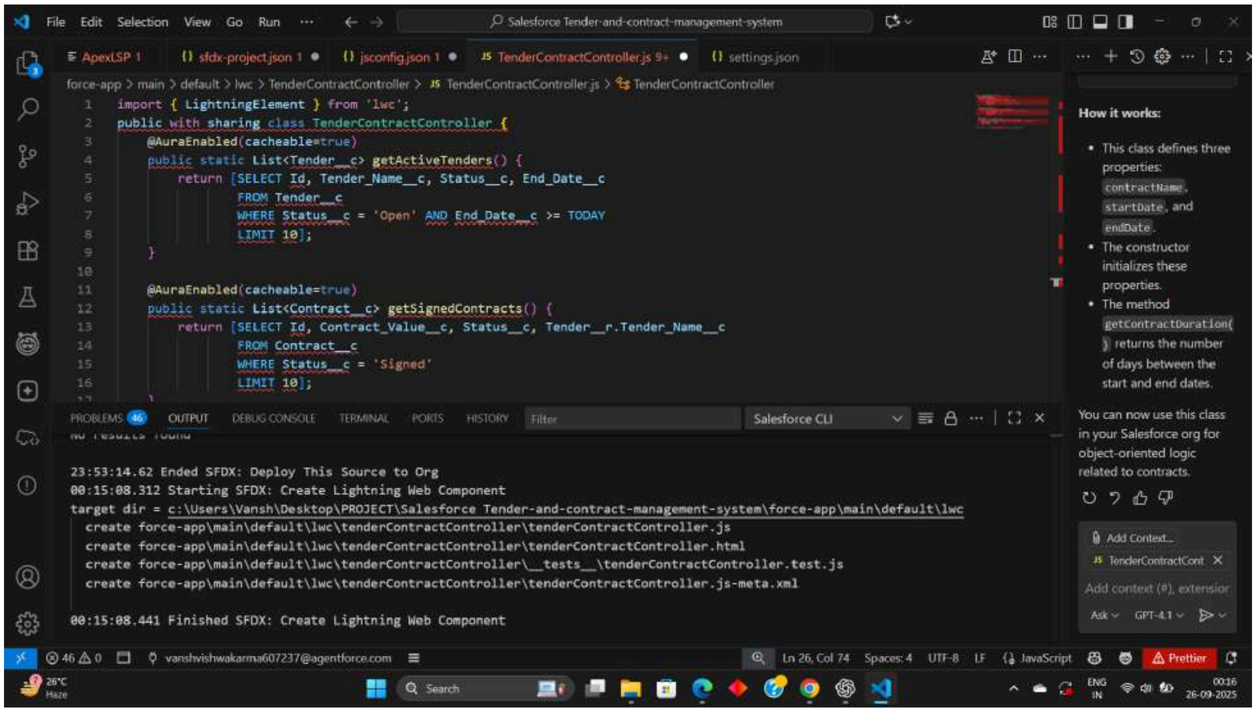
How it works:

- This class defines three properties: `contractName`, `startDate`, and `endDate`.
- The constructor initializes these properties.
- The method `getContractDuration()` returns the number of days between the start and end dates.

You can now use this class in your Salesforce org for object-oriented logic related to contracts.

7. Apex with LWC :

Purpose: Fetch Salesforce data via Apex into LWCs.



```
import { LightningElement } from 'lwc';
public with sharing class TenderContractController {
    @AuraEnabled(cacheable=true)
    public static List<Tender__c> getActiveTenders() {
        return [SELECT Id, Tender_Name__c, Status__c, End_Date__c
                FROM Tender__c
                WHERE Status__c = 'Open' AND End_Date__c >= TODAY
                LIMIT 10];
    }

    @AuraEnabled(cacheable=true)
    public static List<Contract__c> getSignedContracts() {
        return [SELECT Id, Contract_Value__c, Status__c, Tender__r.Tender_Name__c
                FROM Contract__c
                WHERE Status__c = 'Signed'
                LIMIT 10];
```

```
23:53:14.62 Ended SFDX: Deploy This Source to Org
00:15:08.312 Starting SFDX: Create Lightning Web Component
target dir = c:\Users\Vansh\Desktop\PROJECT\Salesforce Tender-and-contract-management-system\force-app\main\default\lwc
  create force-app\main\default\lwc\tenderContractController\tenderContractController.js
  create force-app\main\default\lwc\tenderContractController\tenderContractController.html
  create force-app\main\default\lwc\tenderContractController\__tests__\tenderContractController.test.js
  create force-app\main\default\lwc\tenderContractController\tenderContractController.js-meta.xml

00:15:08.441 Finished SFDX: Create Lightning Web Component
```

How it works:

- This class defines three properties: `contractName`, `startDate`, and `endDate`.
- The constructor initializes these properties.
- The method `getContractDuration()` returns the number of days between the start and end dates.

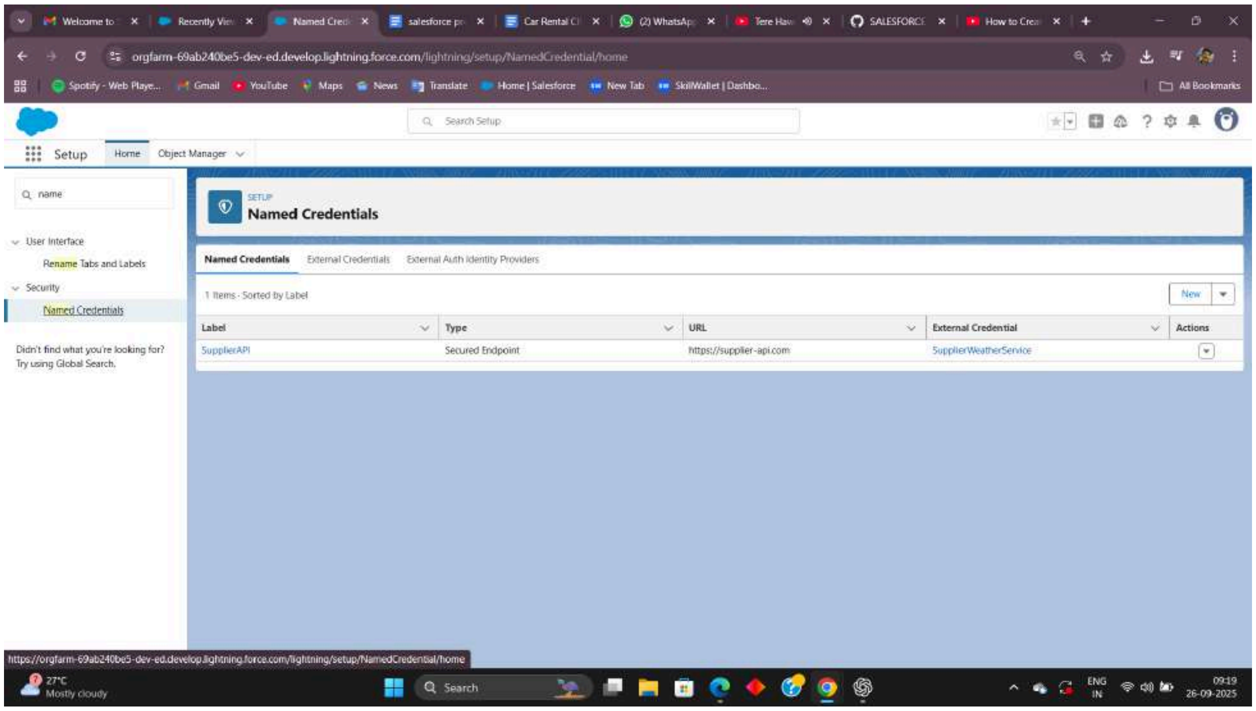
You can now use this class in your Salesforce org for object-oriented logic related to contracts.

File Edit Selection View Go Run
Salesforce Tender-and-contract-management-system
ApexLSP 1
sfdx-project.json 1
jsconfig.json 1
TenderContractController.js 9+
settings.json
force-app > main > default > lwc > TenderContractController > TenderContractController.js > TenderContractController
PROBLEMS 46
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
HISTORY
Filter
Salesforce CLI
Add Context...
TenderContractCont
Add context (#), extension
Ask
GPT-4.1
vanshvishwakarma607237@agentforce.com
Ln 26, Col 74
Spaces: 4
UTF-8
LF
JavaScript
Prettier
26°C Haze
Search
ENG IN
00:16 26-09-2025

Phase 7: Integration & External Access

1 Named Credentials :

- Store authentication settings for external systems securely.


SETUP
Named Credentials

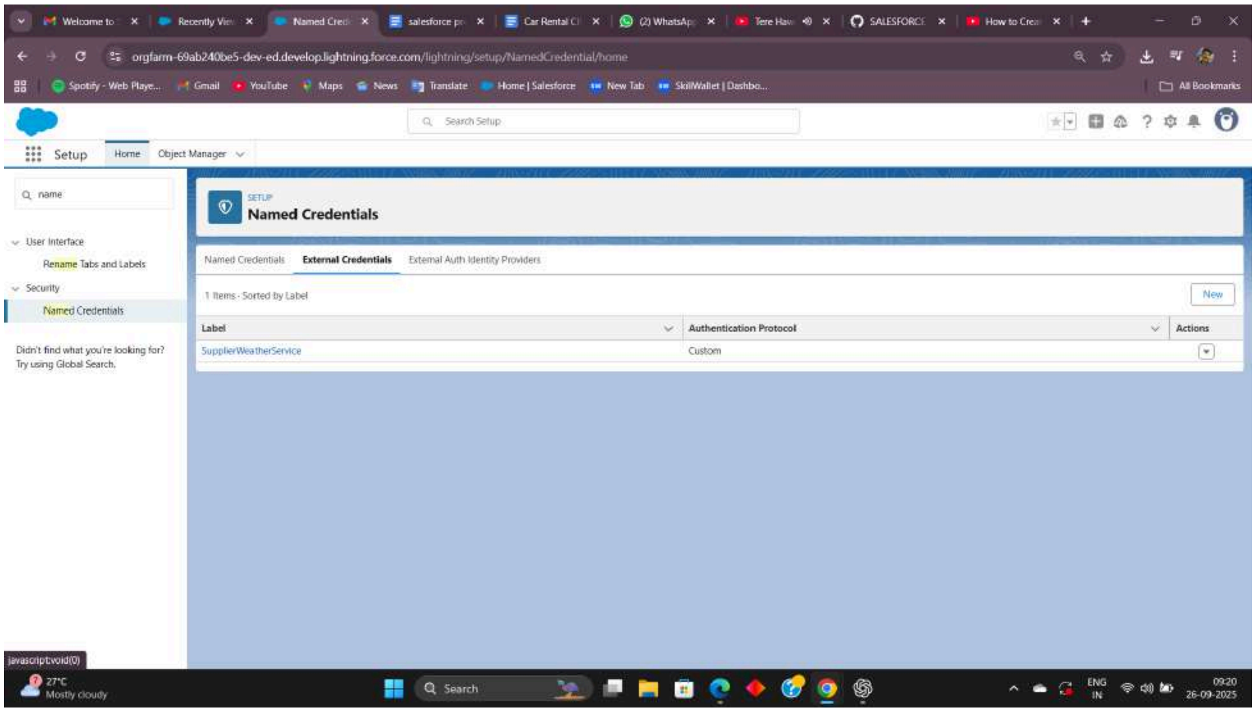
Named Credentials | External Credentials | External Auth Identity Providers

