

# **MEDICAL INVENTORY MANAGEMENT**

**COLLEGE NAME:** PPG COLLEGE OF ARTS AND SCIENCE, COIMBATORE

**COLLEGE CODE:** 2753

**TEAM ID:** NM2025TMID25860

## **TEAM MEMBERS**

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# INTRODUCTION

## PROJECT OVERVIEW:

Medical Inventory Management is a critical aspect of healthcare operations, focusing on the systematic control of medicines, consumables, and medical equipment within hospitals and clinics. Inefficient inventory practices can lead to shortages, wastage, increased operational costs, and risks to patient safety.

This project proposes a structured inventory management system designed to streamline stock monitoring, automate replenishment processes, and integrate supplier coordination. The system leverages database management, real-time tracking, and demand forecasting to ensure optimal utilization of resources. By implementing such a solution, healthcare institutions can improve service quality, enhance operational efficiency, and ensure the timely availability of essential medical supplies.

Features such as automated stock alerts, expiry date monitoring, supplier integration, and demand forecasting help prevent wastage while improving resource allocation. By adopting this system, healthcare organizations can enhance patient care, maintain compliance with medical regulations, and achieve significant cost savings through optimized inventory control.

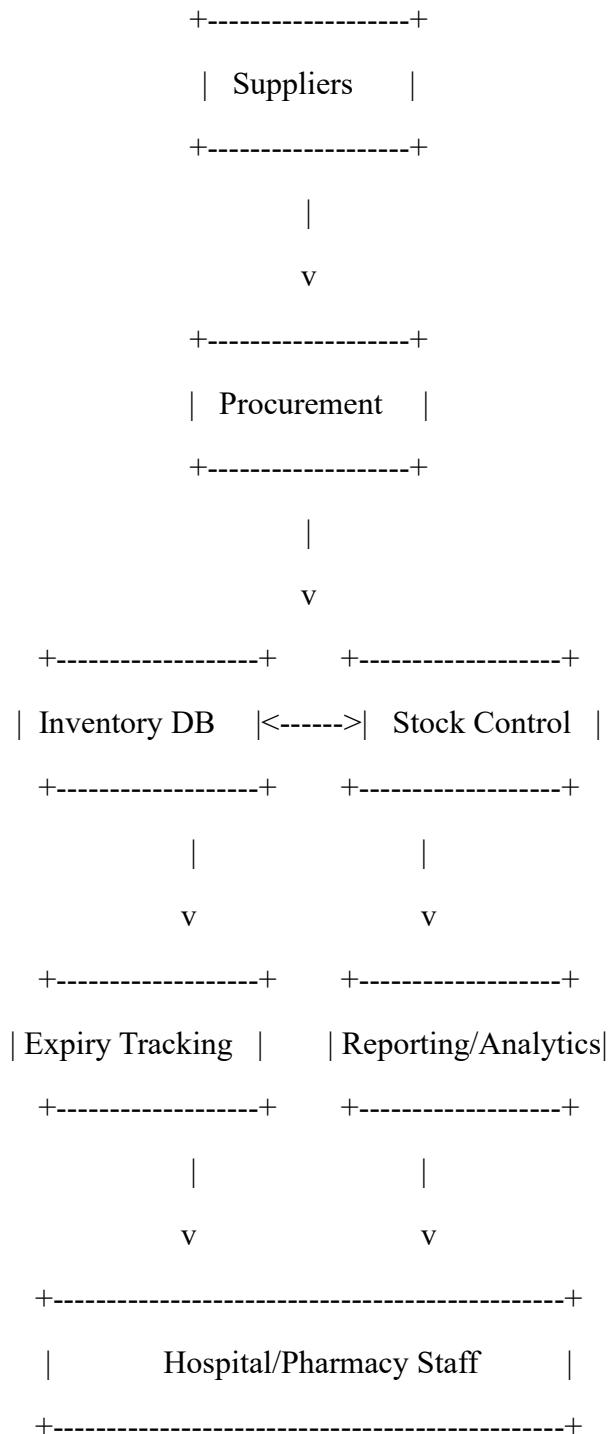
## OBJECTIVES:

- **Ensure Uninterrupted Availability of Medical Supplies.**  
To maintain continuous availability of essential medicines, surgical tools, and other healthcare supplies, avoiding stock-outs that can affect patient care.
- **Optimize Inventory Levels.**  
To prevent overstocking or understocking by maintaining the optimal quantity of each item based on usage trends and shelf life.
- **Improve Cost Efficiency**  
To reduce unnecessary spending through bulk purchasing, supplier negotiations, and minimizing emergency procurements due to poor inventory planning.
- **Track and Monitor Inventory in Real-Time**  
To implement systems (like barcode/RFID or inventory software) that provide real-time updates, allowing accurate tracking of stock movement and usage.
- **Enhance Patient Safety**  
To ensure only safe, valid, and approved medications and equipment are in use by monitoring expiry dates, batch numbers, and recalls

➤ **Streamline Procurement Processes**

To automate and optimize the ordering process based on consumption rates, supplier performance, and lead times.

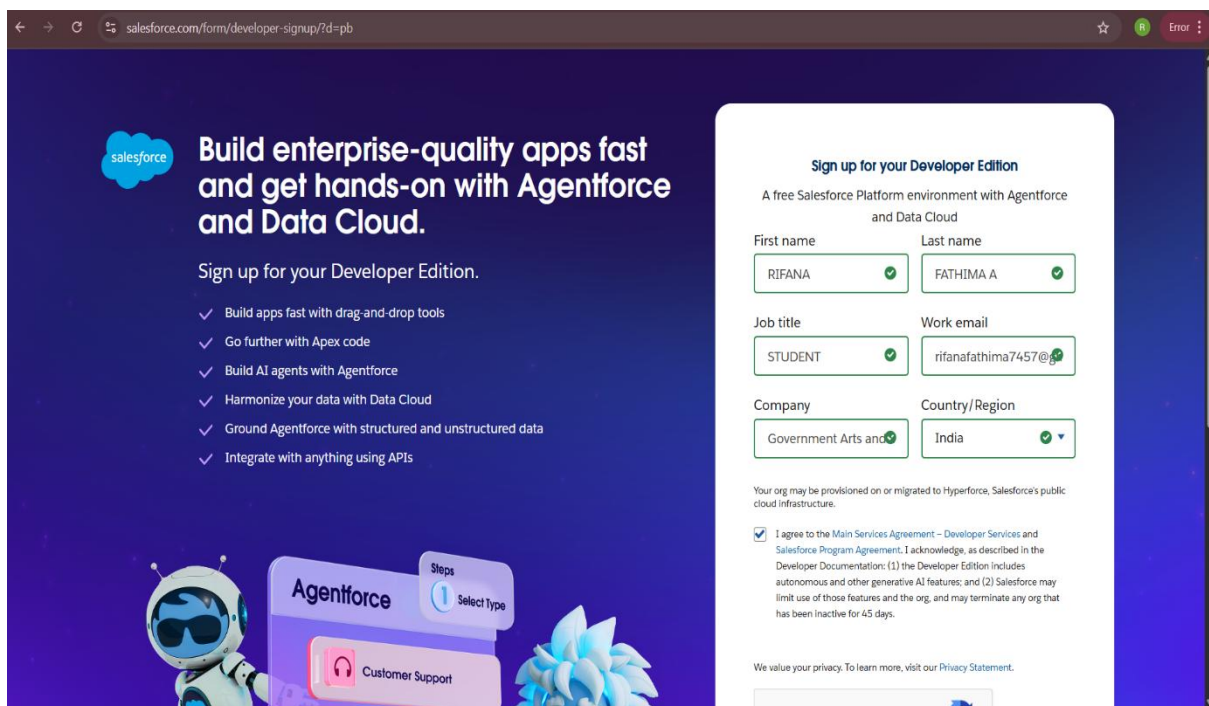
**DIAGRAMMATIC FLOW OF MEDICAL INVENTORY:**



# DEVELOPMENT PHASE:

## Creating Developer Account:

By using this URL: <https://www.salesforce.com/form/developer-signup/?d=pb>



The screenshot shows the Salesforce Developer Edition sign-up page. On the left, there's a blue header with the Salesforce logo and the text "Build enterprise-quality apps fast and get hands-on with Agentforce and Data Cloud." Below this, it says "Sign up for your Developer Edition." and lists five benefits: building apps fast with drag-and-drop tools, going further with Apex code, building AI agents with Agentforce, harmonizing data with Data Cloud, and integrating with APIs. At the bottom left, there's a cartoon robot character and a "Steps" button labeled "Select Type" with a "Customer Support" button below it. On the right, there's a white sign-up form titled "Sign up for your Developer Edition" with the subtitle "A free Salesforce Platform environment with Agentforce and Data Cloud." The form contains fields for First name (RIFANA), Last name (FATHIMA A), Job title (STUDENT), Work email (rifanafathima7457@gmail.com), Company (Government Arts and...), and Country/Region (India). Below the form, there's a checkbox for agreeing to the Main Services Agreement and a link to the Privacy Statement.

salesforce

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

Sign up for your Developer Edition

A free Salesforce Platform environment with Agentforce and Data Cloud

First name: RIFANA

Last name: FATHIMA A

Job title: STUDENT

Work email: rifanafathima7457@gmail.com

Company: Government Arts and...

Country/Region: India

☒ 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.

Here we created our developer account on salesforce and then we started to create our project.

## CREATING CUSTOM OBJECTS:

### 1. PRODUCT

2.

The screenshot shows the Salesforce Setup interface for a custom object named 'Product'. The browser address bar displays the URL: `orgfarm-0d943e41a0-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01lgL0000020eVI/Details/view`. The page header includes the Salesforce logo, a search bar, and navigation tabs for 'Setup', 'Home', and 'Object Manager'. The main content area is titled 'Product' and features a left-hand navigation menu with options: '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', and 'Scoping Rules'. The 'Details' section is active, showing a table of configuration settings. The table has two columns: the first column lists settings with their current values, and the second column shows the status of each setting.

Details	
Description	
API Name	Product_c
Custom	✓
Singular Label	Product
Plural Label	Products
Enable Reports	✓
Track Activities	✓
Track Field History	
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

### ORDER

The screenshot shows the Salesforce Setup interface for a custom object named 'Purchase Order'. The browser address bar displays the URL: `orgfarm-0d943e41a0-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01lgL0000020Z8n/Details/view`. The page header includes the Salesforce logo, a search bar, and navigation tabs for 'Setup', 'Home', and 'Object Manager'. The main content area is titled 'Purchase Order' and features a left-hand navigation menu with options: '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', and 'Scoping Rules'. The 'Details' section is active, showing a table of configuration settings. The table has two columns: the first column lists settings with their current values, and the second column shows the status of each setting.

