9520: P.S.R.R COLLEGE OF ENGINEERING

ARTIFICIAL INTELLIGENCE & DATA SCIENCE

Completed the project "CRM Application for Jewel Management"

TECHNOLOGY NAME: Salesforce Developer

SUBMITTED BY,

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1. INTRODUCTION

1.1 Project Overview:

This project involves the development of a CRM-based Jewel Management System using Salesforce. It streamlines operations like inventory tracking, price updates, billing, and customer management for a jewellery business. The project leverages Salesforce Lightning Platform to design custom objects, automate processes using Flows, and generate actionable insights via dashboards and reports.

1.2 Purpose:

The purpose is to replace manual processes with an automated, cloud-based Salesforce CRM that enables real-time stock updates, dynamic pricing, customer billing, and order tracking. The system enhances customer experience, operational accuracy, and business decision-making.

The purpose of this project is to design and implement a Salesforce-based CRM solution specifically for jewel businesses to:

- Centralize customer information and communication.
- Track and manage jewellery inventory (gold and silver).
- Enable personalized marketing and offers.
- Facilitate efficient order processing and billing.
- Improve customer retention through engagement automation.
- Generate detailed reports on sales, trends, and staff performance.

2. IDEATION PHASE

2.1 Problem Statement:

Traditional jewellery shops face problems like manual stock maintenance, lack of customer records, and inefficiencies in pricing and billing. There's also no integrated view of customer interactions. This leads to errors, delayed decision-making, and customer dissatisfaction.

Many small to mid-sized jewellery retailers struggle with managing customer relationships, tracking sales, handling special orders, and maintaining inventory. Current manual systems or generic software often fall short of addressing the industry's unique needs.

2.2 Empathy Map Canvas:

Think & Feel

- “Are we missing out on leads because we’re not following up?”
- “I need to know who our high-value customers are.”

Hear

- “The customer wasn’t happy with the delay in their custom order.”
- “Can we send reminders for anniversaries and birthdays?”

See

- Registers with scribbled orders.
- Multiple Excel sheets for billing and inventory.

Say & Do

- “Call them about the pendant order tomorrow.”
- “Print out last year’s top customers list.”

Pain

- Losing customers due to lack of follow-up.
- No real-time inventory tracking.

Gain

- Higher customer satisfaction.
- More repeat purchases via automation.

2.3 Brainstorming:

The brainstorming phase focused on collecting diverse ideas from stakeholders—including jewel store owners, sales representatives, developers, and end-users—to define potential solutions and functionalities required in the CRM application. This collaborative ideation process aimed to understand the operational bottlenecks in the jewelry business and how Salesforce’s cloud ecosystem could streamline them.

Ideas collected during brainstorming:

- Use of custom objects for Items, Billing, Orders, and Customers.
- Automate stock management with flows.
- Dashboard for daily performance insights.
- Notifications for low inventory.
- Implement record-triggered and scheduled flows.
- Introduce validation rules to prevent data inconsistencies.
- Plan separate dashboards for different roles (sales, inventory, admin).

3. Requirement Analysis:

3.1 Customer Journey Map:

The customer journey map outlines the stages a customer experiences, from the first interaction to post-purchase engagement. It helps identify gaps and opportunities where the CRM can automate and enhance customer experience.

Awareness Stage

- Customer browses website or social media.
- CRM captures leads using Web-to-Lead forms.

Consideration Stage

- Customer visits the store or requests a catalog.
- Salesforce auto-assigns a sales representative.
- Email/SMS with product recommendations is triggered.

Purchase Stage

- Customer places an order (in-store or online).
- CRM logs order and creates a sales opportunity.
- Invoice is generated using built-in templates.

Delivery Stage

- Customer receives order.
- CRM sends order tracking notifications and confirmations.

Post-Purchase Stage

- Customer receives feedback form.
- Loyalty points are updated.
- Follow-up reminders for anniversaries, birthdays, etc.

3.2 Solution Requirements:

Defines both the functional (what the system should do) and non-functional (how the system performs) needs to fulfill business goals.

- Real-time item stock tracking
- Dynamic pricing management
- Billing with automated tax calculations
- Comprehensive dashboards and reports
- Data security and accessibility
- Integration with communication tools (email/SMS)
- Record ownership for audit and traceability

3.3 Data Flow Diagrams:

DFD illustrates how data moves between the system's components. This helps developers visualize dependencies and database interaction points.

Main Entities & Data Flow Points:

1. Customer submits a product inquiry.

2. Data flows to CRM Interface (Form or App).

3. CRM creates or updates Customer Object.

4. CRM logs sale and updates Sales Record.

5. Inventory count is adjusted in the Inventory Object.

6. Reports are updated to reflect real-time sales and stock.

3.4 Technology Stack:

Defines the tools and platforms used to develop, deploy, and manage the CRM system in Salesforce.

- Platform: Salesforce Lightning Experience.
- Logic: Apex Triggers, Validation Rules, Flow Builder.
- UI: Lightning Tabs, Pages, Reports, Dashboards.
- Database: Salesforce Standard & Custom Objects.
- Integration: Email Templates, Scheduled Flows, Approval Processes.

4. PROJECT DESIGN

4.1 Problem Solution Fit:

Problem: Manual processes and lack of centralized tracking
Solution: Salesforce CRM system automating every major jewelry workflow

4.2 Proposed Solution:

Five major custom objects: Item__c, Price__c, Jewel_Customer__c, Customer_Order__c, Billing_c

- Lightning app with navigation tabs
- Automated flows for inventory, billing, and notifications ● Dashboards visualizing sales, stock, and revenue performance

4.3 : Solution Architecture:

Objects and Relationships:

- Jewel_Customer__c ↔ Customer_Order__c ↔ Billing__c ↔ Item__c ↔ Price__c
- Lookup and Master-Detail fields used to link records
- Formula fields for auto-calculations (e.g., total billing amount)
- Validation rules for quantity and price limits
- Record Types to distinguish Gold, Silver, and Diamond workflows

5. PROJECT PLANNING AND SCHEDULING

5.1 Project Planning:

The planning and scheduling phase involves defining the project's timeline, scope, team responsibilities, tools, and milestones. It ensures the project stays on track and aligns with business goals while delivering the CRM application in an efficient, scalable, and phased manner.

- Week 1: Requirement gathering, Usecase and ER Diagrams
- Week 2: Custom object creation, Page Layouts and Tab Setup
- Week 3: Flows and Automation Setup, Validation Rules
- Week 4: Reports and Dashboards, Testing and Review
- Week 5: Final Deployment, Documentation and User Training

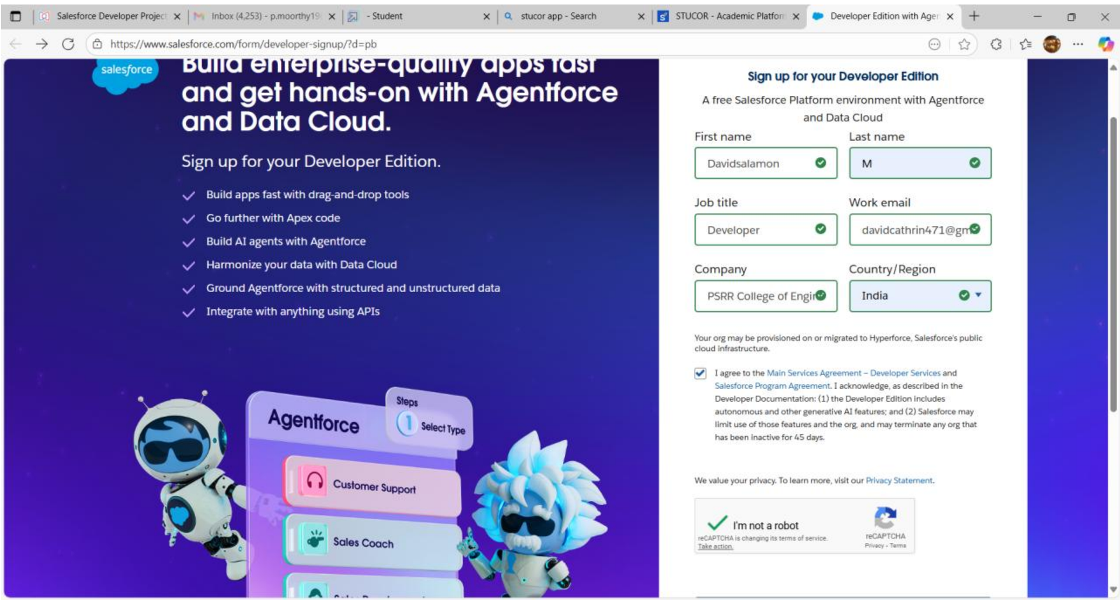
6. PROJECT DEVELOPMENT PHASE - SALESFORCE GUIDED PROJECT

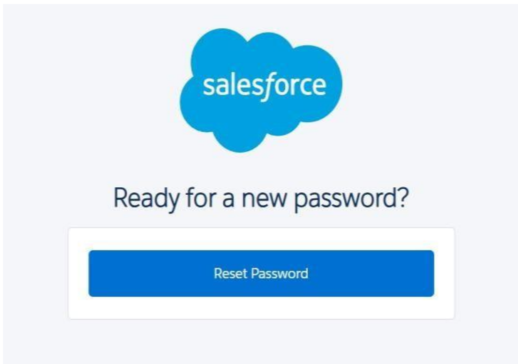
The development phase is the backbone of the CRM application, where core functionalities were implemented using Salesforce's declarative tools and programmatic capabilities. This phase was conducted in iterative sprints, following Agile methodology, and broken into several key activities.

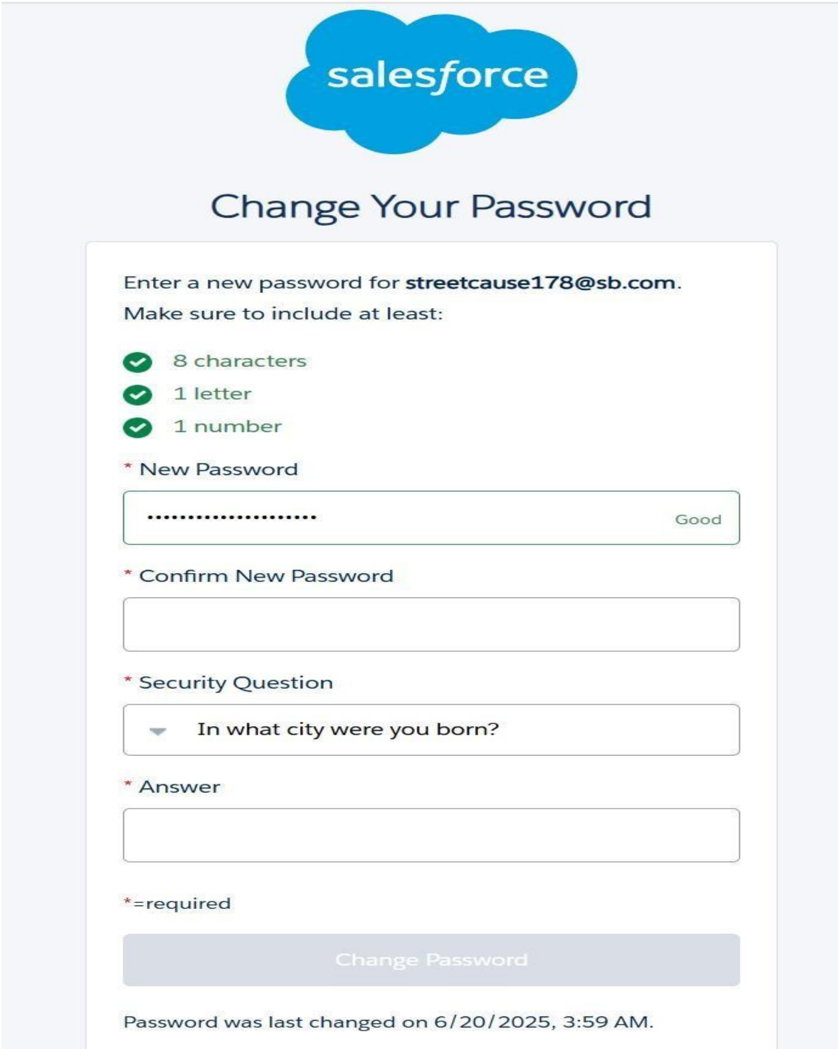
6.1 Developer Environment Setup:

- Create Salesforce Developer Org via developer.salesforce.com/signup

Fill the required information, verify email, set password, and access Salesforce Setup.


https://www.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
Agentforce
Steps
Select Type
Customer Support
Sales Coach
Sign up for your Developer Edition
A free Salesforce Platform environment with Agentforce and Data Cloud
First name
Davidsalamon
Last name
M
Job title
Developer
Work email
davidcathrin471@gm
Company
PSRR College of Engi
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.
I'm not a robot
reCAPTCHA

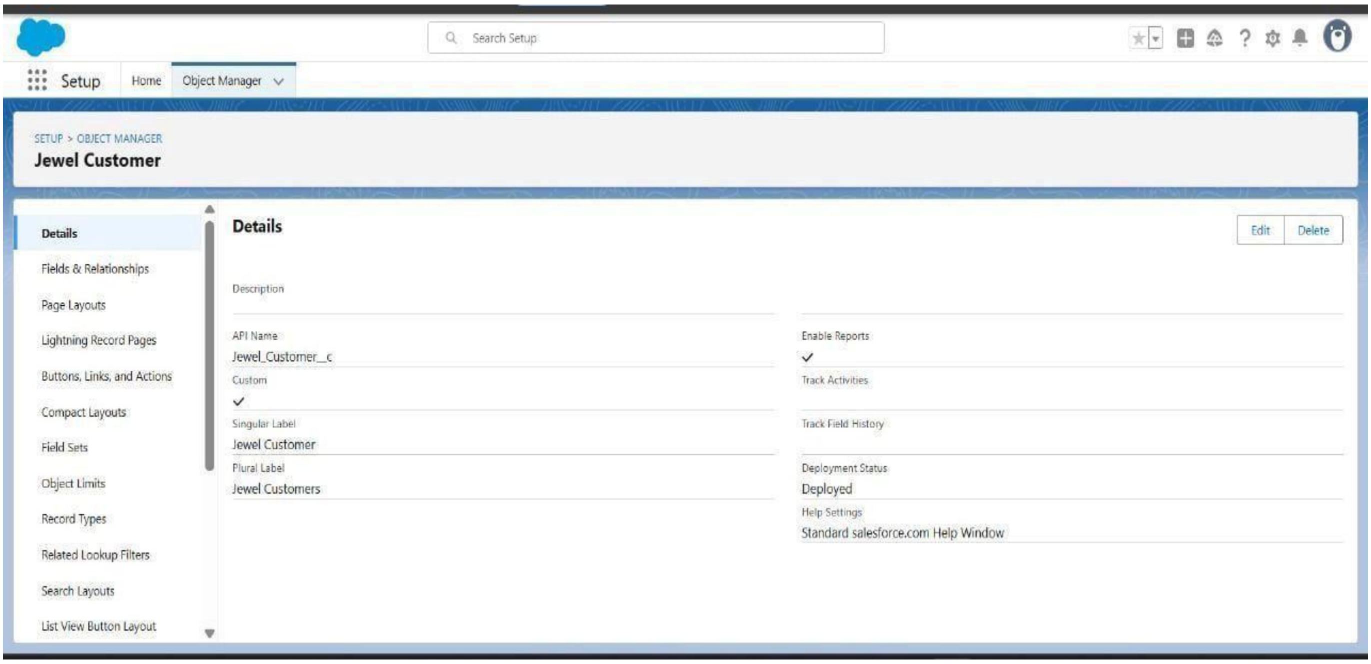

salesforce
Ready for a new password?
Reset Password



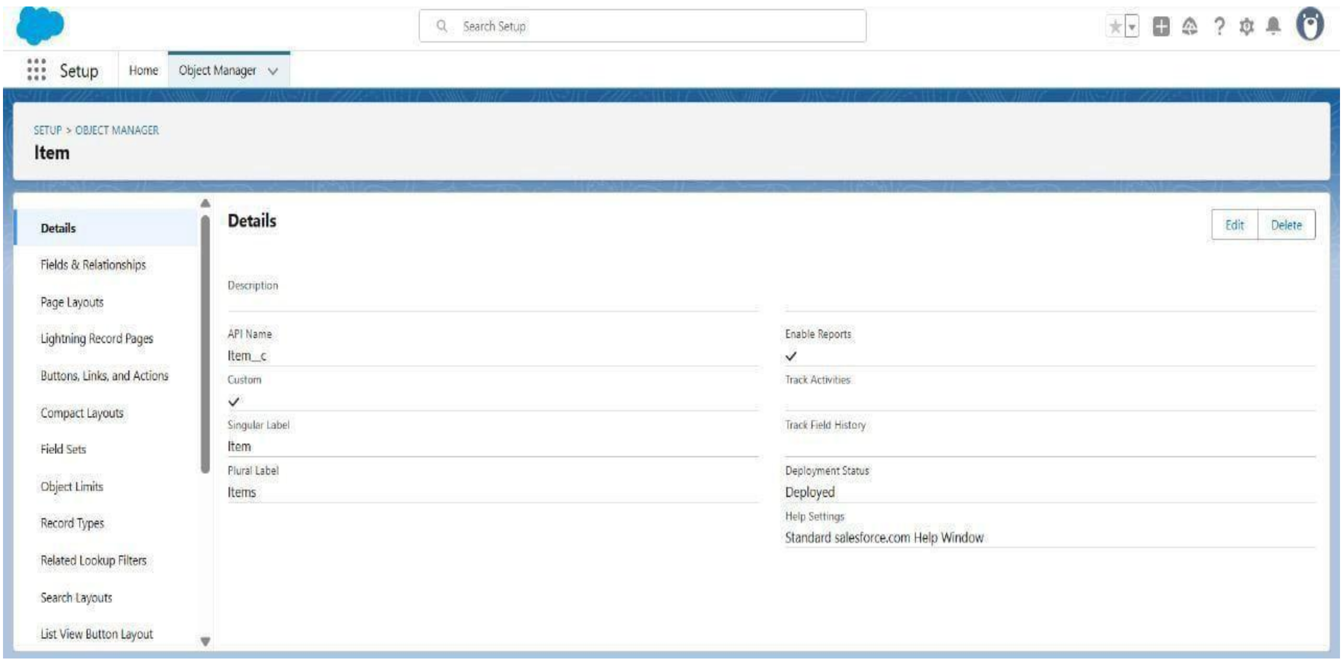
6.2 Custom Object Creation:

We create five main custom objects for Jewel Customer, Item, Customer Order, Price, Billing.

