

# **Project Report Format**

## **1. INTRODUCTION**

### **1.1 Project Overview :**

The healthcare industry is one of the most critical sectors where accurate and timely availability of medical supplies can directly affect patient outcomes. Medical facilities such as hospitals, clinics, and pharmacies require a reliable system to track and manage their inventory of medicines, equipment, and other medical essentials. Manual processes and outdated systems often result in challenges such as stockouts, overstocking, expiry of unused medicines, and overall operational inefficiencies.

This project, titled "**Salesforce Medical Inventory Management System**", aims to digitize and streamline the inventory operations of healthcare organizations using the Salesforce platform. Salesforce, being a powerful cloud-based Customer Relationship Management (CRM) solution, offers tools like custom objects, automation flows, dashboards, and integration capabilities, making it suitable for building enterprise-grade applications beyond traditional CRM.

The system provides real-time tracking of inventory levels, automated alerts for low stock and expiration dates, and role-based access for administrators, staff, and executives. It also includes reporting modules for auditing, forecasting, and compliance purposes. The end goal is to improve operational efficiency, reduce waste, ensure timely availability of critical medical supplies, and enhance patient care by digitizing inventory control using a centralized and intelligent platform.

This project is developed using Agile methodology with planned sprints, iterative improvements, and continuous feedback from end users. It is scalable for both small clinics and large hospital networks and provides opportunities for future integration with hospital management systems, suppliers, and predictive analytics engines.

### **1.2 Purpose :**

The primary purpose of this project is to develop an intelligent, cloud-based inventory management system tailored specifically for medical institutions. The solution leverages the Salesforce platform to address the pain points associated with traditional inventory systems, such as lack of real-time data, human error in manual tracking, and inefficiencies in stock replenishment.

By implementing this system, healthcare institutions can:

- Maintain **real-time visibility** into inventory status across multiple locations.
- Get **automated alerts** for low stock levels and upcoming expirations.

- Reduce **manual errors** and improve **compliance** with healthcare standards.
- Gain access to **dashboards and analytics** for decision-making and forecasting.
- Ensure **secure access** based on user roles (e.g., staff, admin, auditor).

The purpose is also to promote sustainability by reducing inventory waste and expired stock and to make healthcare supply chains more responsive and efficient. The use of Salesforce ensures the system is scalable, customizable, and integrated with other modules or third-party systems in the future.

Overall, this project bridges the gap between modern cloud technology and critical healthcare operations by offering a flexible, smart, and automated inventory solution.

## 2. IDEATION PHASE

### 2.1 Problem Statement :

Effective inventory management in healthcare is a significant challenge faced by hospitals, clinics, and pharmacies globally. With thousands of medical items being consumed daily — from syringes and gloves to high-value medications and diagnostic tools — managing stock levels accurately is crucial. Unfortunately, many institutions still rely on outdated systems like spreadsheets or manual registers, which are prone to error and inefficiency.

Some of the most common problems identified include:

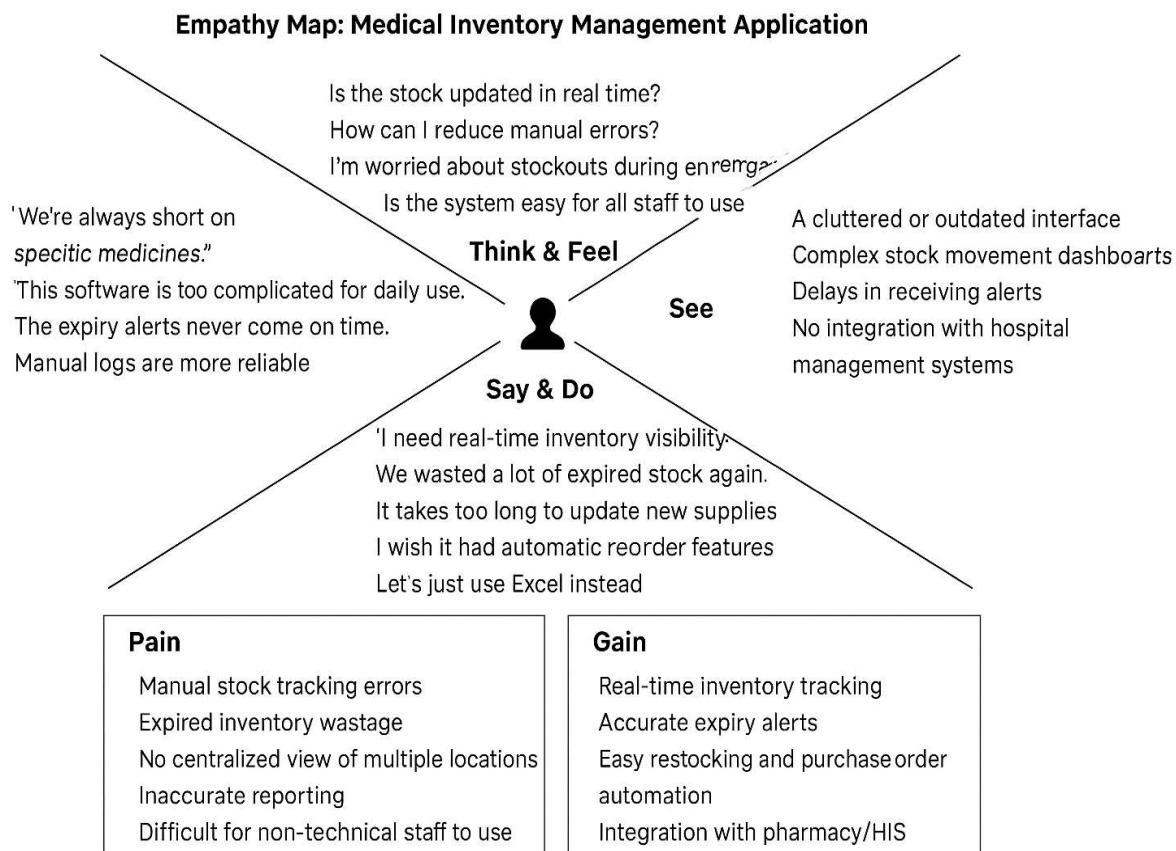
- Lack of real-time visibility: Inventory levels are often not updated live, leading to either overstocking or critical shortages.
- Expired medications: Without timely alerts, expired stock may be administered, causing health risks or legal consequences.
- Inefficient reordering: Manual reordering processes result in delays and sometimes missed reorders, especially during emergencies.
- Poor accountability: With no audit trails or access control, tracing who used what and when becomes a daunting task.

