MediTrack-Salesforce-App

Capstone Project Report

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Under the Guidance of: Mir Abdul sir

Abstract

The **MediTrack Sales force App** is a Sales force-based solution designed to simplify patient-doctor interactions, manage appointments, and streamline prescription tracking.
Healthcare organizations often struggle with manual appointment scheduling, missing patient records, communication gaps, and inefficient prescription management.

This project leverages Sales force CRM capabilities (Admin + Developer) to build a centralized, role-based system where:

Patients can be registered with demographic details.

Doctors manage their availability, appointments, and prescriptions.

Appointments link Patients and Doctors with date, time, and status tracking.

Prescriptions are tied to appointments with medicine details and dosage.

Email/flow automation sends appointment reminders and ensures proper follow-up.

Dashboards and reports provide hospital admins visibility into patient volume, doctor workload, and prescription history.

Automation, Apex triggers, Lightning Web Components (LWC), and integrations ensure smooth workflows and secure role-based access.
The solution is lightweight, scalable, and customizable—making it ideal for clinics, hospitals, and telehealth providers.

Phase 1: Problem Understanding & Industry Analysis

Challenges in Healthcare:

Manual appointment booking → missed/double bookings.

Doctors lack a unified view of patient history.

Patients forget appointments → high no-show rates.

Prescription mismanagement → confusion in dosage & follow-up.

Solution with MediTrack:
A Salesforce Healthcare app to manage:

Patients (demographics, medical history).

Doctors (specializations, availability).

Appointments (with reminders & validation rules).

Prescriptions (linked to appointments).

Stakeholders (Roles):

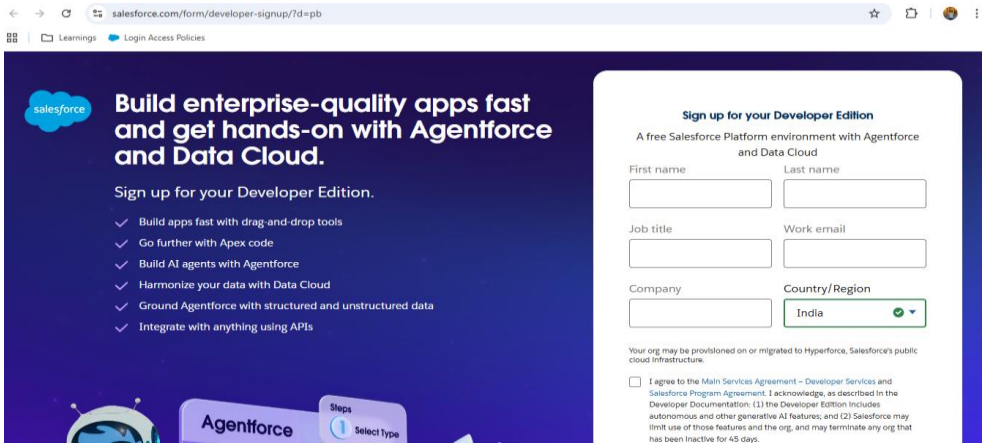
Admin: Sets up org, configures security, monitors reports.

Doctor: Manages availability, appointments, and prescriptions.

Patient: Receives reminders, attends appointments, receives prescriptions.

Receptionist (optional): Books appointments, assists patients.

Phase 2: Org Setup & Configuration



Salesforce Developer Org Created → developer.salesforce.com/signup

Company Profile

- Setup → **Company Information**:

Company Name: MediTrack Healthcare Pvt. Ltd.

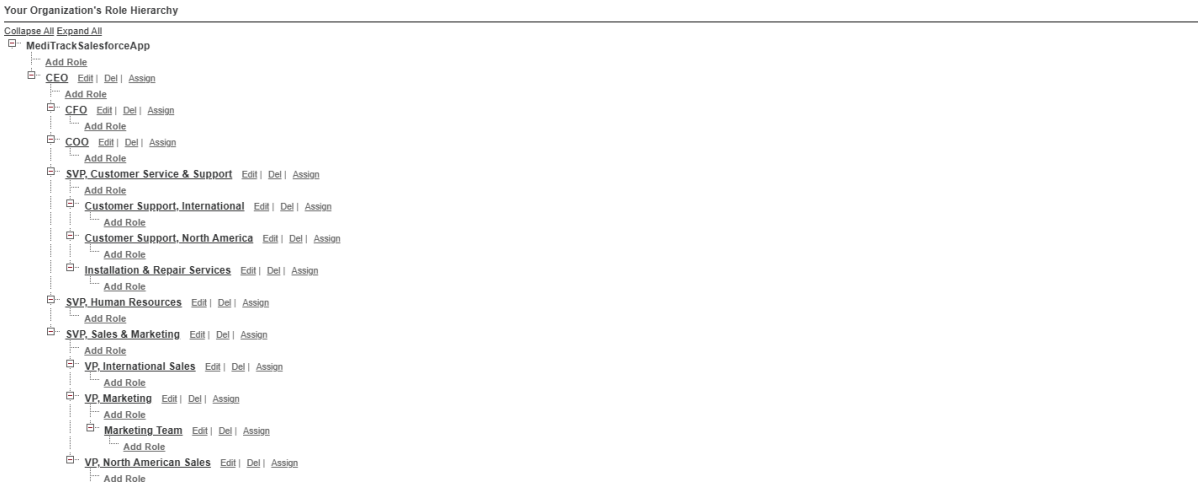
Business Hours: 9 AM – 9 PM (Mon–Sat).

Fiscal Year: Standard Gregorian.

1. **Users & Roles**

Role Hierarchy:

Admin , Doctor , Receptionist



Profiles:

Admin → System Administrator

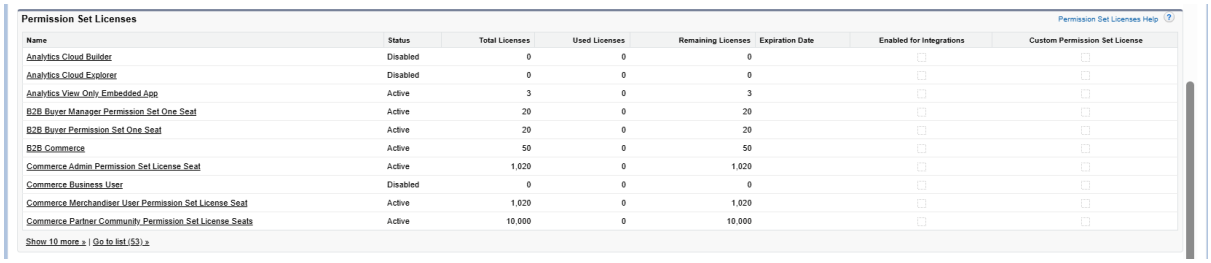
Doctor → Custom profile (Manage Appointments/Prescriptions)

Receptionist → Limited access (read patients, book appointments)

Permission Sets:

"Prescription Manager" → allows doctors to create prescriptions

"Appointment Viewer" → allows patients/receptionists to view appointments



Permission Set Licenses

Permission Set Licenses Help

Name	Status	Total Licenses	Used Licenses	Remaining Licenses	Expiration Date	Enabled for Integrations	Custom Permission Set License
Analytics Cloud Builder	Disabled	0	0	0			
Analytics Cloud Explorer	Disabled	0	0	0			
Analytics View Only Embedded App	Active	3	0	3			
B2B Buyer Manager Permission Set One Seat	Active	20	0	20			
B2B Buyer Permission Set One Seat	Active	20	0	20			
B2B Commerce	Active	50	0	50			
Commerce Admin Permission Set License Seat	Active	1,020	0	1,020			
Commerce Business User	Disabled	0	0	0			
Commerce Merchandiser User Permission Set License Seat	Active	1,020	0	1,020			
Commerce Partner Community Permission Set License Seats	Active	10,000	0	10,000			