Details	
Description	
API Name	Purchase_Order__c
Custom	✓
Singular Label	Purchase Order
Plural Label	Purchase Orders
Enable Reports	✓
Track Activities	
Track Field History	
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

### 3. ORDER ITEM

4.

The screenshot shows the Salesforce Setup interface for the 'Order Item' object. The left sidebar contains a list of configuration options: 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, and Scoping Rules. The main content area is titled 'Order Item' and contains a 'Details' section with the following fields:

Field	Value
Description	
API Name	Order_Item_c
Custom	✓
Singular Label	Order Item
Plural Label	Order Items
Enable Reports	✓
Track Activities	
Track Field History	
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

Buttons for 'Edit' and 'Delete' are located in the top right corner of the details section.

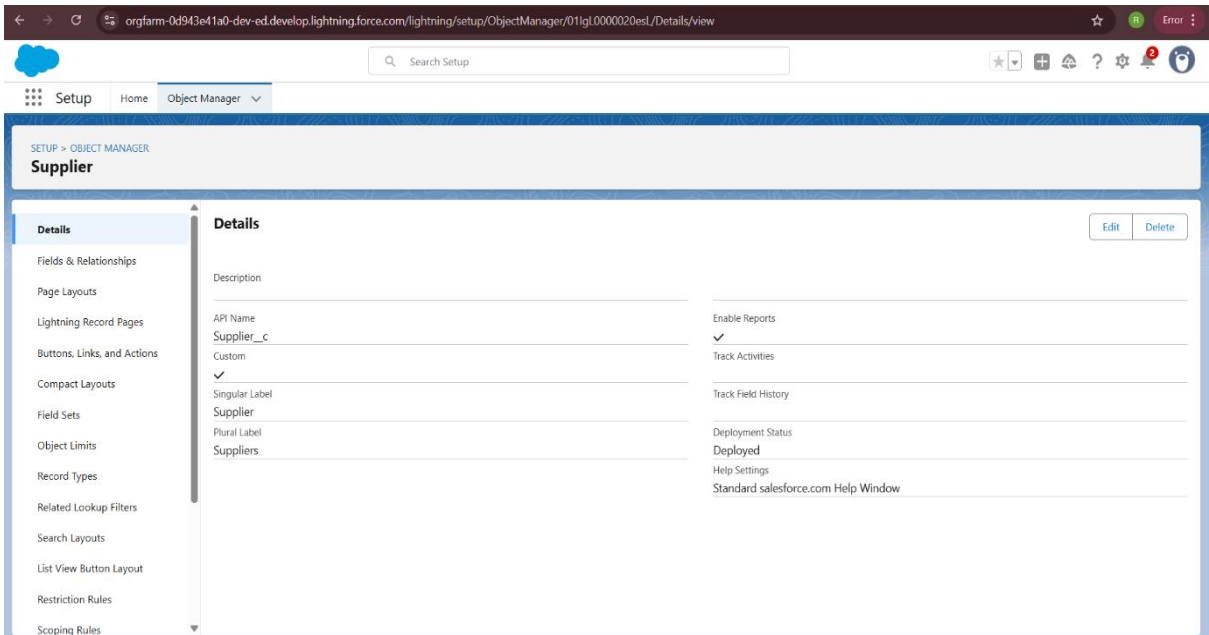
### ANSACTION

The screenshot shows the Salesforce Setup interface for the 'Inventory Transaction' object. The left sidebar contains a list of configuration options: 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, and Scoping Rules. The main content area is titled 'Inventory Transaction' and contains a 'Details' section with the following fields:

Field	Value
Description	
API Name	Inventory_Transaction_c
Custom	✓
Singular Label	Inventory Transaction
Plural Label	Inventory Transactions
Enable Reports	✓
Track Activities	
Track Field History	
Deployment Status	Deployed
Help Settings	Standard salesforce.com Help Window

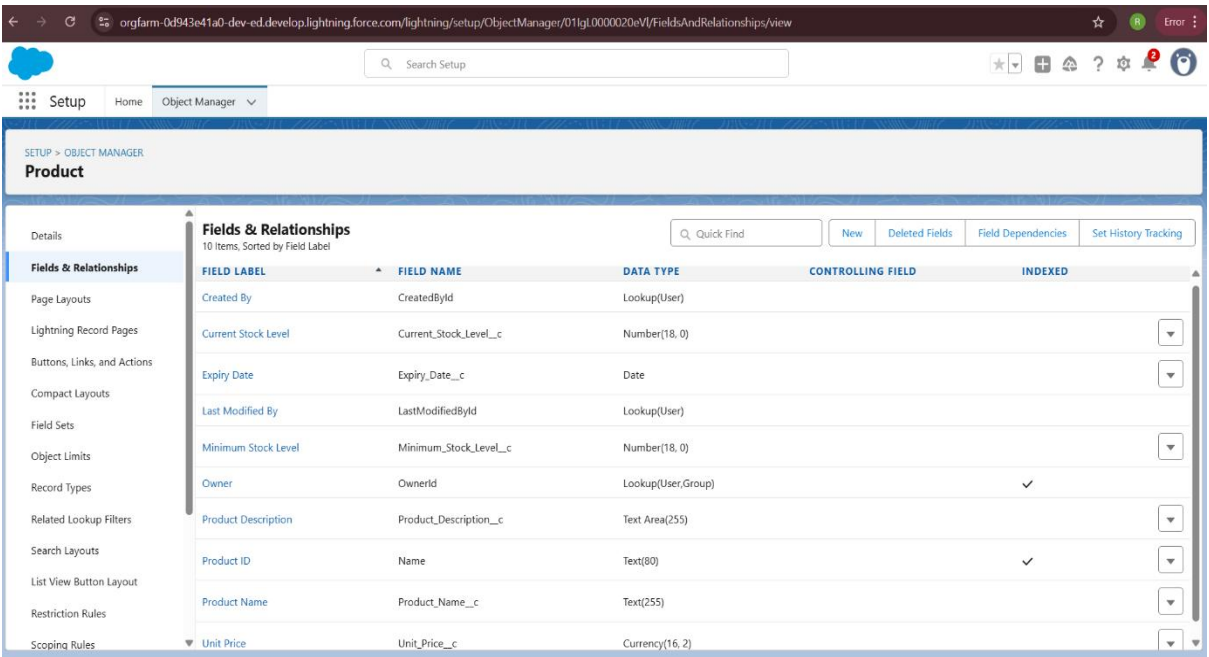
Buttons for 'Edit' and 'Delete' are located in the top right corner of the details section.

5. SUPPLIER

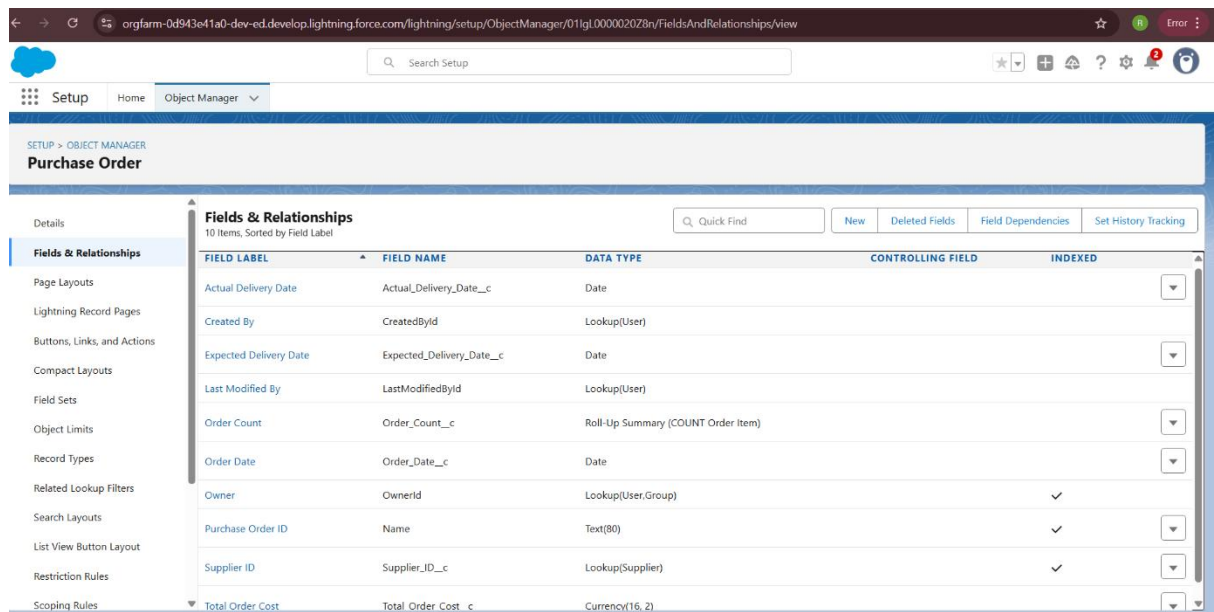


CONFIGURED FIELD AND RELATIONSHIPS:

FOR PRODUCTS:

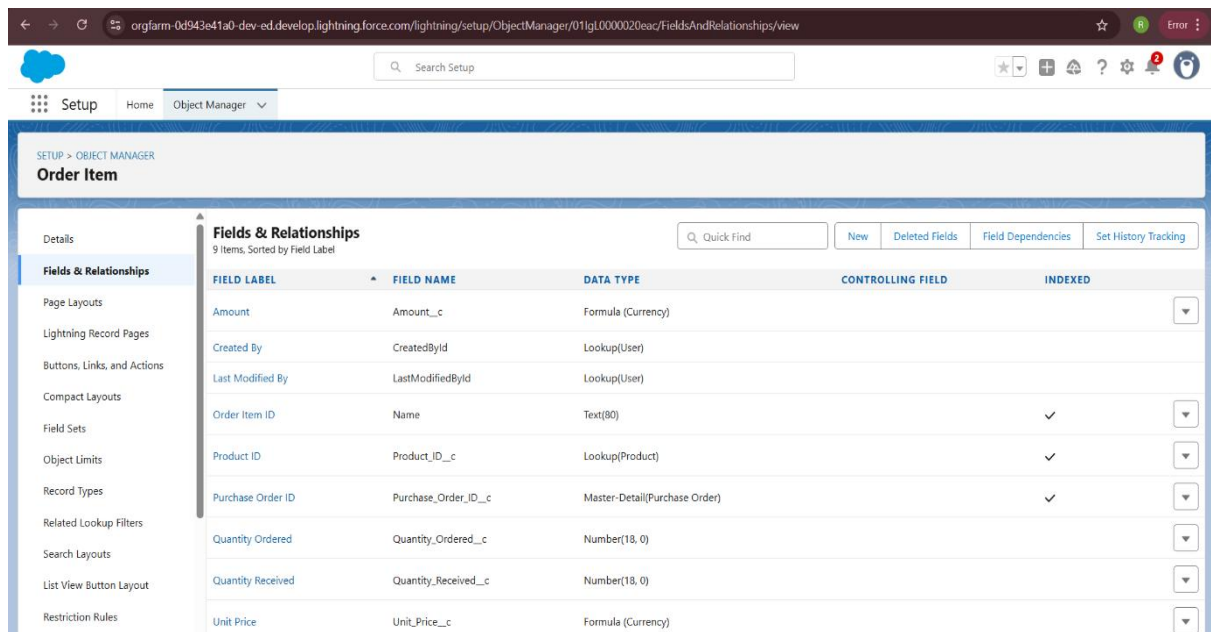


## FOR PURCHASE ORDERS:



The screenshot shows the Salesforce Setup interface for the 'Purchase Order' object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, and others. The main content area is titled 'Fields & Relationships' and shows a list of 10 fields. The fields are sorted by Field Label. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields listed are: Actual Delivery Date, Created By, Expected Delivery Date, Last Modified By, Order Count, Order Date, Owner, Purchase Order ID, Supplier ID, and Total Order Cost.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Actual Delivery Date	Actual_Delivery_Date__c	Date		
Created By	CreatedById	Lookup(User)		
Expected Delivery Date	Expected_Delivery_Date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Order Count	Order_Count__c	Roll-Up Summary (COUNT Order Item)		
Order Date	Order_Date__c	Date		
Owner	OwnerId	Lookup(User Group)		✓
Purchase Order ID	Name	Text(80)		✓
Supplier ID	Supplier_ID__c	Lookup(Supplier)		✓
Total Order Cost	Total_Order_Cost__c	Currency(16, 2)		



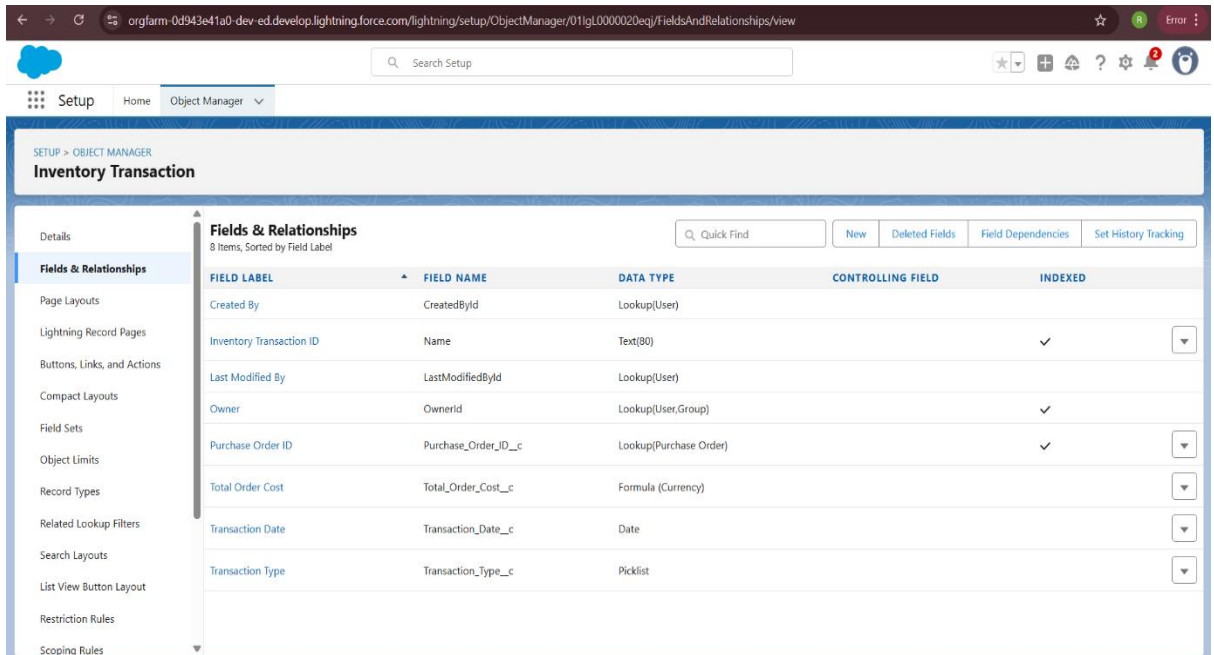
The screenshot shows the Salesforce Setup interface for the 'Order Item' object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, and others. The main content area is titled 'Fields & Relationships' and shows a list of 9 fields. The fields are sorted by Field Label. The table has columns for Field Label, Field Name, Data Type, Controlling Field, and Indexed. The fields listed are: Amount, Created By, Last Modified By, Order Item ID, Product ID, Purchase Order ID, Quantity Ordered, Quantity Received, and Unit Price.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Amount	Amount__c	Formula (Currency)		
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Order Item ID	Name	Text(80)		✓
Product ID	Product_ID__c	Lookup(Product)		✓
Purchase Order ID	Purchase_Order_ID__c	Master-Detail(Purchase Order)		✓
Quantity Ordered	Quantity_Ordered__c	Number(18, 0)		
Quantity Received	Quantity_Received__c	Number(18, 0)		
Unit Price	Unit_Price__c	Formula (Currency)		

## FOR ORDER ITEMS:



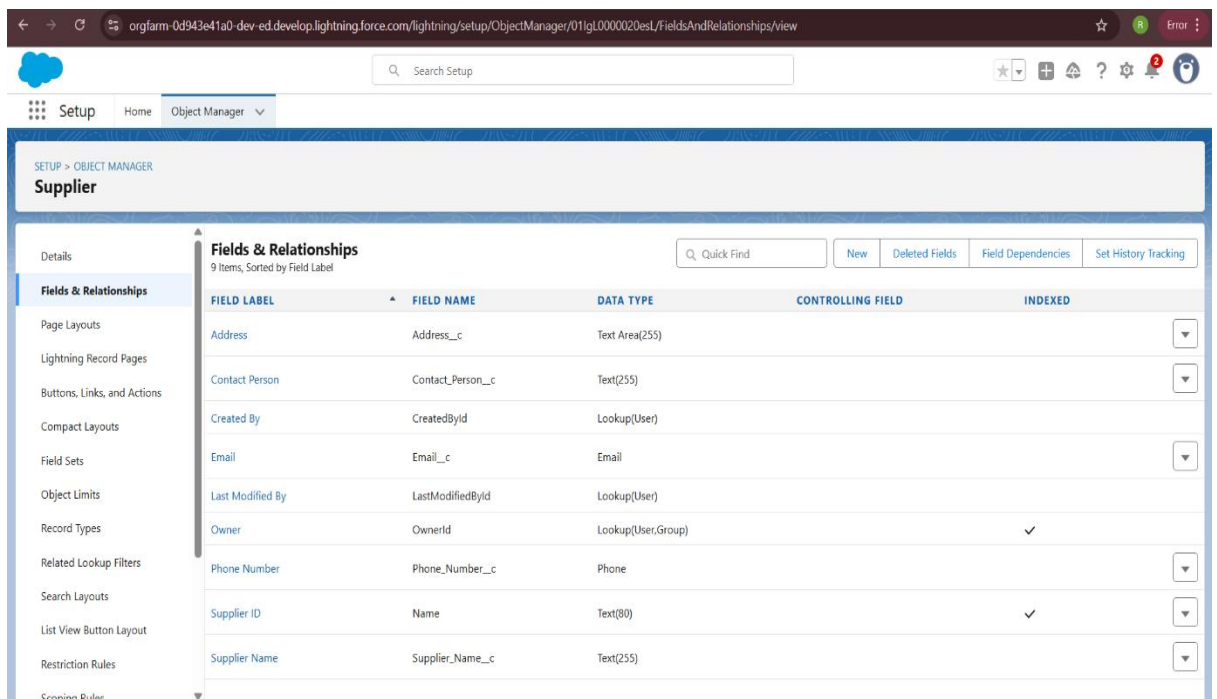
## FOR INVENTORY TRANSACTIONS:



The screenshot shows the Salesforce Object Manager interface for the 'Inventory Transaction' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main content area is titled 'Inventory Transaction' and includes a 'Fields & Relationships' section with 8 items, sorted by Field Label. The table below lists the fields with their names, data types, and whether they are indexed or controlling fields.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Inventory Transaction ID	Name	Text(80)		✓
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Purchase Order ID	Purchase_Order_ID__c	Lookup(Purchase Order)		✓
Total Order Cost	Total_Order_Cost__c	Formula (Currency)		
Transaction Date	Transaction_Date__c	Date		
Transaction Type	Transaction_Type__c	Picklist		

## FOR SUPPLIER:



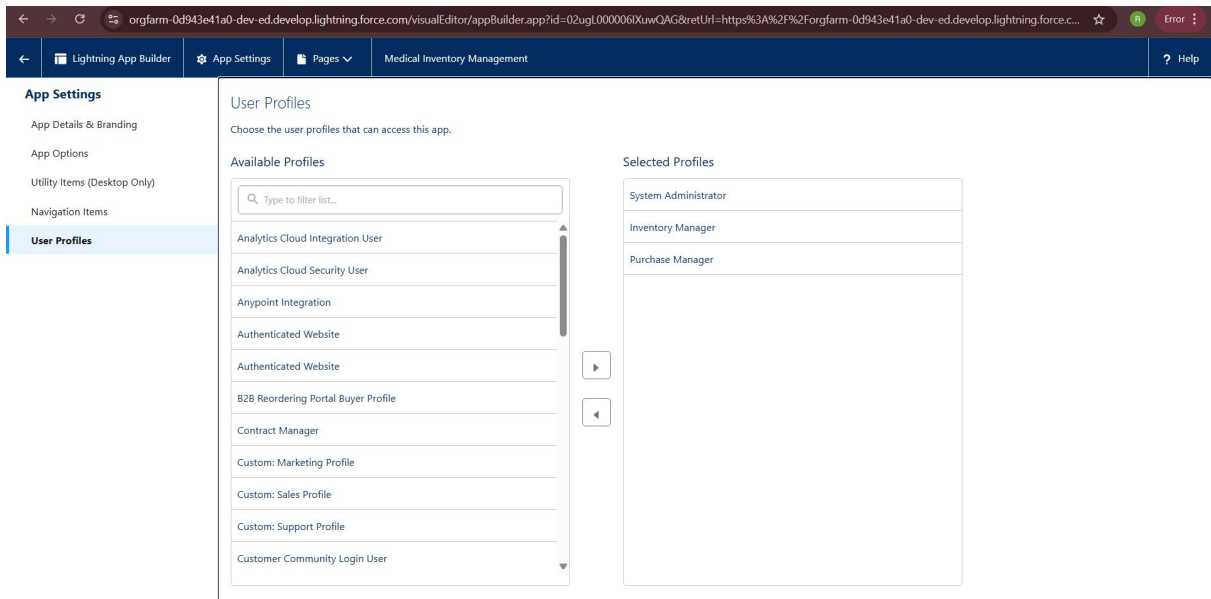
The screenshot shows the Salesforce Object Manager interface for the 'Supplier' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships (selected), Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main content area is titled 'Supplier' and includes a 'Fields & Relationships' section with 9 items, sorted by Field Label. The table below lists the fields with their names, data types, and whether they are indexed or controlling fields.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Address	Address__c	Text Area(255)		
Contact Person	Contact_Person__c	Text(255)		
Created By	CreatedById	Lookup(User)		
Email	Email__c	Email		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Phone Number	Phone_Number__c	Phone		
Supplier ID	Name	Text(80)		✓
Supplier Name	Supplier_Name__c	Text(255)		