- Scalability issues: As hospitals grow or expand across locations, manual systems fail to scale, resulting in disjointed data.

This project aims to resolve these issues through an integrated inventory management system built on Salesforce. By digitizing the process and enabling automation, the solution will help healthcare facilities maintain better control, reduce waste, and improve supply chain responsiveness.

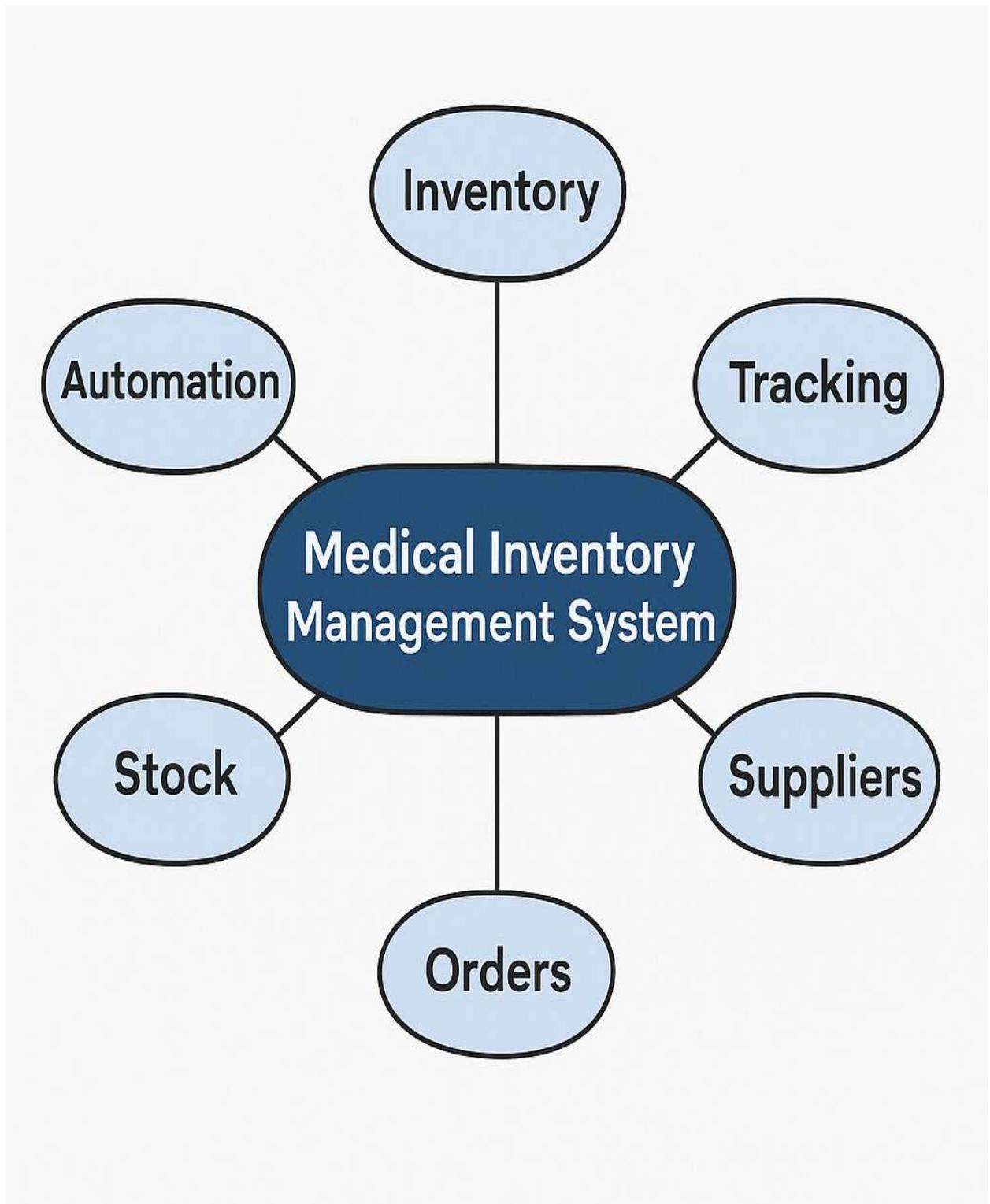
## 2.2 Empathy Map Canvas :