Show 10 more » | Go to list (53) »

2. **Security Settings**

OWD:

Patients: Private

Doctors: Public Read Only

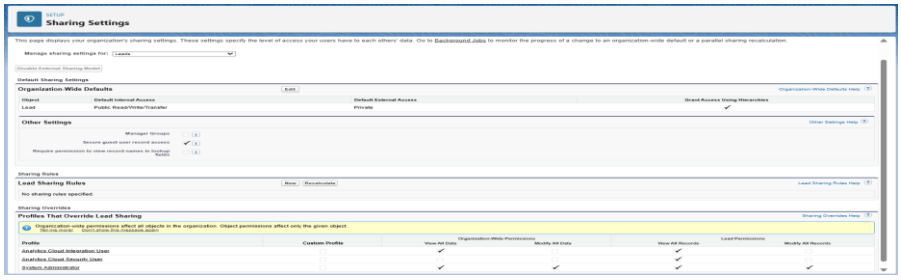
Appointments: Private

Prescriptions: Private

Sharing Rules:

Doctors can view their Appointments

Patients can see their own records (optional: via Experience Cloud).



Sharing Settings

Phase 3: Data Modeling & Relationships

Custom Objects Created:

1. **Patient__c**

Fields: Name, Age, Gender, Contact Number.

2. **Doctor__c**

Fields: Name, Specialization, Contact Number, Availability.

3. **Appointment__c**

Fields: Patient (Lookup), Doctor (Lookup), Appointment Date (Date), Appointment Time (Time), Status (Picklist: Scheduled/Completed/Cancelled/No-Show), Notes.

4. **Prescription__c**

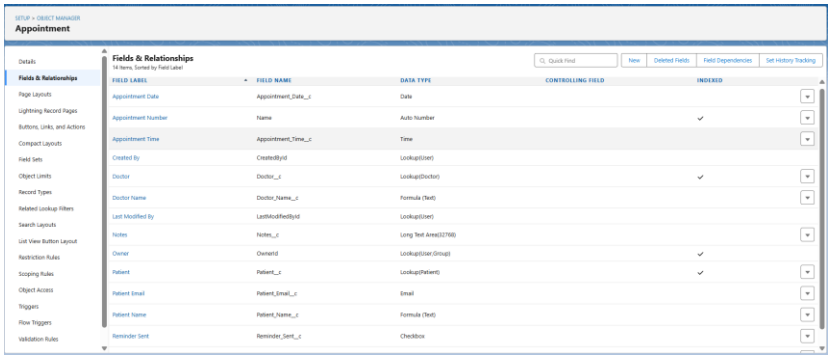
Fields: Appointment (Lookup), Patient (Lookup), Doctor (Lookup), Medicine Name, Dosage, Instructions, Date Prescribed.

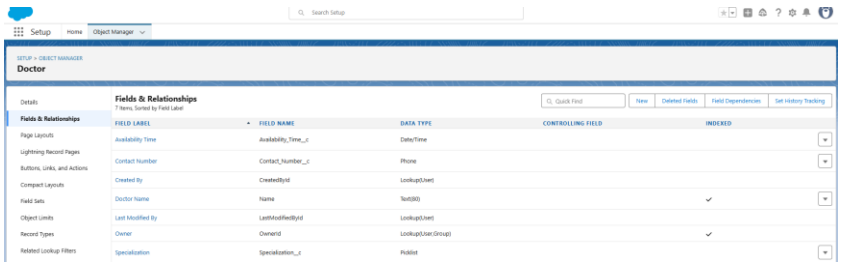
Relationships:

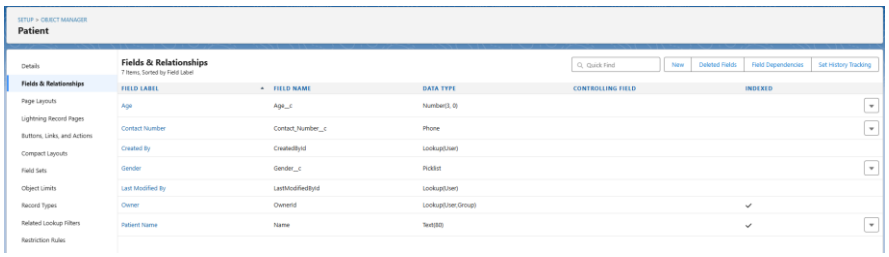
Patient ↔ Appointment (Lookup).

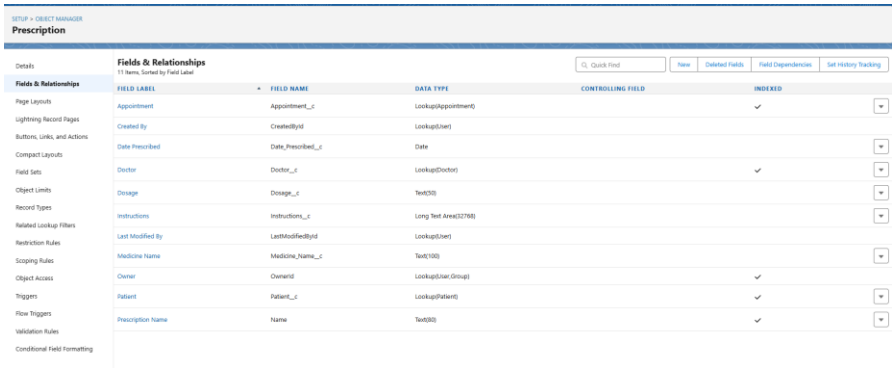
Doctor ↔ Appointment (Lookup).

Appointment ↔ Prescription (Lookup).





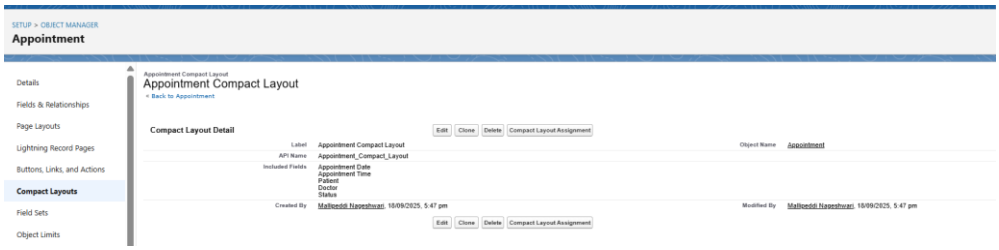


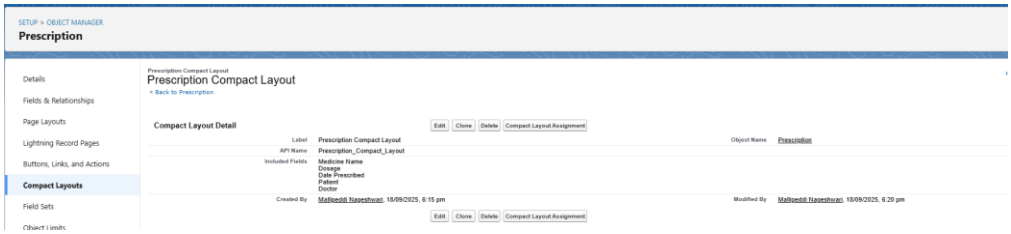


Page Layouts & Compact Layouts:

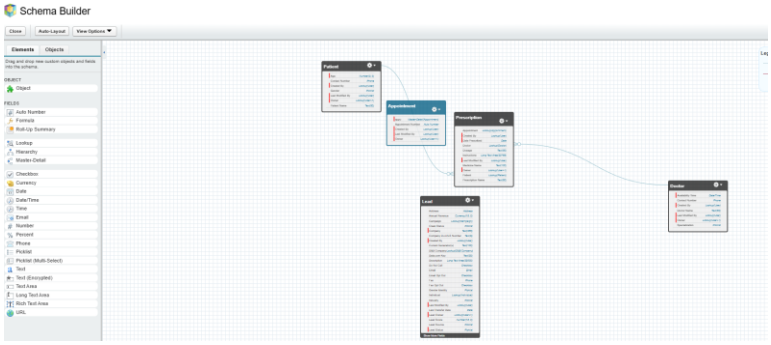
Appointment Compact Layout → Patient, Doctor, Date, Time, Status.

Prescription Compact Layout → Medicine, Dosage, Instructions, Date Prescribed.



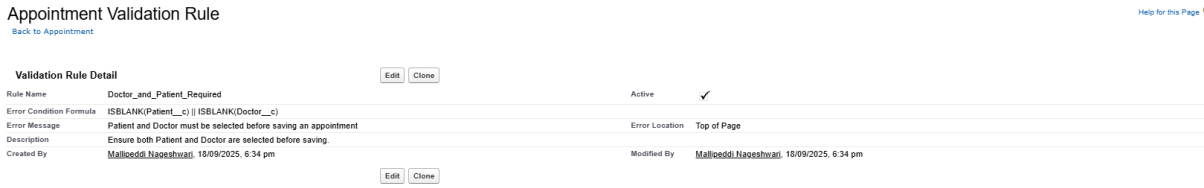


Schema Builder Visualization:
Patient → Appointment → Prescription , Doctor → Appointment → Prescription

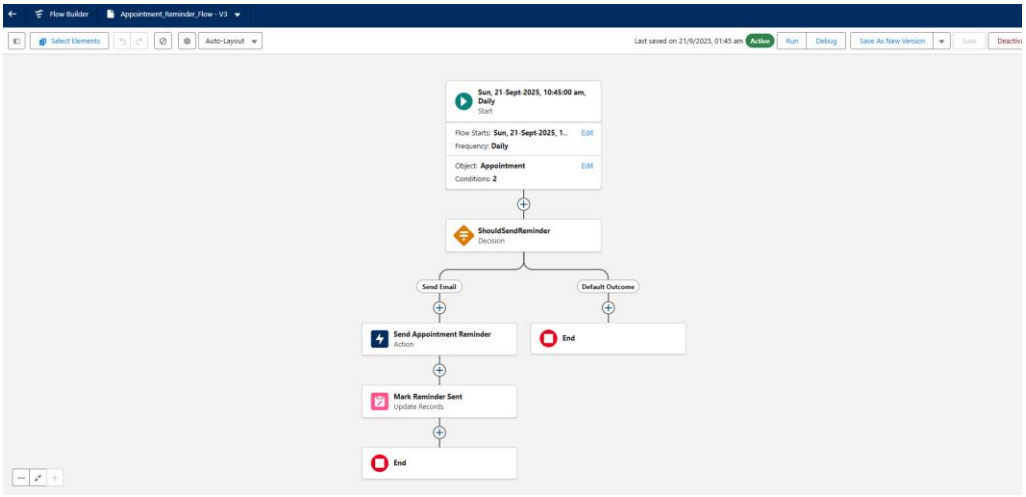


Phase 4: Process Automation

1. **Validation Rules**
    - Appointment must have both Patient and Doctor.
    - Prescription requires linked Appointment.



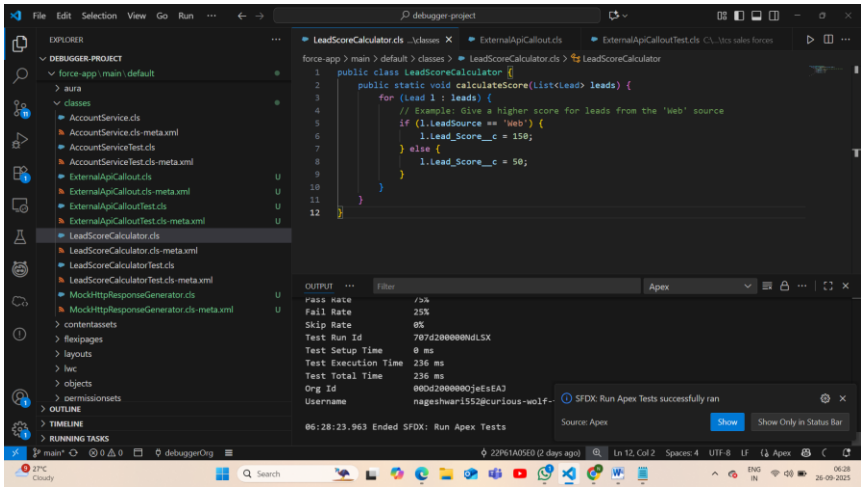
2. **Flows**
   - **Reminder Flow:** Email reminder 1 day before appointment.
   - **Status Update Flow:** When Prescription created → Appointment Status → Completed.

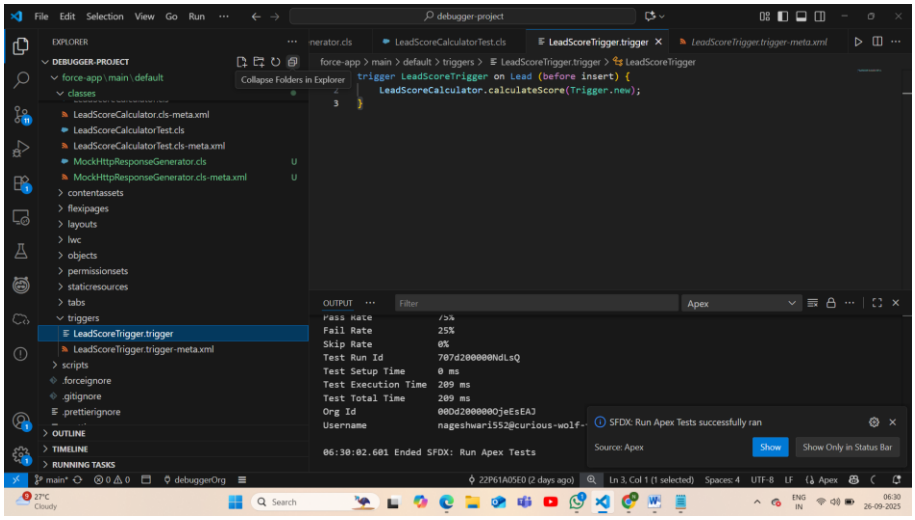


3. **Workflow Rules**
   - Auto-email confirmation on Appointment booking.
4. **Approval Process (Optional)**
   - If Appointment requires a Specialist, route approval to Admin.