## DESIGNED A LIGHTNING APP NAMED MEDICAL INVENTORY MANAGEMENT WITH APPLICABLE TABS.

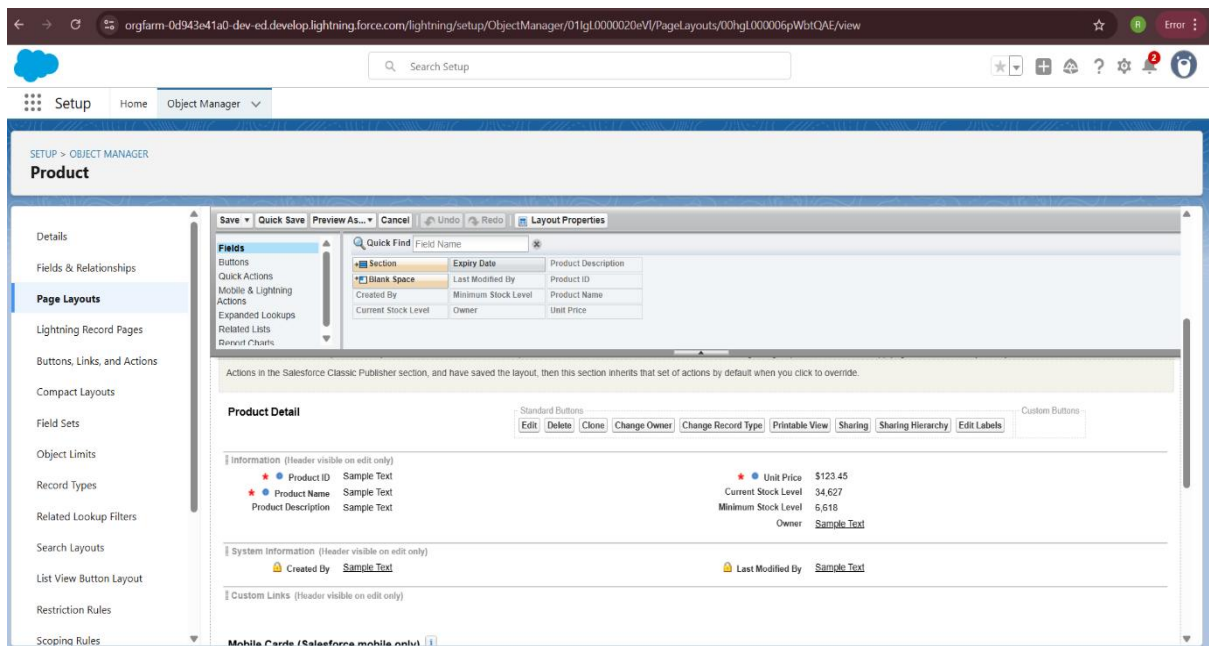
The screenshot shows the 'App Details & Branding' configuration page in the Lightning App Builder. The left sidebar lists 'App Settings' with sub-items: 'App Details & Branding' (selected), 'App Options', 'Utility Items (Desktop Only)', 'Navigation Items', and 'User Profiles'. The main content area is titled 'App Details & Branding' and includes instructions: 'Give your Lightning app a name and description. Upload an image and choose the highlight color for its navigation bar.' It is divided into two sections: 'App Details' and 'App Branding'. The 'App Details' section contains fields for 'App Name' (Medical Inventory Management), 'Developer Name' (Medical\_Inventory\_Management), and 'Description' (Enter a description...). The 'App Branding' section includes an 'Image' upload area, a 'Primary Color Hex Value' field (#0070D2), and 'Org Theme Options' with a checkbox 'Use the app's image and color instead of the org's custom theme'. At the bottom, an 'App Launcher Preview' shows a button with the app's icon and name 'Medical Inventory Manage...'.

The screenshot shows the 'Navigation Items' configuration page in the Lightning App Builder. The left sidebar lists 'App Settings' with sub-items: 'App Details & Branding', 'App Options', 'Utility Items (Desktop Only)', 'Navigation Items' (selected), and 'User Profiles'. The main content area is titled 'Navigation Items' and includes instructions: 'Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename the items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format that the item doesn't support.' It is divided into two sections: 'Available Items' and 'Selected Items'. The 'Available Items' section has a search bar and a list of items including Accounts, Activation Targets, Activations, All Sites, Alternative Payment Methods, Analytics, App Launcher, Appointment Categories, Appointment Invitations, and Approval Requests. The 'Selected Items' section shows a list of items that have been added to the navigation bar: Products, Purchase Orders, Order Items, Inventory Transactions, Suppliers, Reports, and Dashboards. Arrows on the right side of the 'Selected Items' list allow for reordering.



## HOW INFORMATION IS ORGANIZED AND SHOWN ON A CUSTOM OBJECT'S PAGE

### PAGE LAYOUT FOR PRODUCT OBJECT



## PAGE LAYOUT FOR PURCHASE ORDER OBJECT

The screenshot shows the Salesforce Setup interface for the Purchase Order object. The left sidebar contains navigation links: Details, Fields & Relationships, Page Layouts (selected), 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, and Scoping Rules. The main content area is titled 'Purchase Order' and includes a 'Fields' panel on the left with a 'Quick Find' search bar. The 'Fields' panel lists: Section, Blank Space, Actual Delivery Date, Created By, Expected Delivery Date, Last Modified By, Order Count, Order Date, Owner, Purchase Order ID, Supplier ID, and Total Order Cost. The main layout area shows a 'Purchase Order Detail' section with standard buttons (Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, Sharing Hierarchy, Edit Labels) and custom buttons. Below this is an 'Information' section with fields: Purchase Order ID (Sample Text), Supplier ID (Sample Text), Order Date (9/11/2025), Expected Delivery Date (9/11/2025), Actual Delivery Date (9/11/2025), Order Count (81.897), Total Order Cost (\$123.45), and Owner (Sample Text). A 'System Information' section shows Created By (Sample Text) and Last Modified By (Sample Text). A 'Custom Links' section is also visible.

## PAGE LAYOUT FOR ORDER ITEM OBJECT

The screenshot shows the Salesforce Setup interface for the Order Item object. The left sidebar contains navigation links: Details, Fields & Relationships, Page Layouts (selected), 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, and Scoping Rules. The main content area is titled 'Order Item' and includes a 'Fields' panel on the left with a 'Quick Find' search bar. The 'Fields' panel lists: Section, Blank Space, Amount, Product ID, Unit Price, Last Modified By, Order Item ID, Quantity Ordered, Quantity Received, and Purchase Order ID. The main layout area shows an 'Order Item Detail' section with standard buttons (Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Edit Labels) and custom buttons. Below this is an 'Information' section with fields: Order Item ID (Sample Text), Amount (\$123.45), Purchase Order ID (Sample Text), and Product ID (Sample Text). A 'Product details' section shows Unit Price (\$123.45), Quantity Ordered (15,993), and Quantity Received (47,919). A 'System Information' section shows Created By (Sample Text) and Last Modified By (Sample Text). A 'Custom Links' section is also visible.

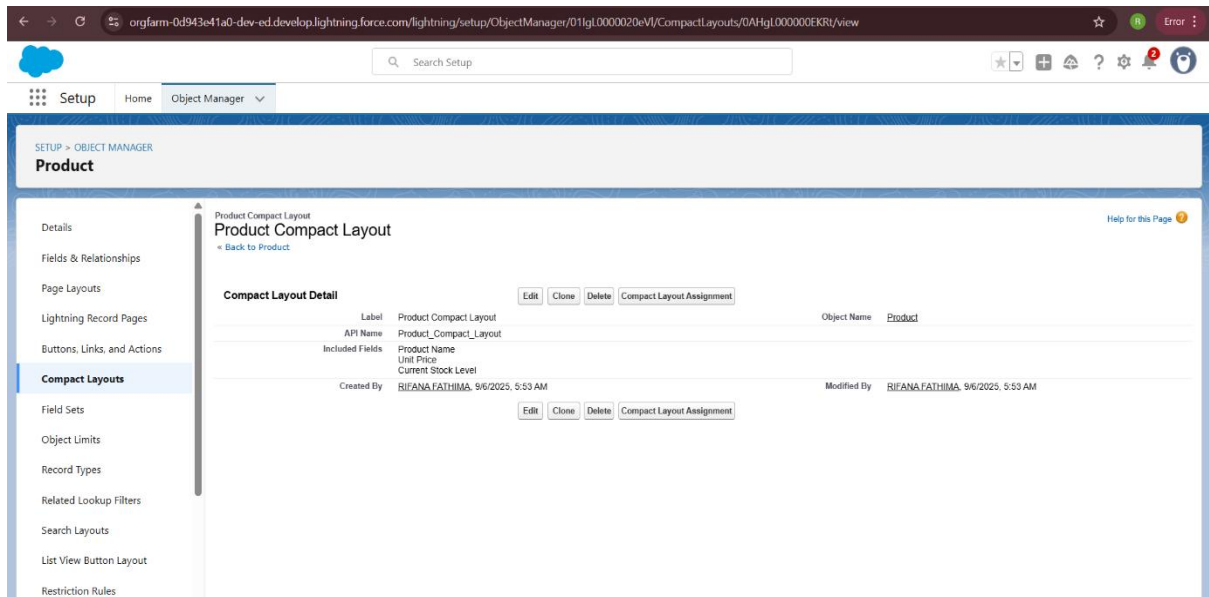
## PAGE LAYOUT FOR INVENTORY TRANSACTION

The screenshot shows the Salesforce Setup interface for the 'Inventory Transaction' page layout. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts (selected), 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, and Scoping Rules. The main content area displays the 'Inventory Transaction Detail' layout. At the top, there are tabs for 'Save', 'Quick Save', 'Preview As...', 'Cancel', 'Undo', 'Redo', and 'Layout Properties'. Below these tabs is a 'Fields' section with a 'Quick Find' bar and a list of fields including 'Section', 'Blank Space', 'Created By', 'Inventory Transaction...', 'Last Modified By', 'Owner', 'Purchase Order ID', 'Transaction Date', 'Transaction Type', and 'Total Order Cost'. The layout itself is divided into sections: 'Information (Header visible on edit only)' with fields for 'Inventory Transaction ID', 'Purchase Order ID', 'Transaction Type', 'Transaction Date', 'Total Order Cost', and 'Owner'; 'System Information (Header visible on edit only)' with 'Created By' and 'Last Modified By'; and 'Custom Links (Header visible on edit only)'. Standard buttons like 'Edit', 'Delete', 'Clone', 'Change Owner', 'Change Record Type', 'Printable View', 'Sharing', 'Sharing Hierarchy', and 'Edit Labels' are visible at the top of the layout area.