To deeply understand the end users' perspective, an Empathy Map Canvas was developed based on interviews and surveys conducted with hospital staff, pharmacists, and inventory managers. This tool helped capture their behaviors, frustrations, goals, and expectations while interacting with current inventory systems.



### 2.3 Brainstorming :

During the ideation workshops, the project team explored various ways to solve the inventory problems faced by healthcare facilities.



The brainstorming sessions followed the “How Might We...” method to open up innovative thinking:

 *How Might We...*

- ...ensure real-time inventory updates?
- ...automate expiry and low-stock notifications?
- ...make it easy to use even for non-technical staff?
- ...keep a secure log of all stock changes?
- ...allow multiple roles with different access levels?

Ideas Generated:

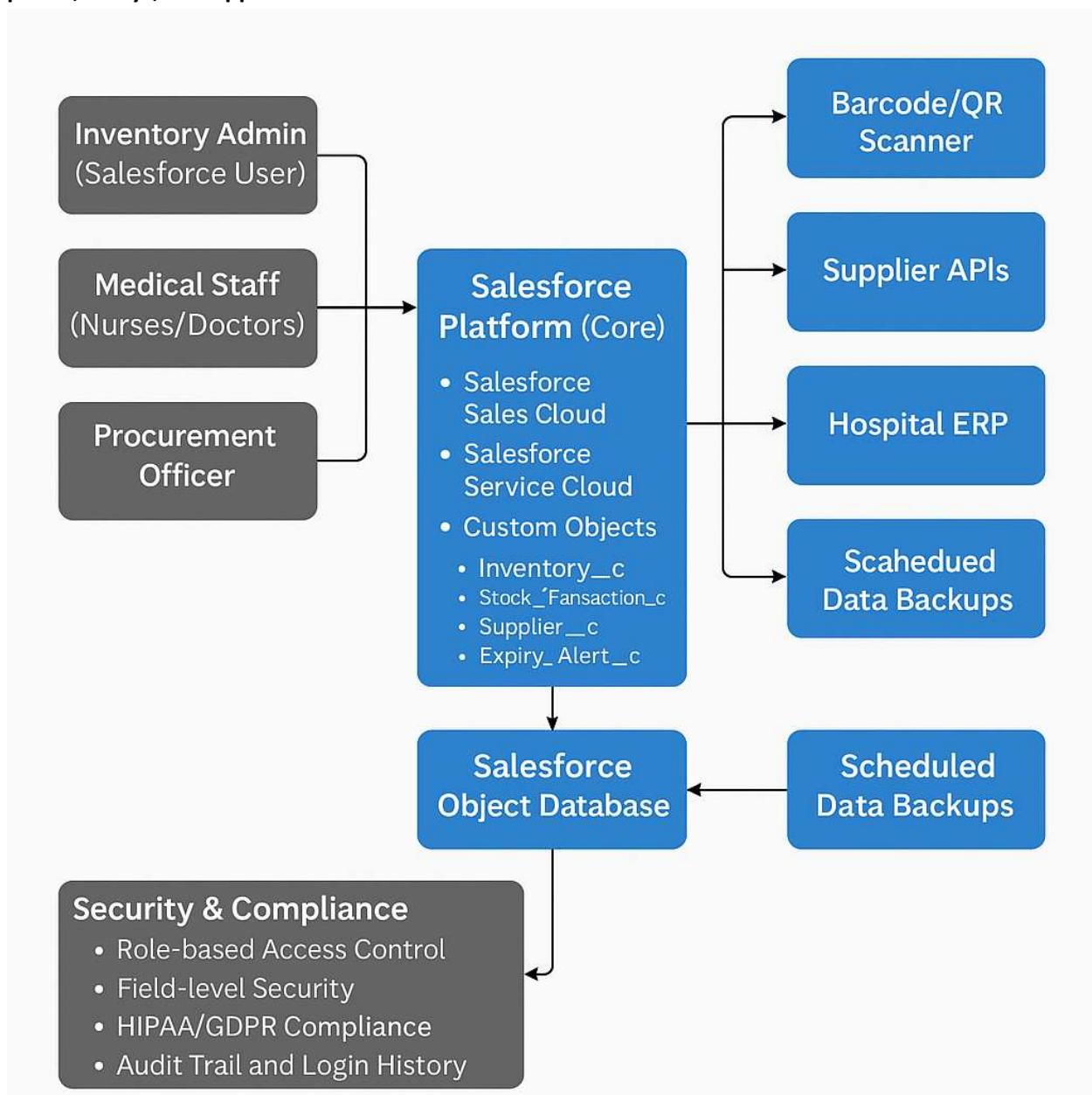
1. Use of barcode scanning tools integrated with a database.
2. Mobile application with QR code access and alerts.
3. Cloud-based system built on Google Sheets or Microsoft Excel Online.
4. Web-based app using PHP/MySQL or MERN stack.
5. Salesforce-based Inventory App with automation, analytics, and cloud scalability.