Phase 5: Apex Programming

- **AppointmentTrigger.trigger** → Prevents appointments without Patient/Doctor.
- **PrescriptionTrigger.trigger** → Updates Appointment Status to Completed when Prescription is added.
- **LeadscoresCalculator.cls** → Batch Apex to send daily reminders.
- **EscalationJob.cls** → Scheduled Apex for overdue appointments.
- **Test Classes** → Ensure 75%+ code coverage.

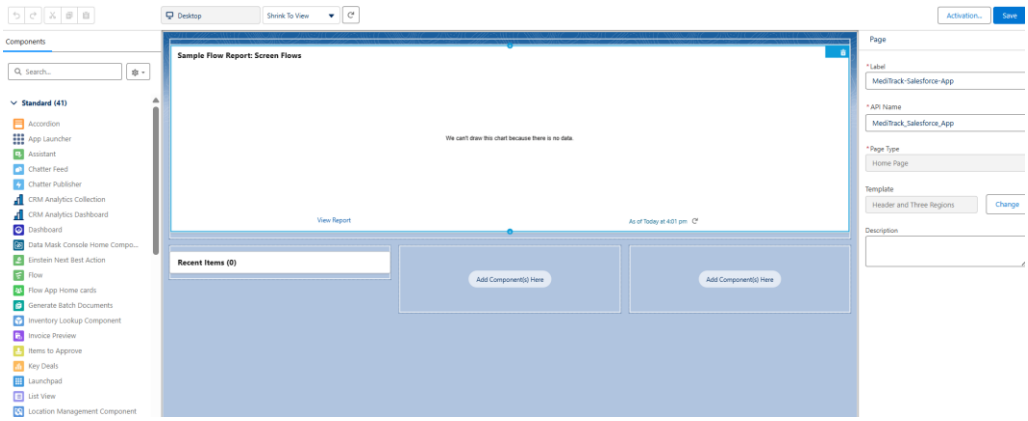




Phase 6: User Interface Development

Lightning App:

MediTrack with tabs: Patients, Doctors, Appointments, Prescriptions.



Custom Record Pages: Appointment → Highlights Panel with Patient, Doctor, Date, Time.

LWC Components:

Doctor Dashboard → Shows doctor's daily appointments.

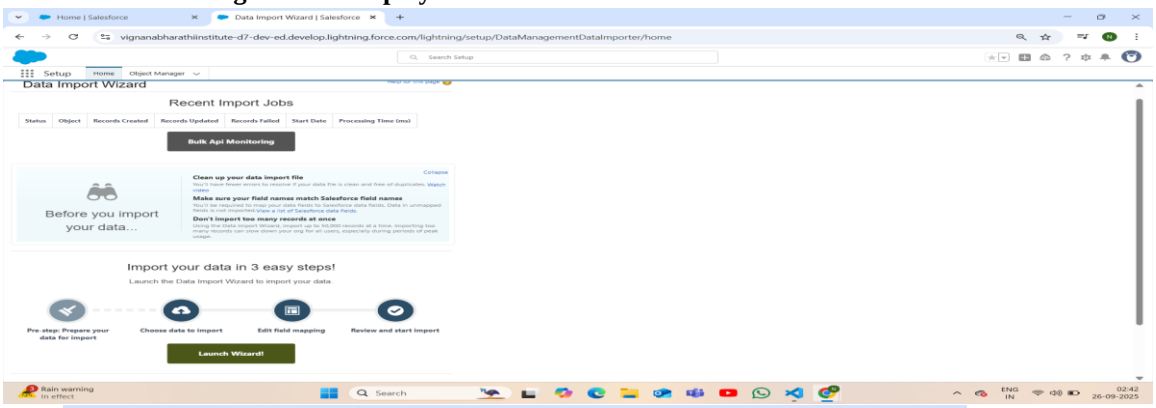
Patient History → Shows all past appointments + prescriptions.

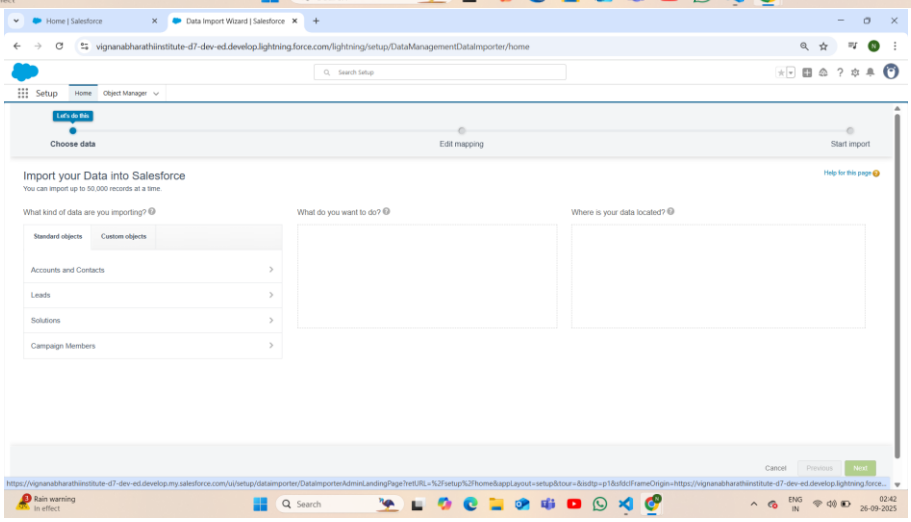
Appointment Reminder Component → Shows upcoming visits.