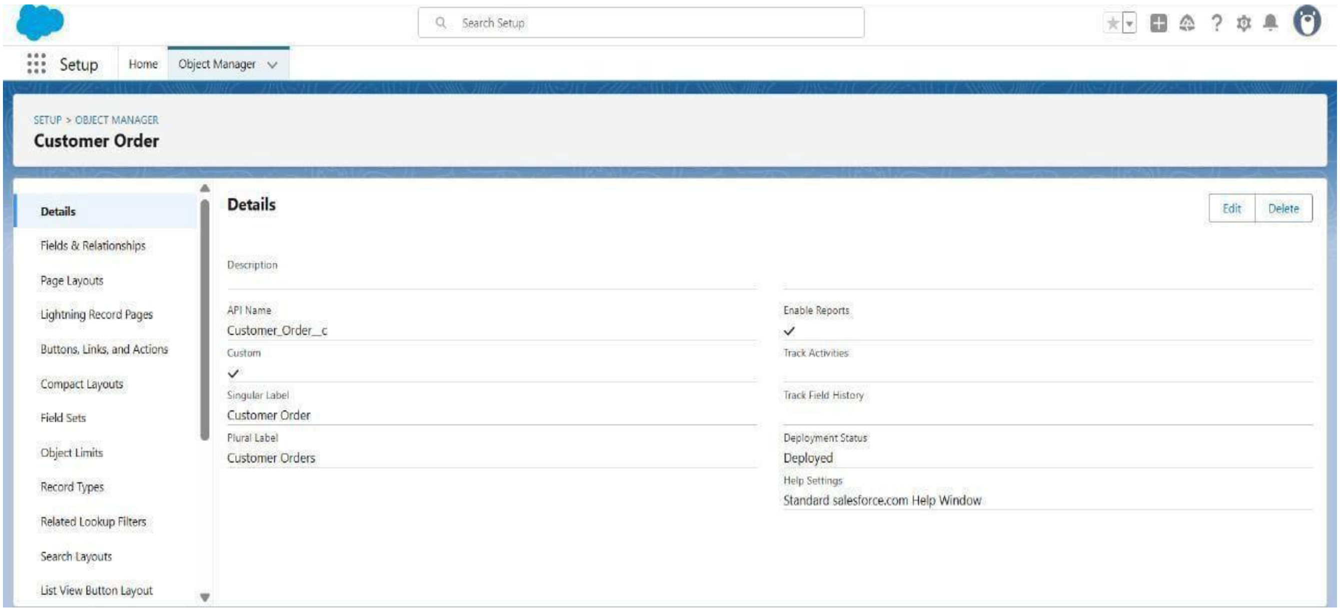
1. Jewel Customer



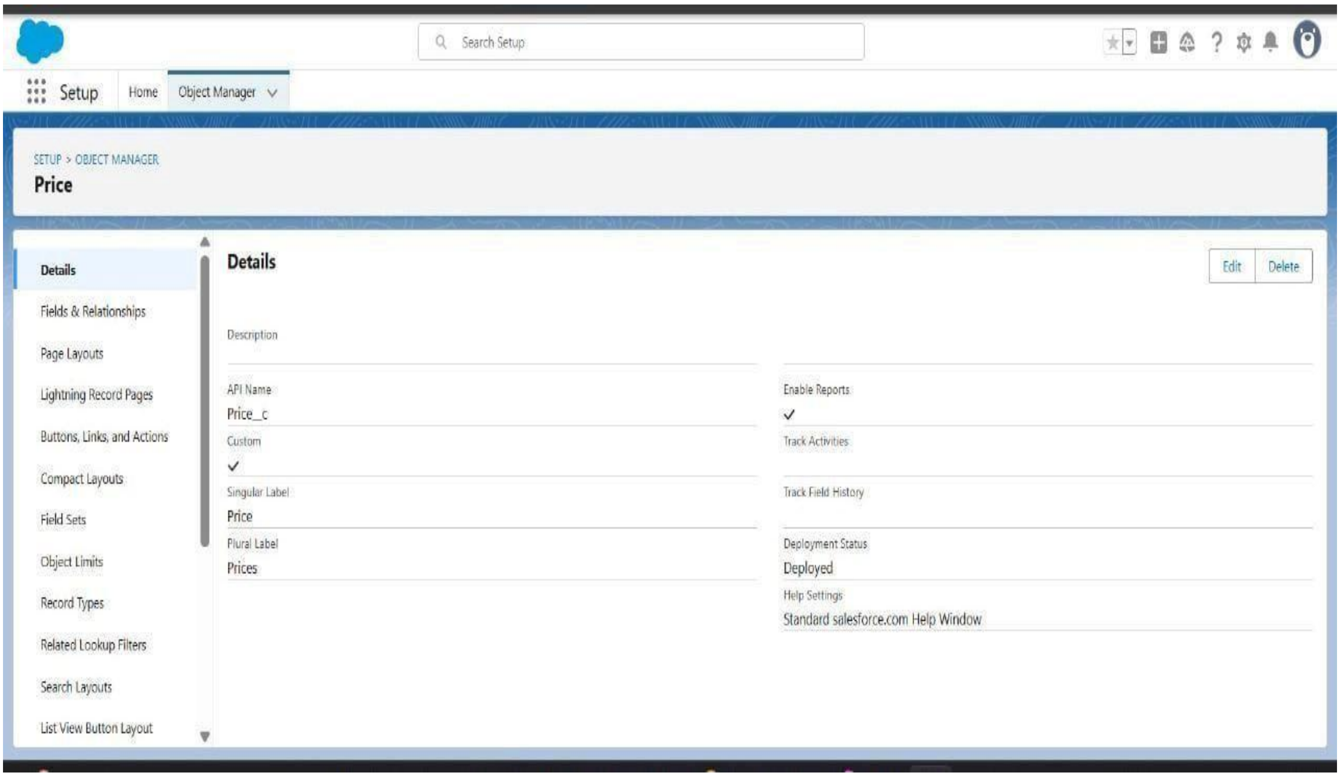
2. Item



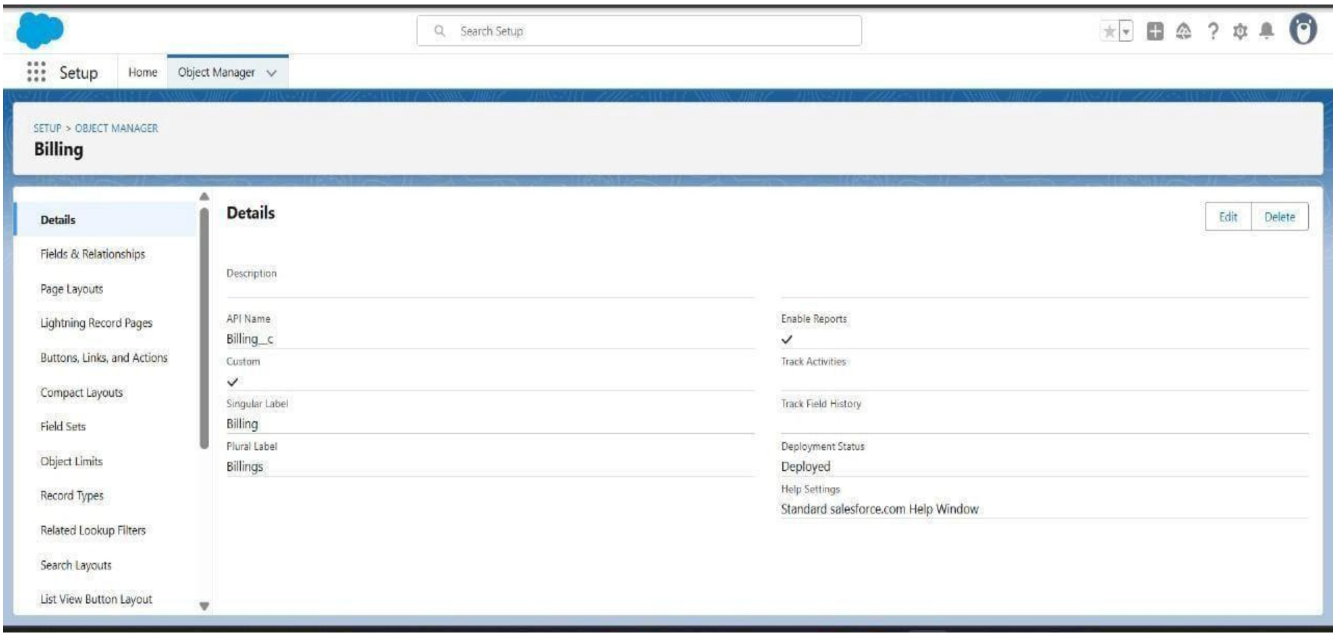
3. Customer Order



4. Price



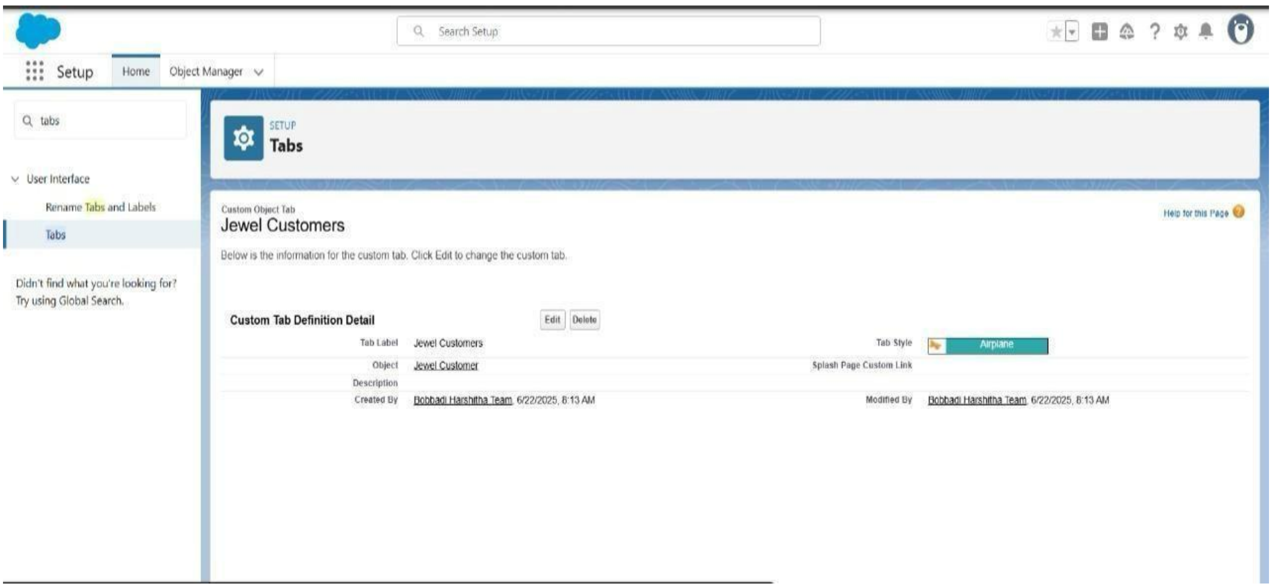
5. Billing



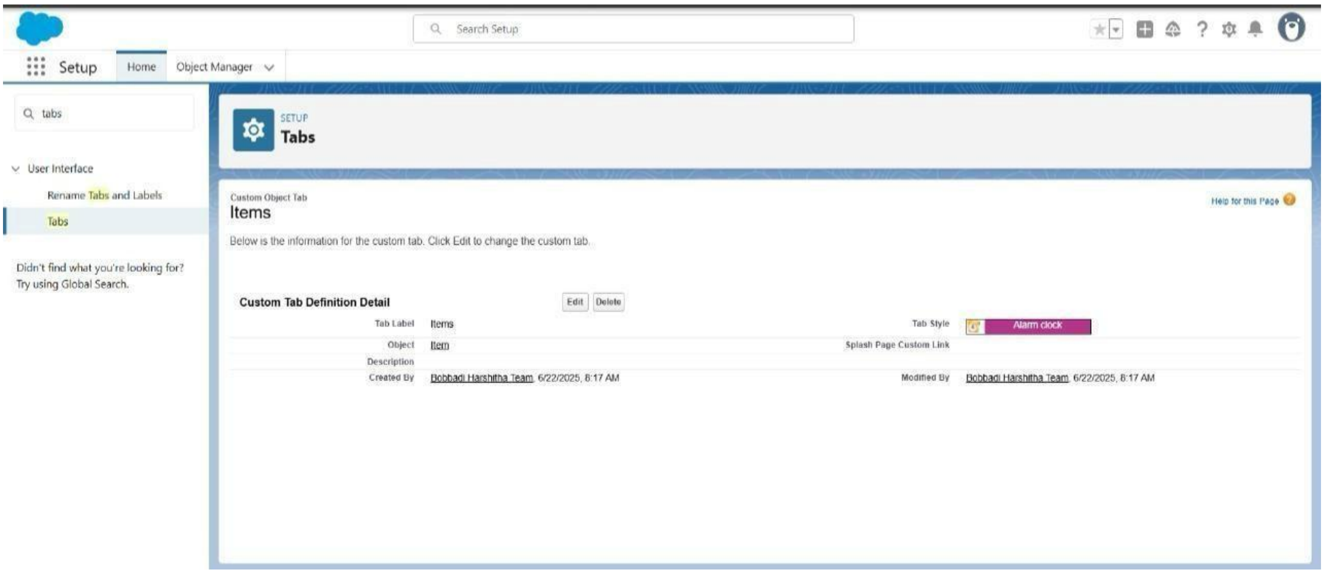
6.3 Creation of Tabs

We create five main custom tabs for Jewel Customer, Item, Customer Order, Price, Billing.

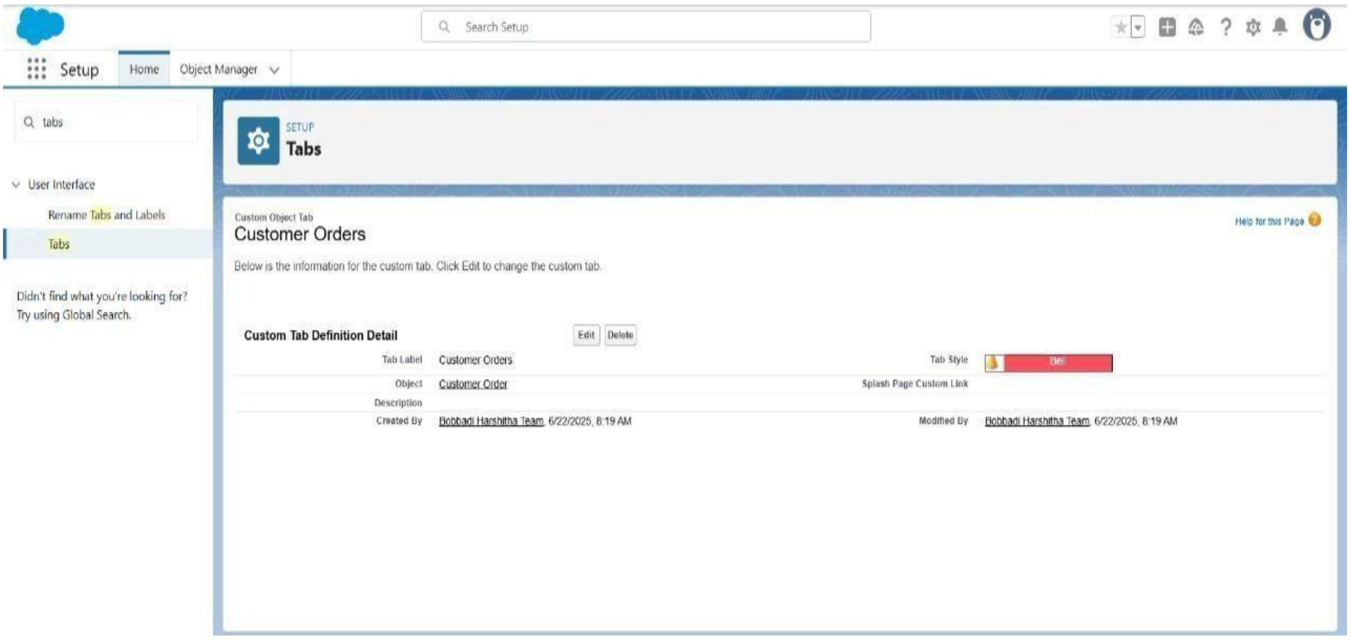
1. Jewel Customer



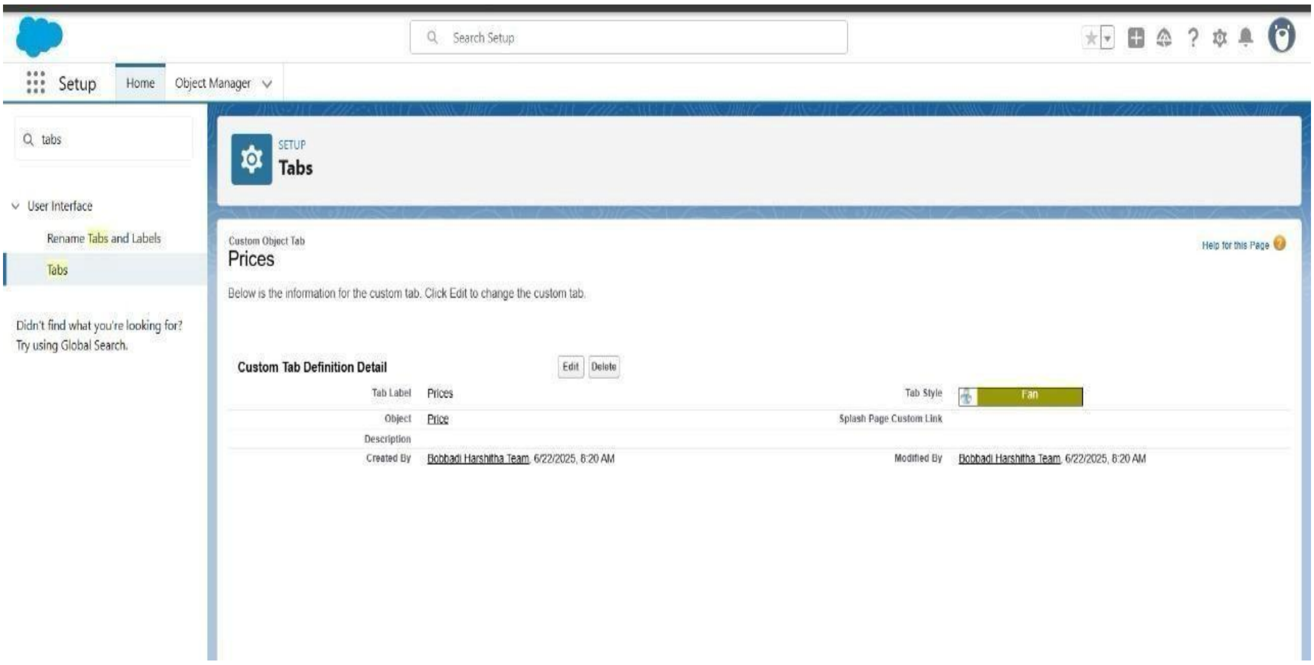
2. Item



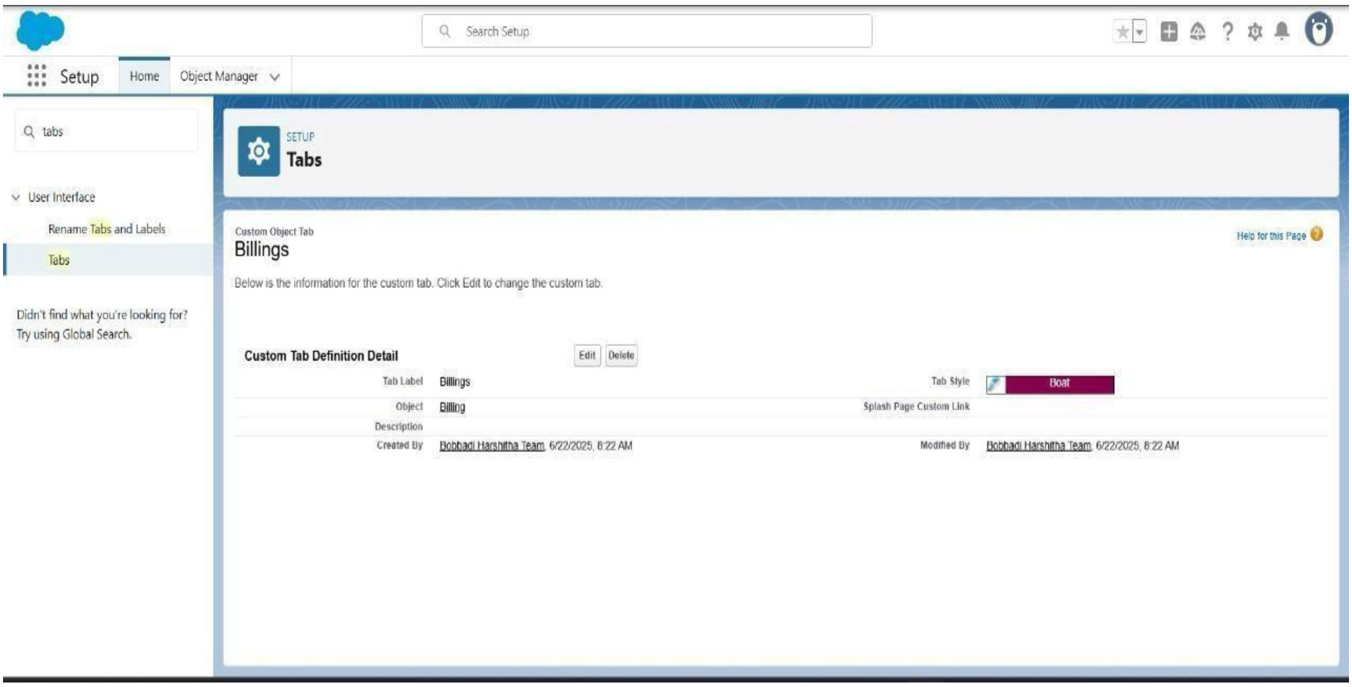
3. Customer Order



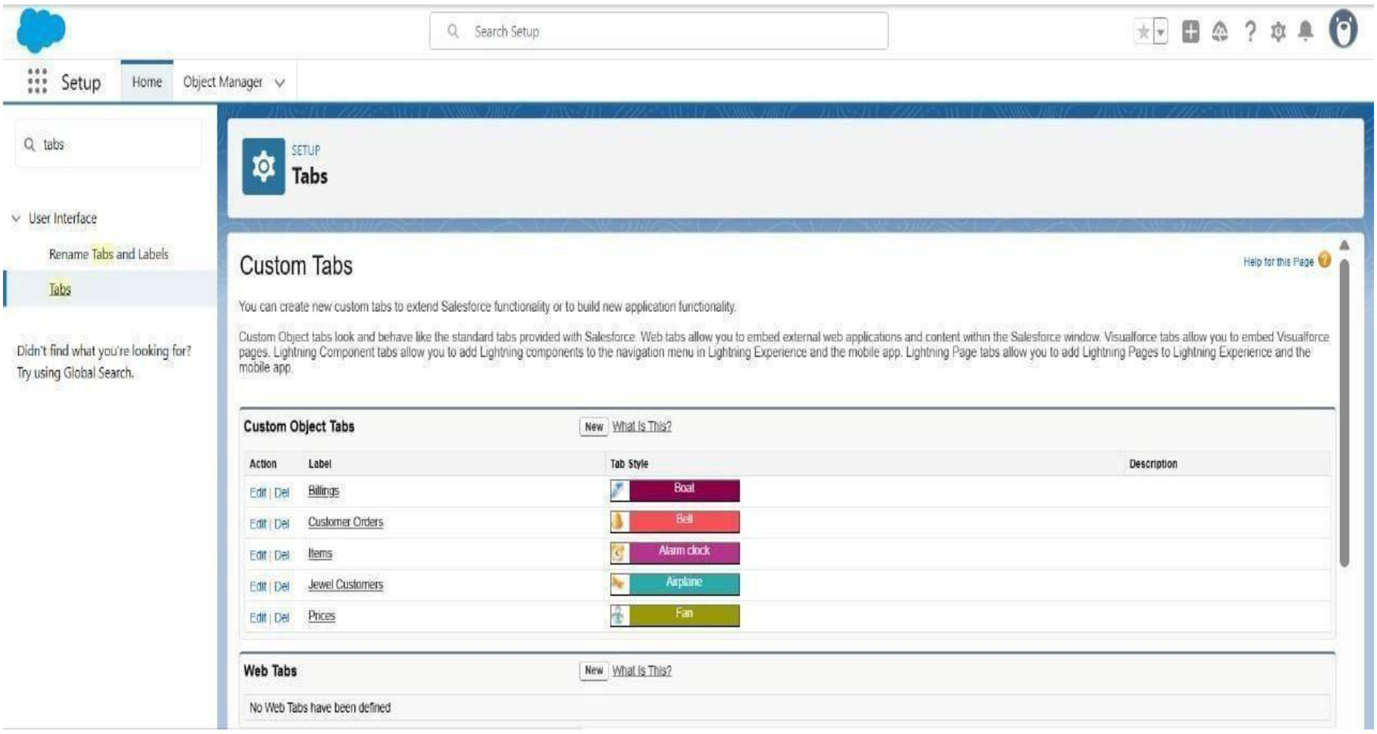
4. Price



5. Billing

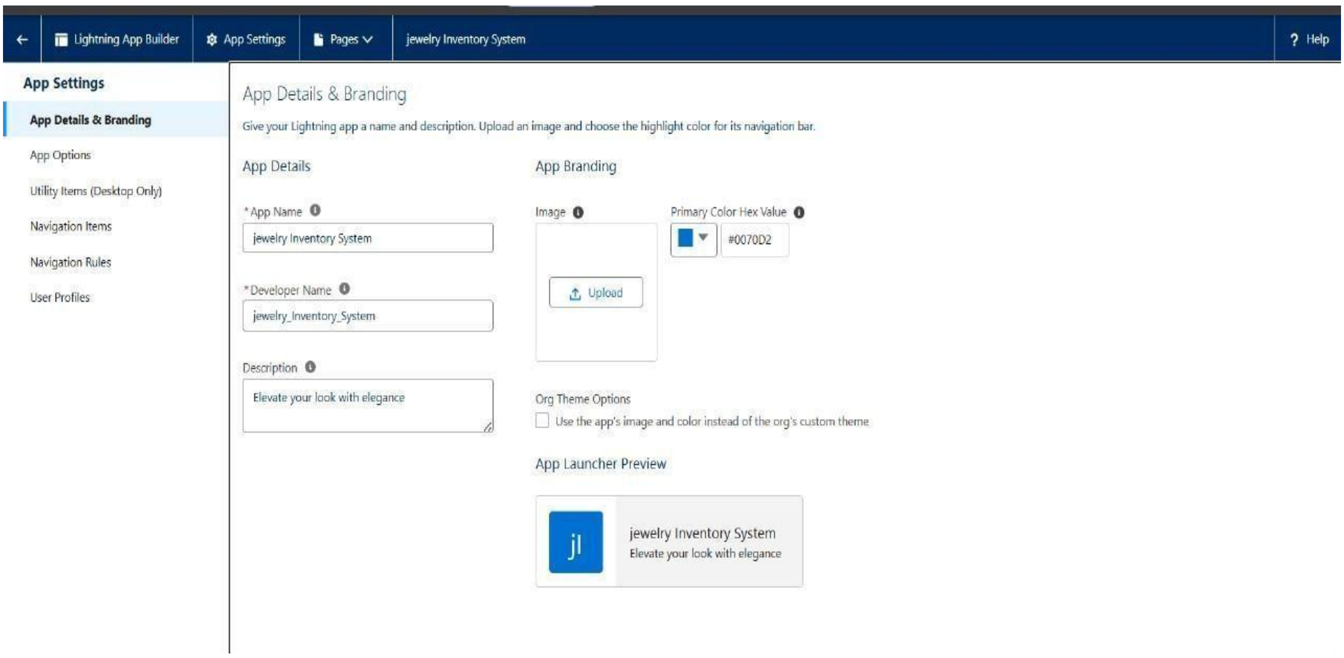


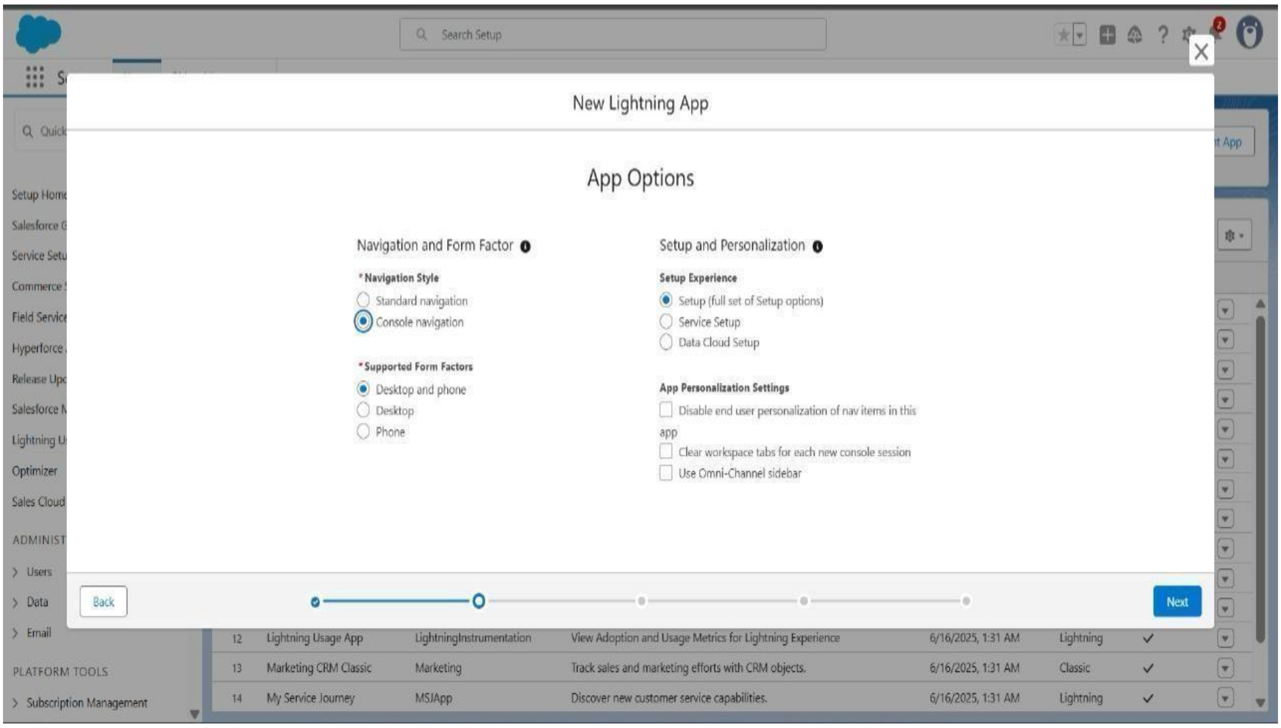
So we get the required all custom tabs as below