1 Items · Sorted by Label

Label	Type	URL	External Credential	Actions
SupplierAPI	Secured Endpoint	https://supplier-api.com	SupplierWeatherService	

2. <u>External Services</u> :

- Register and invoke APIs from external systems directly in Salesforce.


SETUP
Named Credentials

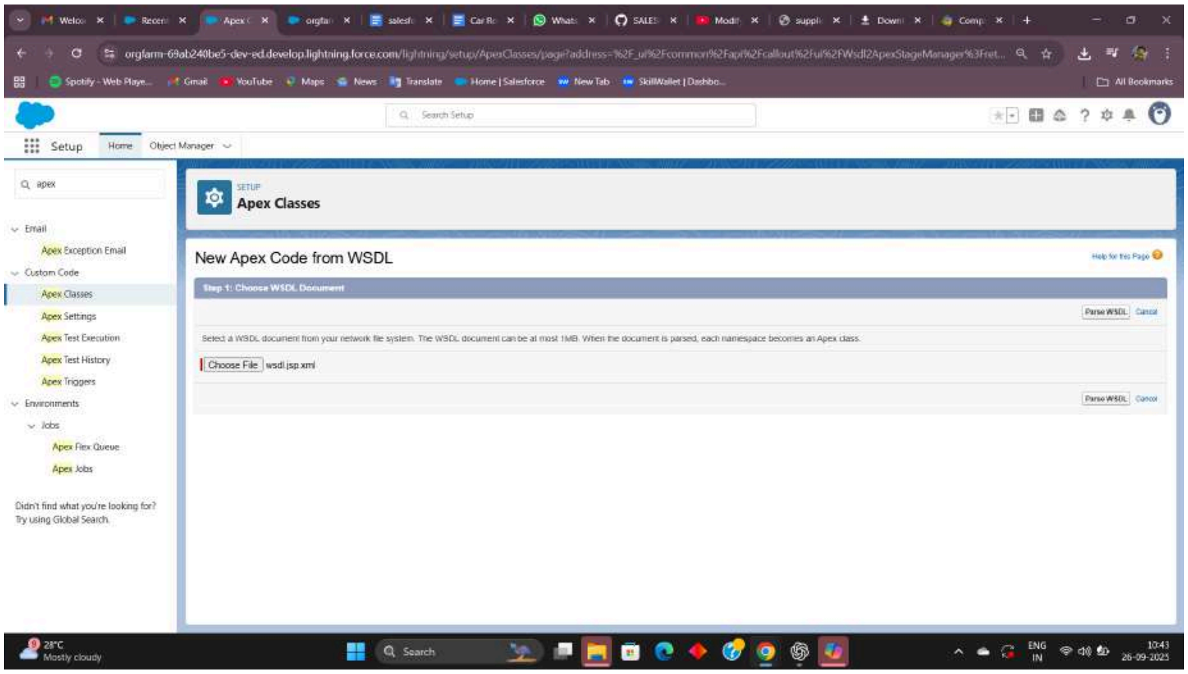
Named Credentials | External Credentials | External Auth Identity Providers

1 Items · Sorted by Label

Label	Authentication Protocol	Actions
SupplierWeatherService	Custom	

3. Web Services (REST/SOAP)

REST callout: Get insurance status.



Apex Classes

New Apex Code from WSDL

Step 1: Choose WSDL Document

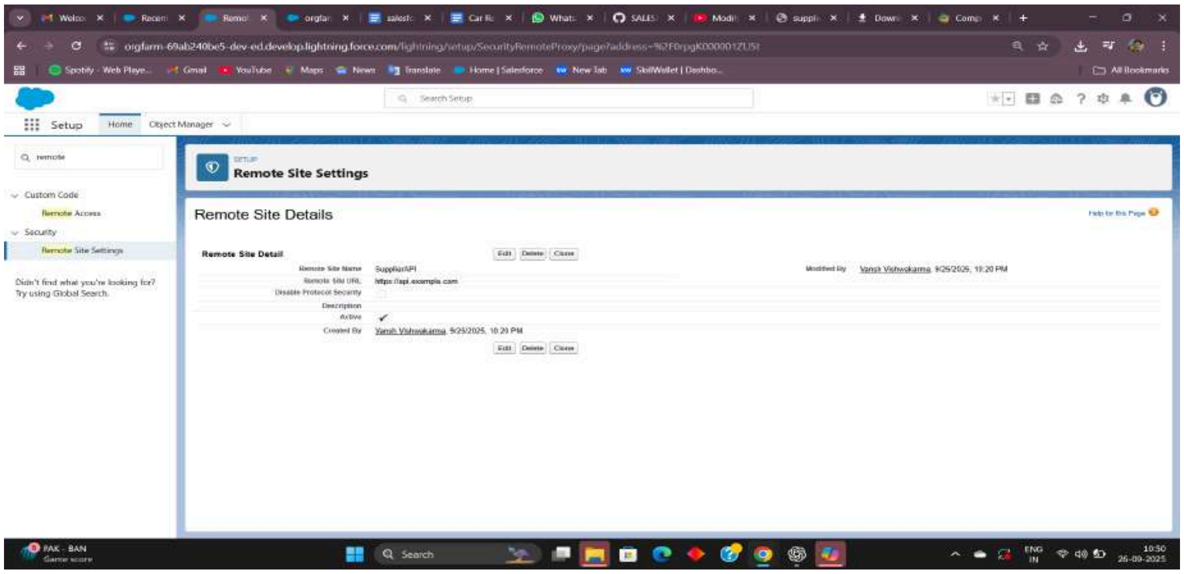
Select a WSDL document from your network file system. The WSDL document can be at most 1MB. When the document is parsed, each namespace becomes an Apex class.

Choose File wsdl.jsp.xml

4. <u>Callouts</u> :

Use HTTP Callouts to integrate Salesforce with external APIs.

Example: Push contract approvals to an external project management tool.



Remote Site Settings

Remote Site Details

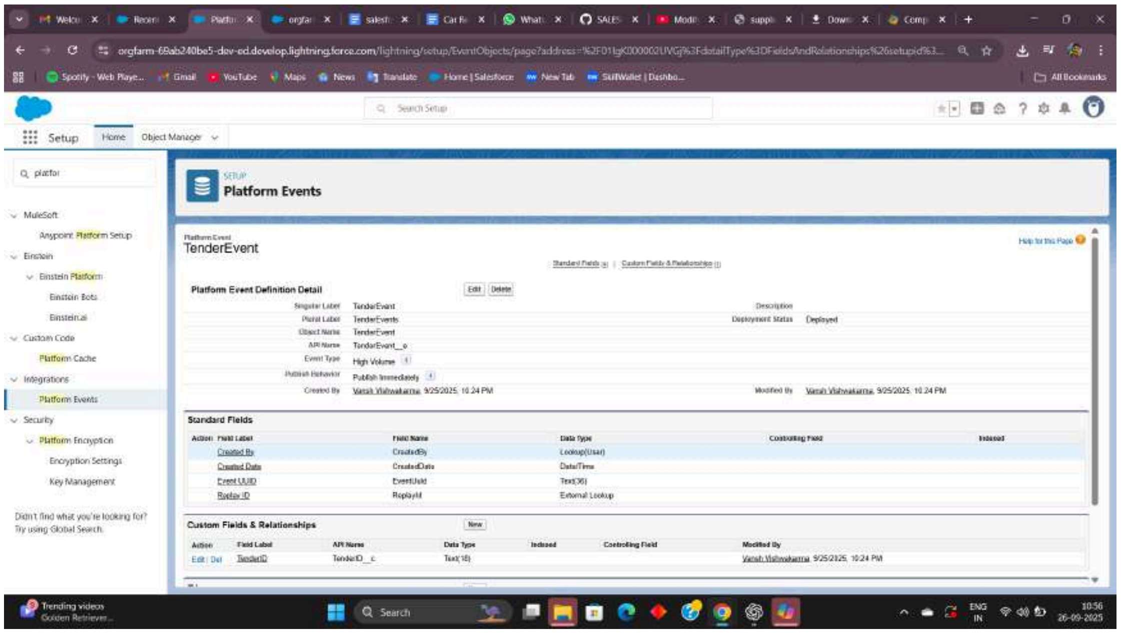
Remote Site Detail

Remote Site Name	SupplierAPI
Remote Site URL	https://api.example.com
Disable Protocol Security	
Description	
Active	✓
Created By	Vansh Vishwakarma, 9/25/2025, 10:20 PM
Modified By	Vansh Vishwakarma, 9/25/2025, 10:20 PM

5. <u>Platform Events</u> :

Use event-driven architecture to trigger actions in real-time.