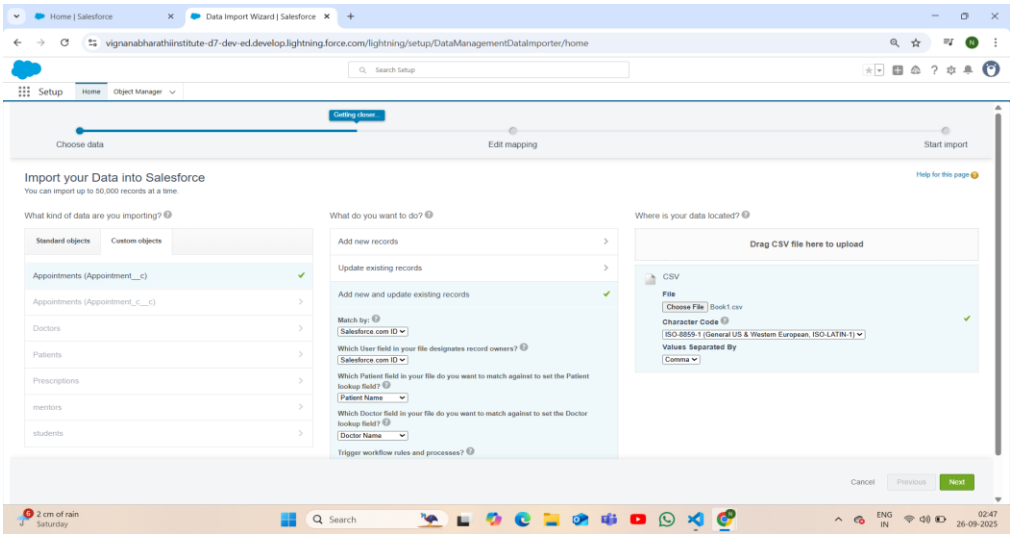
Phase 7: Integration & External Access

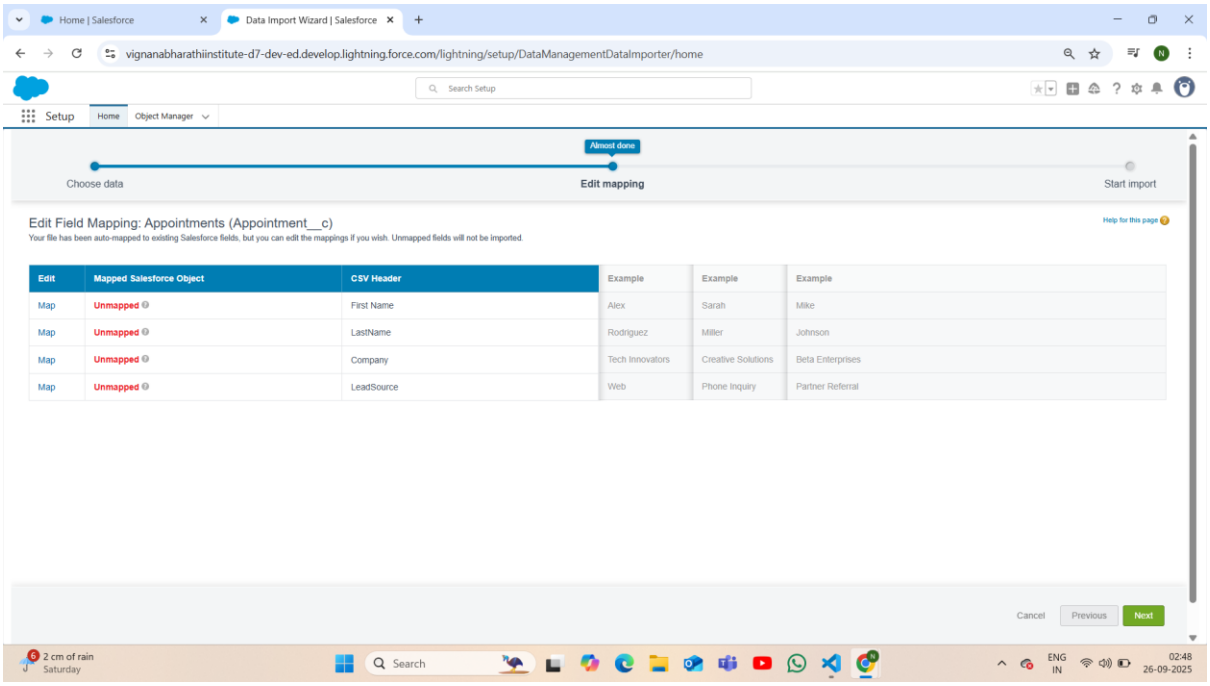
- **Named Credentials:** For integration with external pharmacy system.
- **Platform Events:** "Appointment_Notification__e" → notify external apps.
- **REST Callouts:** Integration with SMS API for reminders.

1. **Phase 8: Data Management & Deployment**



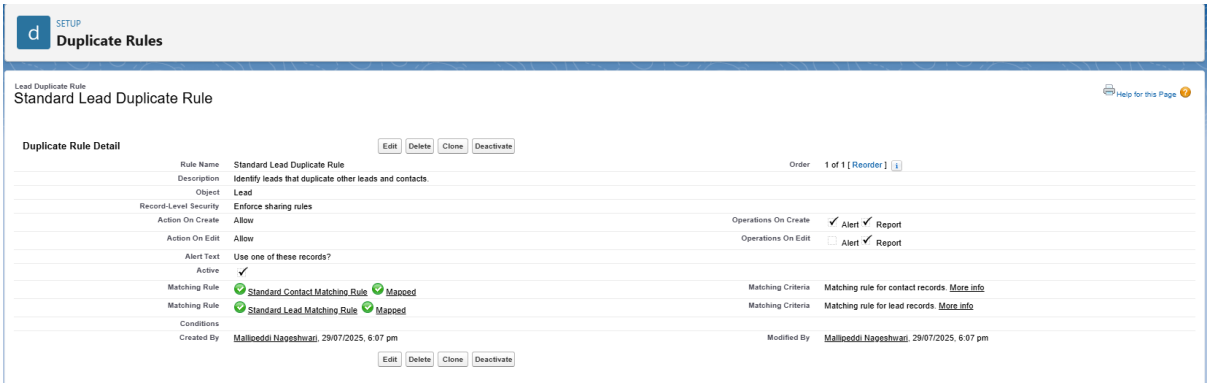




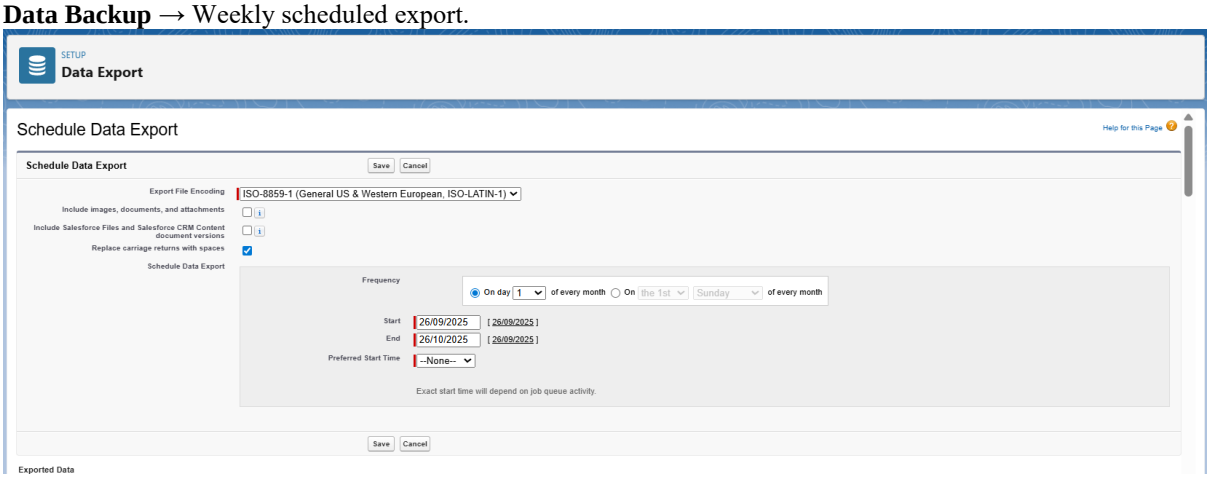


- **Data Loader** → Bulk load Prescriptions

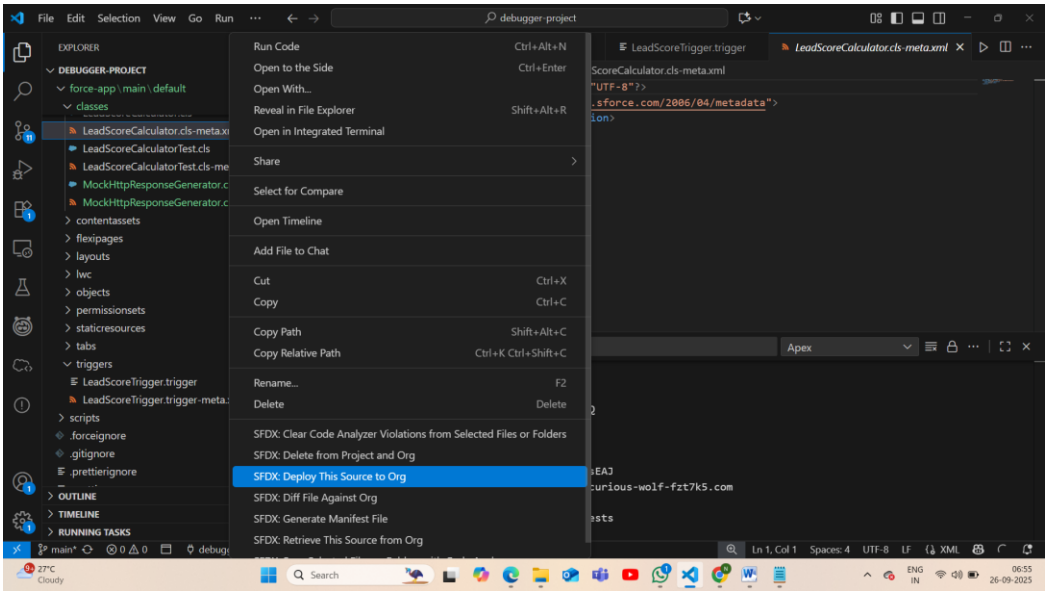
Duplicate Rules → Prevent duplicate Patients (same name + contact).