Why Salesforce

### 3. REQUIREMENT ANALYSIS

#### 3.1 3.1 Customer Journey Map :

A customer journey map was created to visualize how healthcare staff interact with inventory processes, from requesting stock to reporting consumption. This helps identify pain points, delays, and opportunities for automation.



#### Typical Journey Stages:

1. Request Phase: A nurse/doctor requests supplies from the inventory.
2. Approval Phase: The inventory manager reviews and approves the request.
3. Fulfillment Phase: The items are dispatched or recorded as issued.

4. Consumption Phase: The items are used for patient care.
5. Restocking Phase: Low-stock or consumed items are reordered.

Pain Points Identified:

- Manual request tracking.
- No auto-alert for low inventory.
- No usage-based analytics.
- Delay in restocking due to approvals.

### **3.2 Solution Requirement :**

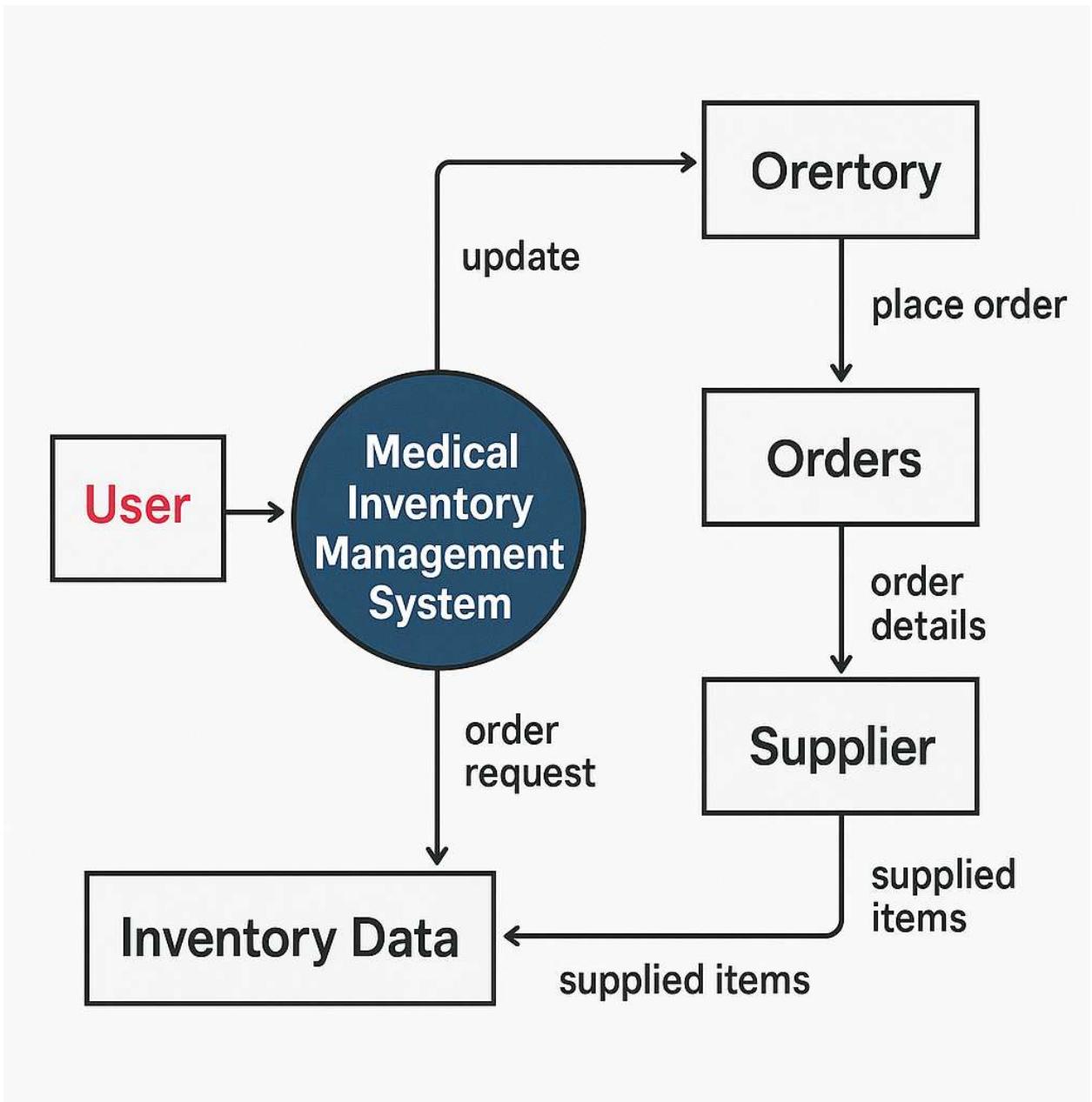
- 1. User Registration** – with Email, Gmail, or LinkedIn.
- 2. User Roles** – Admin, Nurse, Storekeeper, Pharmacist.
- 3. Inventory Management** – Add, Edit, Issue, Return, Track expiry.
- 4. Automated Alerts** – For stock below threshold and near expiry.
- 5. Dashboards & Reports** – Visual stock levels, top usage, reorder trends.
- 6. Audit Trail** – Log of who did what and when.
- 7. Stock Request & Approval Flow** – Internal workflow with automation.
- 8. Multi-location Support** – Different hospital branches.