Example: Notify external systems when a tender is approved.



Platform Events

Platform Event
TenderEvent

Platform Event Definition Detail

Singular Label	TenderEvent	Description	
Plural Label	TenderEvents	Deployment Status	Deployed
Object Name	TenderEvent		
API Name	TenderEvent__e		
Event Type	High Volume		
Publish Behavior	Publish Immediately		
Created By	Vansh Vishwakarma, 9/25/2025, 10:24 PM	Modified By	Vansh Vishwakarma, 9/25/2025, 10:24 PM

Standard Fields

Action	Field Label	Field Name	Data Type	Controlling Field	Indexed
	Created By	CreatedById	Lookup(User)		
	Created Date	CreatedDate	Date/Time		
	Event UUID	EventUuid	Text(36)		
	Replay ID	ReplayId	External Lookup		

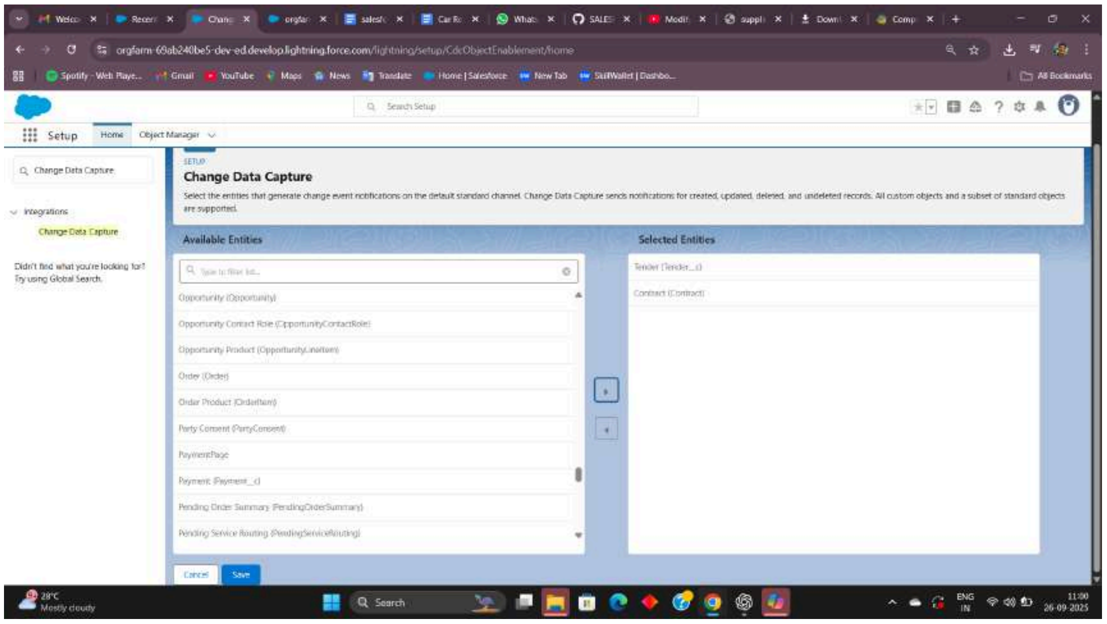
Custom Fields & Relationships

Action	Field Label	API Name	Data Type	Indexed	Controlling Field	Modified By
Edit | Del	TenderID	TenderID__c	Text(18)			Vansh Vishwakarma, 9/25/2025, 10:24 PM

6. <u>Change Data Capture</u> :

Monitor Salesforce record changes in real-time.

Example: Automatically sync updates on Contracts to ERP systems.



Change Data Capture

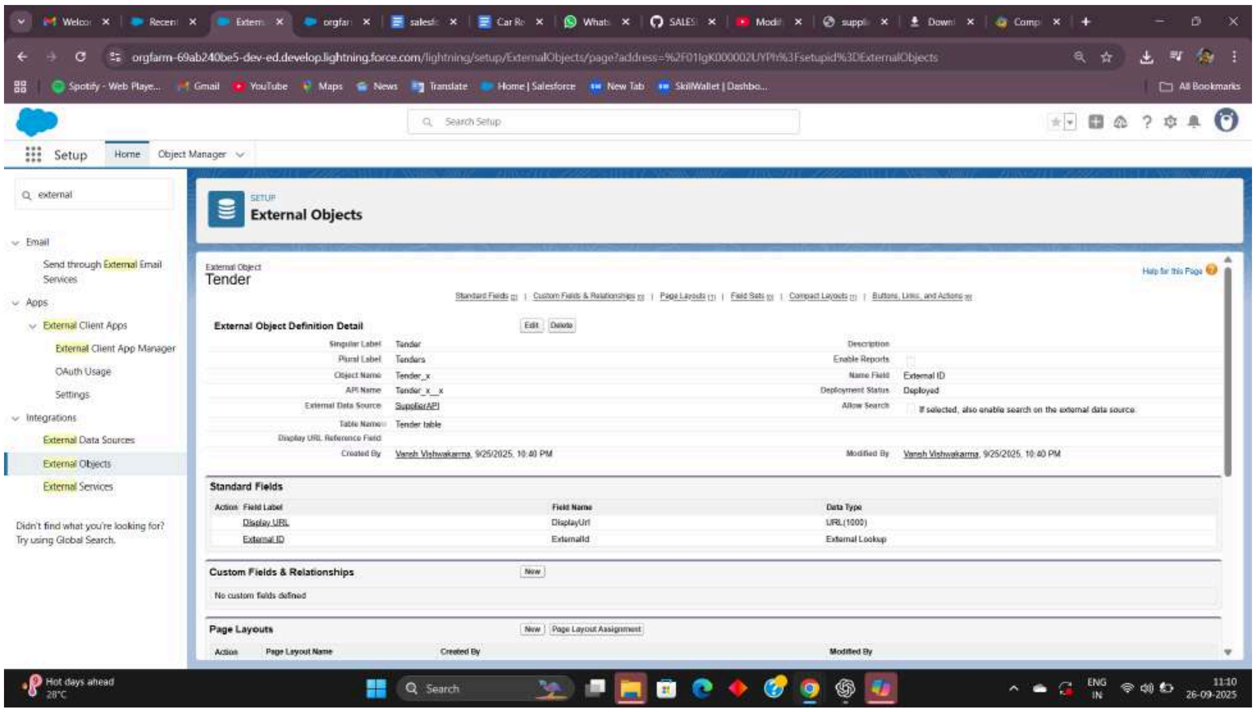
Select the entities that generate change event notifications on the default standard channel. Change Data Capture sends notifications for created, updated, deleted, and undeleted records. All custom objects and a subset of standard objects are supported.

Available Entities	Selected Entities
Opportunity (Opportunity)	Tender (Tender__c)
Opportunity Contact Role (OpportunityContactRole)	Contract (Contract)
Opportunity Product (OpportunityLineItem)	
Order (Order)	
Order Product (OrderItem)	
Party Consent (PartyConsent)	
PaymentPage	
Payment (Payment__c)	
Pending Order Summary (PendingOrderSummary)	
Pending Service Routing (PendingServiceRouting)	

7. **Salesforce Connect** :

Access external objects and data without storing it in Salesforce.

Example: View supplier bids from external database within Salesforce UI.


SETUP
External Objects

External Object
Tender

External Object Definition Detail

Singular Label	Tender	Description	
Plural Label	Tenders	Enable Reports	
Object Name	Tender_x	Name Field	External ID
API Name	Tender_x__x	Deployment Status	Deployed
External Data Source	SupplierAPI	Allow Search	If selected, also enable search on the external data source.
Table Name	Tender table		
Display URL Reference Field			
Created By	Vansh Vishwakarma, 9/25/2025, 10:40 PM	Modified By	Vansh Vishwakarma, 9/25/2025, 10:40 PM

Standard Fields

Action	Field Label	Field Name	Data Type
	Display URL	DisplayUrl	URL(1000)
	External ID	ExternalId	External Lookup

Custom Fields & Relationships

No custom fields defined

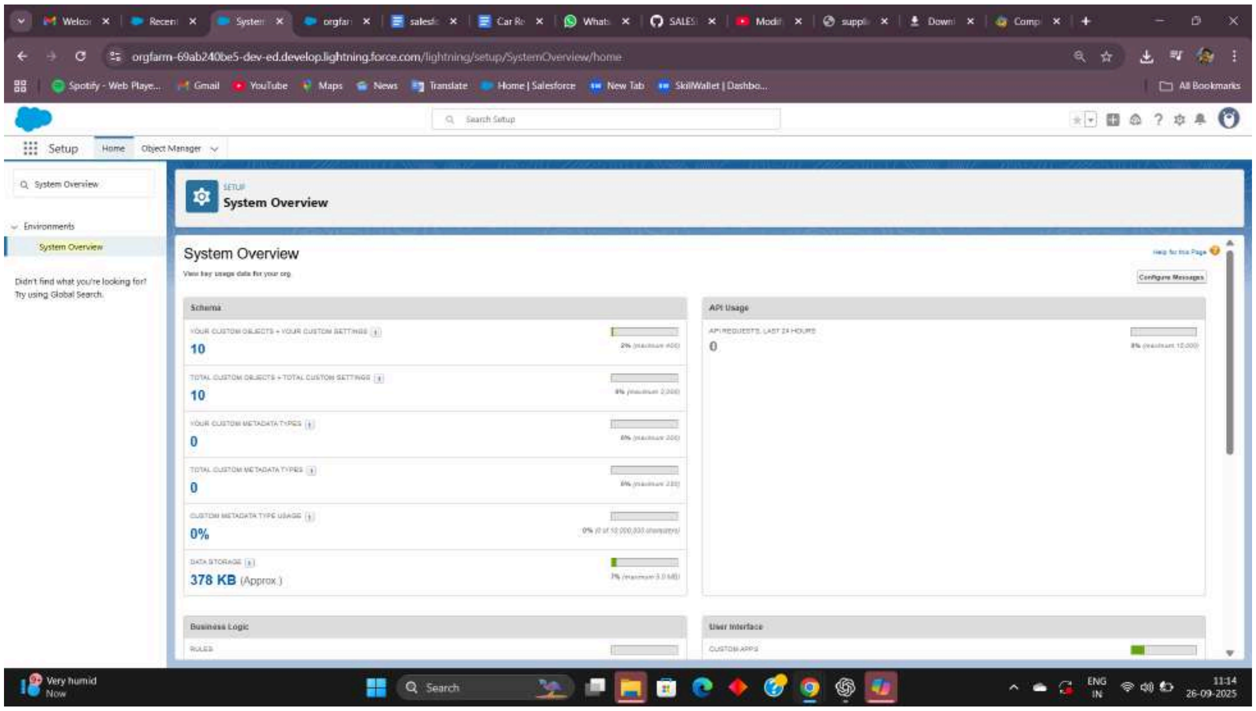
Page Layouts

Action	Page Layout Name	Created By	Modified By

8. **API Limits** :

Monitor and manage API usage to avoid hitting limits.