## PAGE LAYOUT FOR SUPPLIER

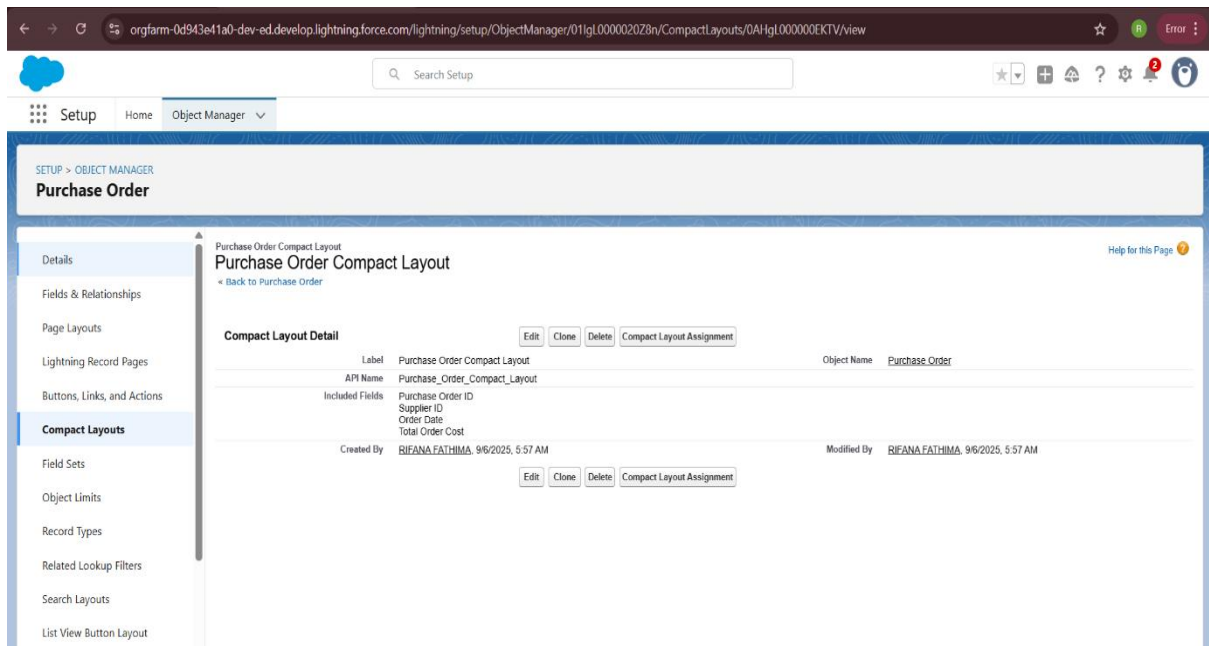
The screenshot shows the Salesforce Setup interface for the 'Supplier' page layout. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts (selected), Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, and Scoping Rules. The main content area displays the 'Supplier Detail' layout. At the top, there are tabs for 'Save', 'Quick Save', 'Preview As...', 'Cancel', 'Undo', 'Redo', and 'Layout Properties'. Below these tabs is a 'Fields' section with a 'Quick Find' bar and a list of fields including 'Section', 'Blank Space', 'Created By', 'Address', 'Contact Person', 'Email', 'Last Modified By', 'Owner', 'Phone Number', 'Supplier ID', 'Supplier Name', and 'Supplier Type'. The layout itself is divided into sections: 'Information (Header visible on edit only)' with fields for 'Supplier ID', 'Supplier Name', 'Contact Person', 'Phone Number', 'Email', 'Address', and 'Owner'; 'System Information (Header visible on edit only)' with 'Created By' and 'Last Modified By'; and 'Custom Links (Header visible on edit only)'. Standard buttons like 'Edit', 'Delete', 'Clone', 'Change Owner', 'Change Record Type', 'Printable View', 'Sharing', 'Sharing Hierarchy', and 'Edit Labels' are visible at the top of the layout area.

## COMPACT LAYOUTS FOR PRODUCT AND PURCHASE ORDER OBJECTS



The screenshot shows the Salesforce Setup interface for the 'Product' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, **Compact Layouts** (selected), Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, and Restriction Rules. The main content area is titled 'Product Compact Layout' and includes a 'Back to Product' link. Below the title is a 'Compact Layout Detail' section with a table of layout information. The table has columns for Label, API Name, Included Fields, Object Name, Created By, and Modified By. The layout is named 'Product Compact Layout' and includes fields: Product Name, Unit Price, and Current Stock Level. It was created by RIFANA.FATHIMA on 9/6/2025 at 5:53 AM. The table also includes action buttons: Edit, Clone, Delete, and Compact Layout Assignment.

Label	API Name	Included Fields	Object Name	Created By	Modified By
Product Compact Layout	Product_Compact_Layout	Product Name Unit Price Current Stock Level	Product	RIFANA.FATHIMA, 9/6/2025, 5:53 AM	RIFANA.FATHIMA, 9/6/2025, 5:53 AM



The screenshot shows the Salesforce Setup interface for the 'Purchase Order' object. The left sidebar contains a navigation menu with options: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, **Compact Layouts** (selected), Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, and Restriction Rules. The main content area is titled 'Purchase Order Compact Layout' and includes a 'Back to Purchase Order' link. Below the title is a 'Compact Layout Detail' section with a table of layout information. The table has columns for Label, API Name, Included Fields, Object Name, Created By, and Modified By. The layout is named 'Purchase Order Compact Layout' and includes fields: Purchase Order ID, Supplier ID, Order Date, and Total Order Cost. It was created by RIFANA.FATHIMA on 9/6/2025 at 5:57 AM. The table also includes action buttons: Edit, Clone, Delete, and Compact Layout Assignment.

Label	API Name	Included Fields	Object Name	Created By	Modified By
Purchase Order Compact Layout	Purchase_Order_Compact_Layout	Purchase Order ID Supplier ID Order Date Total Order Cost	Purchase Order	RIFANA.FATHIMA, 9/6/2025, 5:57 AM	RIFANA.FATHIMA, 9/6/2025, 5:57 AM



## IMPLEMENTED A VALIDATION RULE FOR PURCHASE ORDER OBJECT

The screenshot shows the Salesforce Setup interface for configuring a Validation Rule for the Purchase Order object. The left sidebar contains navigation links: 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, and Restriction Rules. The main content area is titled "Purchase Order Validation Rule" and includes a description: "Define a validation rule by specifying an error condition and a corresponding error message. The error condition is written as a Boolean formula expression that returns true or false. When the formula expression returns true, the save will be aborted and the error message will be displayed. The user can correct the error and try again." Below this is the "Validation Rule Edit" section with fields for Rule Name (Expected\_Delivery\_Date\_Validation), Active (checked), and Description. The "Error Condition Formula" section shows an example formula: `(Discount_Percent_c > 0.30)` and a description: "Display an error if Discount is more than 30%. If this formula expression is true, display the text defined in the Error Message area." The formula editor shows the formula: `(Expected_Delivery_Date_c - Order_Date_c) > 7`. A functions list is open, showing categories like ABS, ACOS, ADDMONTHS, AND, ASCII, and ASIN. The "Error Message" section is partially visible at the bottom.

Setup > OBJECT MANAGER  
**Purchase Order**

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

**Purchase Order Validation Rule** [Help for this Page](#)

Define a validation rule by specifying an error condition and a corresponding error message. The error condition is written as a Boolean formula expression that returns true or false. When the formula expression returns true, the save will be aborted and the error message will be displayed. The user can correct the error and try again.

**Validation Rule Edit** [Save](#) [Save & New](#) [Cancel](#)

Rule Name:

Active: ☒

Description:

**Error Condition Formula** [More Examples](#) F = Required Information

**Example:** `Discount_Percent_c > 0.30`  
Display an error if Discount is more than 30%  
If this formula expression is **true**, display the text defined in the Error Message area

`(Expected_Delivery_Date_c - Order_Date_c) > 7`

**Functions**  
-- All Function Categories --  
ABS  
ACOS  
ADDMONTHS  
AND  
ASCII  
ASIN  
  
ABS(number)  
Returns the absolute value of a

**Quick Tips**  
• Operators & Functions

The screenshot shows the "Error Message" configuration page. It includes an "Example" section with the text "Discount percent cannot exceed 30%". Below this, it states "This message will appear when Error Condition formula is true". The "Error Message" field contains the text "The Expected Delivery Date should not exceed 7 days.". Below this, it states "This error message can either appear at the top of the page or below a specific field on the page". The "Error Location" section has two radio buttons: "Top of Page" (selected) and "Field". At the bottom are "Save", "Save & New", and "Cancel" buttons.

**Error Message**

**Example:**

This message will appear when Error Condition formula is **true**

Error Message:

This error message can either appear at the top of the page or below a specific field on the page

Error Location: ☒ Top of Page ☐ Field [?](#)

[Save](#) [Save & New](#) [Cancel](#)

## PROFILES

Profiles control a user's permissions to objects, fields, tabs, apps, and other settings. Each user in Salesforce must be assigned a profile, and the profile assigned to a user determines what they can see and do in the system.

Here we have created Inventory management profile and Purchase management profile.

## ROLES

Roles are used to control record-level access and define the hierarchy of an organization, determining the level of visibility and sharing of records among users. Roles work in conjunction with profiles to provide a robust security model. While profiles control what actions users can perform (object and field permissions), roles control which records users can see based on their position in the hierarchy.

Here we have created roles for Purchasing management and Inventory management.