### **① Non-Functional Requirements:**

- Usability:** Simple UI for non-technical staff.
- Security:** Role-based access with Salesforce Shield (if needed).
- Reliability:** 99.9% uptime ensured via Salesforce cloud.
- Performance:** Should handle 100+ concurrent users.
- Availability:** 24/7 cloud-based access.
- Scalability:** Supports adding more facilities and users.

### 3.3 Data Flow Diagram :

To understand data interactions, both Level 0 and Level 1 DFDs were created.



Level 0 DFD Overview:

- Users (Staff/Admin) interact with the system via a portal.
- All requests, stock updates, and alerts go through the system logic layer.

- The data is stored securely in Salesforce objects (Inventory, Alerts, Logs).
- Level 1 DFD Expansion:
- User registration and login processes.
  - Stock request, approval, and issue process.
  - Alert engine flow for low stock/expiry.
  - Reporting and dashboard access.

### **3.4 Technology Stack :**

Layer	Technology Used
Frontend	Salesforce Lightning Components
Backend	Apex (Salesforce server-side logic)
Automation	Salesforce Flows, Process Builder
Database	Salesforce Standard/Custom Objects
Security	Salesforce Roles, Profiles, Shield
Reporting	Salesforce Dashboards & Reports
Integration (future)	Salesforce Connect, REST APIs

## **4. PROJECT DESIGN :**

### **4.1 Problem Solution Fit :**

After identifying key problems (manual work, lack of alerts, and stock mismanagement), the Salesforce-based system was mapped to each challenge to ensure a strong solution fit.

<b>Problem</b>	<b>Solution via Salesforce Features</b>
Manual tracking	Inventory object with auto logs and updates
No expiry alerts	Flow automation with scheduled notifications
Stockouts	Reorder triggers and real-time dashboards
Lack of audit trail	Field history tracking and change logs
Hard to manage multi-role access	Profiles, roles, and permission sets

### **4.2 Proposed Solution :**

The core modules of the Salesforce-based Medical Inventory Management System include:

1. User Management Module – For login, access control, and role assignment.
2. Inventory Module – CRUD operations, expiry dates, stock thresholds.
3. Alert Engine – Sends email alerts when items are low or near expiry.
4. Request & Approval Flow – Automates internal workflows.