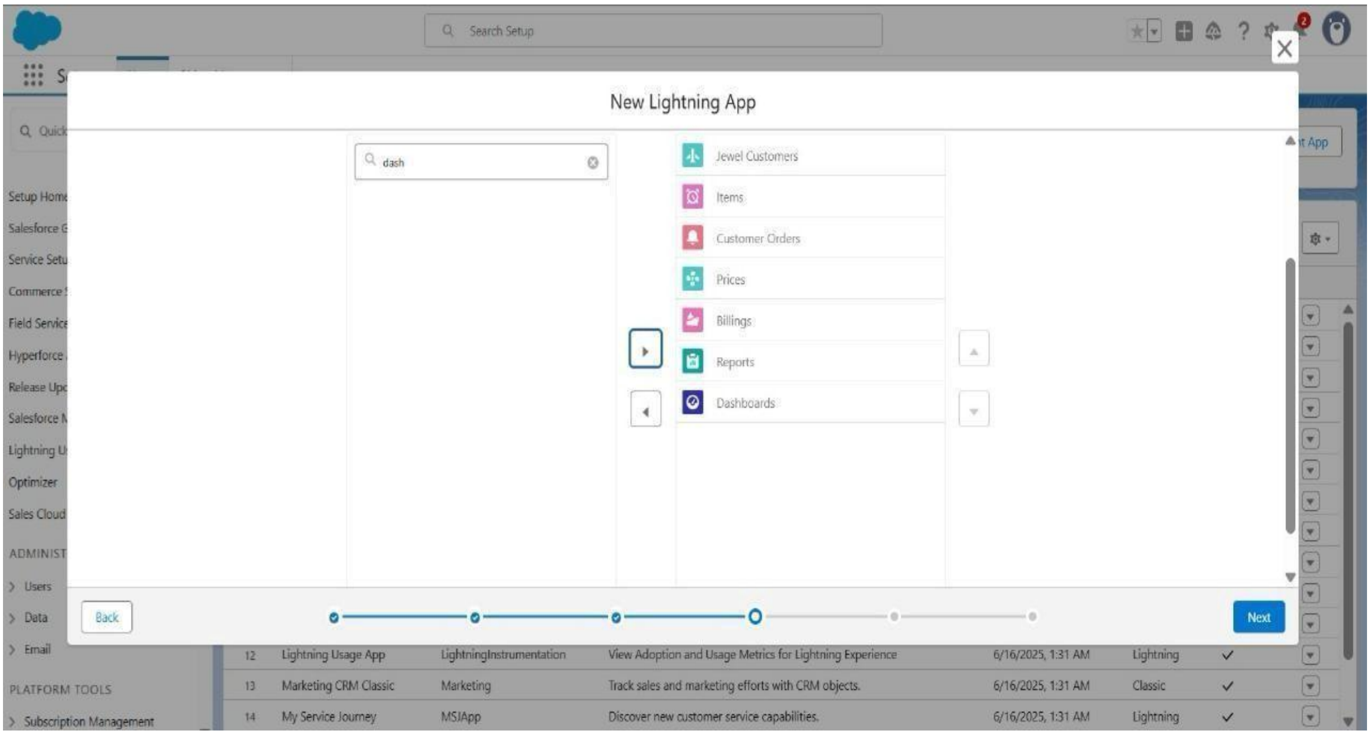
6.4 Creation of Lightning App

App Name: Jewelry Inventory System





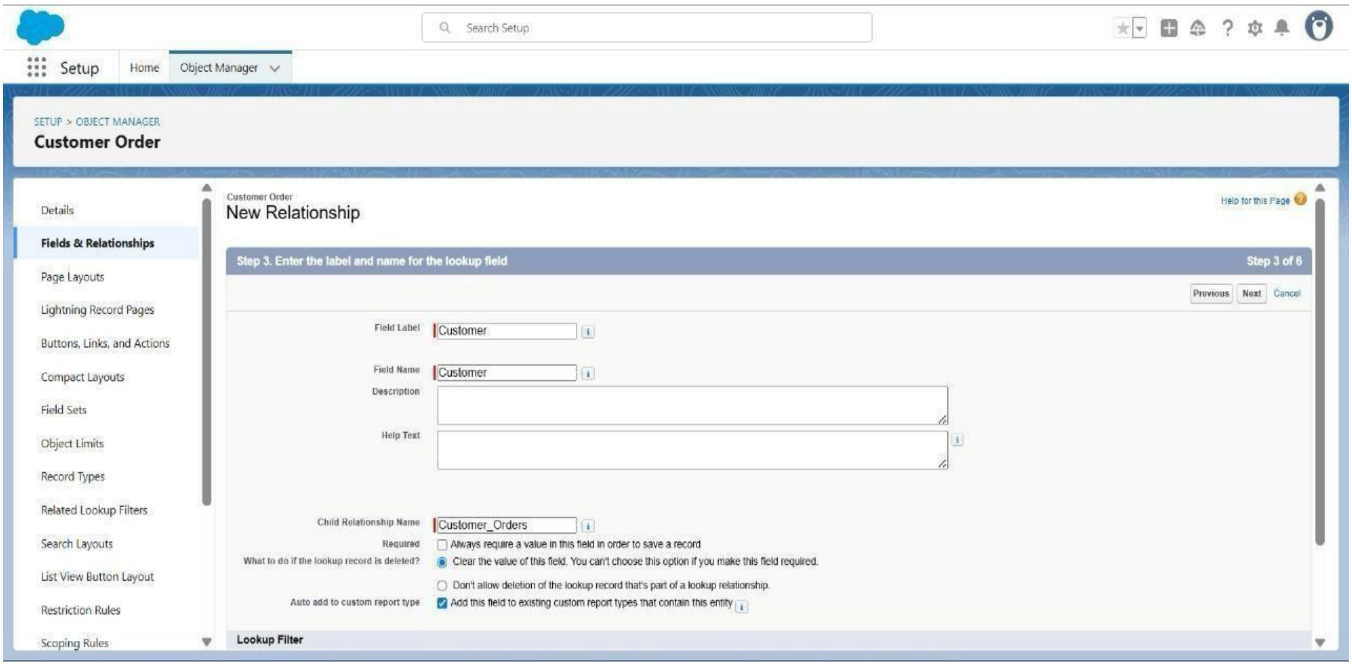
Navigation Items

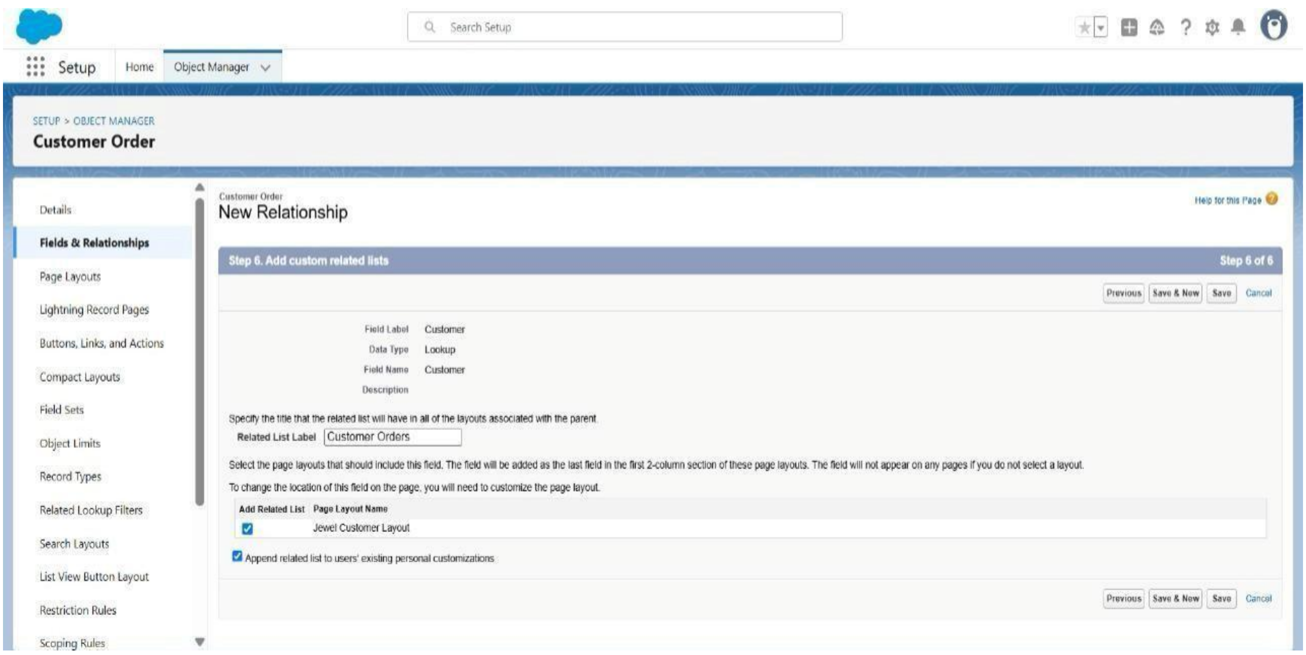


6.5 Creation of Fields

1. Creating lookup relationship

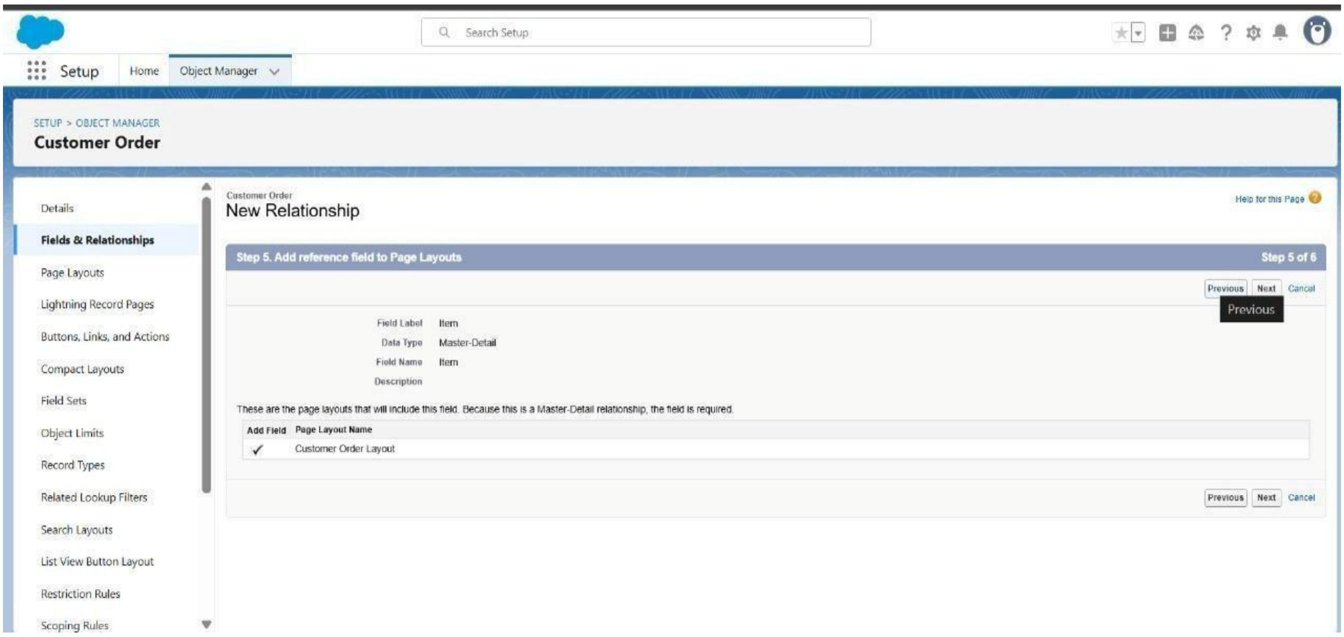
To Create a relationship between Jewel Customer & Customer Order Objects.

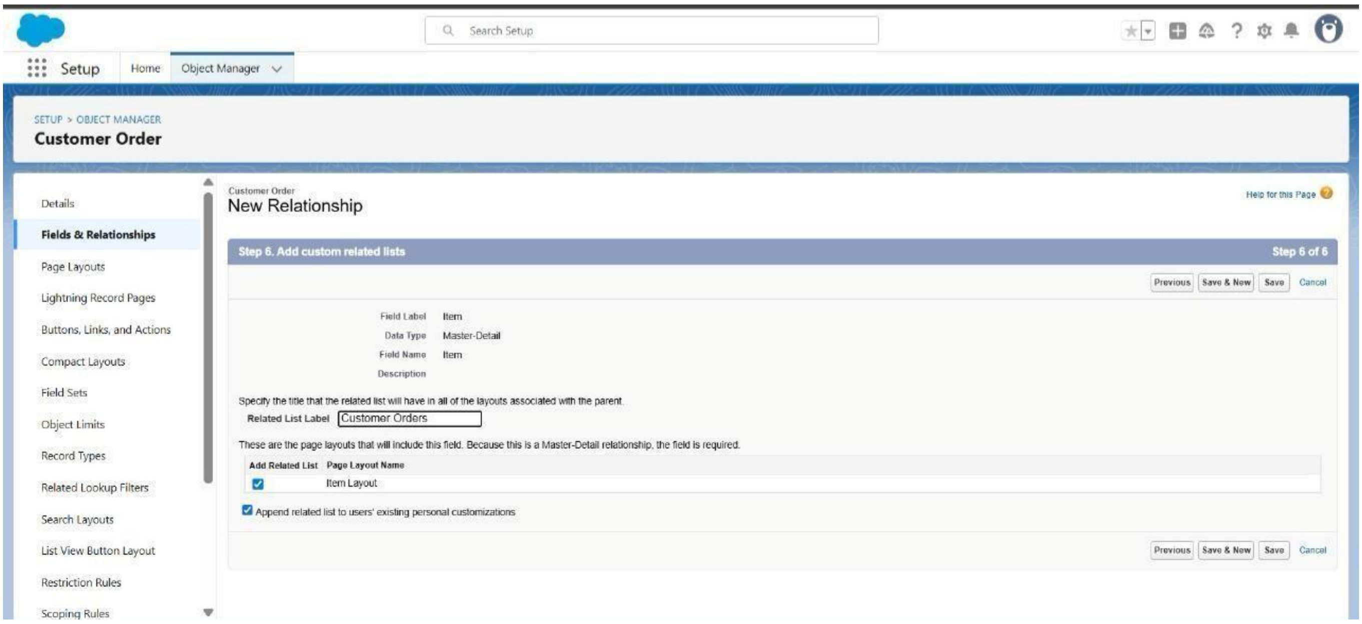




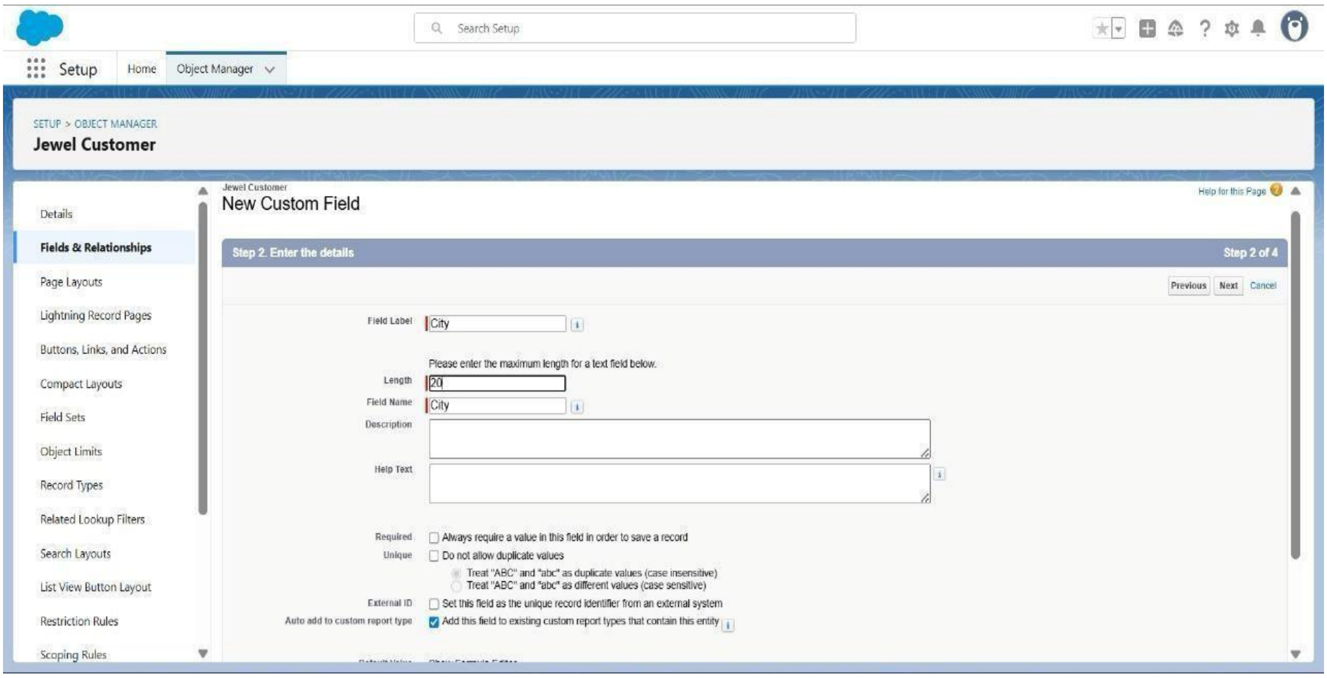
2. Creating a Master-Detail Relationship

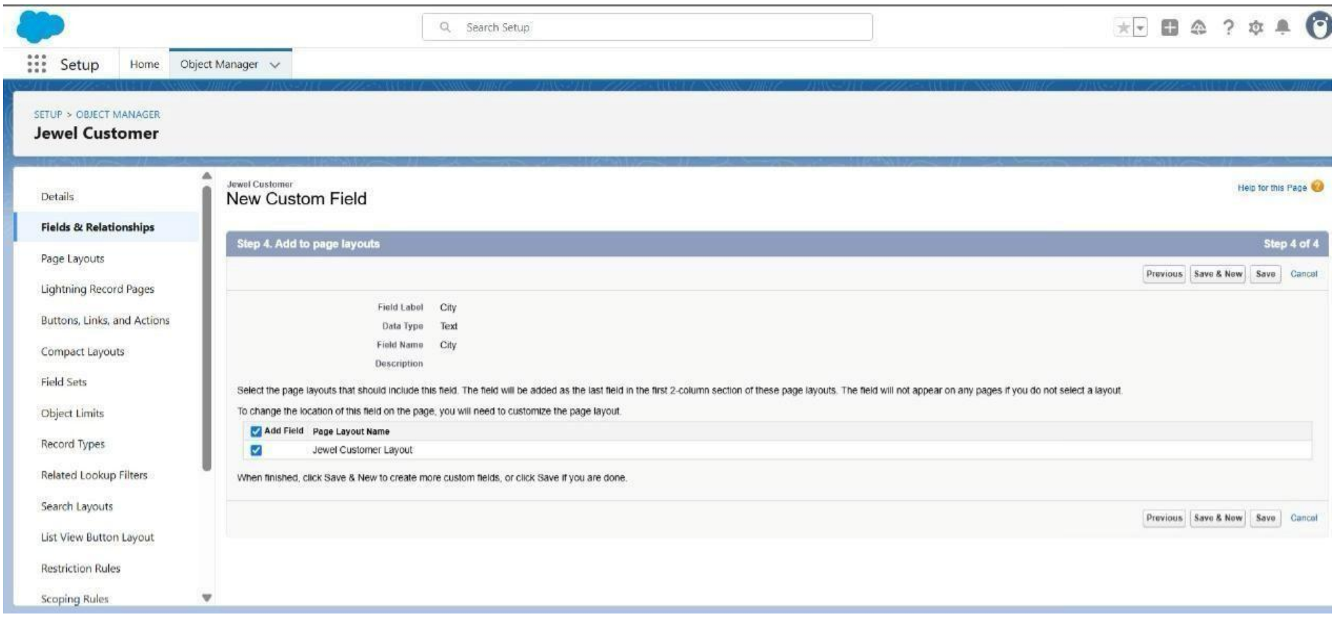
Creating Master-Detail Relationship between Item & Customer Order Object.