Data Backup → Weekly scheduled export.



- **Change Sets** → Deployment between orgs.

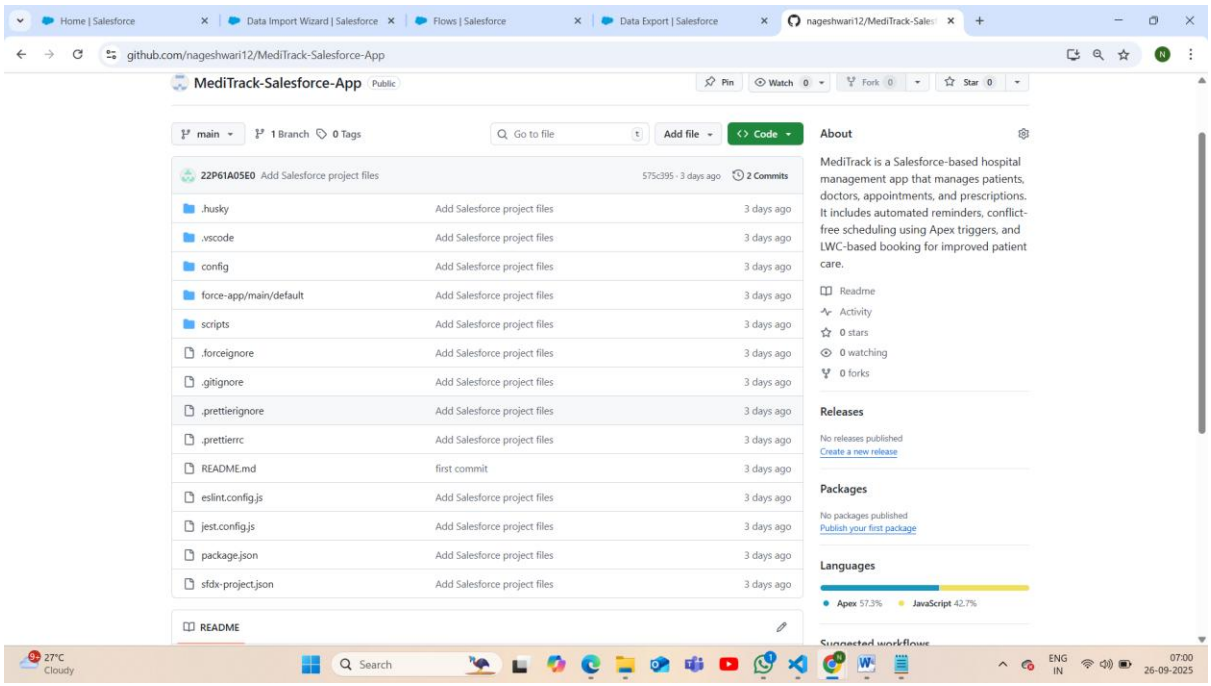


- **VS Code + SFDX** → Git-based deployment pipeline.

```
@isTest
global class MockHttpResponseGenerator implements HttpCalloutMock {
    global HttpResponse respond(HttpRequest request) {
        HttpResponse response = new HttpResponse();
        response.setHeader('Content-Type', 'application/json');
```

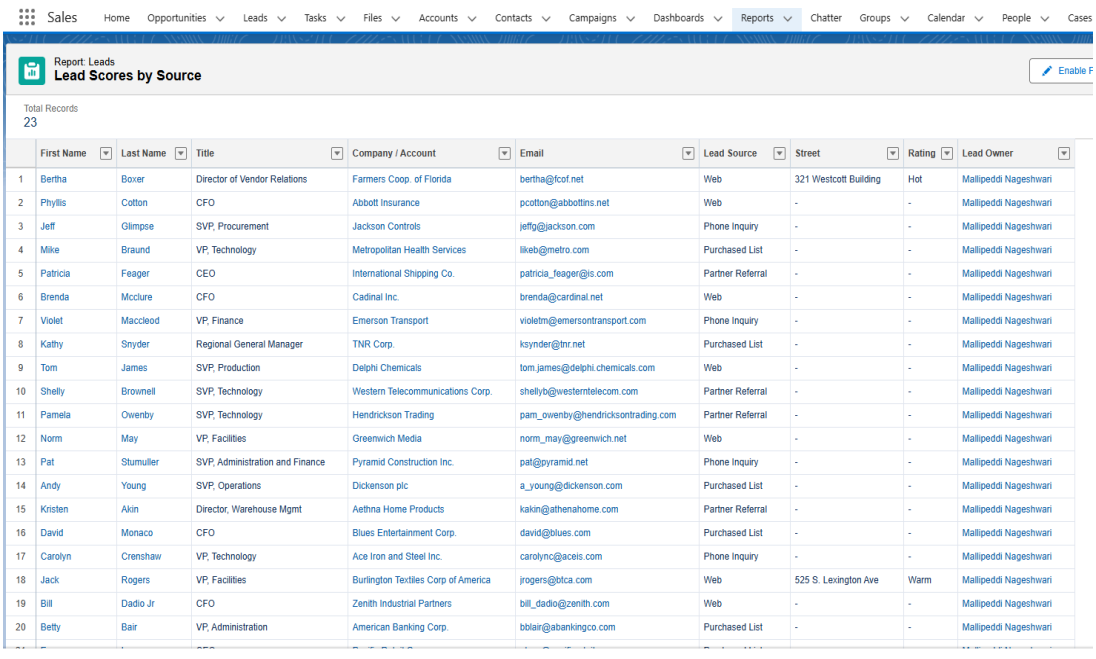
```
        response.setBody('{"status": "success", "data": "test data"}');
        response.setStatusCode(200);
        return response;
    }
}
@isTest
private class LeadScoreCalculatorTest {
    @isTest static void testCalculateScore() {
        // Test data setup
        List<Lead> testLeads = new List<Lead>();
        testLeads.add(new Lead(LastName = 'TestLead1', Company = 'TestCo', LeadSource = 'Web', Lead_Score__c = 0));
        testLeads.add(new Lead(LastName = 'TestLead2', Company = 'TestCo', LeadSource = 'Phone', Lead_Score__c = 0));
        insert testLeads;

        // Call the method to test
        LeadScoreCalculator.calculateScore(testLeads);

        // Verify the results
        Lead lead1 = [SELECT Lead_Score__c FROM Lead WHERE LastName = 'TestLead1' LIMIT 1];
        System.assertEquals(150, lead1.Lead_Score__c);

        Lead lead2 = [SELECT Lead_Score__c FROM Lead WHERE LastName = 'TestLead2' LIMIT 1];
        System.assertEquals(50, lead2.Lead_Score__c);
    }
}
@isTest
private class ExternalApiCalloutTest {
    @isTest
    static void testApiCallout() {
        // This is a dummy response. We don't want to make an actual callout during testing.
        Test.setMock(HttpCalloutMock.class, new MockHttpResponseGenerator());

        // Call the method to be tested
        ExternalApiCallout.makeApiCallout();

        // The assertion will check that the method runs without exceptions
        // You can add more specific assertions here if you were testing the response data
        System.assert(true, 'The callout method executed without error.');
    }
trigger LeadScoreTrigger on Lead (before insert) {
    LeadScoreCalculator.calculateScore(Trigger.new);
```

```
}
```