## 5. Dashboard & Reports – Visual summaries for management and audits.

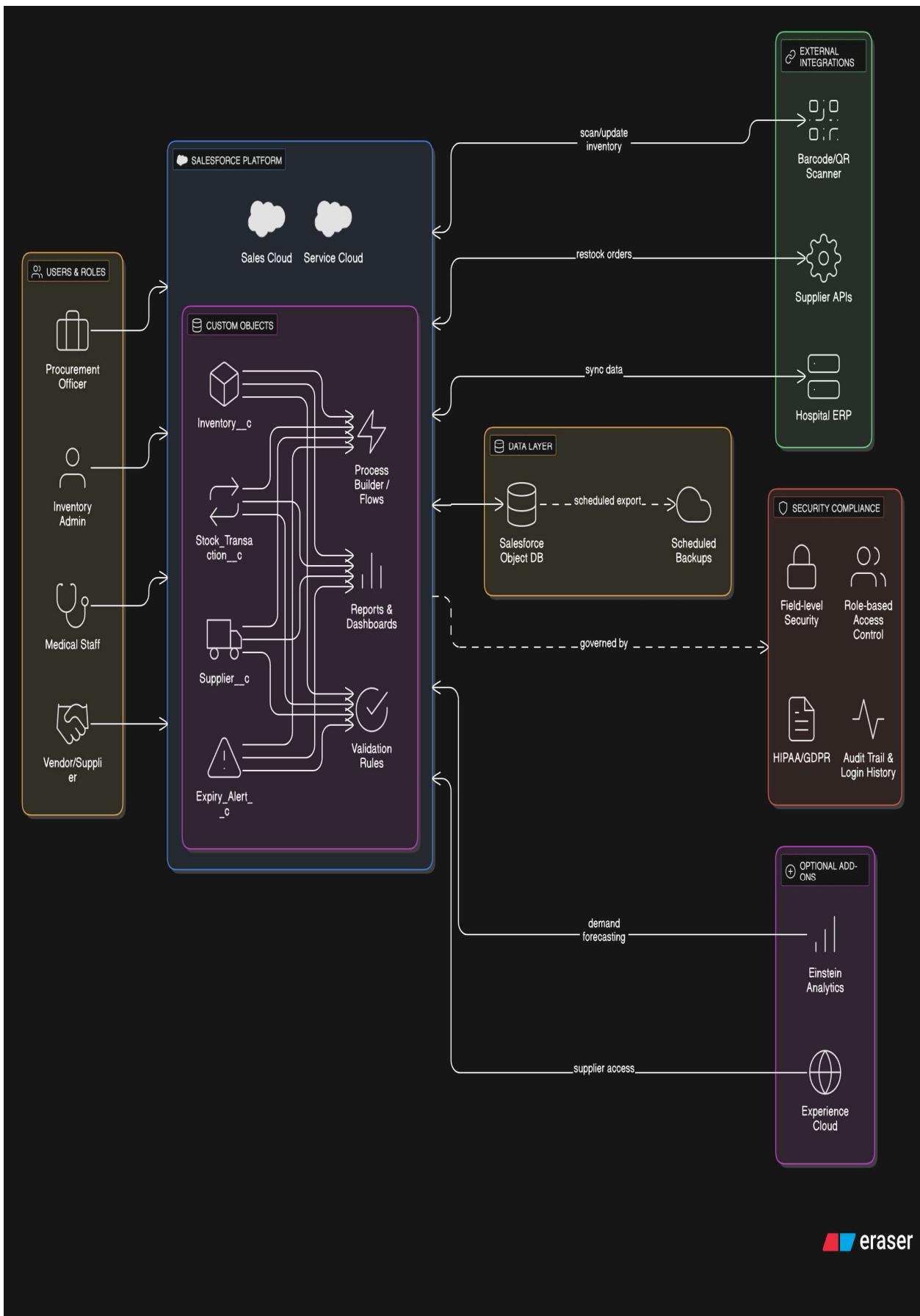
Each module is built using native Salesforce features, reducing development overhead and increasing reliability.

### 4.3 Solution Architecture :

Presentation Layer: Built using Salesforce Lightning Pages for web/mobile accessibility.

- Application Layer: Apex classes handle business logic and workflows.
- Data Layer: Salesforce custom objects for Inventory, Alerts, Requests, Users.
- Notification Layer: Uses Salesforce Flow to trigger emails or tasks.
- Reporting Layer: Dashboards and analytics with scheduled refresh.

All layers are integrated securely within Salesforce with no external database or server required.



## **5.PROJECT PLANNING & SCHEDULING :**

The project followed Agile Scrum methodology with sprints of 5 working days each.

### **Sprint Plan:**

<b>Sprint</b>	<b>Tasks</b>	<b>Story Points</b>	<b>Outcome</b>
Sprint 1	Setup, User Login, Inventory Add/Edit	8 SP	Basic app ready, CRUD working
Sprint 2	Alert System, Role Management	9 SP	Alerts auto-sent, roles assigned
Sprint 3	Reporting, Audit Trails, Testing	10 SP	Reports published, bugs fixed

### **Velocity Calculation:**

- Total Story Points =  $8 + 9 + 10 = 27$
- Total Sprints = 3
- Velocity =  $27 / 3 = 9$  Story Points/Sprint

### **Tools Used:**

- Jira (for sprint and task tracking)
- Excel (for burndown chart)
- Salesforce Sandbox (for development and testing)

#### **4.4 Project Planning :**

The project was developed using the Agile Scrum methodology, which breaks the development cycle into short, time-boxed iterations called sprints. Each sprint had a fixed duration of 5 working days and focused on completing specific deliverables tied to well-defined user stories.