3. Creating Text Field in Jewel Customer Object


Search Setup
Setup
Home
Object Manager
SETUP > OBJECT MANAGER
Jewel Customer
Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Search Layouts
List View Button Layout
Restriction Rules
Scoping Rules
Jewel Customer
New Custom Field
Help for this Page
Step 2. Enter the details
Step 2 of 4
Previous
Next
Cancel
Field Label
City
Please enter the maximum length for a text field below.
Length
20
Field Name
City
Description
Help Text
Required
Always require a value in this field in order to save a record
Unique
Do not allow duplicate values
Treat "ABC" and "abc" as duplicate values (case insensitive)
Treat "ABC" and "abc" as different values (case sensitive)
External ID
Set this field as the unique record identifier from an external system
Auto add to custom report type
Add this field to existing custom report types that contain this entity


Search Setup
Setup
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Jewel Customer
Details
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Lightning Record Pages
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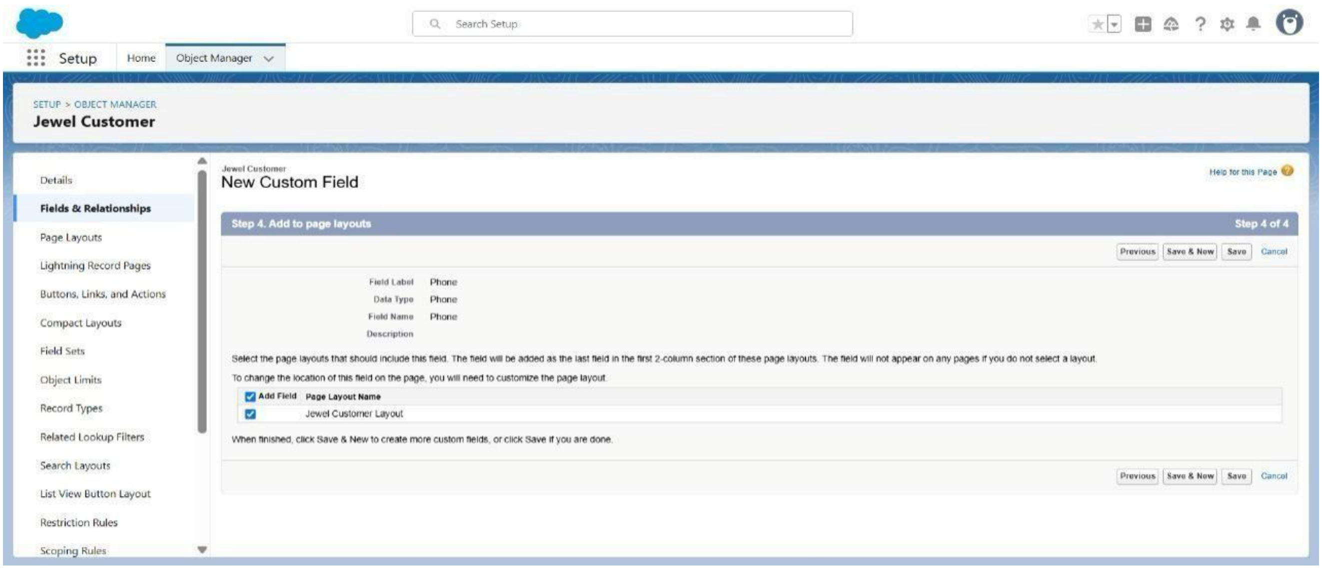
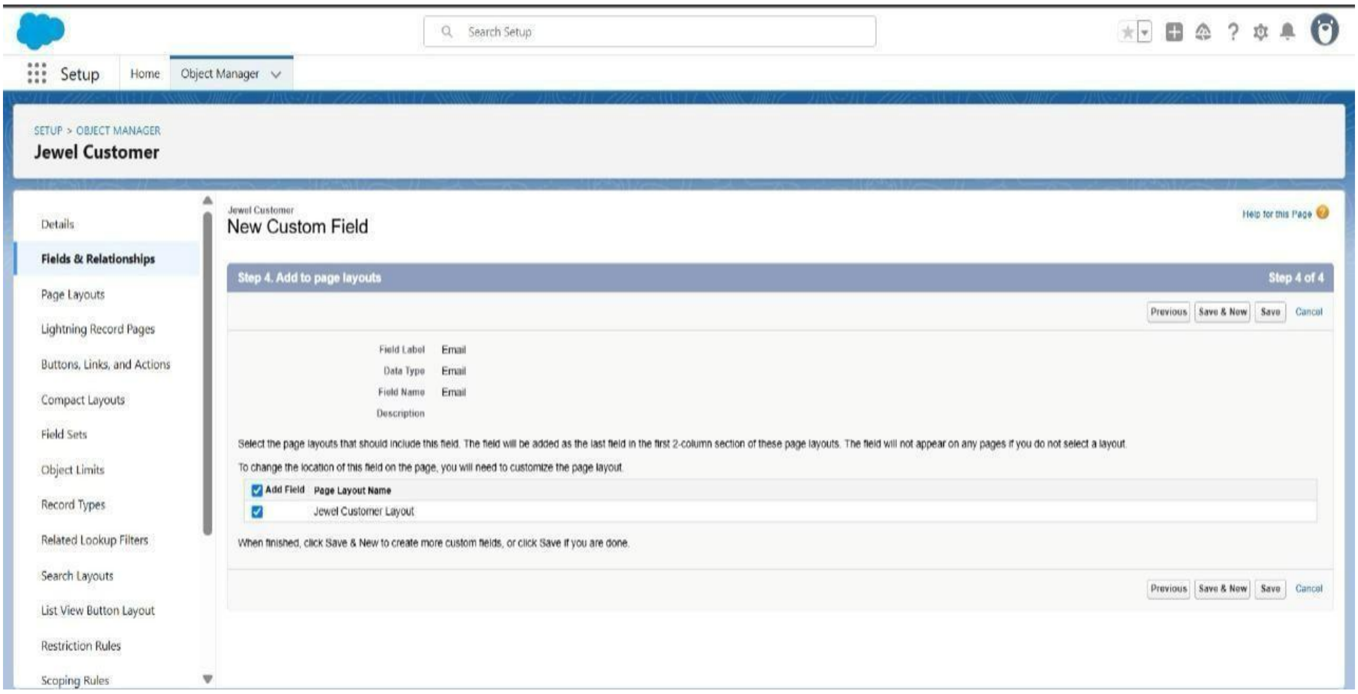
Field Sets
Object Limits
Record Types
Related Lookup Filters
Search Layouts
List View Button Layout
Restriction Rules
Scoping Rules
Jewel Customer
New Custom Field
Help for this Page
Step 4. Add to page layouts
Step 4 of 4
Previous
Save & New
Save
Cancel
Field Label
City
Data Type
Text
Field Name
City
Description
Select the page layouts that should include this field. The field will be added as the last field in the first 2-column section of these page layouts. The field will not appear on any pages if you do not select a layout.
To change the location of this field on the page, you will need to customize the page layout.
Add Field
Page Layout Name
Jewel Customer Layout
When finished, click Save & New to create more custom fields, or click Save if you are done.

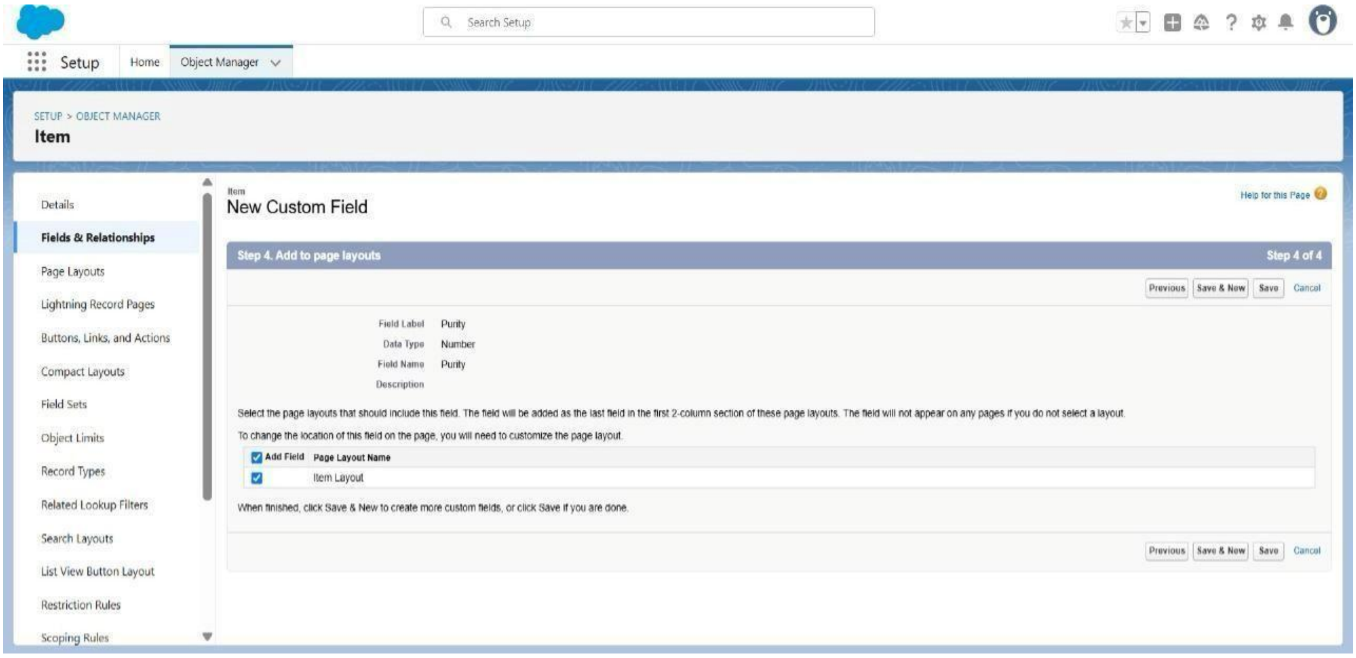
4. Creating the Phone field in object Jewel Customer



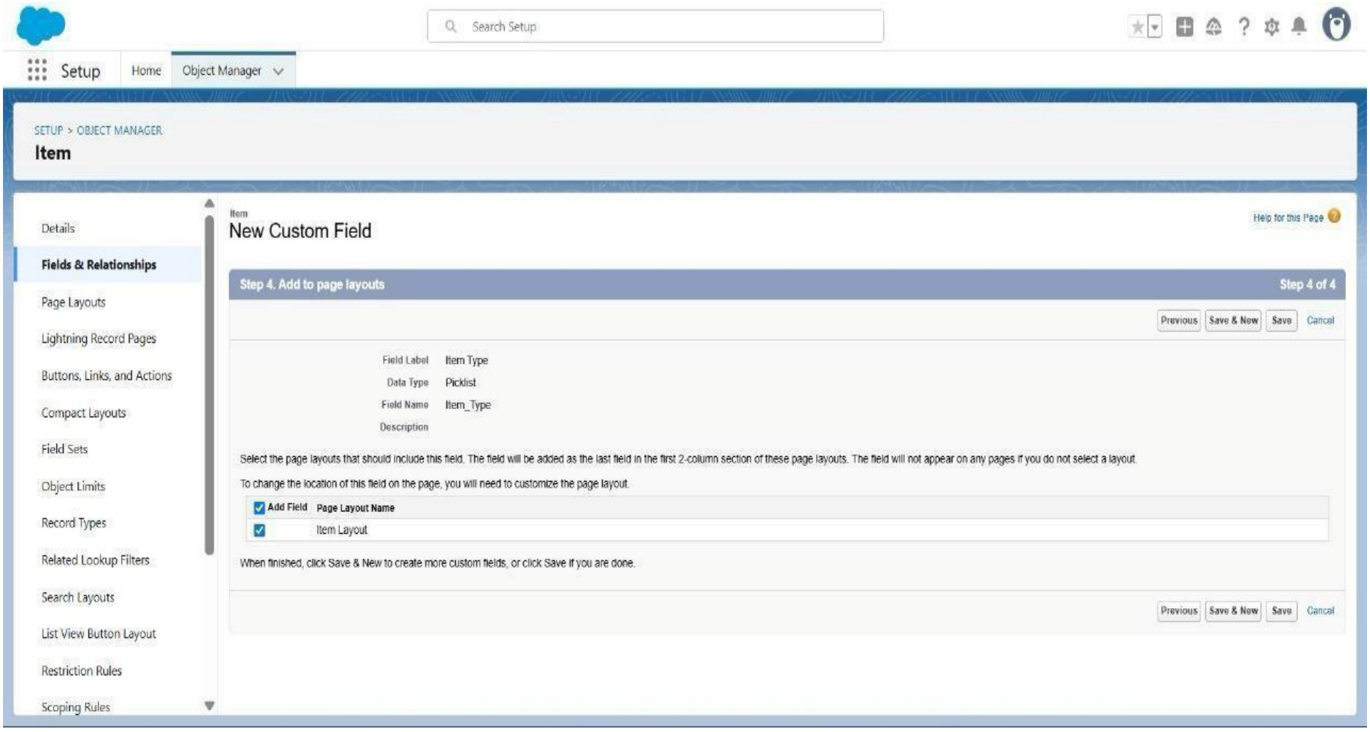
5. Creating the Email field in object Jewel Customer



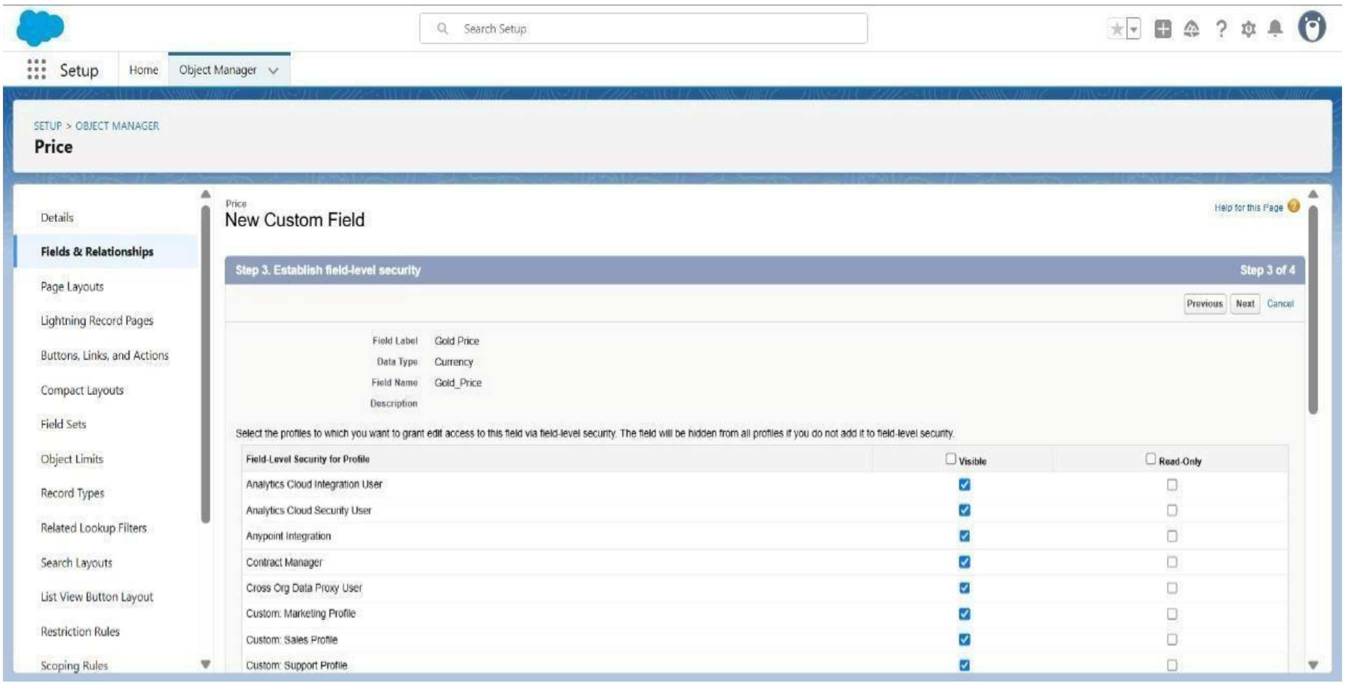
6. Creating the number field in Item object



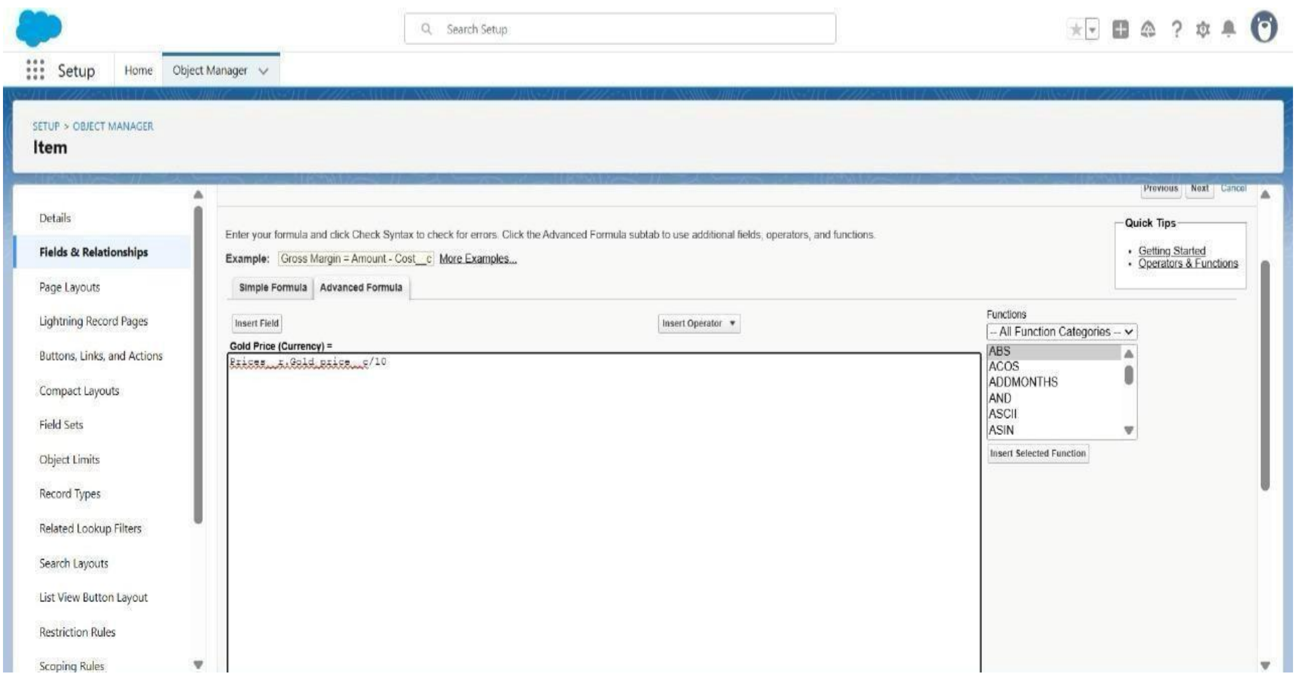
7. Creating Picklist Field in Item Object

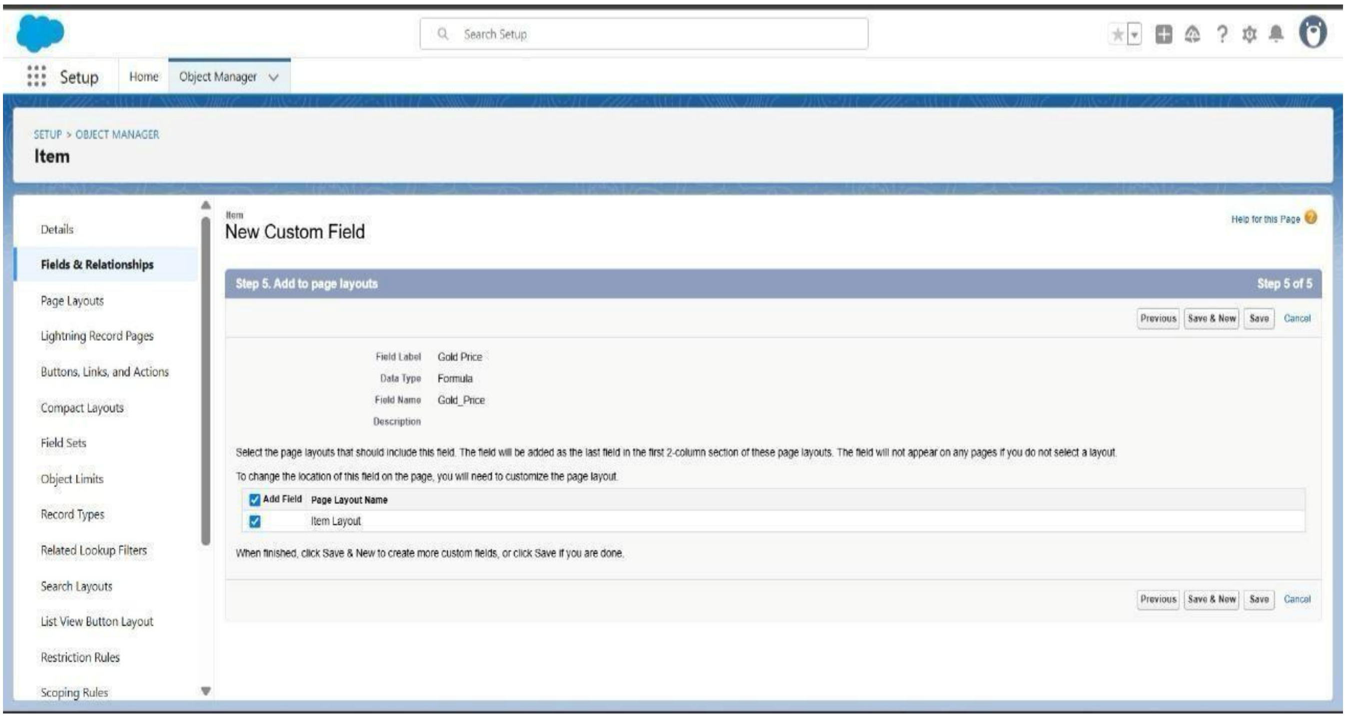


8. Creating Currency Field in Price Object



9. Creating Formula Field(Cross Object) in Item Object

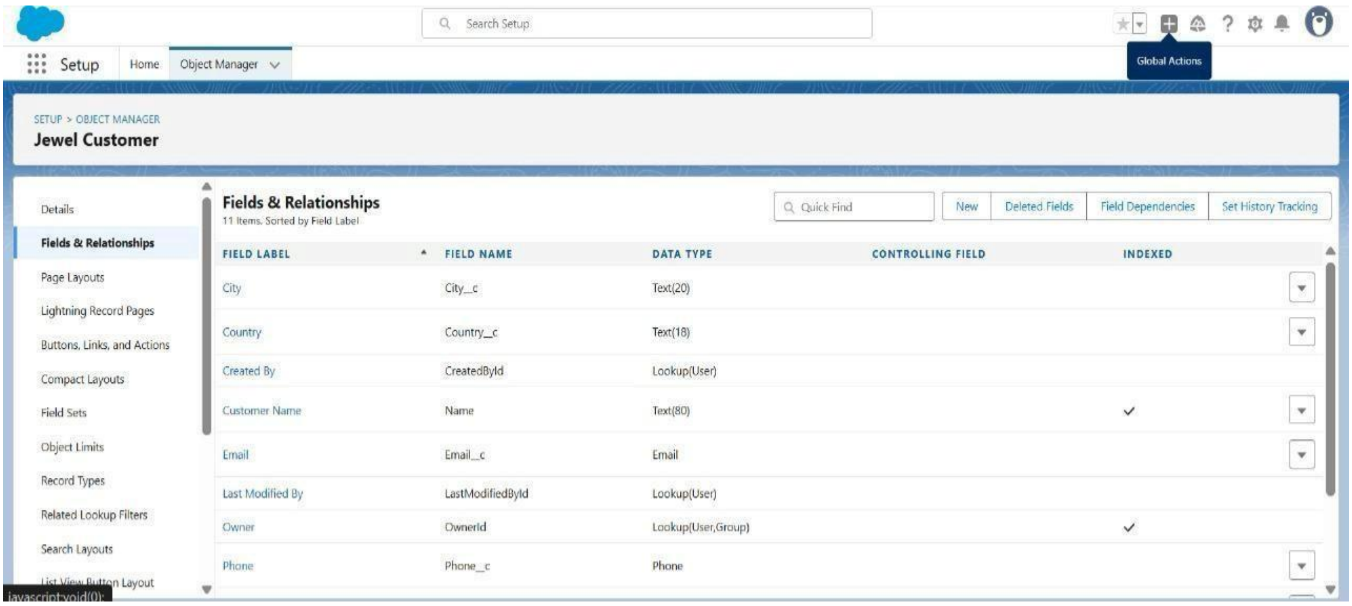




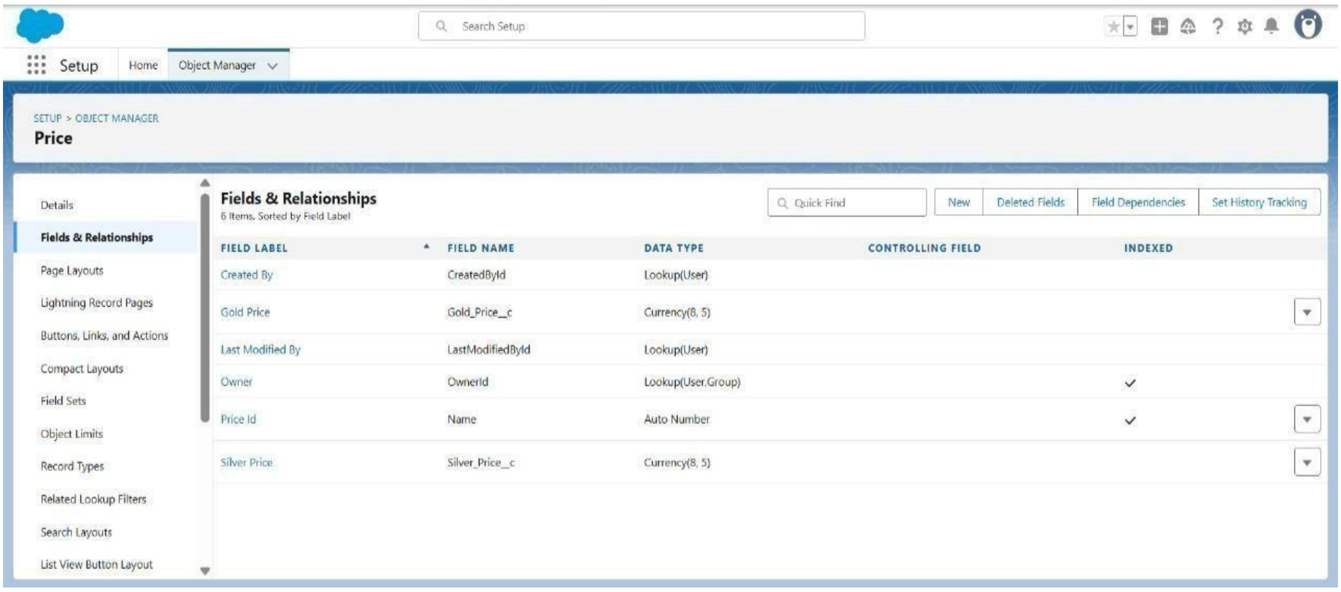
10. Creating Remaining Fields in Objects