Example: Limit external integrations to prevent exceeding daily API calls.


SETUP
System Overview

System Overview
View key usage data for your org

Schema

YOUR CUSTOM OBJECTS + YOUR CUSTOM SETTINGS
10
2% (maximum 400)

TOTAL CUSTOM OBJECTS + TOTAL CUSTOM SETTINGS
10
0% (maximum 2,000)

YOUR CUSTOM METADATA TYPES
0
0% (maximum 200)

TOTAL CUSTOM METADATA TYPES
0
0% (maximum 200)

CUSTOM METADATA TYPE USAGE
0%
0% (0 of 10,000,000 characters)

DATA STORAGE
378 KB (Approx.)
7% (maximum 5.0 MB)

API Usage

API REQUESTS, LAST 24 HOURS
0
0% (maximum 15,000)

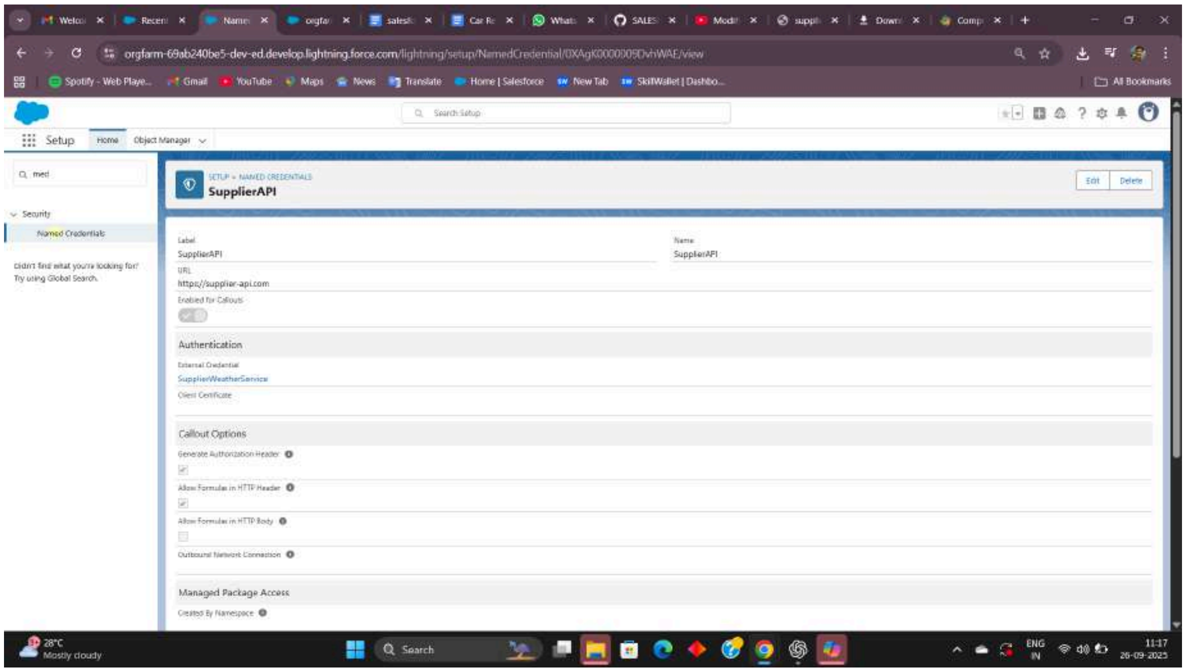
Business Logic
RULES

User Interface
CUSTOM APPS

9. <u>OAuth & Authentication</u> :

Securely authenticate Salesforce with external apps.

Example: OAuth 2.0 flow for integrating with partner systems.


SETUP > NAMED CREDENTIALS
SupplierAPI

Label: SupplierAPI
Name: SupplierAPI
URL: https://supplier-api.com
Enabled for Callouts

Authentication
External Credential: SupplierWeatherService
Client Certificate

Callout Options
Generate Authorization Header ✓
Allow Formulas in HTTP Header ✓
Allow Formulas in HTTP Body
Outbound Network Connection

Managed Package Access
Created By Namespace

10. **Remote Site Settings** :

Register external endpoints to allow Salesforce callouts.

Example: Add supplier API URL in Remote Site Settings to enable communication.

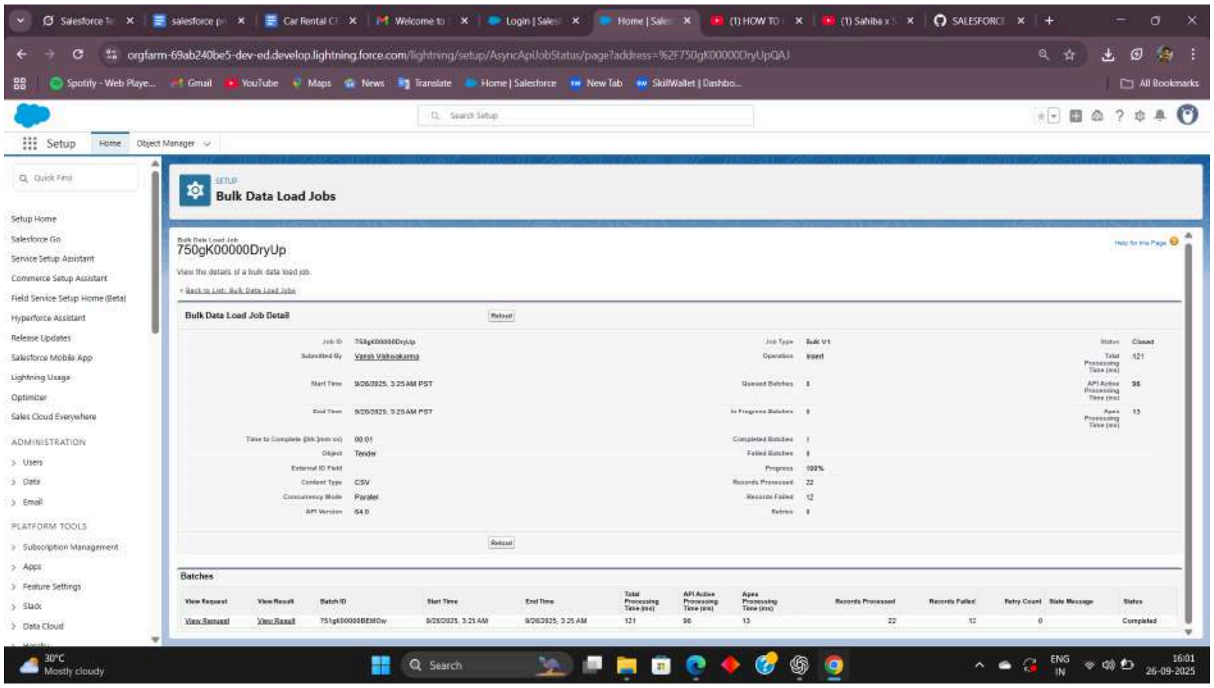
NOTE : we have already done in phase 4 .

Phase 8: Data Management & Deployment

1. **Data Import Wizard :**

Tool for importing small to medium datasets

Enables adding records for Contractors, Tenders, Bids, Projects, and Payments.



SETUP
Bulk Data Load Jobs

Bulk Data Load Job
750gK00000DryUp
View the details of a bulk data load job.
« Back to List: Bulk Data Load Jobs

Bulk Data Load Job Detail

Job ID	750gK00000DryUp	Job Type	Bulk V1	Status	Closed
Submitted By	Vansh Vishwakarma	Operation	Insert	Total Processing Time (ms)	121
Start Time	9/26/2025, 3:25 AM PST	Queued Batches	0	API Active Processing Time (ms)	96
End Time	9/26/2025, 3:25 AM PST	In Progress Batches	0	Apex Processing Time (ms)	13
Time to Complete (hh:mm:ss)	00:01	Completed Batches	1		
Object	Tender	Failed Batches	0		
External ID Field		Progress	100%		
Content Type	CSV	Records Processed	22		
Concurrency Mode	Parallel	Records Failed	12		
API Version	64.0	Retries	0		

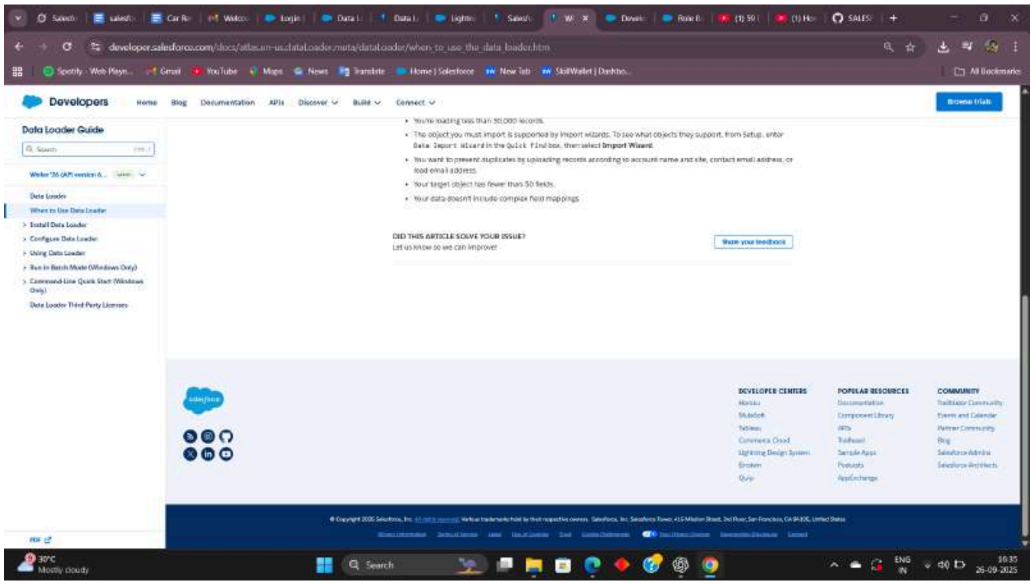
Batches

View Request	View Result	Batch ID	Start Time	End Time	Total Processing Time (ms)	API Active Processing Time (ms)	Apex Processing Time (ms)	Records Processed	Records Failed	Retry Count	State Message	Status
View Request	View Result	751gK00000BEMOw	9/26/2025, 3:25 AM	9/26/2025, 3:25 AM	121	96	13	22	12	0		Completed

2. <u>Data Loader</u> :

Supports bulk import, update, upsert, export, and deletion of large datasets.