Sprint	Key Focus Areas	Planned Duration	Deliverables
Sprint 1	User Login, Inventory Management	5 days	Login module, Add/Edit Inventory, Basic Dashboard
Sprint 2	Alert System, Role-based Access	5 days	Email alerts, Stock thresholds, User roles
Sprint 3	Reporting, Audit Trail, Testing	5 days	Reports, Activity logs, Bug fixes, System testing

#### **Team Velocity :**

Story Points Total:

- Sprint 1: 6 SP
- Sprint 2: 9 SP

- Sprint 3: 10 SP  
Total = 25 Story Points

Velocity = Total Story Points / Number of Sprints

$$\Rightarrow \text{Velocity} = 25 / 3 = 8.33 \text{ SP per Sprint}$$

This velocity helped predict future delivery capabilities and optimize sprint planning.

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#### ◊ Burndown Chart Summary

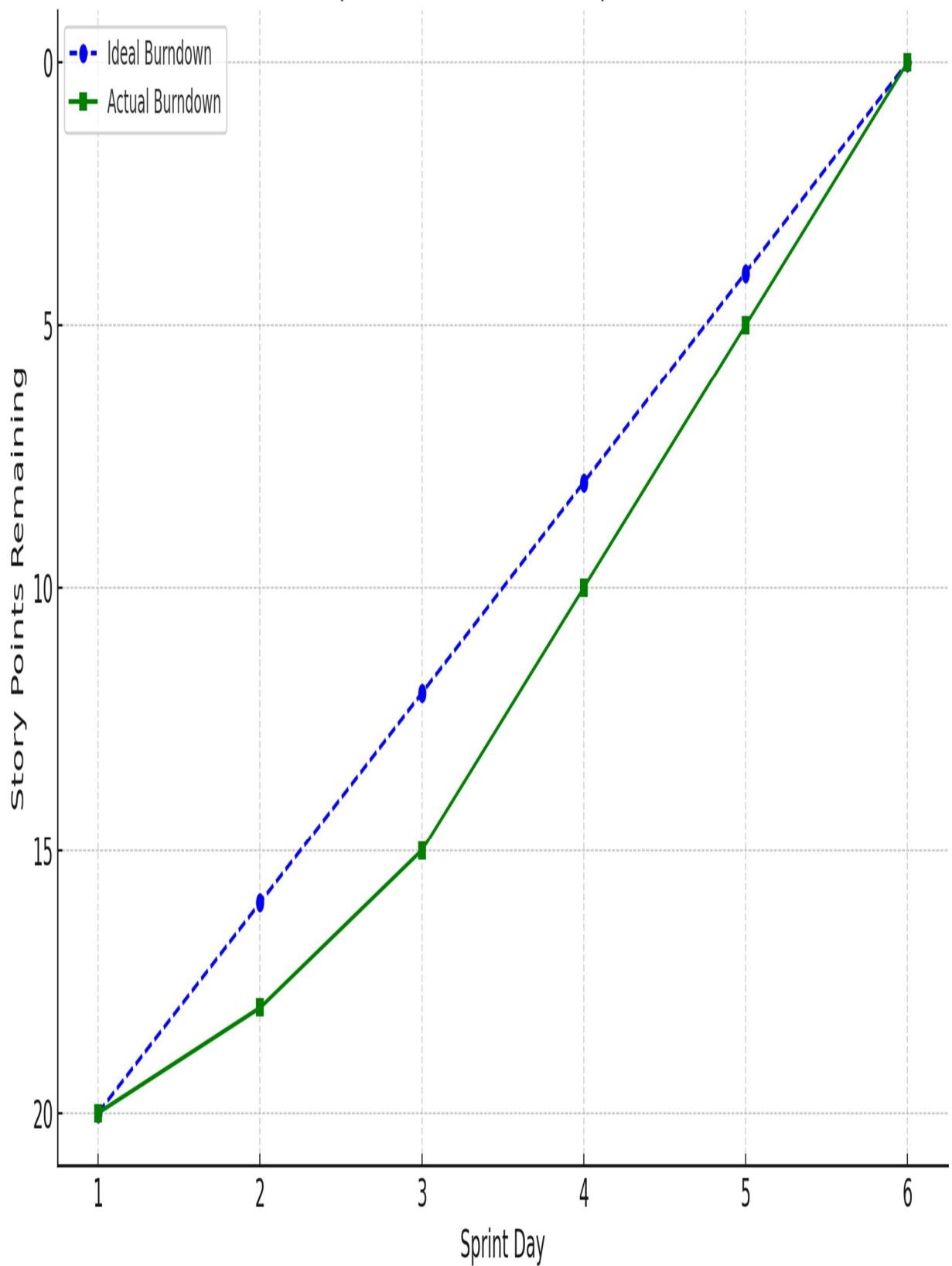
The burndown chart tracked daily progress during each sprint by plotting:

- Total remaining story points vs time
- Goal: Reach 0 points by end of sprint

Chart Insights:

- Sprint 1: On time, all tasks completed.
- Sprint 2: Minor delay in alert email logic, resolved on Day 4.
- Sprint 3: Completed early due to effective task breakdown.