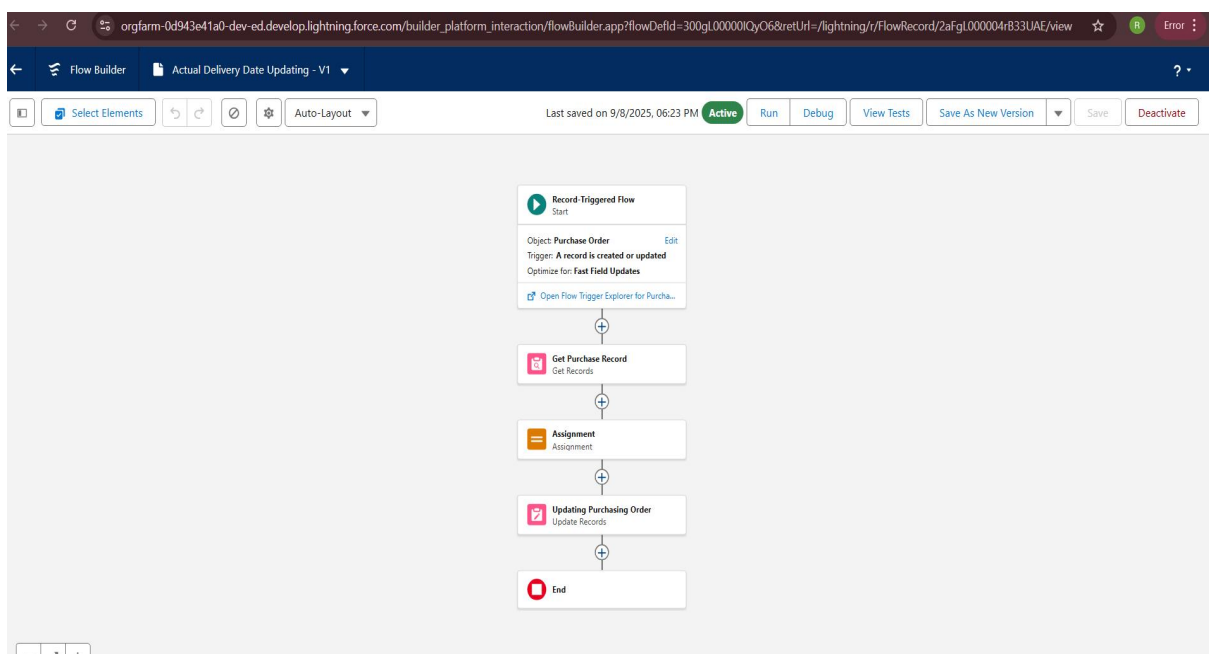
## PERMISSION SET

Permission set allow administrators to grant additional access to various tools and functions without altering the user's profile. They are particularly useful for providing specialized permissions to specific users without the need to create multiple profiles.

Here we have given permission set to a user named John Purchase M.

## FLOWS

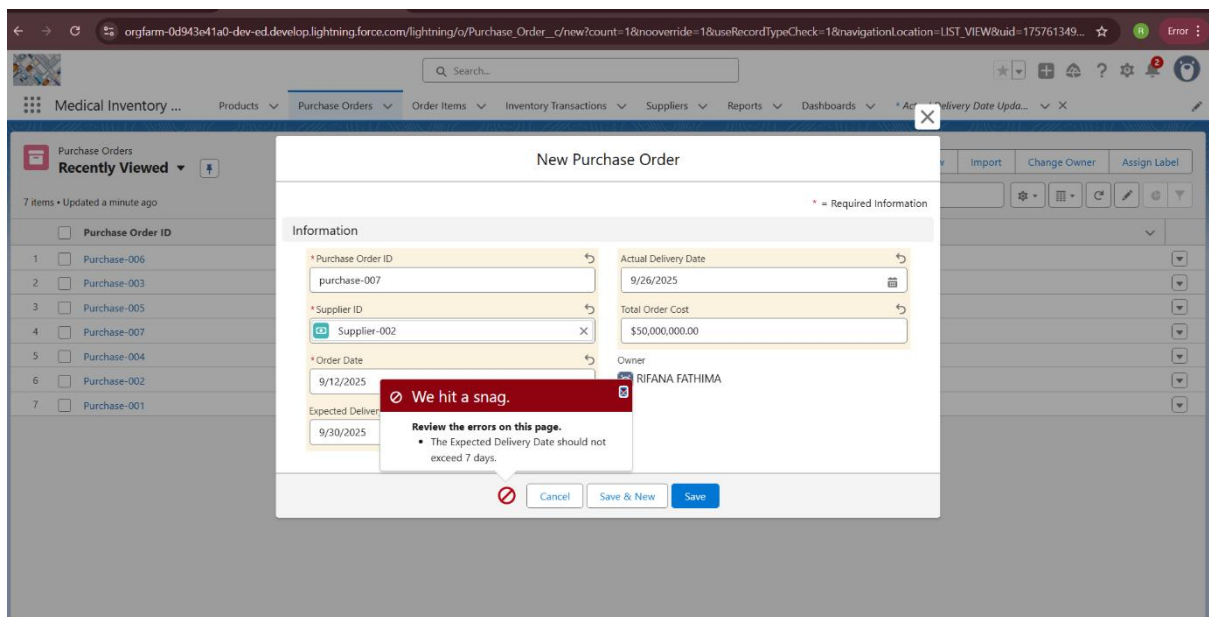
**Established flows to update the Actual Delivery Date.**





## FUNCTIONAL AND PERFORMANCE TESTING

### VALIDATION RULE



### TRIGGERS

#### APEX TRIGGER

Created an Apex Trigger named **CalculateTotalAmountTrigger** on **Order\_Item\_\_c** to recalculate the total amount of the parent order (Order) whenever its related order items change.

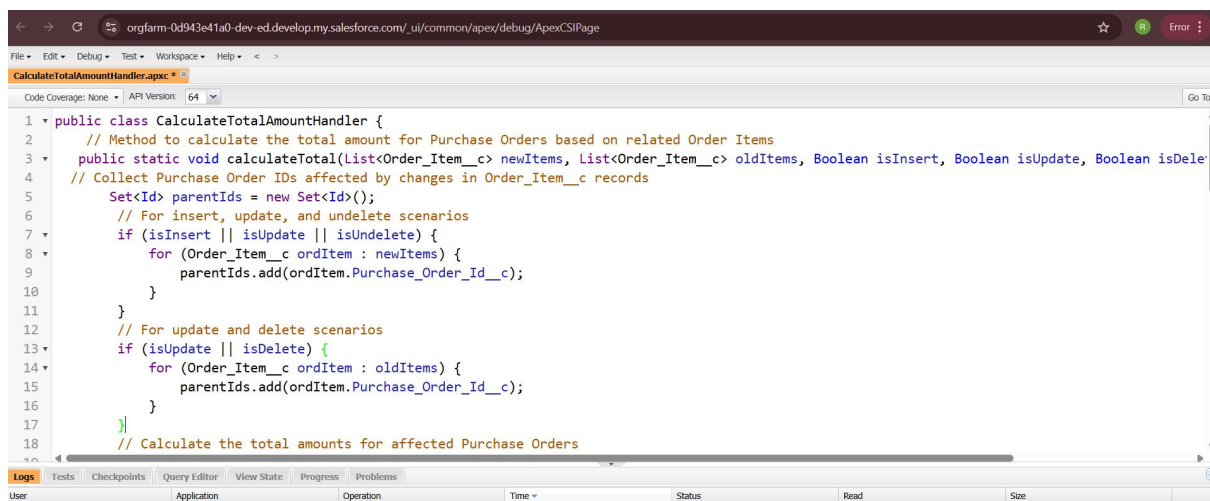
Total Records  
7

Total Order Count  
5

Total Total Order Cost  
\$81,490,977.00

## APEX CLASS

Created an Apex class named CalculateTotalAmountHandler to keep the parent Purchase Order's total cost (Total\_Order\_cost\_\_c) always accurate.

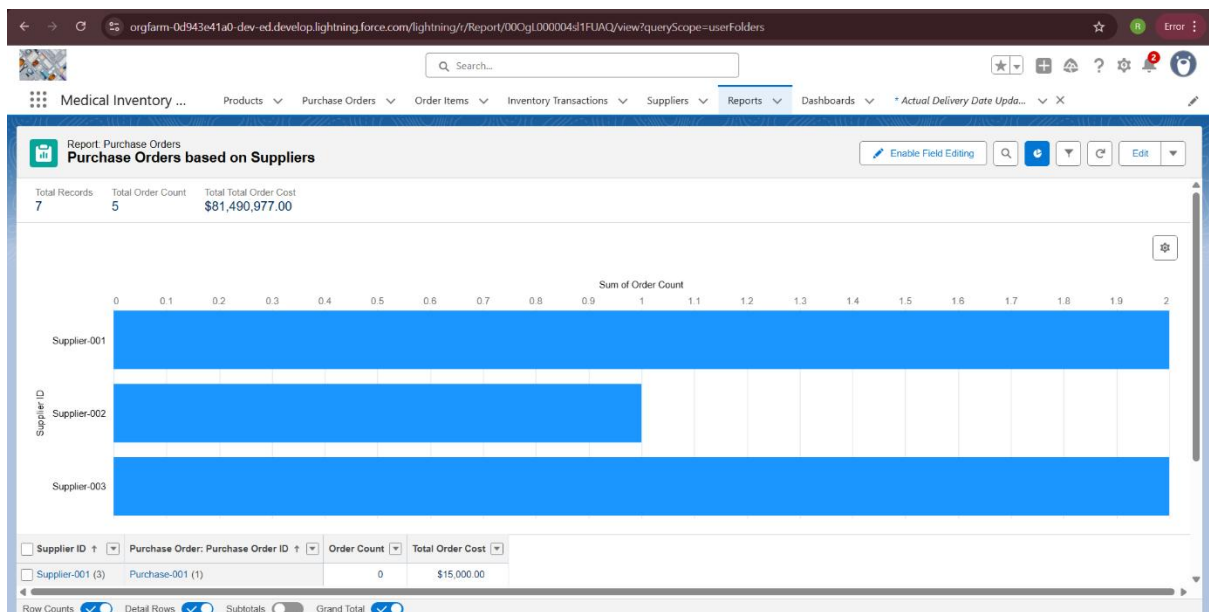
The screenshot shows the Salesforce IDE interface. At the top, the browser address bar displays 'orgfarm-0d943e41a0-dev-ed.develop.my.salesforce.com/\_ui/common/apex/debug/ApexCSIPage'. Below the browser, the IDE menu bar includes 'File', 'Edit', 'Debug', 'Test', 'Workspace', and 'Help'. The active window is titled 'CalculateTotalAmountHandler.apex'. Below the menu bar, a status bar shows 'Code Coverage: None' and 'API Version: 64'. The main editor area contains the following Apex code:

```
1 public class CalculateTotalAmountHandler {
2     // Method to calculate the total amount for Purchase Orders based on related Order Items
3     public static void calculateTotal(List<Order_Item__c> newItems, List<Order_Item__c> oldItems, Boolean isInsert, Boolean isUpdate, Boolean isDelete) {
4         // Collect Purchase Order IDs affected by changes in Order_Item__c records
5         Set<Id> parentIds = new Set<Id>();
6         // For insert, update, and undelete scenarios
7         if (isInsert || isUpdate || isUndelete) {
8             for (Order_Item__c ordItem : newItems) {
9                 parentIds.add(ordItem.Purchase_Order_Id__c);
10            }
11        }
12        // For update and delete scenarios
13        if (isUpdate || isDelete) {
14            for (Order_Item__c ordItem : oldItems) {
15                parentIds.add(ordItem.Purchase_Order_Id__c);
16            }
17        }
18        // Calculate the total amounts for affected Purchase Orders
19    }
20 }
```

At the bottom of the IDE, there is a 'Logs' tab and a table with columns: 'User', 'Application', 'Operation', 'Time', 'Status', 'Read', and 'Size'.