Ideal for large-scale data operations beyond the limits of the Data Import Wizard.


developer.salesforce.com/docs/atlas.en-us.dataLoader.meta/dataLoader/when_to_use_the_data_loader.htm

Data Loader Guide

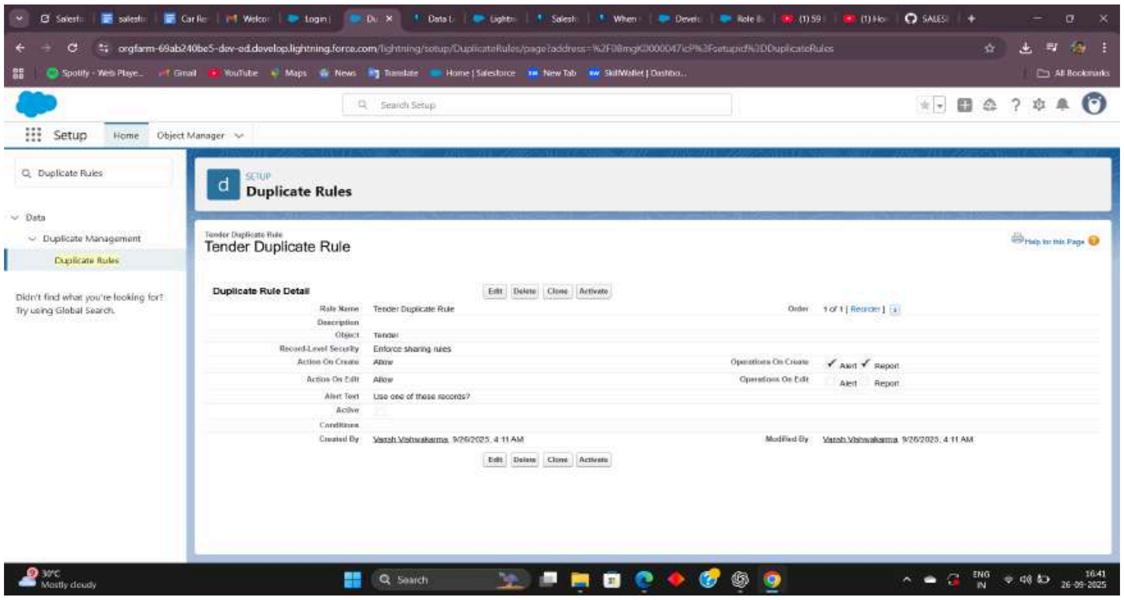
- You're loading less than 50,000 records.
- The object you must import is supported by import wizards. To see what objects they support, from Setup, enter `Data Import Wizard` in the `Quick Find` box, then select **Import Wizard**.
- You want to prevent duplicates by uploading records according to account name and site, contact email address, or lead email address.
- Your target object has fewer than 50 fields.
- Your data doesn't include complex field mappings.

DID THIS ARTICLE SOLVE YOUR ISSUE?
Let us know so we can improve!

3. <u>Duplicate Rules</u> :

Prevents duplicate records and maintains data accuracy.

Ensures unique entries for Accounts, Contacts, Tenders, and Bids.


SETUP
Duplicate Rules

Tender Duplicate Rule
Tender Duplicate Rule

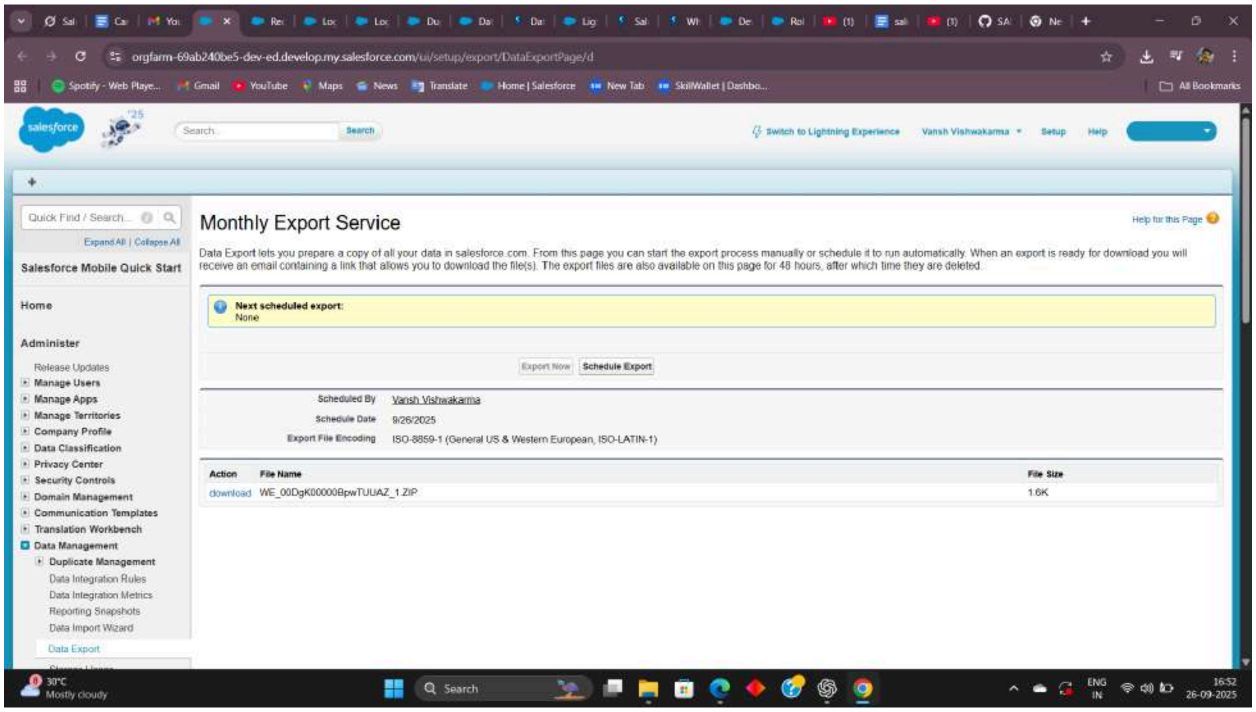
Duplicate Rule Detail

Rule Name	Tender Duplicate Rule	Order	1 of 1 [Reorder]
Description			
Object	Tender		
Record-Level Security	Enforce sharing rules		
Action On Create	Allow	Operations On Create	✓ Alert ✓ Report
Action On Edit	Allow	Operations On Edit	Alert Report
Alert Text	Use one of these records?		
Active			
Conditions			
Created By	Vansh Vishwakarma, 9/26/2025, 4:11 AM	Modified By	Vansh Vishwakarma, 9/26/2025, 4:11 AM

4. Data Export & Backup :

Provides regular backup of Salesforce data.

Helps recover data in case of accidental deletion or corruption.



Monthly Export Service

Data Export lets you prepare a copy of all your data in salesforce.com. From this page you can start the export process manually or schedule it to run automatically. When an export is ready for download you will receive an email containing a link that allows you to download the file(s). The export files are also available on this page for 48 hours, after which time they are deleted.

Next scheduled export:
None

Scheduled By	Vansh Vishwakarma
Schedule Date	9/26/2025
Export File Encoding	ISO-8859-1 (General US & Western European, ISO-LATIN-1)

Action	File Name	File Size
download	WE_00DgK00000BpwTUUAZ_1.ZIP	1.6K

5. **ANT Migration Tool** :

Enables programmatic metadata deployment using XML descriptors.