Phase 9: Reporting & Dashboards

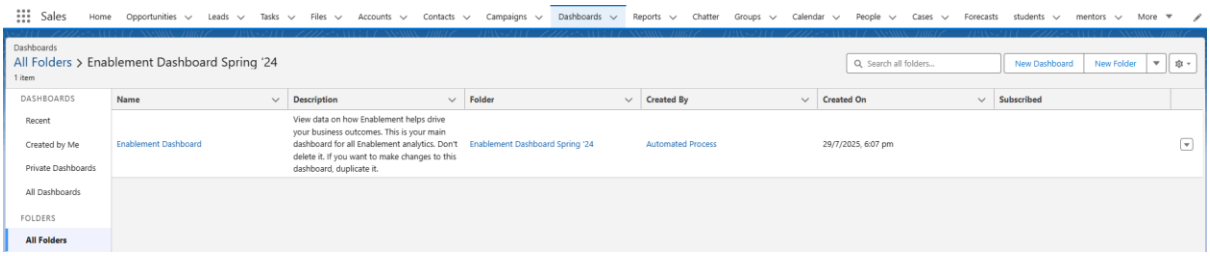
- **Reports:**
  - Appointments by Status.
  - Prescriptions by Doctor.
  - Patient Visit History.



	First Name	Last Name	Title	Company / Account	Email	Lead Source	Street	Rating	Lead Owner
1	Bertha	Boxer	Director of Vendor Relations	Farmers Coop. of Florida	bertha@fcof.net	Web	321 Westcott Building	Hot	Mallipeddi Nageshwari
2	Phyllis	Cotton	CFO	Abbott Insurance	pcotton@abbottins.net	Web	-	-	Mallipeddi Nageshwari
3	Jeff	Glimpse	SVP, Procurement	Jackson Controls	jeffg@jackson.com	Phone Inquiry	-	-	Mallipeddi Nageshwari
4	Mike	Braund	VP, Technology	Metropolitan Health Services	likeb@metro.com	Purchased List	-	-	Mallipeddi Nageshwari
5	Patricia	Feager	CEO	International Shipping Co.	patricia_feager@is.com	Partner Referral	-	-	Mallipeddi Nageshwari
6	Brenda	Mcclure	CFO	Cadinal Inc.	brenda@cardinal.net	Web	-	-	Mallipeddi Nageshwari
7	Violet	Maccleod	VP, Finance	Emerson Transport	violetm@emersontransport.com	Phone Inquiry	-	-	Mallipeddi Nageshwari
8	Kathy	Snyder	Regional General Manager	TNR Corp.	ksynder@tnr.net	Purchased List	-	-	Mallipeddi Nageshwari
9	Tom	James	SVP, Production	Delphi Chemicals	tom.james@delphi.chemicals.com	Web	-	-	Mallipeddi Nageshwari
10	Shelly	Brownell	SVP, Technology	Western Telecommunications Corp.	shellyb@westerntelecom.com	Partner Referral	-	-	Mallipeddi Nageshwari
11	Pamela	Owenby	SVP, Technology	Hendrickson Trading	pam_owenby@hendricksontrading.com	Partner Referral	-	-	Mallipeddi Nageshwari
12	Norm	May	VP, Facilities	Greenwich Media	norm_may@greenwich.net	Web	-	-	Mallipeddi Nageshwari
13	Pat	Stumuller	SVP, Administration and Finance	Pyramid Construction Inc.	pat@pyramid.net	Phone Inquiry	-	-	Mallipeddi Nageshwari
14	Andy	Young	SVP, Operations	Dickenson plc	a_young@dickenson.com	Purchased List	-	-	Mallipeddi Nageshwari
15	Kristen	Akin	Director, Warehouse Mgmt	Aethna Home Products	kakin@athenahome.com	Partner Referral	-	-	Mallipeddi Nageshwari
16	David	Monaco	CFO	Blues Entertainment Corp.	david@blues.com	Purchased List	-	-	Mallipeddi Nageshwari
17	Carolyn	Crenshaw	VP, Technology	Ace Iron and Steel Inc.	carolync@aceis.com	Phone Inquiry	-	-	Mallipeddi Nageshwari
18	Jack	Rogers	VP, Facilities	Burlington Textiles Corp of America	jrogers@btca.com	Web	525 S. Lexington Ave	Warm	Mallipeddi Nageshwari
19	Bill	Dadio Jr	CFO	Zenith Industrial Partners	bill_dadio@zenith.com	Web	-	-	Mallipeddi Nageshwari
20	Betty	Bair	VP, Administration	American Banking Corp.	bblair@abankingco.com	Purchased List	-	-	Mallipeddi Nageshwari

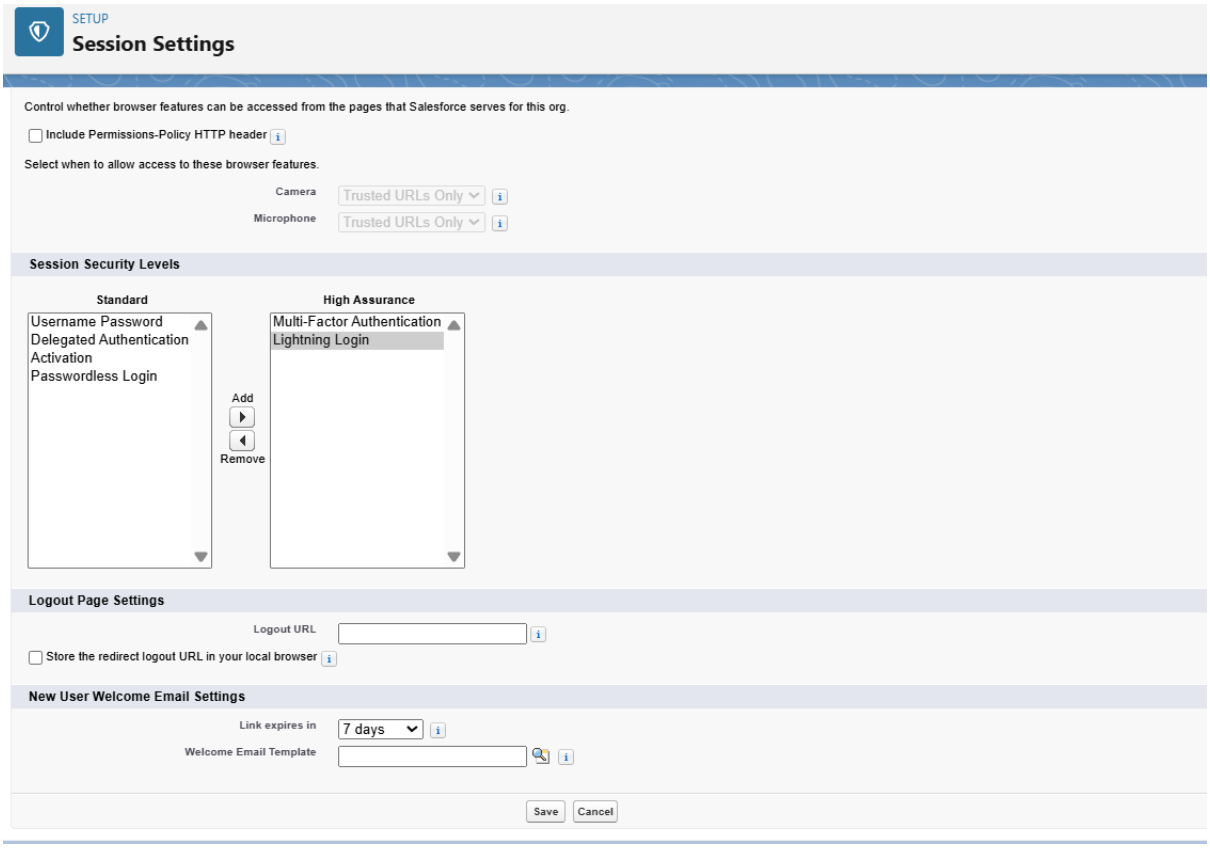
- **Dashboards:**
  - Pie Chart → Appointment Status Distribution.
  - Bar Chart → Prescriptions by Doctor.
  - Metric → Upcoming Appointments Today.