Creating remaining fields in the objects

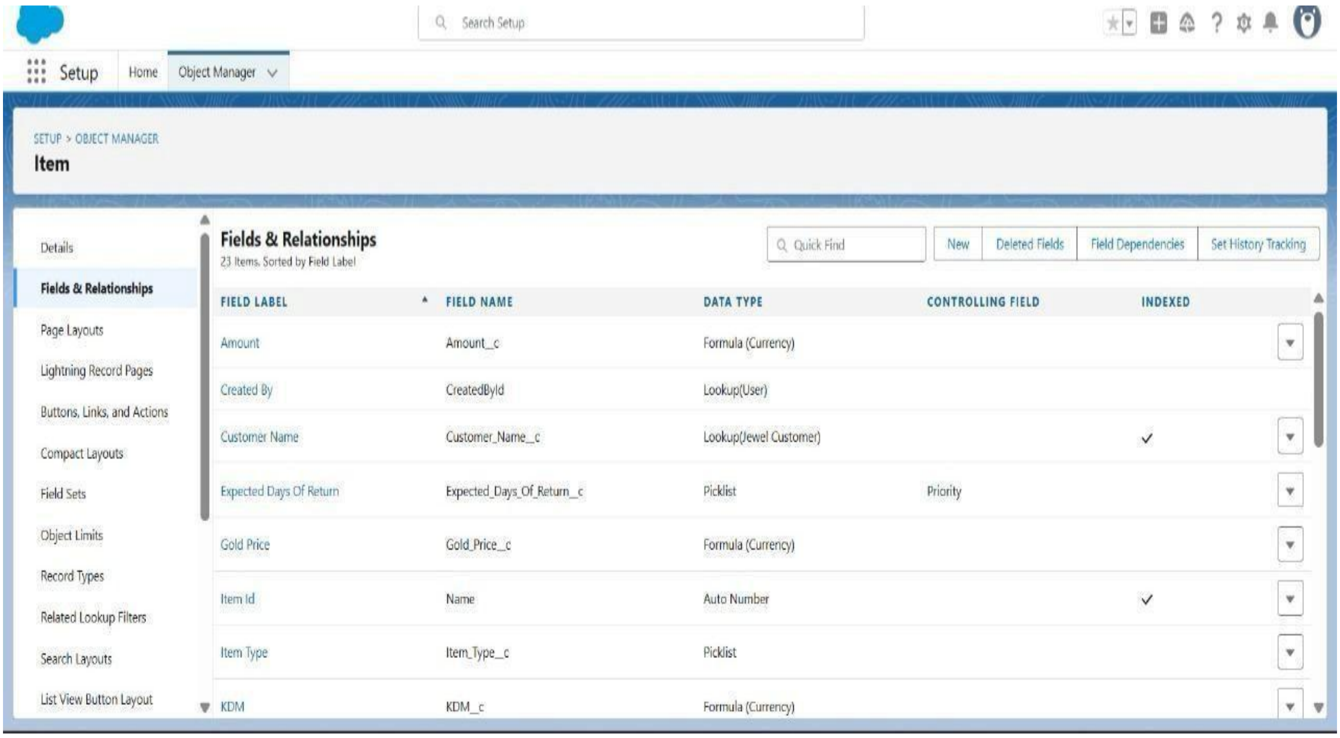
1. Jewel Customer : State, Street, Country, Zip/Postal code



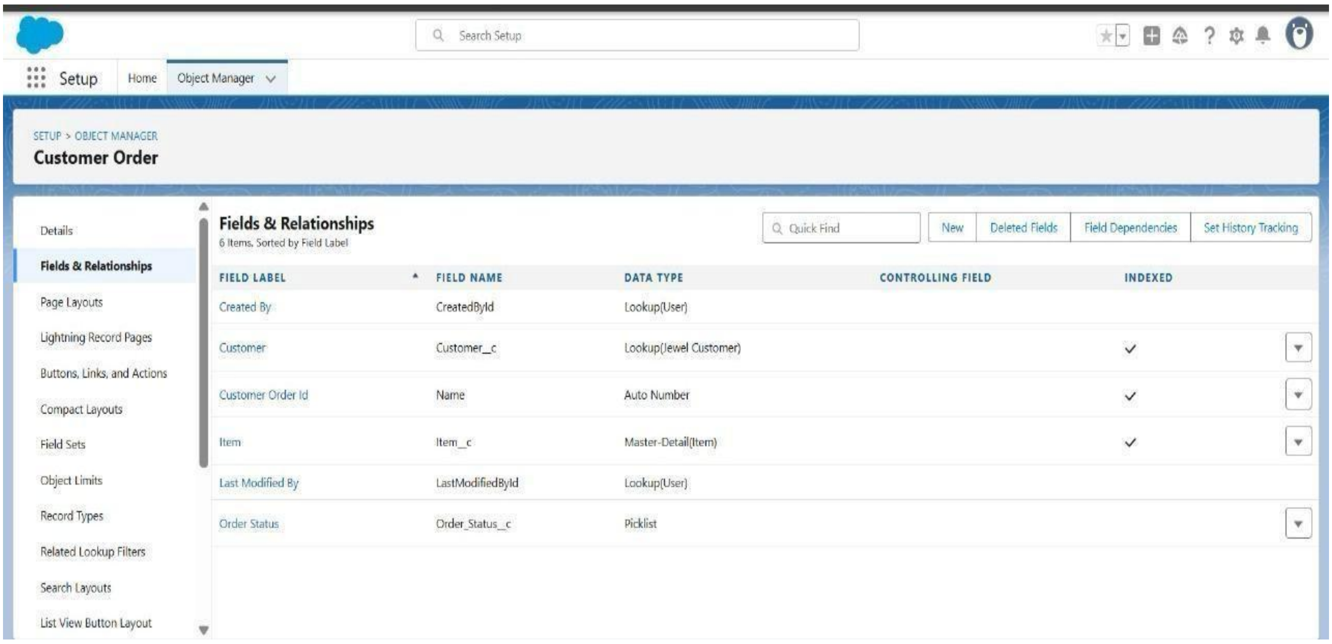
2. Price : Silver Price



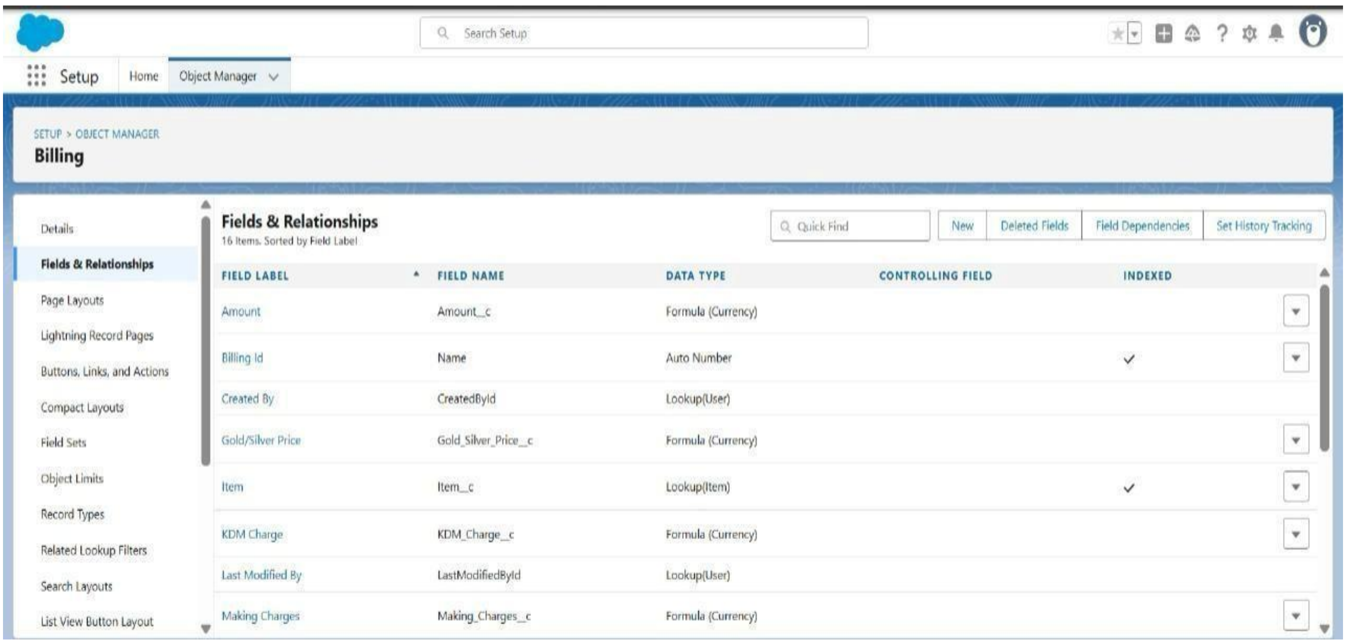
3. Item : Field Label-Customer Name, Ornament, Weight, Stone Weight, Percentage, Stone/Other Price, Expected Days of Return, Priority, Silver Price, Purity Gold Price, Total weights, Amount, KDM, Making Charges.



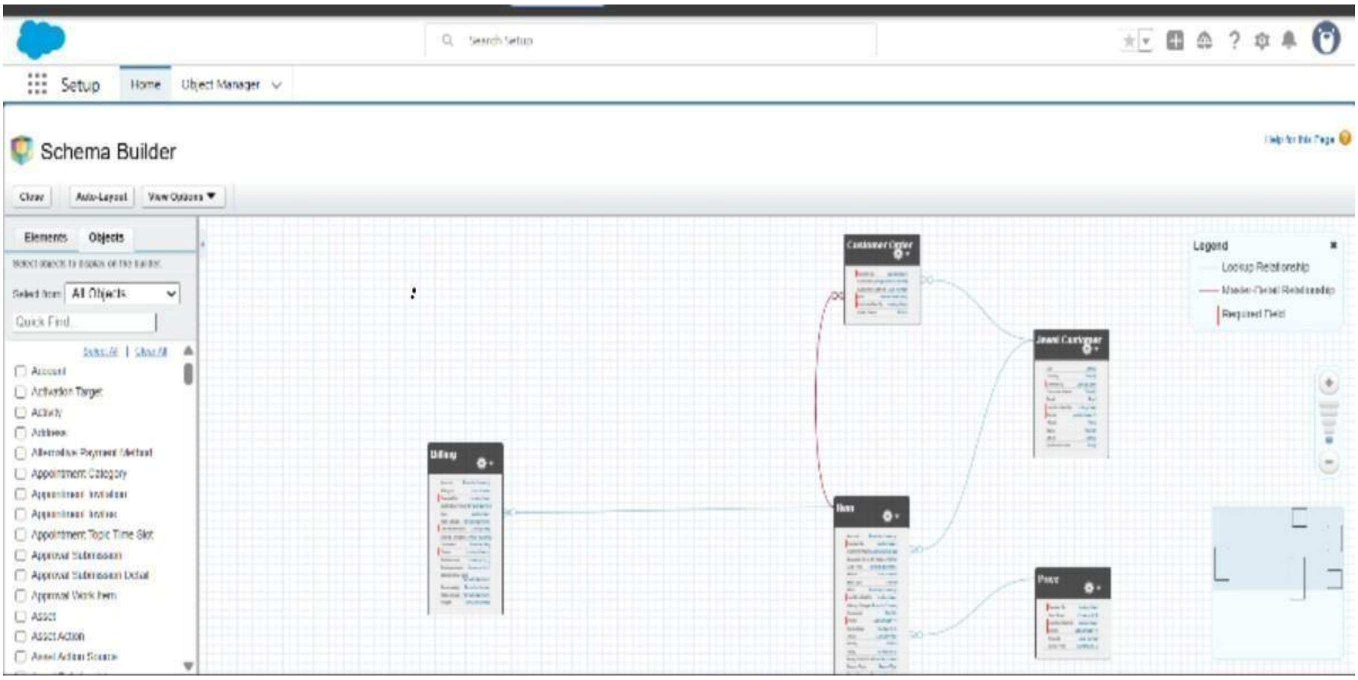
4. Customer Order: Order Status



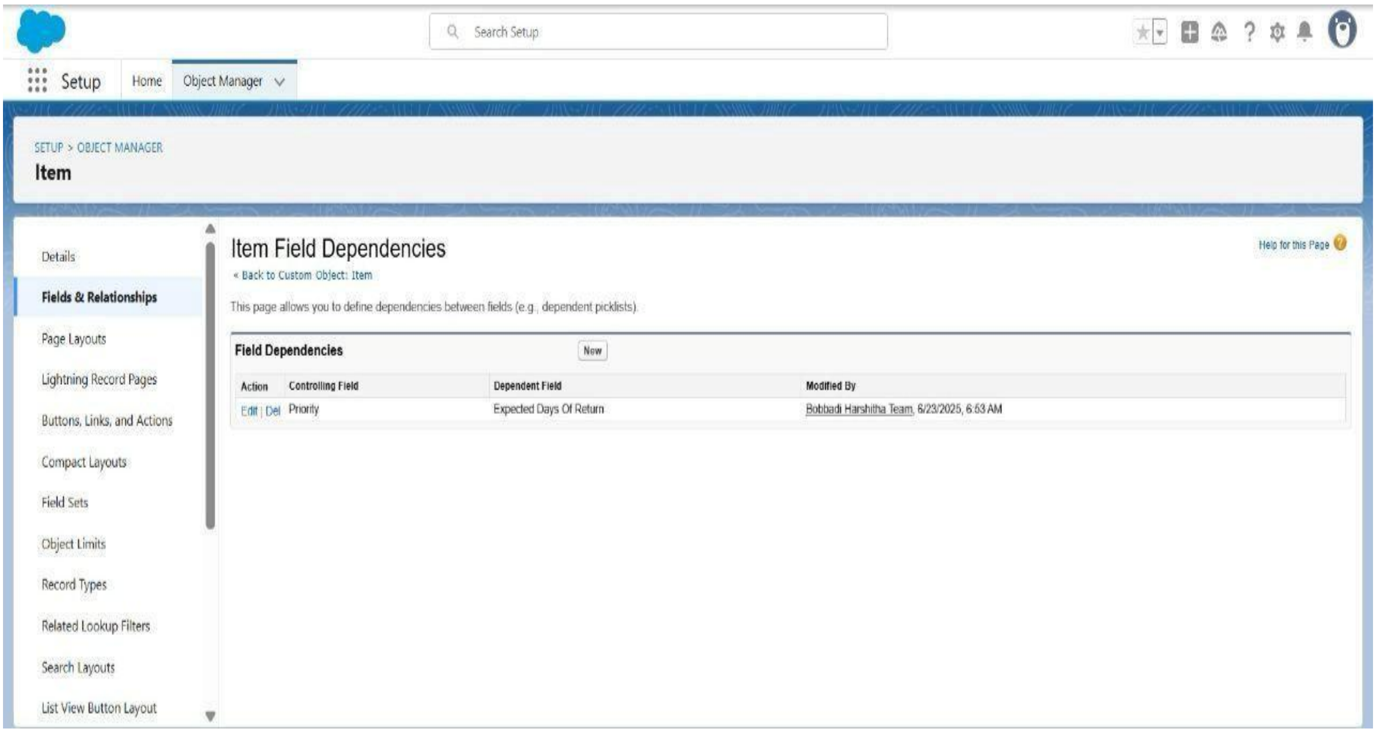
5. Billing: Field Label-Item, Ornament, Stone Weight, Weight, Amount, Gold/Silver Price, KDM Charge, Making Charges,Stone/Other Price, Total Amount.