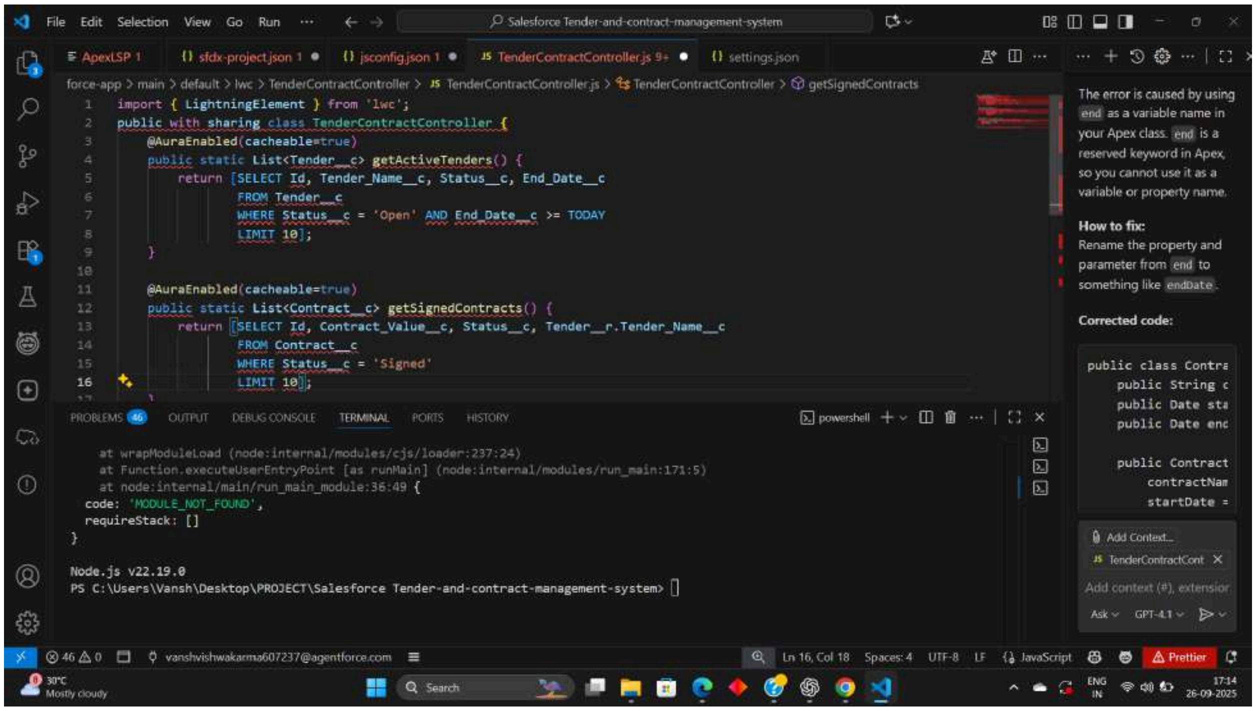
Supports version control and automated deployment pipelines.

Already done in step 4

6. VS Code & Salesforce CLI (SFDX) ;

Modern development environment for Salesforce.

Facilitates metadata management, scratch orgs, code deployment, and continuous integration.



```
import { LightningElement } from 'lwc';
public with sharing class TenderContractController {
    @AuraEnabled(cacheable=true)
    public static List<Tender__c> getActiveTenders() {
        return [SELECT Id, Tender_Name__c, Status__c, End_Date__c
                FROM Tender__c
                WHERE Status__c = 'Open' AND End_Date__c >= TODAY
                LIMIT 10];
    }

    @AuraEnabled(cacheable=true)
    public static List<Contract__c> getSignedContracts() {
        return [SELECT Id, Contract_Value__c, Status__c, Tender__r.Tender_Name__c
                FROM Contract__c
                WHERE Status__c = 'Signed'
                LIMIT 10];
```

```
    at wrapModuleLoad (node:internal/modules/cjs/loader:237:24)
    at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:171:5)
    at node:internal/main/run_main_module:36:49 {
  code: 'MODULE_NOT_FOUND',
  requireStack: []
}

Node.js v22.19.0
PS C:\Users\Vansh\Desktop\PROJECT\Salesforce Tender-and-contract-management-system>
```

The error is caused by using `end` as a variable name in your Apex class. `end` is a reserved keyword in Apex, so you cannot use it as a variable or property name.

How to fix:
Rename the property and parameter from `end` to something like `endDate`.

Corrected code:

```
public class Contra
    public String c
    public Date sta
    public Date enc

    public Contract
        contractNam
        startDate =
```

File Edit Selection View Go Run
Salesforce Tender-and-contract-management-system
ApexLSP 1
sfdx-project.json 1
jsconfig.json 1
TenderContractController.js 9+
settings.json
force-app > main > default > lwc > TenderContractController > TenderContractController.js > TenderContractController > getSignedContracts
PROBLEMS 46
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
HISTORY
powershell
Add Context...
TenderContractCont
Add context (#), extensior
Ask
GPT-4.1
46 0
vanshvishwakarma607237@agentforce.com
Ln 16, Col 18
Spaces: 4
UTF-8
LF
JavaScript
Prettier
30°C
Mostly cloudy
Search
ENG IN
17:14
26-09-2025

Phase 9: Reporting, Dashboards & Security Review

👉 Goal: Monitor business & secure data.

1. <u>Reports</u> :

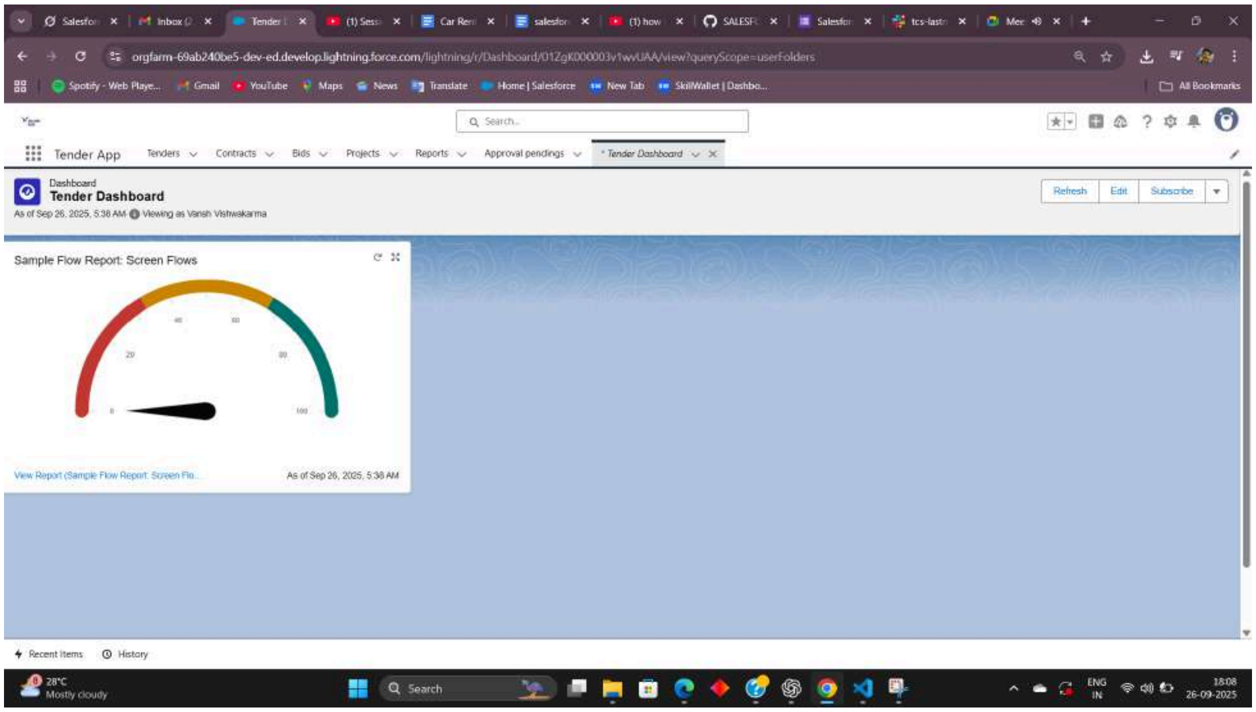
- Tabular, Summary, Matrix, Joined reports provide different ways to view and analyze Salesforce data.
- Reports can track Tenders, Bids, Contracts, Payments, and their status or value.

2. <u>Report Types</u>:

- Define which objects and related records can be included in reports.
- Custom report types (e.g., Tender with Bids) allow detailed reporting on multiple related objects.

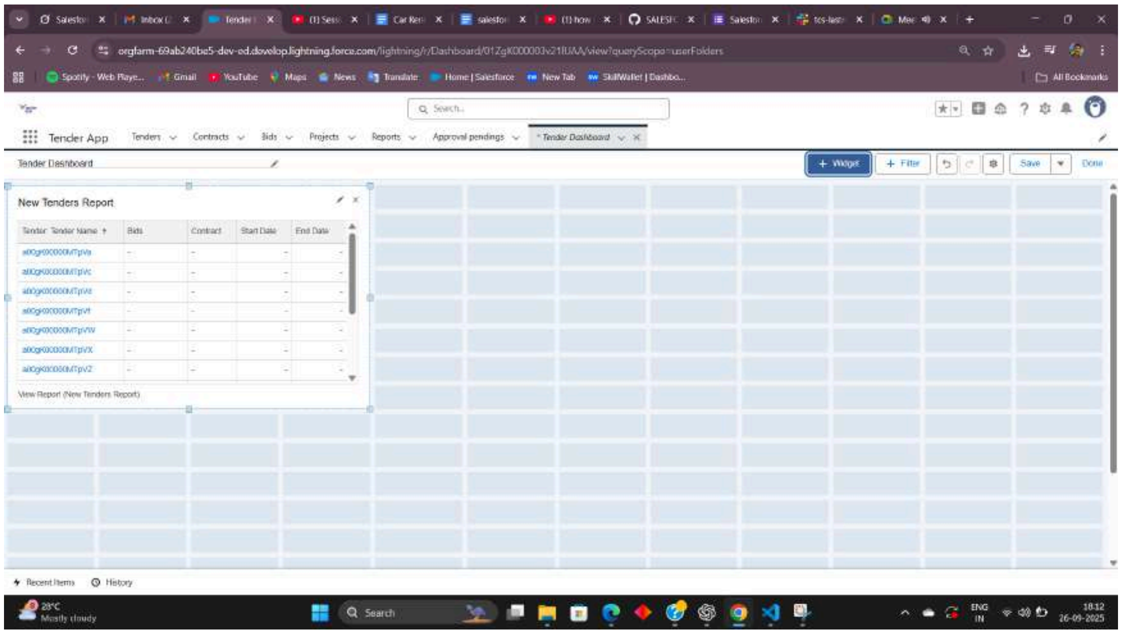
3. Dashboards:

- Visual representation of reports with charts, graphs, and tables.
- Provides at-a-glance monitoring of tender lifecycle, bid status, contract progress, and payments.


Tender App
Tenders
Contracts
Bids
Projects
Reports
Approval pendings
Tender Dashboard
Dashboard
Tender Dashboard
As of Sep 26, 2025, 5:38 AM · Viewing as Vansh Vishwakarma
Refresh
Edit
Subscribe
Sample Flow Report: Screen Flows
View Report (Sample Flow Report: Screen Flo...
As of Sep 26, 2025, 5:38 AM
Recent Items
History

5. <u>Dynamic Dashboards</u> :

- Display data based on the viewing user's role or access level.
- Ensures managers, finance officers, and contractors see only relevant information.