Dynamic Dashboards: Role-based views (Admin sees all, Doctor sees own patients).

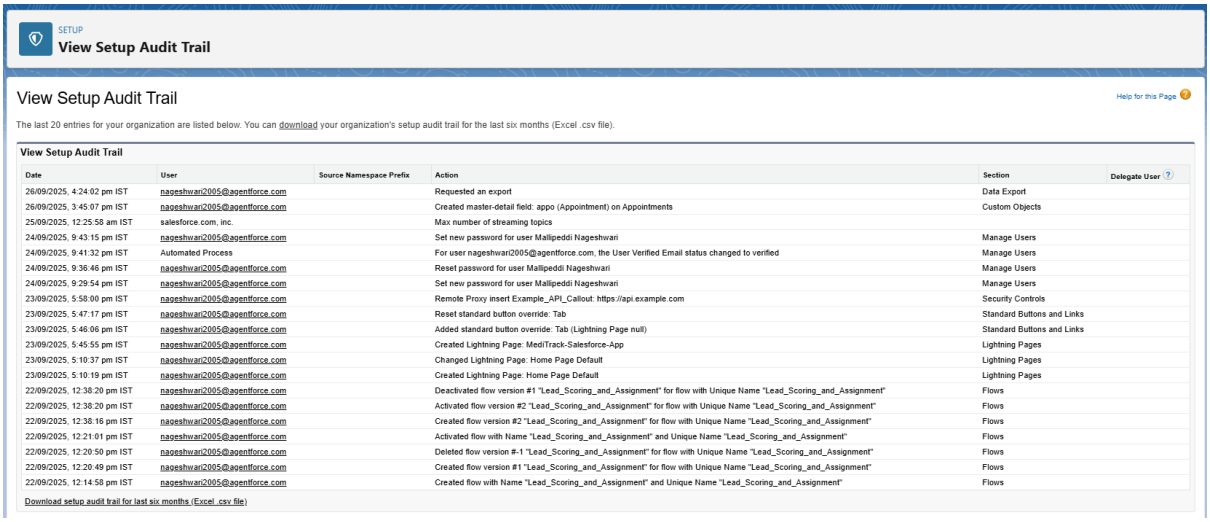


2. **Security Review:** OWD, Sharing, **Field-Level Security (FLS)**

Session settings



Audit Trail.

- 
SETUP
View Setup Audit Trail

View Setup Audit Trail

Help for this Page

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
26/09/2025, 4:24:02 pm IST	nageshwari2005@agentforce.com		Requested an export	Data Export	
26/09/2025, 3:45:07 pm IST	nageshwari2005@agentforce.com		Created master-detail field: appo (Appointment) on Appointments	Custom Objects	
25/09/2025, 12:25:58 am IST	salesforce.com, inc.		Max number of streaming topics		
24/09/2025, 9:43:15 pm IST	nageshwari2005@agentforce.com		Set new password for user Mallipeddi Nageshwari	Manage Users	
24/09/2025, 9:41:32 pm IST	Automated Process		For user nageshwari2005@agentforce.com, the User Verified Email status changed to verified	Manage Users	
24/09/2025, 9:36:46 pm IST	nageshwari2005@agentforce.com		Reset password for user Mallipeddi Nageshwari	Manage Users	
24/09/2025, 9:29:54 pm IST	nageshwari2005@agentforce.com		Set new password for user Mallipeddi Nageshwari	Manage Users	
23/09/2025, 5:58:00 pm IST	nageshwari2005@agentforce.com		Remote Proxy insert Example_API_Callout: https://api.example.com	Security Controls	
23/09/2025, 5:47:17 pm IST	nageshwari2005@agentforce.com		Reset standard button override: Tab	Standard Buttons and Links	
23/09/2025, 5:46:06 pm IST	nageshwari2005@agentforce.com		Added standard button override: Tab (Lightning Page null)	Standard Buttons and Links	
23/09/2025, 5:45:55 pm IST	nageshwari2005@agentforce.com		Created Lightning Page: MediTrack-Salesforce-App	Lightning Pages	
23/09/2025, 5:10:37 pm IST	nageshwari2005@agentforce.com		Changed Lightning Page: Home Page Default	Lightning Pages	
23/09/2025, 5:10:19 pm IST	nageshwari2005@agentforce.com		Created Lightning Page: Home Page Default	Lightning Pages	
22/09/2025, 12:38:20 pm IST	nageshwari2005@agentforce.com		Deactivated flow version #1 "Lead_Scoring_and_Assignment" for flow with Unique Name "Lead_Scoring_and_Assignment"	Flows	
22/09/2025, 12:38:20 pm IST	nageshwari2005@agentforce.com		Activated flow version #2 "Lead_Scoring_and_Assignment" for flow with Unique Name "Lead_Scoring_and_Assignment"	Flows	
22/09/2025, 12:38:16 pm IST	nageshwari2005@agentforce.com		Created flow version #2 "Lead_Scoring_and_Assignment" for flow with Unique Name "Lead_Scoring_and_Assignment"	Flows	
22/09/2025, 12:21:01 pm IST	nageshwari2005@agentforce.com		Activated flow with Name "Lead_Scoring_and_Assignment" and Unique Name "Lead_Scoring_and_Assignment"	Flows	
22/09/2025, 12:20:50 pm IST	nageshwari2005@agentforce.com		Deleted flow version #-1 "Lead_Scoring_and_Assignment" for flow with Unique Name "Lead_Scoring_and_Assignment"	Flows	
22/09/2025, 12:20:49 pm IST	nageshwari2005@agentforce.com		Created flow version #1 "Lead_Scoring_and_Assignment" for flow with Unique Name "Lead_Scoring_and_Assignment"	Flows	
22/09/2025, 12:14:58 pm IST	nageshwari2005@agentforce.com		Created flow with Name "Lead_Scoring_and_Assignment" and Unique Name "Lead_Scoring_and_Assignment"	Flows	

Download setup audit trail for last six months (Excel .csv file)

Phase 10: Final Presentation