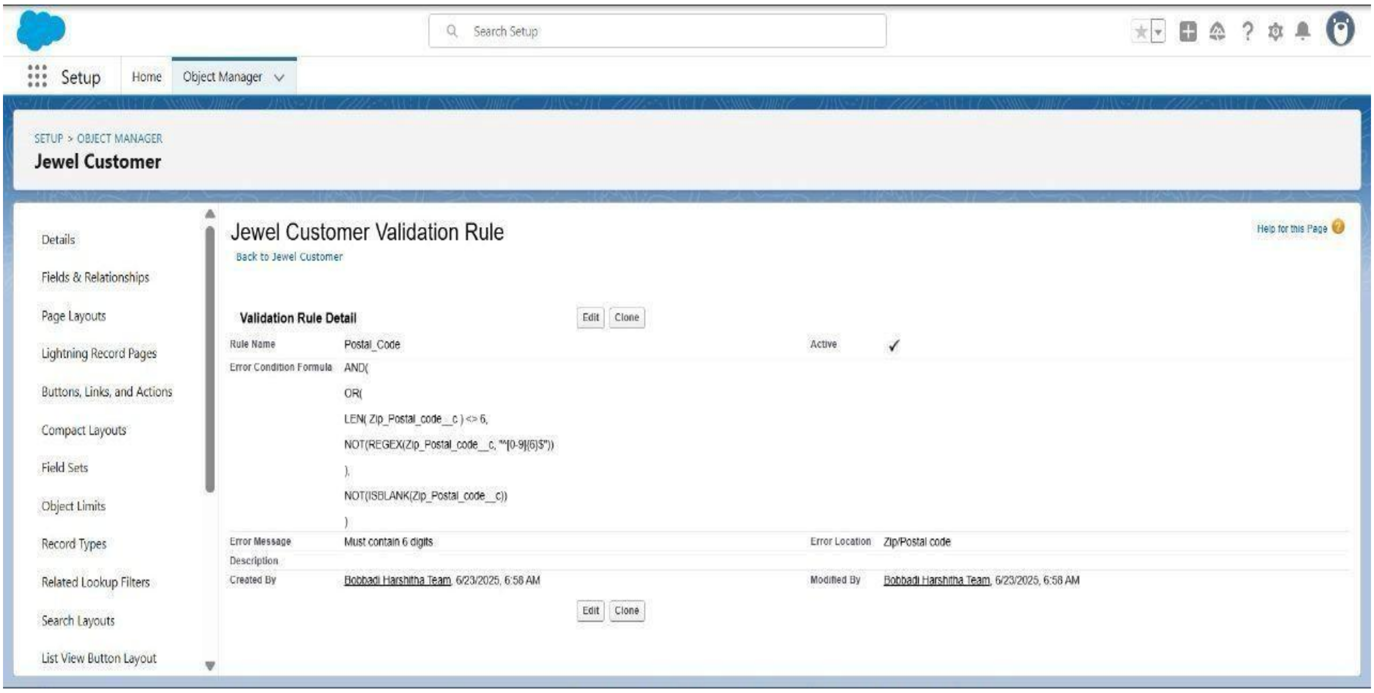
11. Creation of Schema Builder

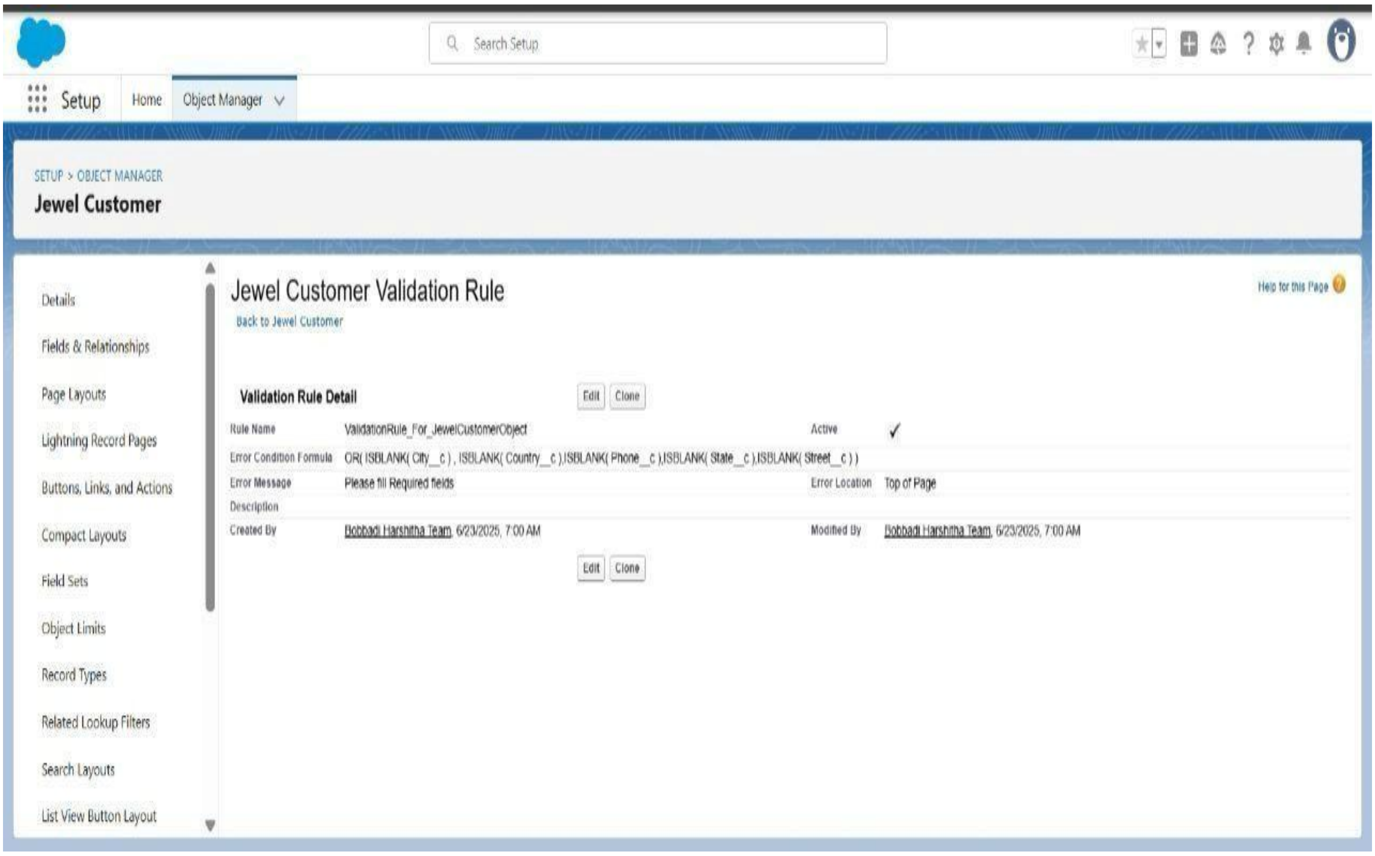


12. Creation of Field Dependencies



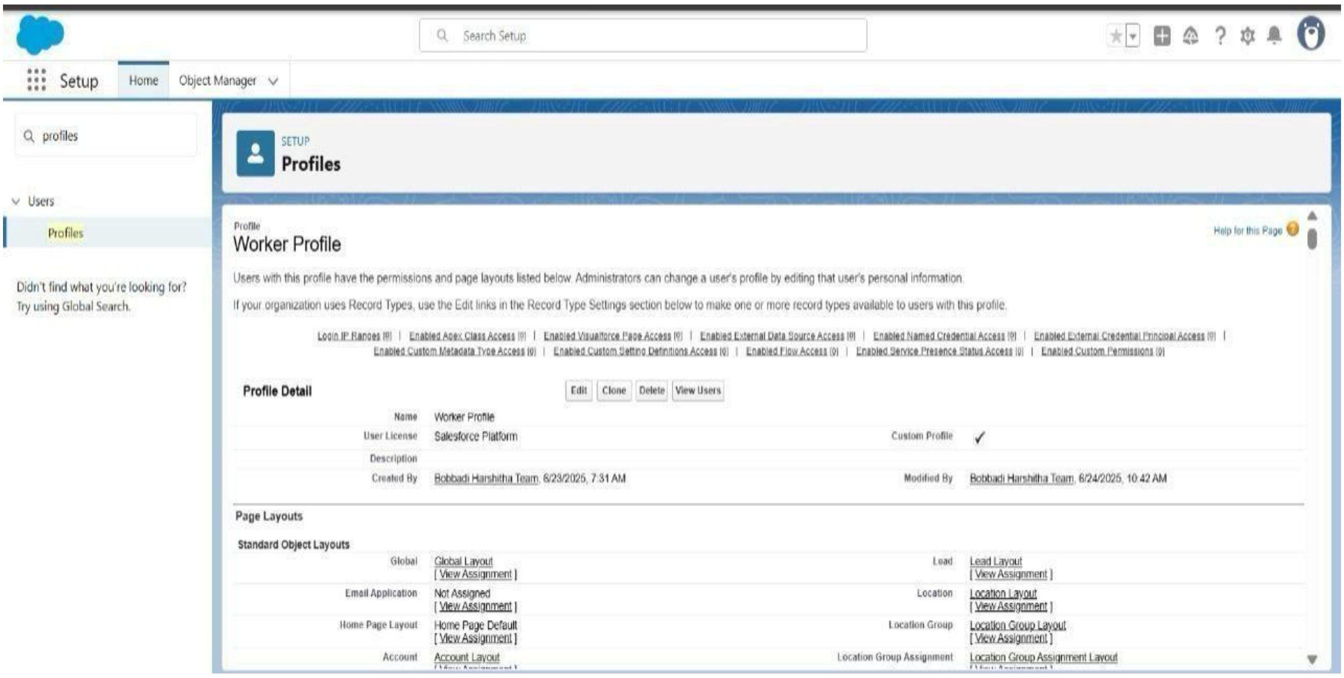
13. Creation of Validation Rules



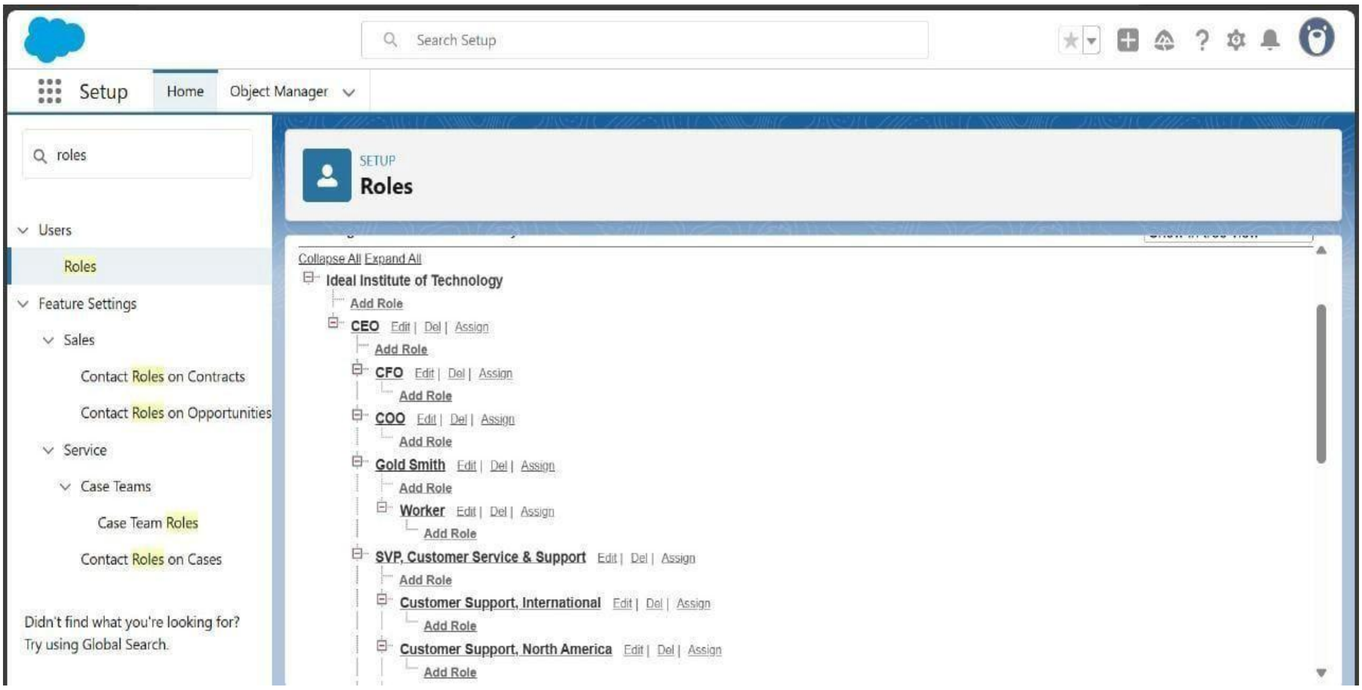


6.6 Creation of Profiles

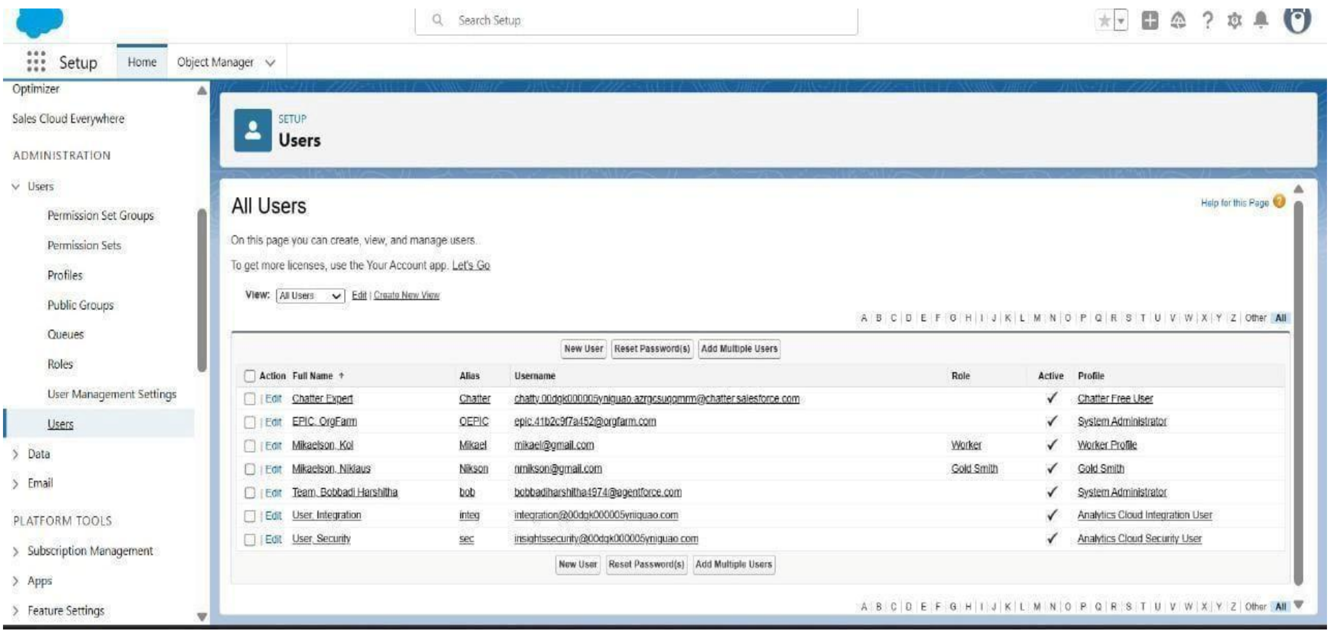
We create the goldsmith profile and the worker profile