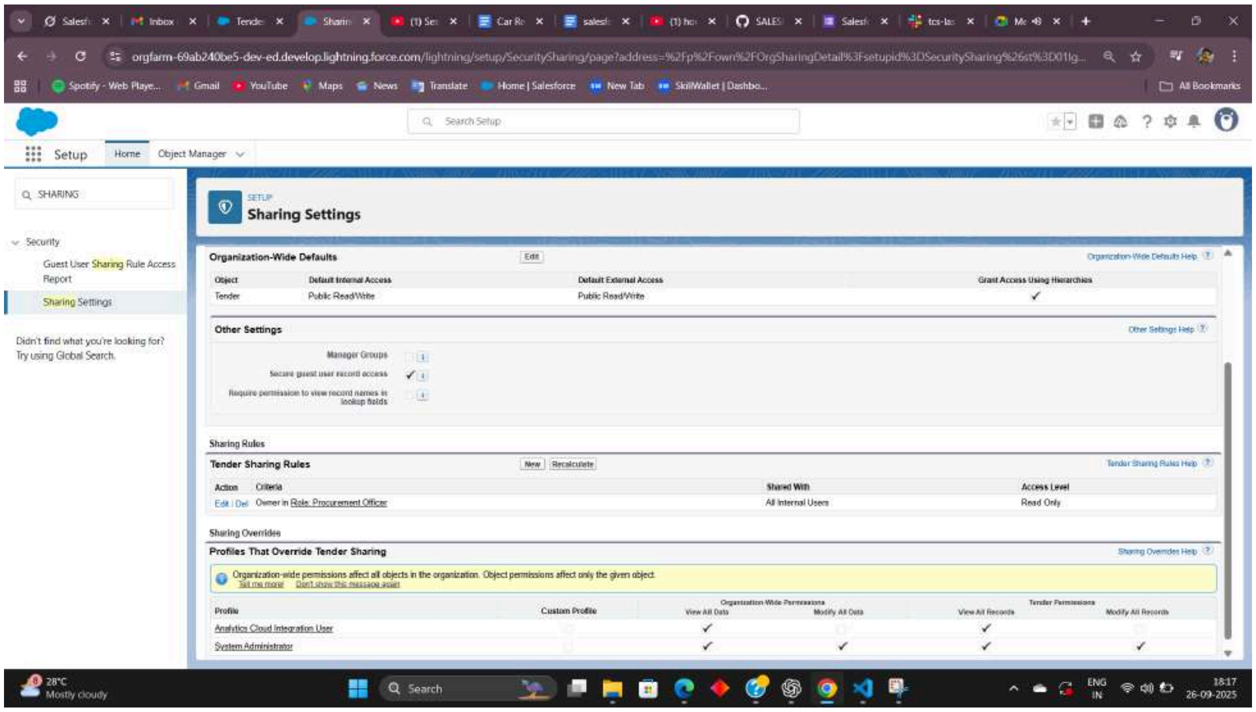
New Tenders Report

Tender: Tender Name ↑	Bids	Contract	Start Date	End Date
a0OgK00000MTpVa	-	-	-	-
a0OgK00000MTpVc	-	-	-	-
a0OgK00000MTpVe	-	-	-	-
a0OgK00000MTpVf	-	-	-	-
a0OgK00000MTpVW	-	-	-	-
a0OgK00000MTpVX	-	-	-	-
a0OgK00000MTpVZ	-	-	-	-

View Report (New Tenders Report)

6. <u>Sharing Settings</u> :

- Control record-level access using **Org-Wide Defaults (OWD)**, role hierarchy, and sharing rules.
- Ensures sensitive data like contract values are visible only to authorized users.



SETUP
Sharing Settings

Organization-Wide Defaults

Object	Default Internal Access	Default External Access	Grant Access Using Hierarchies
Tender	Public Read/Write	Public Read/Write	✓

Other Settings

Manager Groups	
Secure guest user record access	✓
Require permission to view record names in lookup fields	

Sharing Rules

Tender Sharing Rules

Action	Criteria	Shared With	Access Level
Edit | Del	Owner in Role: Procurement Officer	All Internal Users	Read Only

Sharing Overrides

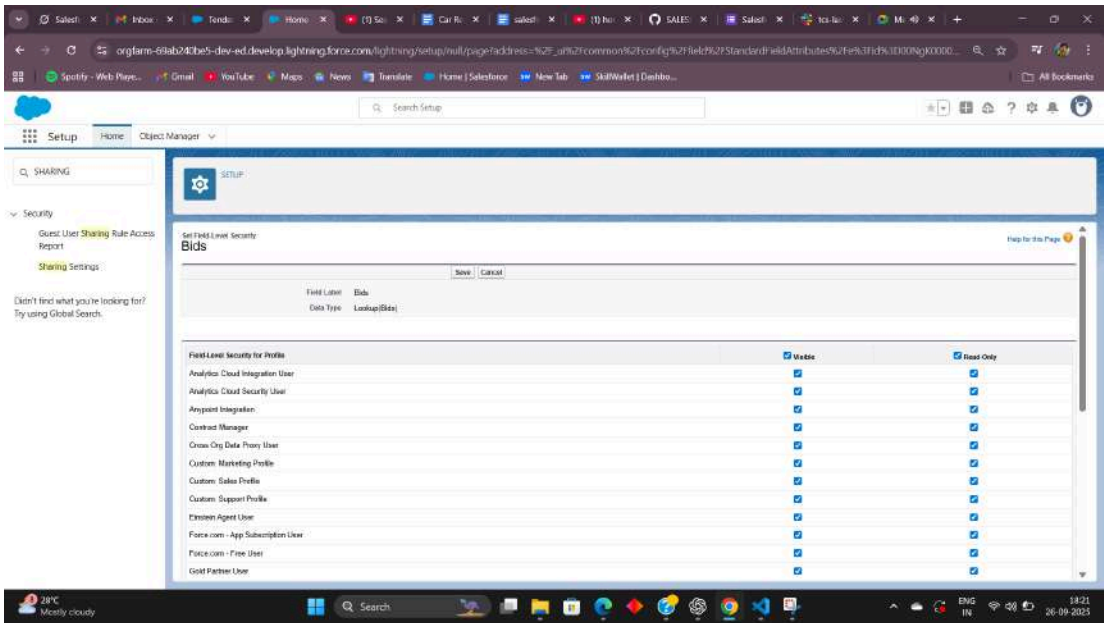
Profiles That Override Tender Sharing

Organization-wide permissions affect all objects in the organization. Object permissions affect only the given object.

		Organization-Wide Permissions		Tender Permissions	
Profile	Custom Profile	View All Data	Modify All Data	View All Records	Modify All Records
Analytics Cloud Integration User		✓		✓	
System Administrator		✓	✓	✓	✓

7. **Field-Level Security (FLS)** :

- Controls visibility and editability of individual fields for different profiles.
- Protects confidential data while providing necessary access to relevant users.



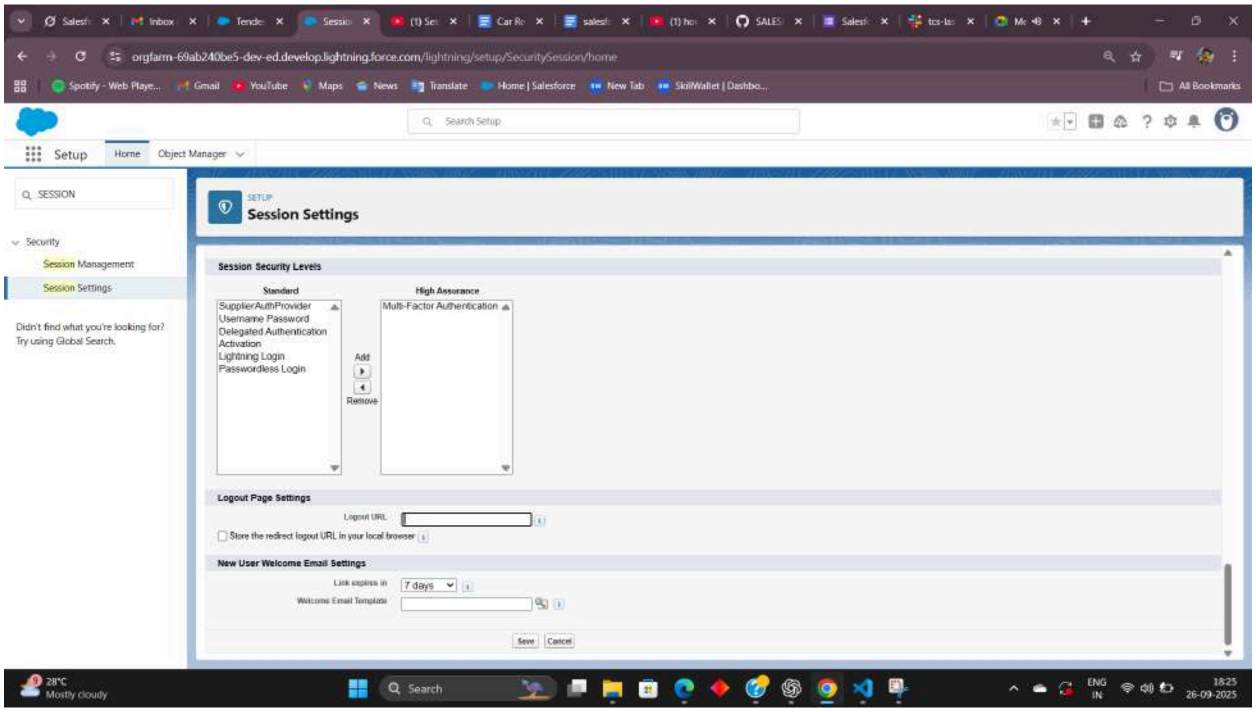
Set Field-Level Security
Bids

Field Label: Bids
Data Type: Lookup(Bids)

Field-Level Security for Profile	Visible	Read Only
Analytics Cloud Integration User	✓	✓
Analytics Cloud Security User	✓	✓
Anypoint Integration	✓	✓
Contract Manager	✓	✓
Cross Org Data Proxy User	✓	✓
Custom: Marketing Profile	✓	✓
Custom: Sales Profile	✓	✓
Custom: Support Profile	✓	✓
Einstein Agent User	✓	✓
Force.com - App Subscription User	✓	✓
Force.com - Free User	✓	✓
Gold Partner User	✓	✓

8. <u>Session Settings</u> :

- Manage session duration, security policies, and login behavior to maintain secure access.


orgfarm-69ab240be5-dev-ed.develop.lightning.force.com/lightning/setup/SecuritySession/home
Setup
Home
Object Manager
SESSION
Security
Session Management
Session Settings
Didn't find what you're looking for? Try using Global Search.
SETUP

Session Settings

Session Security Levels

Standard: SupplierAuthProvider, Username Password, Delegated Authentication, Activation, Lightning Login, Passwordless Login

High Assurance: Multi-Factor Authentication

Logout Page Settings

Logout URL:

Store the redirect logout URL in your local browser

New User Welcome Email Settings

Link expires in: 7 days

Welcome Email Template:

9. <u>Login IP Ranges</u> :

- Restrict access to Salesforce org based on trusted IP addresses.
- Enhances security by limiting logins to office or approved locations.