## REPORTS

We have created reports for two data: i)Purchase Orders based on Suppliers  
ii)complete purchase detail



orgfarm-0d943e41a0-dev-ed.develop.lightning.force.com/lightning/r/Report/000gl000004ssdpUAA/view?queryScope=userFolders

Medical Inventory ... Products Purchase Orders Order Items Inventory Transactions Suppliers Reports Dashboards \* Actual Delivery Date Upda...

Report: Purchase Orders with Order Items and Product ID  
**Complete Purchase Details Report**

Enable Field Editing Add Chart

Total Records: 5 Total Order Count: 5 Total Quantity Received: 13,340 Total Amount: \$145,977.00

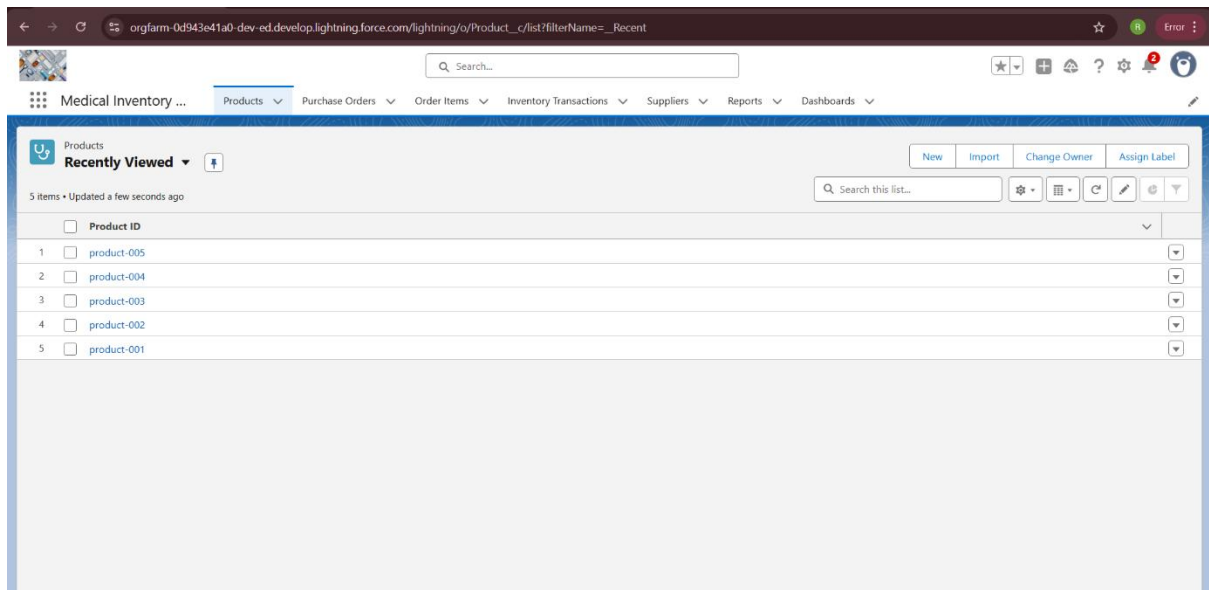
Supplier ID ↑	Actual Delivery Date ↑	Purchase Order: Purchase Order ID ↑	Product ID: Product ID	Product ID: Product Name	Order Count	Quantity Received	Amount
Supplier-001 (2)	9/11/2025 (2)	Purchase-003 (2)	product-002	Diclofenoc	2	6,800	\$76,840.00
			product-001	Aspirin Tablets	2	440	\$1,188.00
		Subtotal			2	7,240	\$78,028.00
		Subtotal			2	7,240	\$78,028.00
Supplier-002 (1)	9/5/2025 (1)	Purchase-005 (1)	product-002	Diclofenoc	1	800	\$9,040.00
		Subtotal			1	800	\$9,040.00
		Subtotal			1	800	\$9,040.00
Supplier-003 (2)	9/20/2025 (2)	Purchase-006 (2)	product-002	Diclofenoc	2	5,000	\$56,500.00
			product-004	Paracetamol Tablets	2	300	\$2,409.00
		Subtotal			2	5,300	\$58,909.00
		Subtotal			2	5,300	\$58,909.00
		Subtotal			2	5,300	\$58,909.00
		Total (5)			5	13,340	\$145,977.00