6.7 Creation of Roles

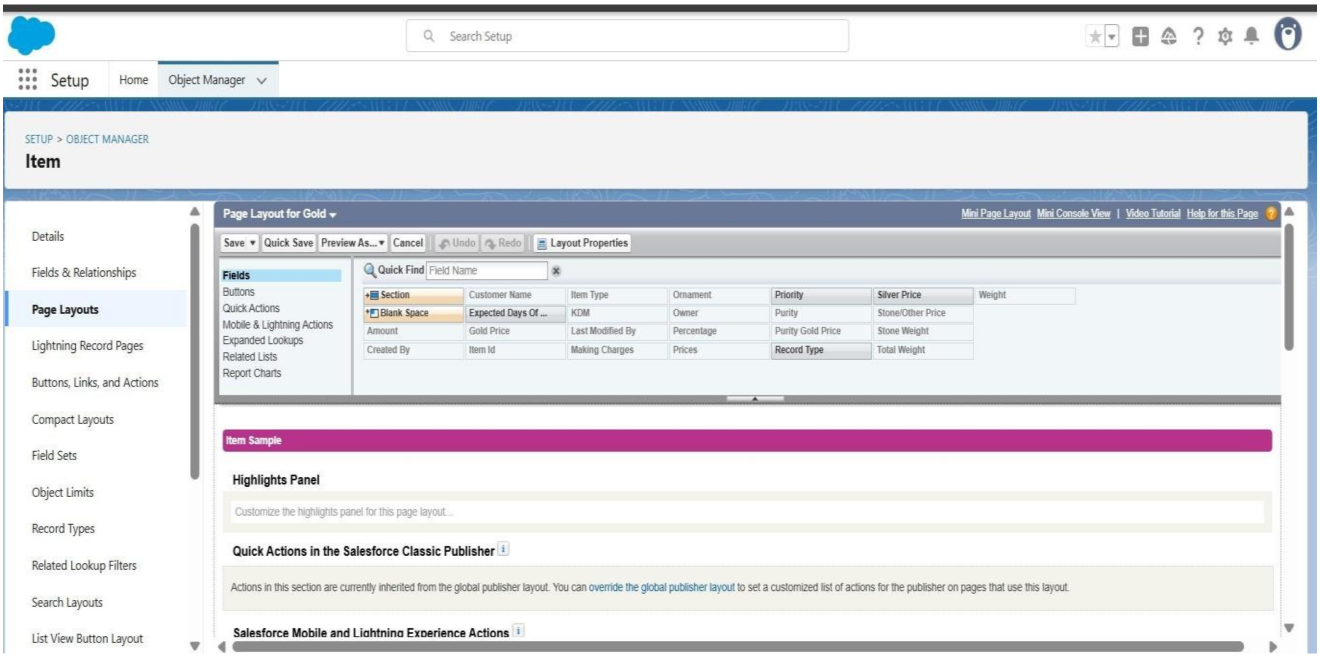


6.8 Creation of Users



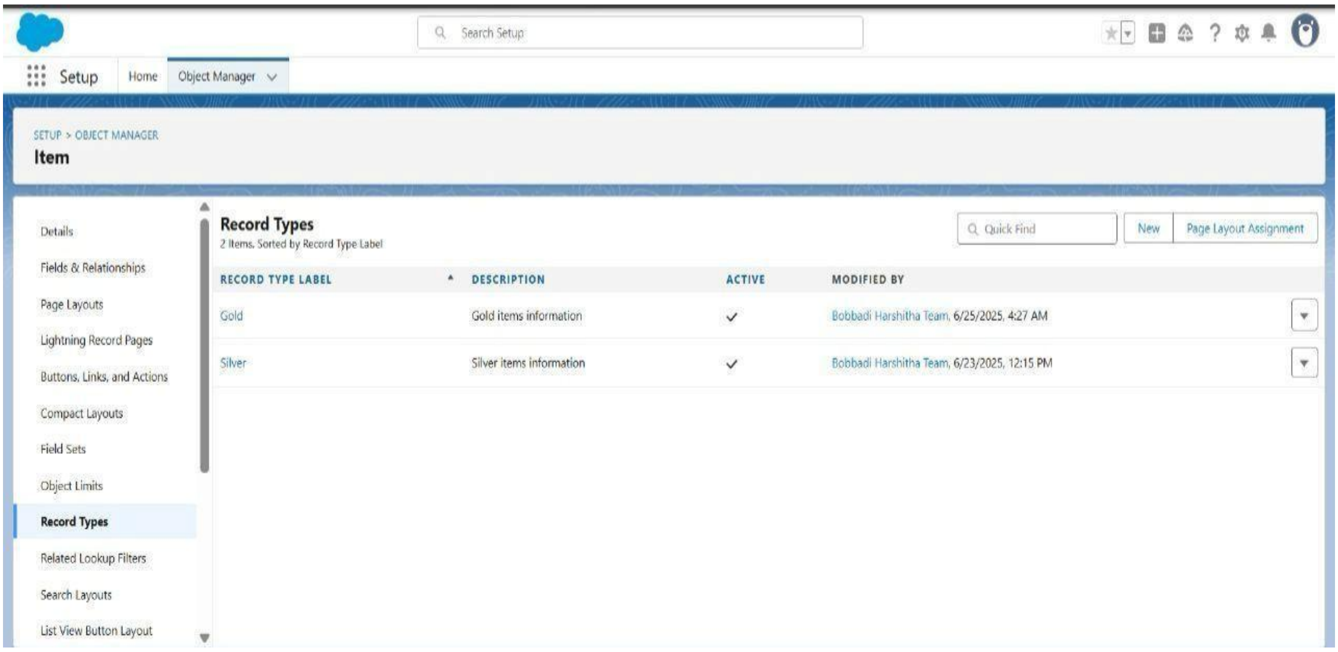
6.9 Creation of Page Layouts

We create the page layouts for gold and silver items

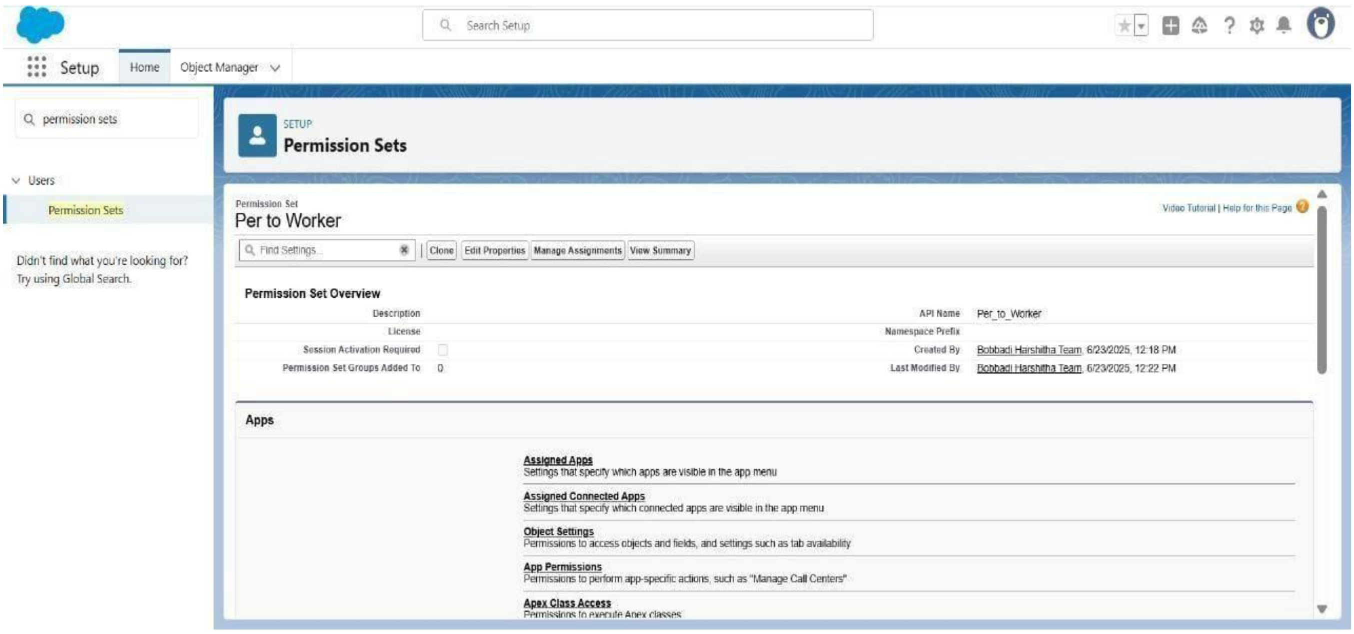


6.10 Creation of Record Types

We create the gold an silver records

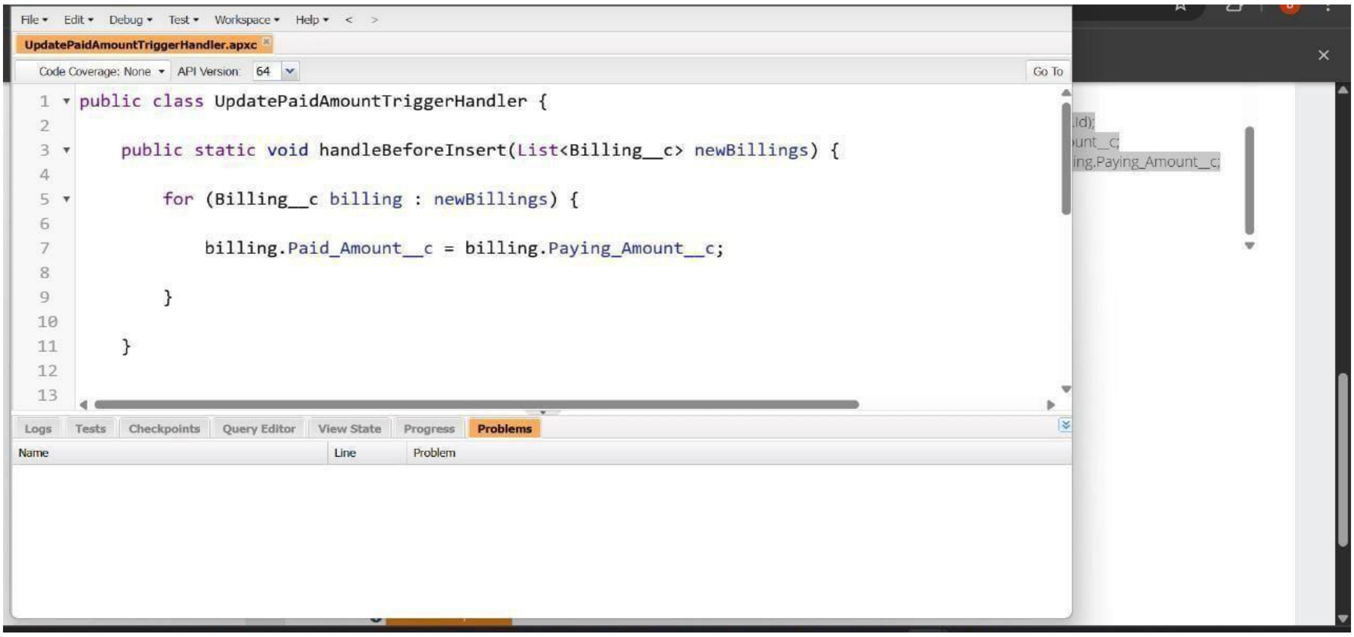


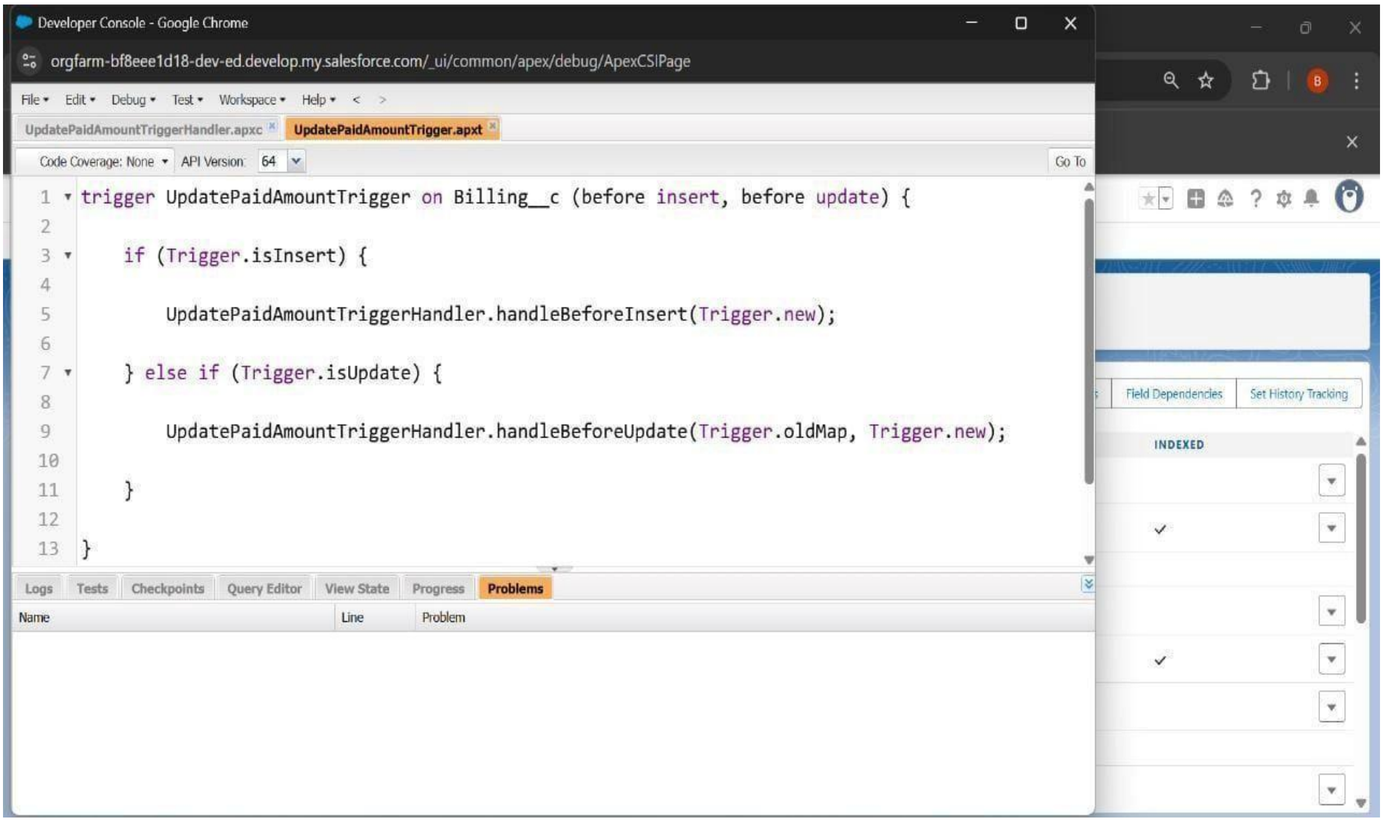
6.11 Creation of Permission Sets



Trigger

6.12 Creation of

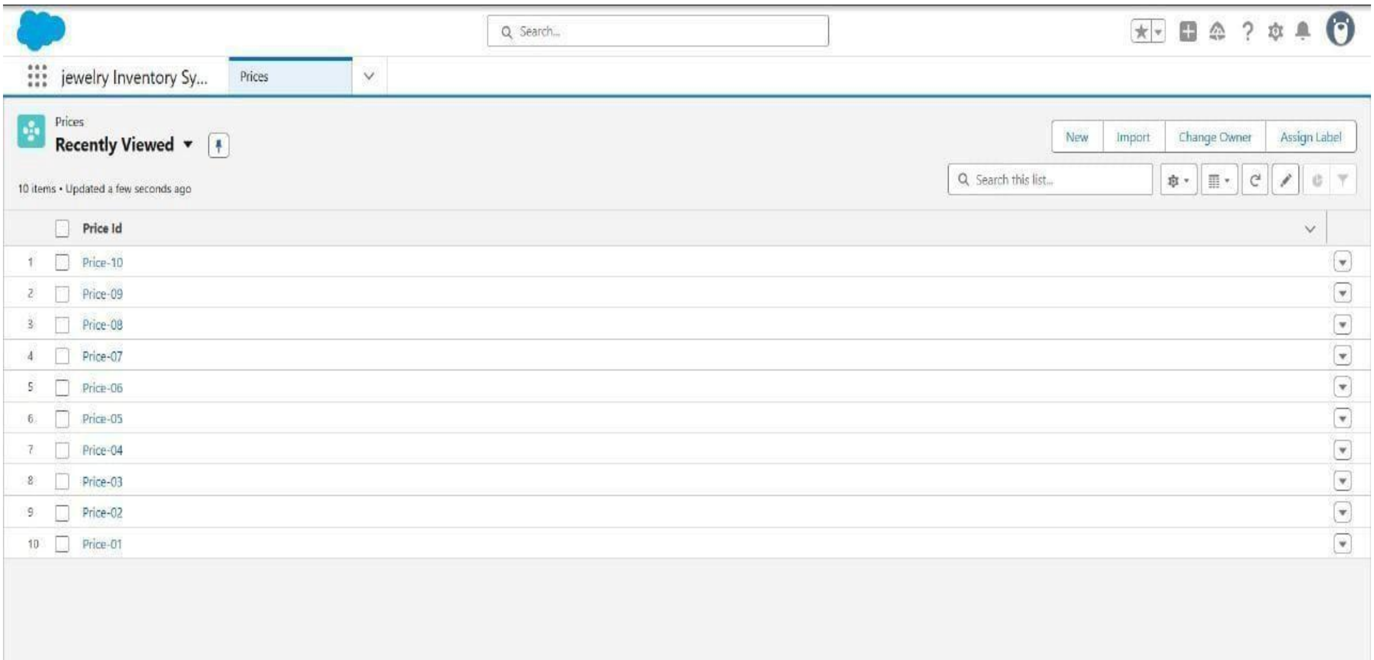


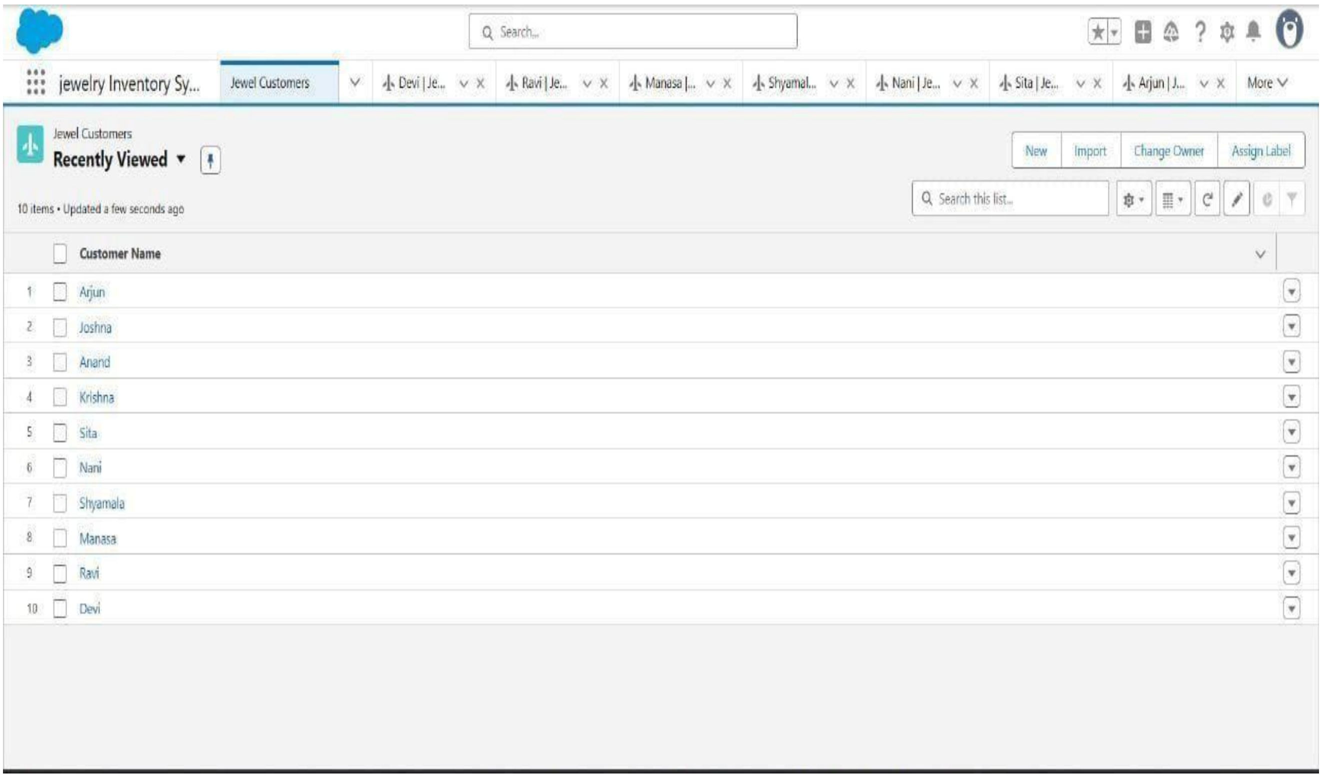


User Adoption

6.13 Creation of

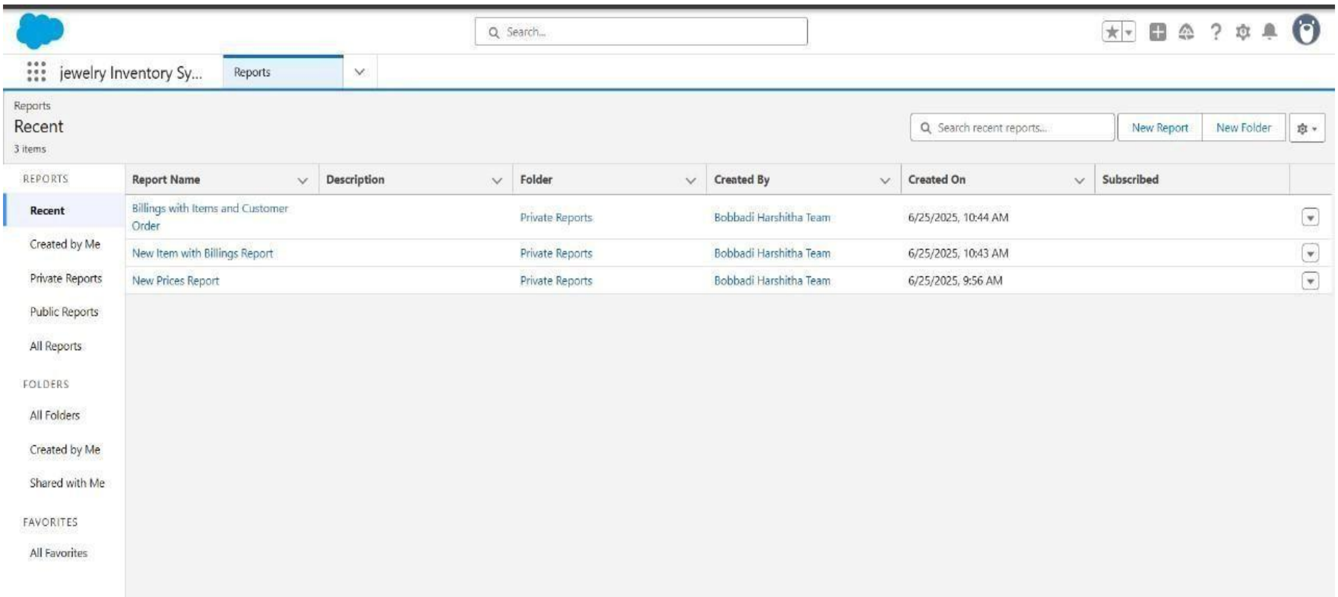
We create item,price,customer orders,jewel customers and billing





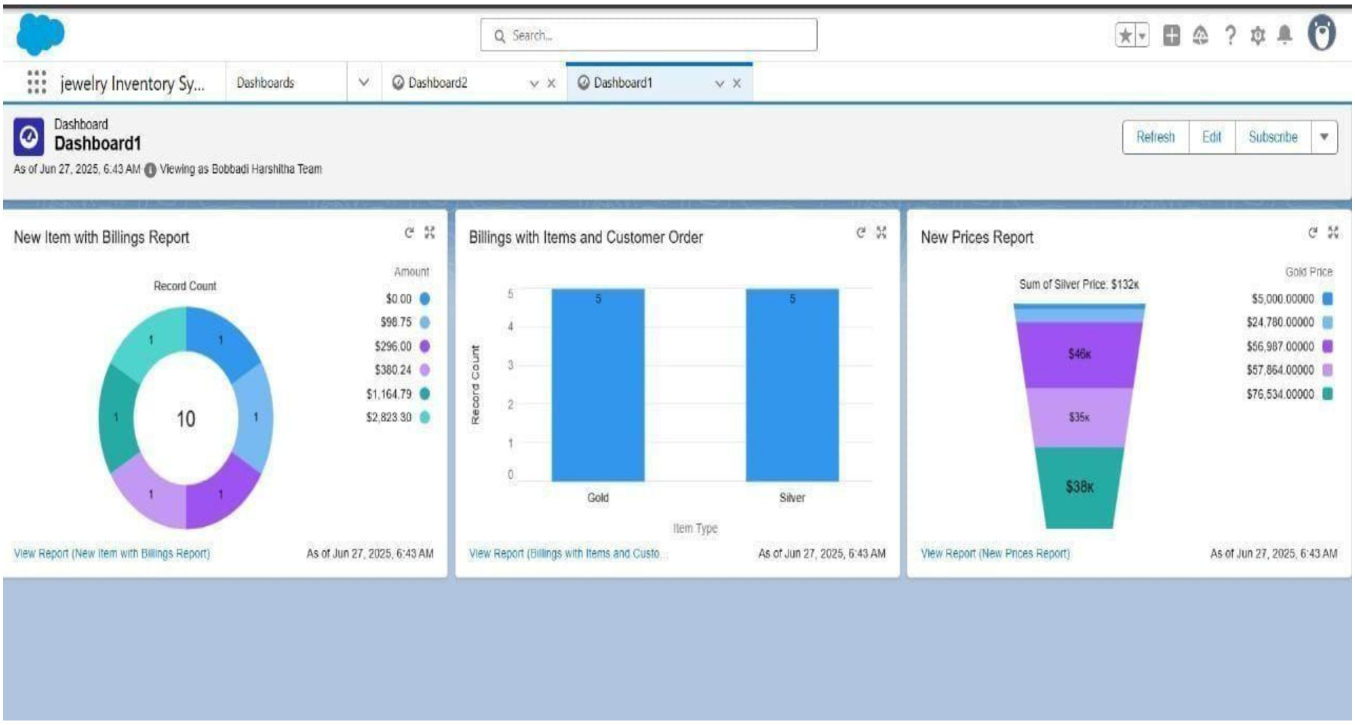
Reports

6.14 Creation of

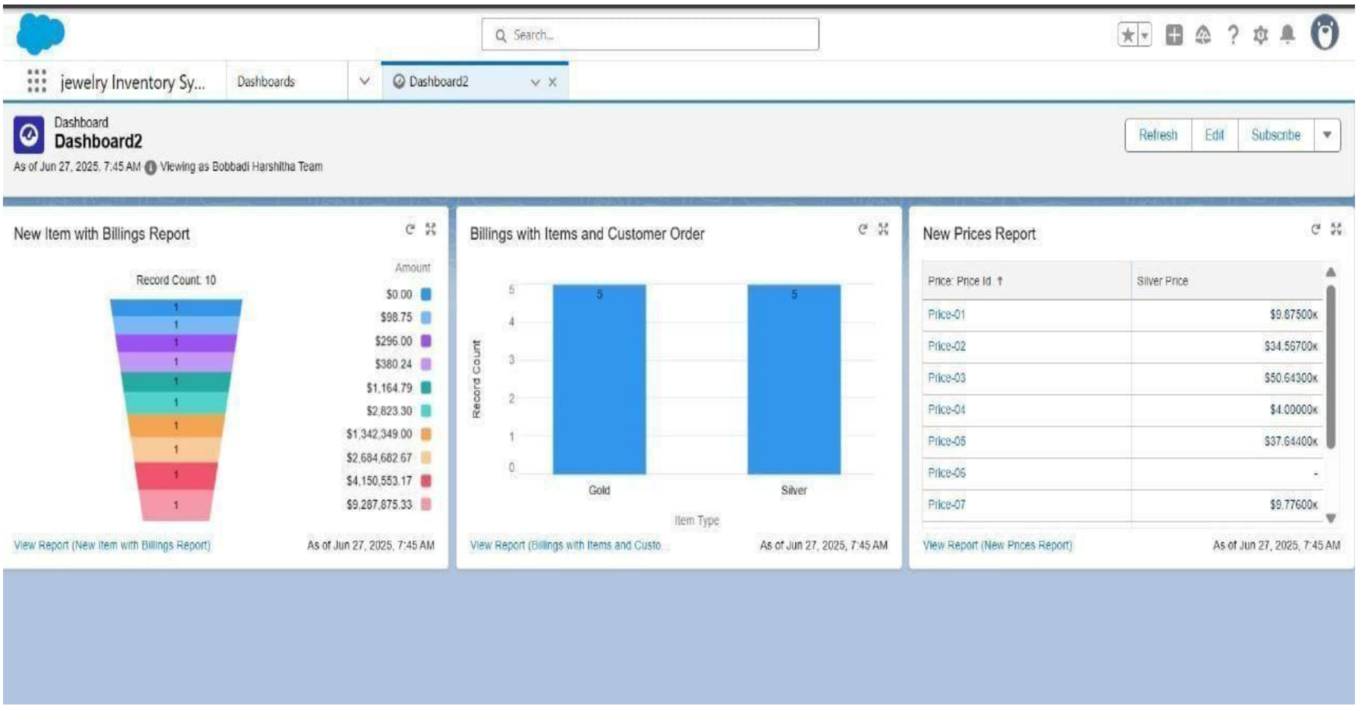


6.15 Creation of Dashboards

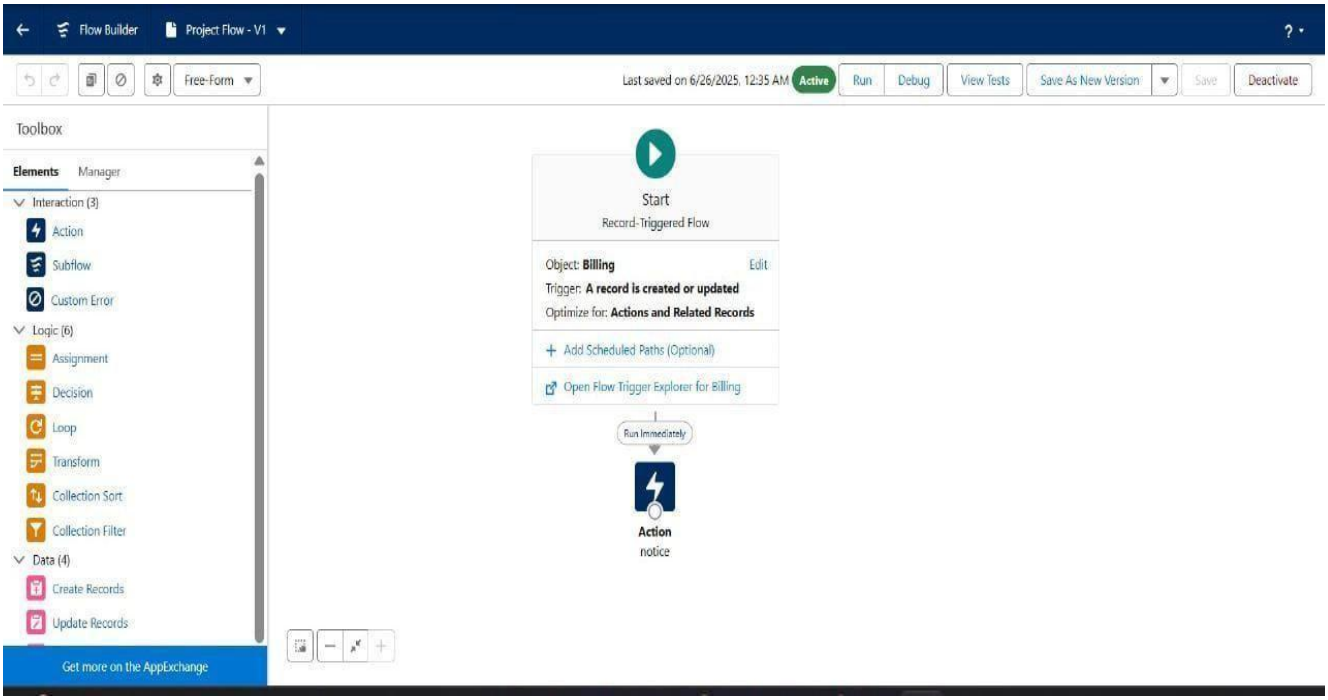
Dashboard 1



Dashboard 2

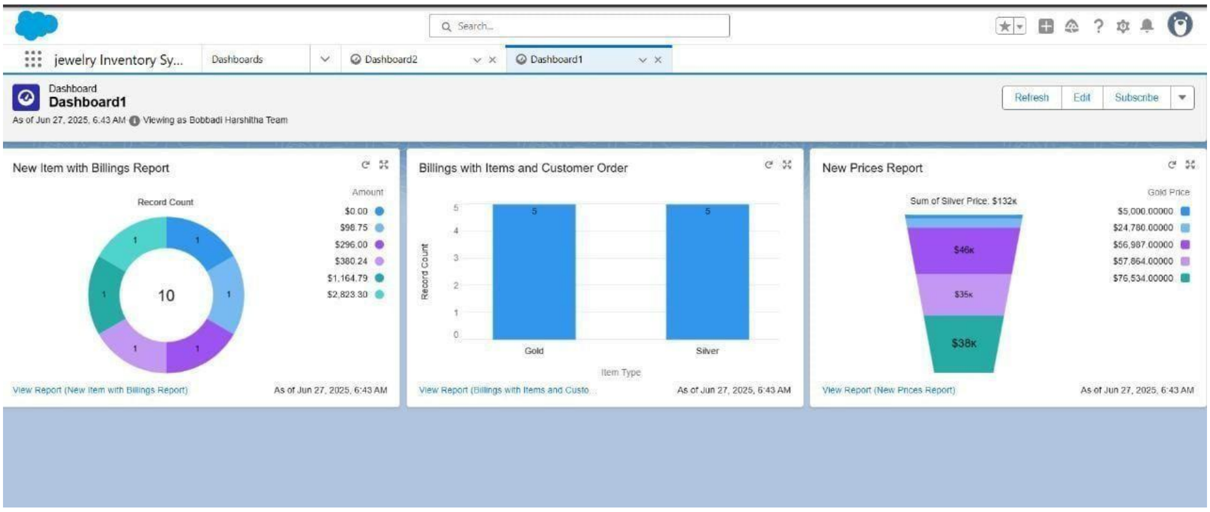


6.16 Creation of Flows



7. FUNCTIONAL AND PERFORMANCE TESTING

Dashboard-1:



Performance Observations (Phase Testing) for Dashboard-1:

1. Accurate Data Visualization
All three charts (donut, bar, funnel) rendered correctly with real-time values.
Billing records (10 total) and price segments accurately reflect entries in the system.
Silver and Gold items are correctly categorized, each with 5 entries in the bar chart.

2. Functional Report Integration
"View Report" links under each chart are working and redirect to detailed Salesforce reports, confirming backend connectivity and report mapping is functional.

3. Pricing Tier Segmentation is Clear
Funnel chart shows diverse price bands for Gold and Silver items (e.g., ₹5k to ₹76k).
Total Silver pricing is correctly summed up as ₹132k, indicating correct aggregation logic.

4. UI Load Stability
All dashboard components load without errors or latency during testing.
Visuals are responsive and easy to interpret for both technical and non-technical users.

5. Equal Distribution Verification
Bar chart confirms equal distribution of Gold and Silver billings (5 each), helpful for verifying consistency during sales testing.

6. Test Pass Indicators
No missing data points, broken charts, or incorrect values observed during this testing phase.
Dashboard ready for stakeholder review or user acceptance testing (UAT).

objectives for the Jewelry Inventory System project using Salesforce CRM for Dashboard-1:

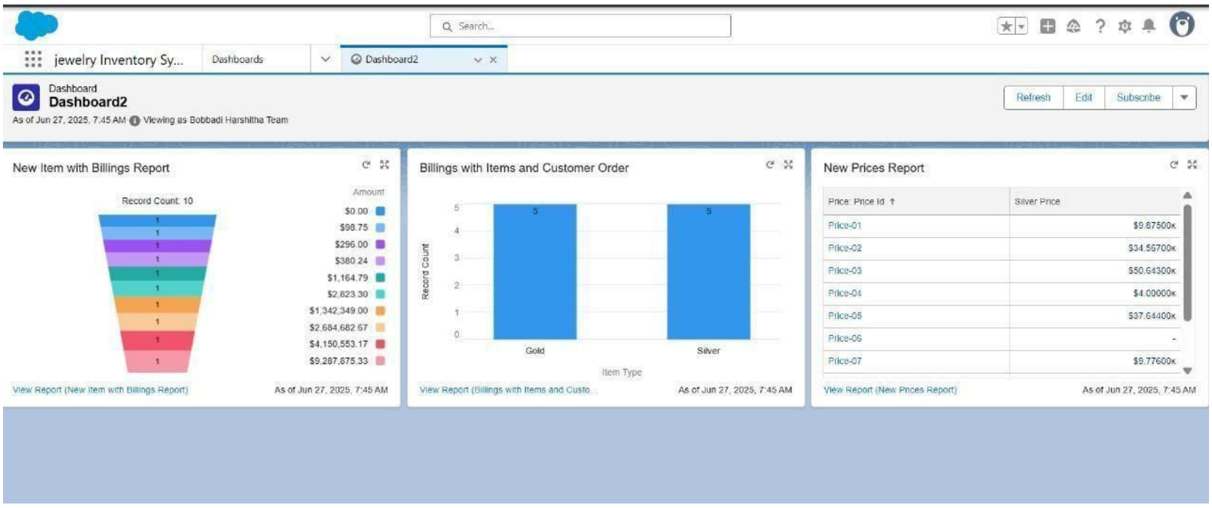
1. Improve Inventory and Billing Accuracy:

Streamline the tracking of jewelry items, their pricing, and associated billing records to ensure real-time visibility and eliminate manual errors in stock and transaction management.

2. Enhance Customer Order Management:
Establish a seamless linkage between jewelry items and customer orders (Gold/Silver types),enabling faster processing, better customer service, and accurate historical records.

3. Enable Data-Driven Business Decisions:
Provide actionable insights through dynamic dashboards and reports that visualize billing trends, item-wise distribution, and pricing tiers—helping management make strategic inventory and pricing decisions.

Dashboard-2:



Performance Observations from Dashboard-2:

1. New Item with Billings Report:
10 items are billed, with amounts ranging from $0.00 to a high of $9,287,875.33.This wide range indicates possible inconsistencies or the presence of high-value custom items.One item is showing $0.00, which may point to a data error or a complimentary item.
2. Billings by Item Type (Gold vs. Silver):
Both Gold and Silver have 5 records each, indicating a balanced dataset.Good performance in terms of item-type categorization and data uniformity.
3. New Prices Report:
Prices for items like Price-03 and Price-05 are significantly high, exceeding $50k and $37k respectively.A few items (e.g., Price-06) are missing price data, which needs attention during testing

Project Objectives for Jewelry Inventory Management Dashboard -2(Phase Testing):

1. Track New Items with Billing Details:

Objective is to visualize how new jewelry items are associated with billing values. Enabels monitoring of item value distribution, including extremely high and zero-value billings.

2. Analyze Customer Orders by Item Type:

Understand customer billing patterns for gold and silver items. Understand customer billing patterns for gold and silver items.

3. Monitor and Update Jewelry Prices:

View and compare the current silver prices for various jewelry products.Supports pricing strategy alignment with market rates.