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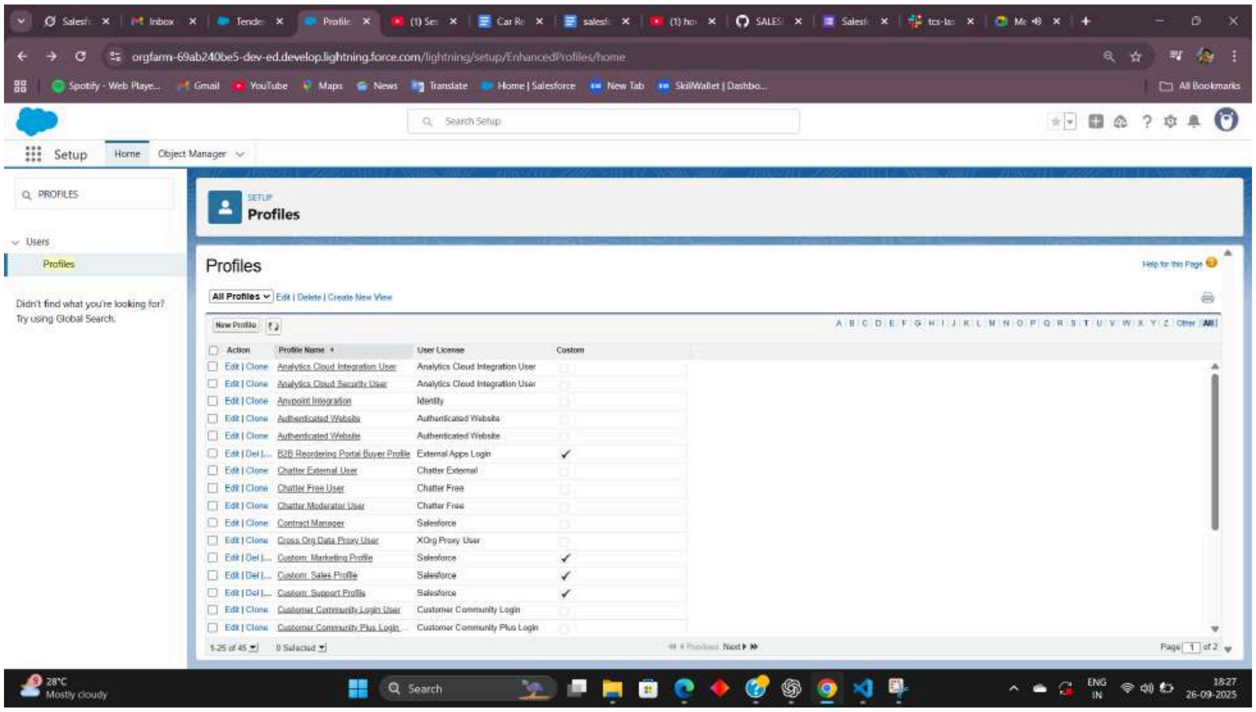

Profiles

All Profiles | Edit | Delete | Create New View

New Profile

Action	Profile Name	User License	Custom
Edit | Clone	Analytics Cloud Integration User	Analytics Cloud Integration User	
Edit | Clone	Analytics Cloud Security User	Analytics Cloud Integration User	
Edit | Clone	Anypoint Integration	Identity	
Edit | Clone	Authenticated Website	Authenticated Website	
Edit | Clone	Authenticated Website	Authenticated Website	
Edit | Del |...	B2B Reordering Portal Buyer Profile	External Apps Login	✓
Edit | Clone	Chatter External User	Chatter External	
Edit | Clone	Chatter Free User	Chatter Free	
Edit | Clone	Chatter Moderator User	Chatter Free	
Edit | Clone	Contract Manager	Salesforce	
Edit | Clone	Cross Org Data Proxy User	XOrg Proxy User	
Edit | Del |...	Custom: Marketing Profile	Salesforce	✓
Edit | Del |...	Custom: Sales Profile	Salesforce	✓
Edit | Del |...	Custom: Support Profile	Salesforce	✓
Edit | Clone	Customer Community Login User	Customer Community Login	
Edit | Clone	Customer Community Plus Login ...	Customer Community Plus Login	

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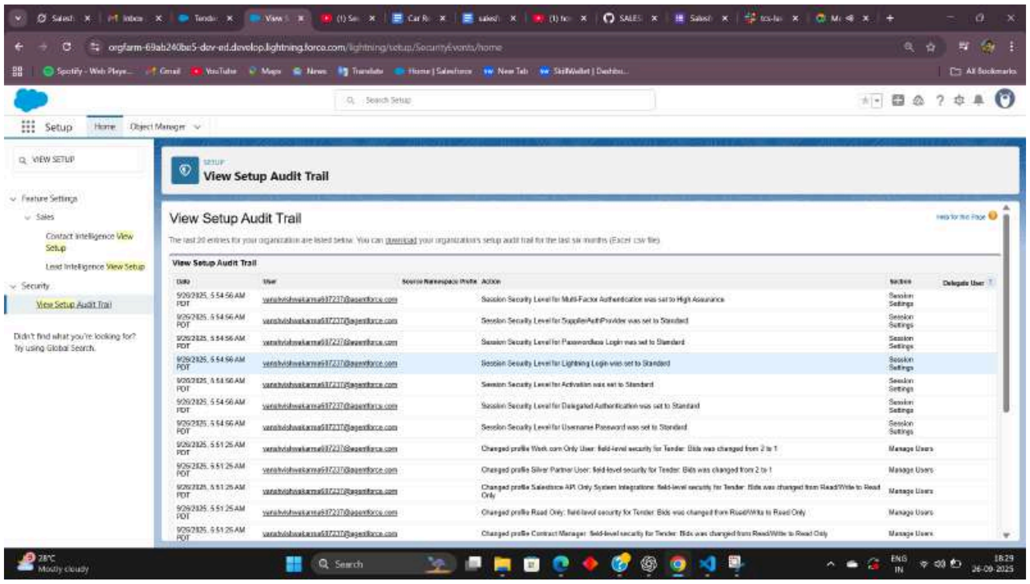
10 . Audit Trail :

- Tracks configuration and metadata changes in Salesforce setup.
- Provides accountability and supports compliance audits.



View Setup Audit Trail

The last 20 entries for your organization are listed below. You can download your organization's setup audit trail for the last six months (Excel csv file).

View Setup Audit Trail

Date	User	Source Namespace Prefix	Action	Section	Delegate User
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for Multi-Factor Authentication was set to High Assurance	Session Settings	
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for SupplierAuthProvider was set to Standard	Session Settings	
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for Passwordless Login was set to Standard	Session Settings	
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for Lightning Login was set to Standard	Session Settings	
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for Activation was set to Standard	Session Settings	
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for Delegated Authentication was set to Standard	Session Settings	
9/26/2025, 5:54:56 AM PDT	vanshvishwakarma697237@agentforce.com		Session Security Level for Username Password was set to Standard	Session Settings	
9/26/2025, 5:51:25 AM PDT	vanshvishwakarma697237@agentforce.com		Changed profile Work.com Only User: field-level security for Tender: Bids was changed from 2 to 1	Manage Users	
9/26/2025, 5:51:25 AM PDT	vanshvishwakarma697237@agentforce.com		Changed profile Silver Partner User: field-level security for Tender: Bids was changed from 2 to 1	Manage Users	
9/26/2025, 5:51:25 AM PDT	vanshvishwakarma697237@agentforce.com		Changed profile Salesforce API Only System Integrations: field-level security for Tender: Bids was changed from Read/Write to Read Only	Manage Users	
9/26/2025, 5:51:25 AM PDT	vanshvishwakarma697237@agentforce.com		Changed profile Read Only: field-level security for Tender: Bids was changed from Read/Write to Read Only	Manage Users	
9/26/2025, 5:51:25 AM PDT	vanshvishwakarma697237@agentforce.com		Changed profile Contract Manager: field-level security for Tender: Bids was changed from Read/Write to Read Only	Manage Users	

Phase 10: Final Presentation & Demo Day

👉 Goal: Wrap it up like a real project delivery.

1. Pitch Presentation :

Present the project idea, objectives, and outcomes to stakeholders.

2. Demo Walkthrough :

Showcase the working solution, highlighting key features and functionalities.

3. Feedback Collection :

Gather input and suggestions from audience or evaluators for improvement.

4 . Handoff Documentation:

Provide comprehensive project documents, including configurations, reports, and manuals.

5. LinkedIn/Portfolio Project Showcase :

Share the project publicly on professional platforms to demonstrate skills and experience.