Row Counts Detail Rows Subtotals Grand Total

# RESULTS

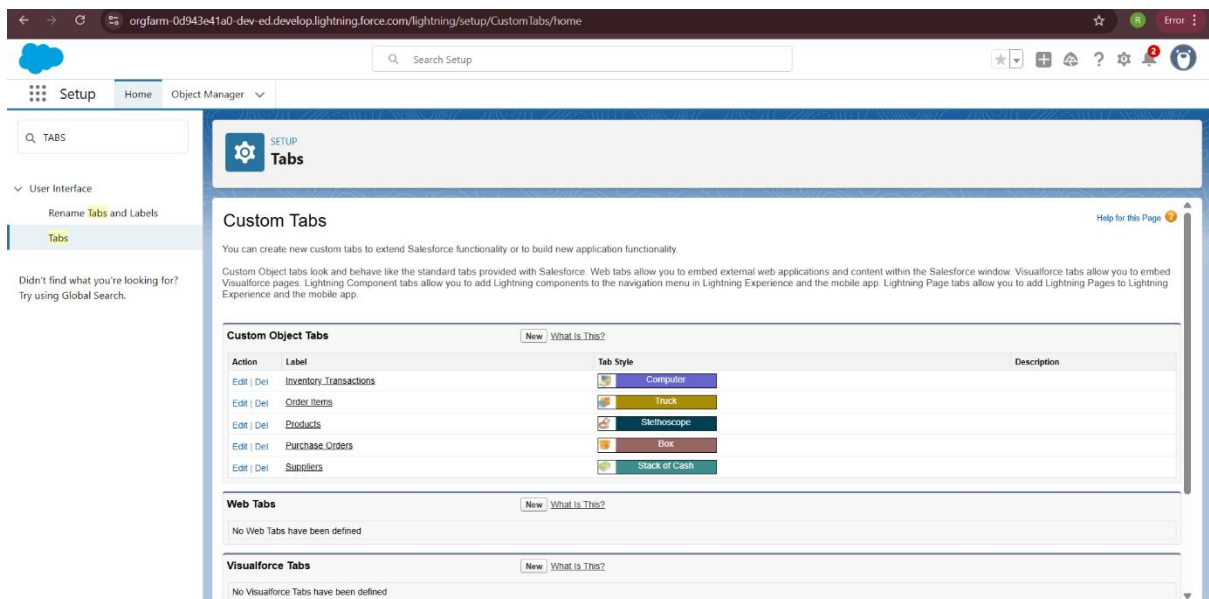
## OUTPUT SCREENS

## MEDICAL INVENTORY MANAGEMENT APP



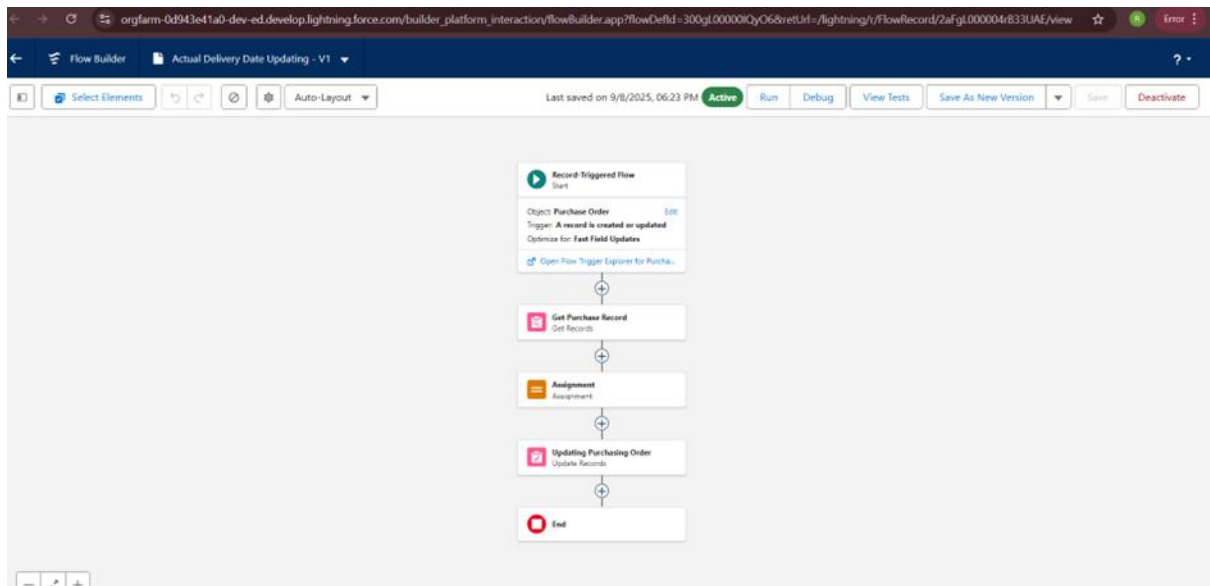
## TABS

### Created tabs for objects

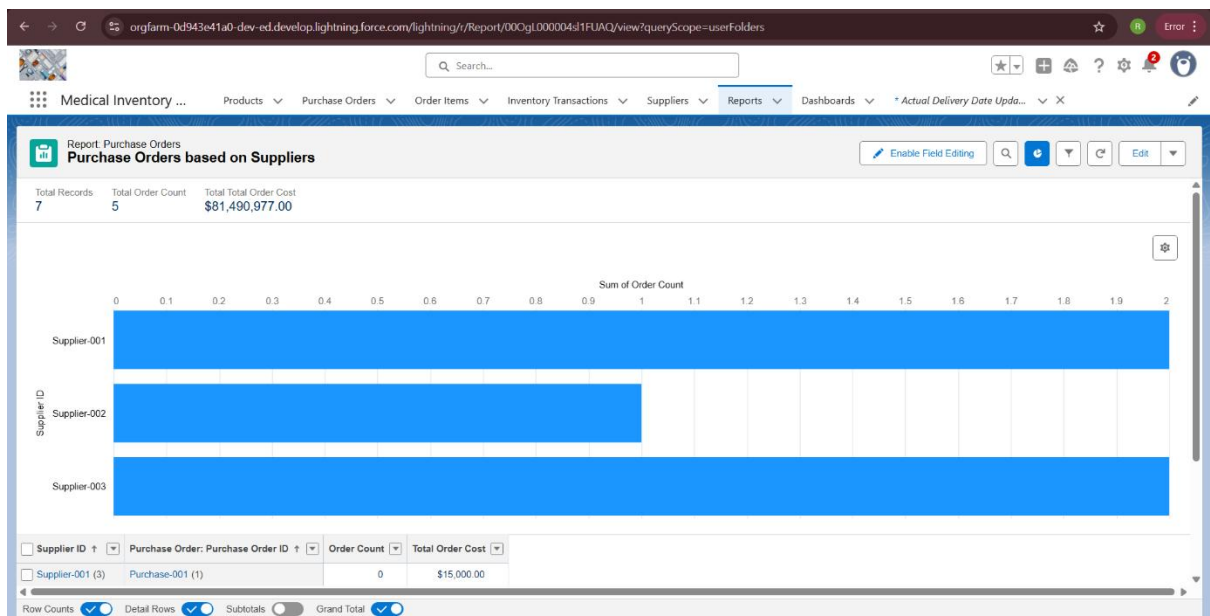


## FLOWS

### ACTUAL DELIVERY DATE UPDATING



## REPORTS



Report: Purchase Orders with Order Items and Product ID  
**Complete Purchase Details Report**

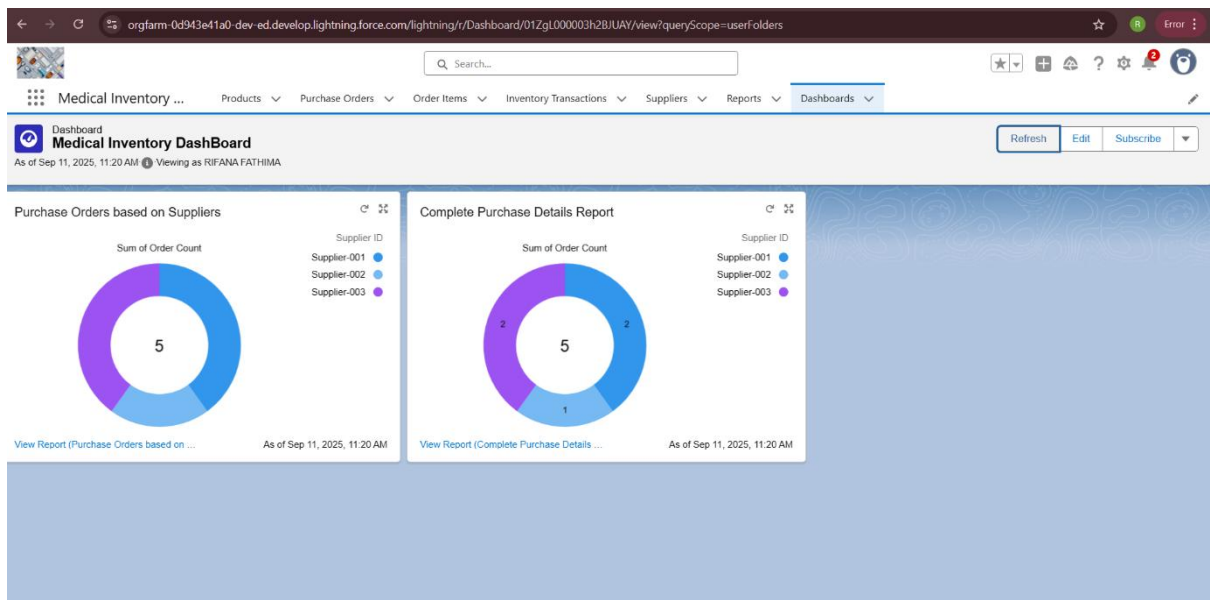
Enable Field Editing

Total Records	5	Total Order Count	5	Total Quantity Received	13,340	Total Amount	\$145,977.00
---------------	---	-------------------	---	-------------------------	--------	--------------	--------------

Supplier ID	Actual Delivery Date	Purchase Order: Purchase Order ID	Product ID: Product ID	Product ID: Product Name	Order Count	Quantity Received	Amount
Supplier-001 (2)	9/11/2025 (2)	Purchase-003 (2)	product-002	Diclofenoc	2	6,800	\$76,840.00
			product-001	Aspirin Tablets	2	440	\$1,188.00
		Subtotal			2	7,240	\$78,028.00
		Subtotal			2	7,240	\$78,028.00
		Subtotal			2	7,240	\$78,028.00
Supplier-002 (1)	9/5/2025 (1)	Purchase-005 (1)	product-002	Diclofenoc	1	800	\$9,040.00
		Subtotal			1	800	\$9,040.00
		Subtotal			1	800	\$9,040.00
		Subtotal			1	800	\$9,040.00
Supplier-003 (2)	9/20/2025 (2)	Purchase-006 (2)	product-002	Diclofenoc	2	5,000	\$56,500.00
			product-004	Paracetamol Tablets	2	300	\$2,409.00
		Subtotal			2	5,300	\$58,909.00
		Subtotal			2	5,300	\$58,909.00
		Subtotal			2	5,300	\$58,909.00
Total (5)					5	13,340	\$145,977.00

Row Counts: ☒ Detail Rows: ☒ Subtotals: ☒ Grand Total: ☒

## DASHBOARDS



## **PRONS AND CONS OF MEDICAL INVENTORY MANAGEMENT**

### **PRONS:**

- Ensures Availability of Supplies
- Prevents stockouts of critical medicines, equipment, or consumables
- Saves lives by ensuring treatments aren't delayed.
- Reduces Wastage
- Tracks expiry dates and avoids overstocking
- Minimizes financial loss from expired or unused items.
- Improves Patient Safety
- Ensures only valid and safe supplies are used.
- Reduces risks of errors (like using expired drugs)
- Cost Control & Efficiency
- Optimizes purchasing and storage
- Reduces unnecessary spending.
- Better Decision-Making
- Reporting and analytics help forecast demand.
- Managers can negotiate better with suppliers.
- Time-Saving Automation
- Features like auto-reorder and barcode scanning reduce manual work.
- Regulatory Compliance
- Maintains accurate records for audits and healthcare regulations.

### **CONS:**

- High Initial Setup Cost
- Advanced inventory systems (software + hardware) can be expensive.
- Training Requirement
- Staff need training to properly use the system.
- Resistance to adopting new technology can be a challenge.
- Dependence on Technology
- System downtime, bugs, or cyber-attacks can disrupt operations.
- Data Entry Errors
- If staff enter wrong data (e.g., quantity, batch number), reports and stock tracking become unreliable.
- Maintenance Costs
- Regular updates, support, and system maintenance add ongoing costs
- Integration Challenges

- Sometimes hard to integrate with other hospital systems (like billing or electronic medical records).
- Risk of Over-Reliance
- Too much dependence on automation can cause issues if manual checks are ignored.

## **CONCLUSION**

The Medical Inventory Management system provides an effective solution to one of the most critical challenges in healthcare: ensuring the right supplies are available at the right time while minimizing costs and wastage. By automating processes such as stock tracking, expiry monitoring, supplier management, and real-time reporting, the system reduces human errors and enhances operational efficiency. This not only supports better decision-making and regulatory compliance but also directly contributes to improved patient safety and service quality. Although initial implementation requires investment in technology and training, the long-term benefits in terms of reliability, cost savings, and optimized resource utilization outweigh these challenges. Therefore, a well-structured medical inventory management system is essential for sustainable healthcare operations and for strengthening the overall quality of patient care.

## **APPENDIX**

**Source Code: provided in Apex Class and Trigger**

**CalculateTotalAmountHandler.apxc**

```
public class CalculateTotalAmountHandler {

    public static void calculateTotal(List<Order_Item__c> newItems,
List<Order_Item__c> oldItems, Boolean isInsert, Boolean isUpdate, Boolean isDelete,
Boolean isUndelete) {

        Set<Id> parentIds = new Set<Id>();

        if (isInsert || isUpdate || isUndelete) {

            for (Order_Item__c ordItem : newItems) {

                parentIds.add(ordItem.Purchase_Order_Id__c);

            }

        }

    }
```



```

    }
}
if (isUpdate || isDelete) {
    for (Order_Item__c ordItem : oldItems) {
        parentIds.add(ordItem.Purchase_Order_Id__c);
    }
}
Map<Id, Decimal> purchaseToUpdateMap = new Map<Id, Decimal>();
if (!parentIds.isEmpty()) {
    List<AggregateResult> aggrList = [
        SELECT Purchase_Order_Id__c, SUM(Amount__c) totalAmount
        FROM Order_Item__c
        WHERE Purchase_Order_Id__c IN :parentIds
        GROUP BY Purchase_Order_Id__c
    ];
    for (AggregateResult aggr : aggrList) {
        Id purchaseOrderId = (Id)aggr.get('Purchase_Order_Id__c');
        Decimal totalAmount = (Decimal)aggr.get('totalAmount');
        purchaseToUpdateMap.put(purchaseOrderId, totalAmount);
    }
    List<Purchase_Order__c> purchaseToUpdate = new
List<Purchase_Order__c>();
    for (Id purchaseOrderId : purchaseToUpdateMap.keySet()) {
        Purchase_Order__c purchaseOrder = new Purchase_Order__c(Id =
purchaseOrderId, Total_Order_cost__c =
purchaseToUpdateMap.get(purchaseOrderId));
        purchaseToUpdate.add(purchaseOrder);
    }
    if (!purchaseToUpdate.isEmpty()) {
        update purchaseToUpdate;
    }
}

```

```
    }  
  }  
}  
}
```

#### **CalculateTotalAmountTrigger.apxt**

```
trigger CalculateTotalAmountTrigger on Order_Item__c (after insert, after update,  
after delete, after undelete) {  
    CalculateTotalAmountHandler.calculateTotal(trigger.new, trigger.old,  
trigger.isInsert, trigger.isUpdate, trigger.isDelete, trigger.isUndelete);  
}
```