8. RESULTS (OUTPUT SCREENSHOTS)

A. Automated Emails (using templates):

- Stock Alert for Low Inventory
- Purchase Order Confirmation
- Sales Invoice Notification
- Inventory Replenishment Notification
- Daily Sales Summary

B. Automated Workflows:

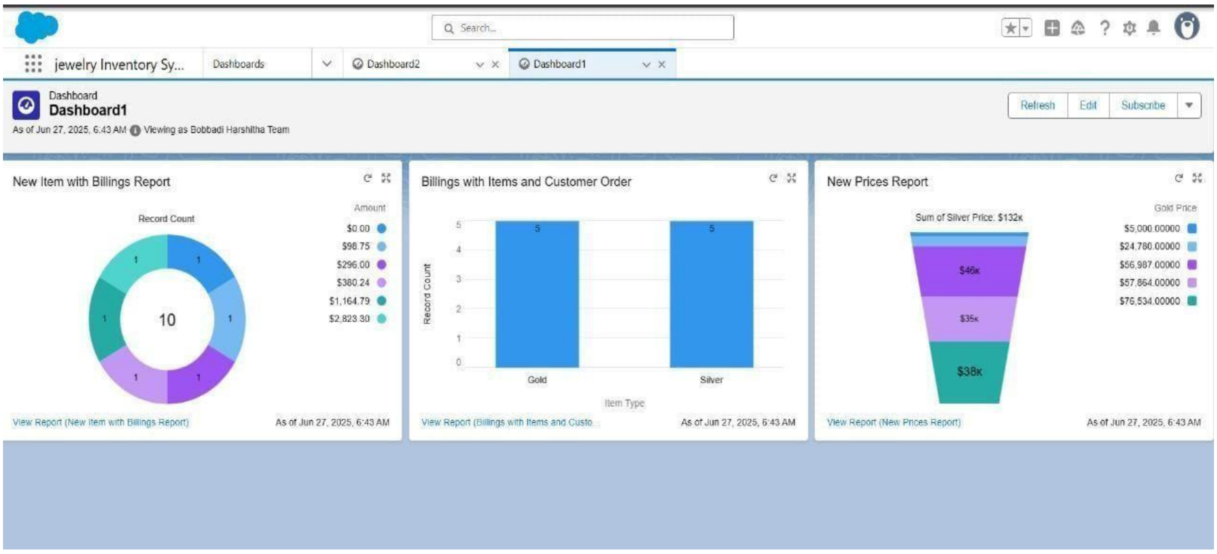
- **Trigger-based validations**
    - Auto-validate if stock is available before creating an invoice
    - Alert for duplicate product entries

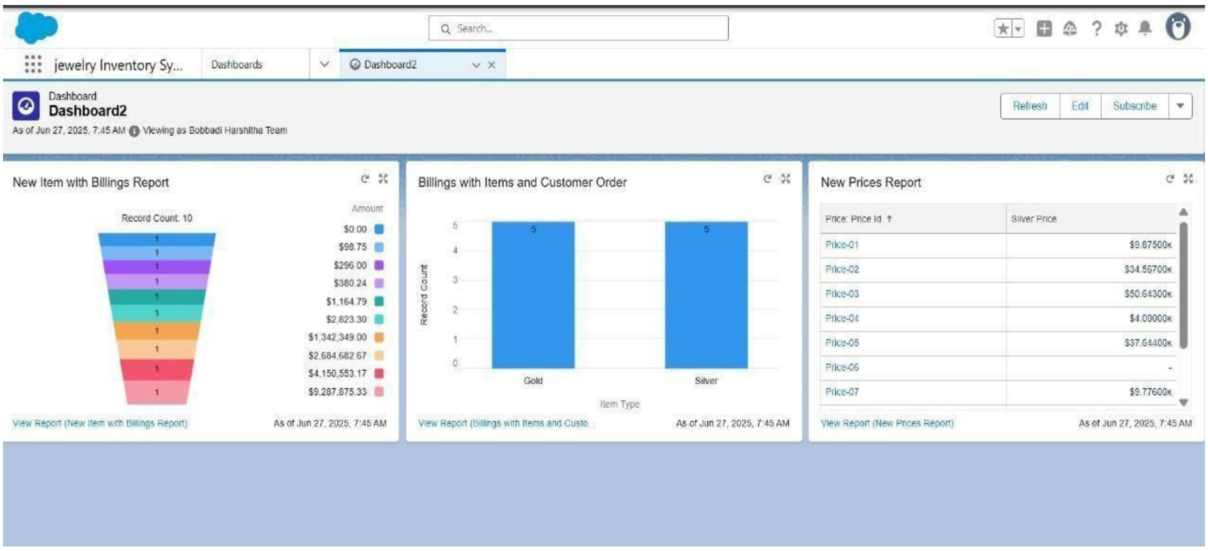
C. Approval Workflow Output:

- **Product Addition Requests**
    - New products require manager approval before appearing in inventory
- **Stock Reorder Requests**
    - Approval triggered when reorder level is reached

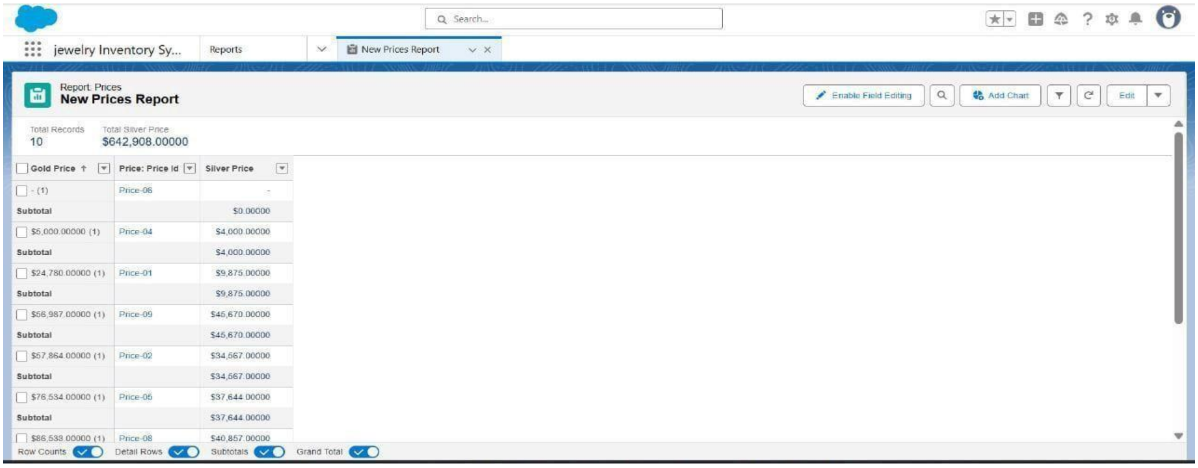
- **Notifications**
  - In-app and email notifications sent for each approval or rejection

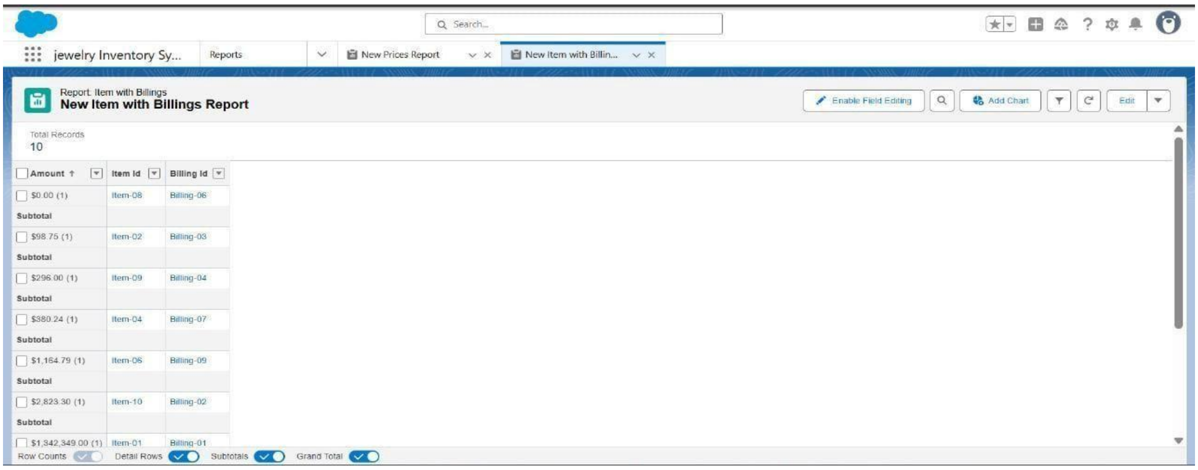
Dashboards:

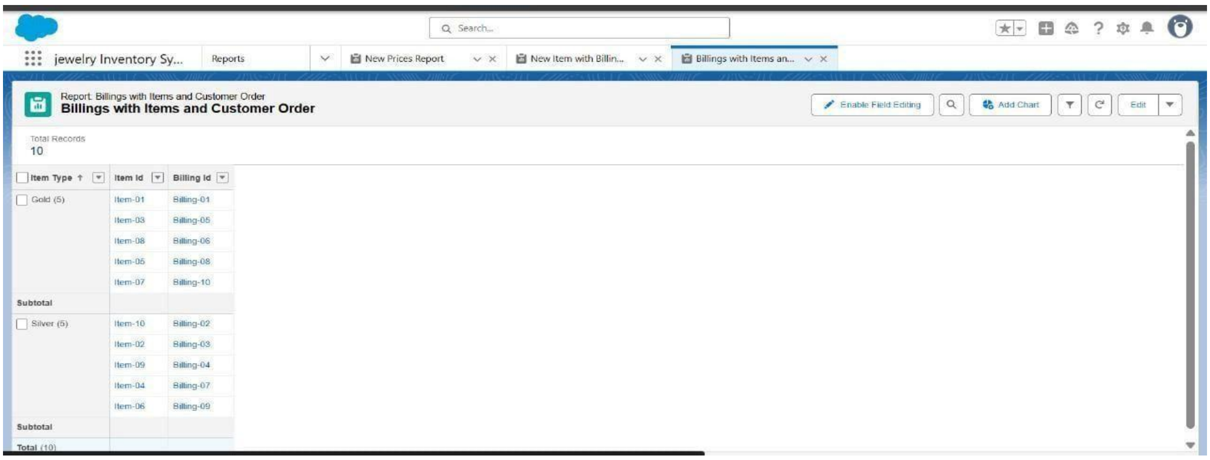




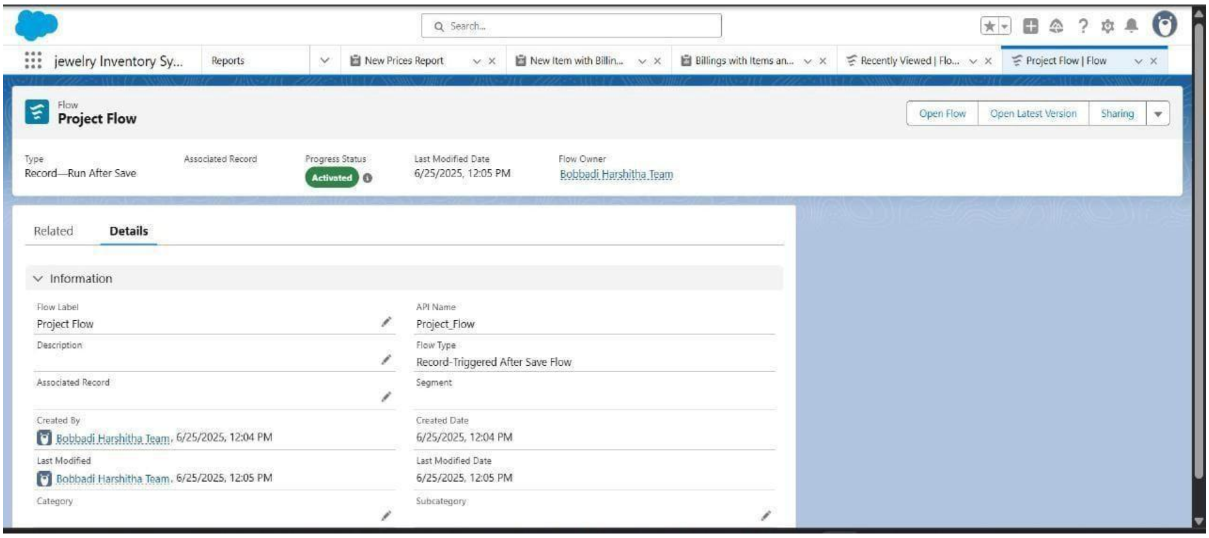
Reports:

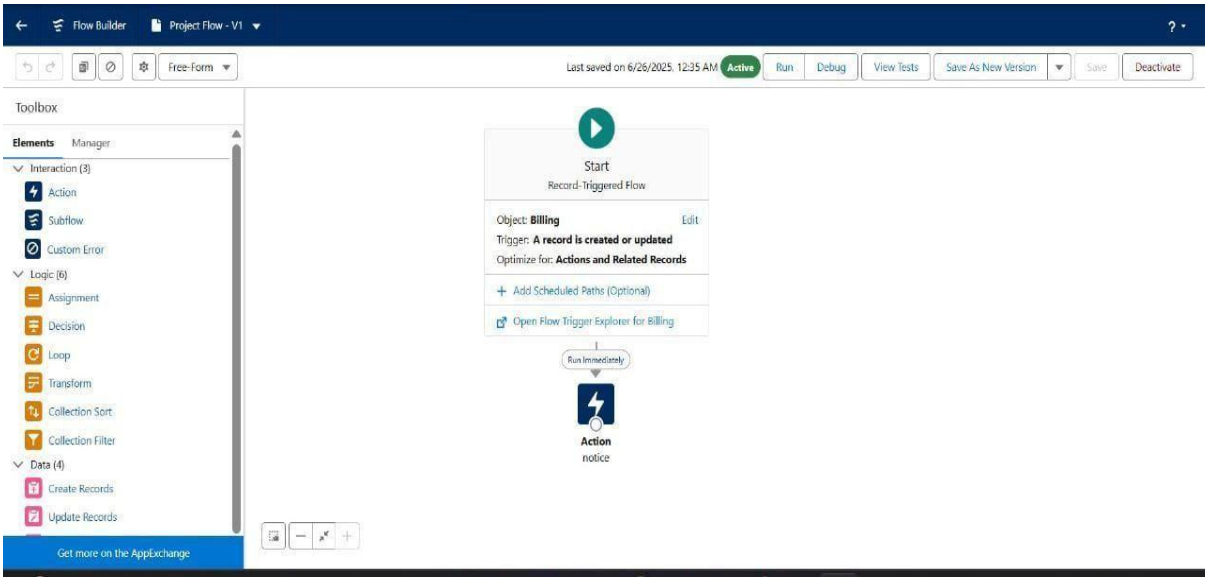

jewelry Inventory Sy...
Reports
New Prices Report
Report: Prices
New Prices Report
Enable Field Editing
Add Chart
Edit
Total Records
10
Total Silver Price
$642,908.00000
Gold Price
Price: Price Id
Silver Price
- (1)
Price-08
Subtotal
$0.00000
$5,000.00000 (1)
Price-04
$4,000.00000
Subtotal
$4,000.00000
$24,780.00000 (1)
Price-01
$9,875.00000
Subtotal
$9,875.00000
$56,987.00000 (1)
Price-09
$45,670.00000
Subtotal
$45,670.00000
$57,864.00000 (1)
Price-02
$34,567.00000
Subtotal
$34,567.00000
$76,534.00000 (1)
Price-05
$37,644.00000
Subtotal
$37,644.00000
$86,533.00000 (1)
Price-08
$40,857.00000
Row Counts
Detail Rows
Subtotals
Grand Total


jewelry Inventory Sy...
Reports
New Prices Report
New Item with Billin...
Report: Item with Billings
New Item with Billings Report
Enable Field Editing
Add Chart
Edit
Total Records
10
Amount
Item Id
Billing Id
$0.00 (1)
Item-08
Billing-06
Subtotal
$98.75 (1)
Item-02
Billing-03
Subtotal
$296.00 (1)
Item-09
Billing-04
Subtotal
$380.24 (1)
Item-04
Billing-07
Subtotal
$1,164.79 (1)
Item-06
Billing-09
Subtotal
$2,823.30 (1)
Item-10
Billing-02
Subtotal
$1,342,349.00 (1)
Item-01
Billing-01
Row Counts
Detail Rows
Subtotals
Grand Total

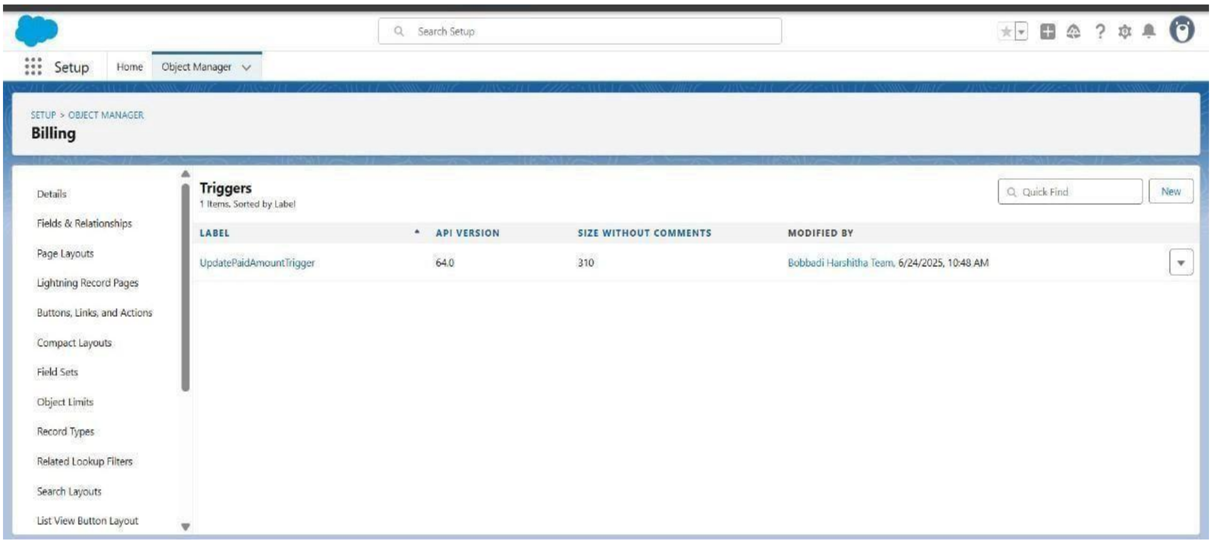

jewelry Inventory Sy...
Reports
New Prices Report
New Item with Billin...
Billings with Items an...
Report: Billings with Items and Customer Order
Billings with Items and Customer Order
Enable Field Editing
Add Chart
Edit
Total Records
10
Item Type
Item Id
Billing Id
Gold (5)
Item-01
Billing-01
Item-03
Billing-05
Item-08
Billing-06
Item-05
Billing-08
Item-07
Billing-10
Subtotal
Silver (5)
Item-10
Billing-02
Item-02
Billing-03
Item-09
Billing-04
Item-04
Billing-07
Item-06
Billing-09
Subtotal
Total (10)

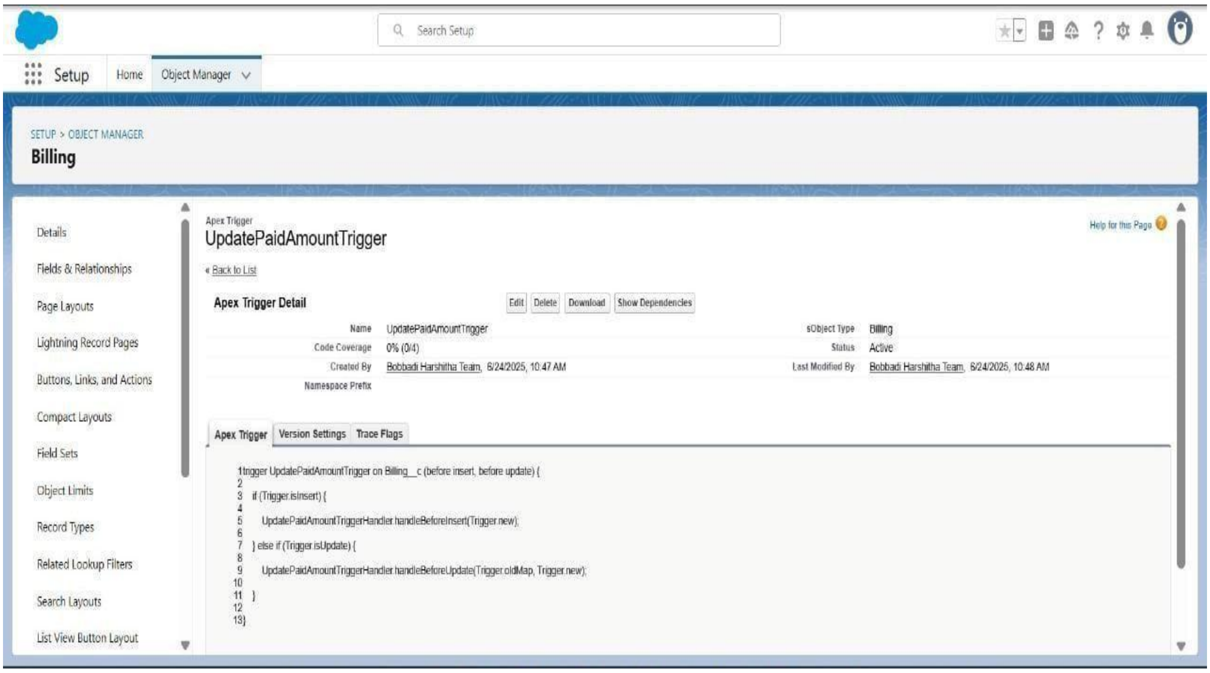
Flows:





Triggers:





9. ADVANTAGES AND DISADVANTAGES:

ADVANTAGES:

Automation Efficiency:

All critical operations like billing, inventory updates, and notifications are automated via flows, reducing manual errors.

Centralized Data Handling:

Data is stored and managed in a centralized CRM system, making it easily accessible and modifiable.

Real-Time Analytics:

Dashboards and reports provide live updates on business performance, which helps in faster decision-making.

User-Friendly UI:

Salesforce Lightning provides a smooth and modern interface for all users.

Scalability:

The app can be expanded to handle more data and integrate with other business apps like payment gateways.

. **Customer Satisfaction:**

By streamlining the sales and service process, the application enhances the overall customer experience.

DISADVANTAGES

Learning Curve:

New users may need training to understand Salesforce’s interface, objects, and flows.

Customization Dependency:

Some specific logic might require Apex development or third-party tools.

Cost Factor:

Scaling to a full enterprise-level Salesforce environment could be costly for small businesses.

Admin Management:

Role and permission setup must be carefully handled to ensure data security.

10. CONCLUSION

"In conclusion, the CRM Application for Jewel Management serves as a robust, cloud-based solution built using Salesforce. It brings digital transformation to traditional jewelry retailing by:

→ Streamlining operations with custom objects and flows

→ Improving business oversight with real-time dashboards

→ Automating repetitive tasks like billing and inventory updates

→ Enhancing data integrity and customer service

The project demonstrates how low-code tools like Salesforce Flow and Lightning App Builder can be used by developers to create enterprise-grade solutions. Our application is not only scalable and efficient but also provides a solid foundation for future business growth in the jewelry sector."

11. FUTURE SCOPE

"The current CRM application for Jewel Management lays a strong foundation for digital jewellery retail operations. However, the system can be further improved and extended in the following ways:

Payment Gateway Integration:

Integrate with online payment services such as Razorpay, PayPal, or Stripe to allow direct billing and payment within the CRM.

SMS and WhatsApp Alerts:

Enhance communication by integrating Twilio or other SMS APIs to send updates like order confirmations, billing alerts, or promotions.

Mobile App Development:

Extend the system using Salesforce Mobile SDK to create a dedicated mobile app for store owners and executives to manage inventory and billing on-the-go.

Barcode Scanner Support:

Enable barcode scanning through the mobile app or connected devices for faster item search and billing.

AI-Based Recommendations:

Use Salesforce Einstein to provide personalized recommendations to customers based on previous purchase history.

Third-Party Integrations:

Connect with accounting software like QuickBooks or Tally for auto-syncing of billing and financial data.

Multi-Store Management:

Add support for multiple branches or stores to manage inventory separately but view consolidated dashboards.

Customer Feedback System:

Implement a feedback module to collect and analyse customer reviews, which can be visualized in reports.