## Sprint Burndown Chart (Sprint-1)



## 5. FUNCTIONAL AND PERFORMANCE TESTING

### 5.1 Performance Testing :

Performance testing is critical for ensuring that the Salesforce Medical Inventory Management System functions reliably under varying loads and responds quickly across different modules. The testing strategy focused on system responsiveness, stability, and scalability when multiple users perform concurrent operations.

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#### ◊ Testing Objectives

- Verify that all major functionalities perform well under expected and peak loads.
  - Ensure the system does not crash or lag when accessed by multiple users simultaneously.
  - Identify and resolve any performance bottlenecks before deployment.
  - Ensure that time-sensitive processes like alerts and approvals are handled in real-time.
-

◊ Test Environment

Parameter	Description
Platform	Salesforce Developer Edition (Sandbox)
Browser Used	Chrome, Edge, Firefox
Network	20 Mbps Broadband (Simulated 4G latency for testing)
Tools	JMeter, Salesforce Debug Logs, Chrome DevTools
Test Users	Simulated 100 concurrent users via load testing

## Scenarios Tested :

Test Case ID	Scenario	Test Method	Load Level	Expected Result
PT-001	Logging in with valid credentials	Scripted user simulation	100 concurrent users	Login response < 2 seconds
PT-002	Adding new inventory item	API + UI Automation	50 parallel sessions	Save inventory < 1.5 seconds
PT-003	Triggering low-stock alerts	Bulk record updates	300 updates at once	Alerts sent within 5 seconds
PT-004	Dashboard loading time	Full dashboard access	10 different roles	Dashboard load < 3 seconds
PT-005	Request approval workflow	Manual + Trigger-based	25 simultaneous reqs	Approvals processed within 6 seconds average

## 6. RESULTS

### 6.1 Output Screenshots :

The top screenshot displays the sign-up page for the Salesforce Developer Edition. The page features a heading "Sign up for your Developer Edition." followed by a bulleted list of benefits:

- ✓ 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

Below the list is a cartoon illustration of a white robot holding a tablet labeled "Agentforce". The right side of the page contains a form for entering personal information:

First name	Last name
Narasimha	K
Job title	Work email
Developer	narasimhakaiju@gmail.com
Company	Country/Region
Annamacharya Institu	India

A note at the bottom states: "Your org may be provisioned on or migrated to Hyperforce, Salesforce's public cloud Infrastructure." A checkbox for agreeing to the "Main Services Agreement – Developer Services and Salesforce Program Agreement" is checked. A reCAPTCHA verification is present at the bottom.

The bottom screenshot shows the main Sales dashboard. The dashboard is divided into several sections:

- Close Deals:** Opportunities owned by me and closing this quarter. Shows a total pipeline of \$0. Buttons: View Opportunities.
- Plan My Accounts:** Accounts owned by me. Shows 0 accounts. Buttons: View Accounts.
- Grow Relationships:** Contacts owned by me and created in the last 90 days. Shows 0 contacts. Buttons: View Contacts.
- Build Pipeline:** Leads owned by me and created in the last 30 days.
- My Goals:** Set personal weekly or monthly goals for emails, calls, and.
- Today's Events:**

The status bar at the bottom of both screenshots shows the date (24-06-2025), time (21:10 and 21:24), and system information (ENG IN).

Screenshot of the Salesforce Administer section showing the configuration of a Custom Object named "Product".

**Custom Object Definition Detail**

Singular Label	Product	Description
Plural Label	Products	Enable Reports <input checked="" type="checkbox"/>
Object Name	Product	Track Activities <input type="checkbox"/>
API Name	Product_c	Allow in Chatter Groups <input type="checkbox"/>
		Allow Sharing <input checked="" type="checkbox"/>
		Allow Bulk API Access <input checked="" type="checkbox"/>
		Allow Streaming API Access <input checked="" type="checkbox"/>
		Track Field History <input type="checkbox"/>
		Enable Licensing <input type="checkbox"/>
Deployment Status	Deployed	Allow Search <input checked="" type="checkbox"/>
		Help Settings Standard salesforce.com Help Window
Created By	Narasimha K.	Modified By Narasimha K.

**Standard Fields**

Custom Tabs

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

**Custom Object Tabs**

Action	Label	Tab Style	Description
Edit   Del	Inventory Transactions	Stethoscope	
Edit   Del	Order Items	Stethoscope	
Edit   Del	Products	Stethoscope	
Edit   Del	Purchase Orders	Stethoscope	
Edit   Del	Suppliers	Stethoscope	

**Web Tabs**

No Web Tabs have been defined.

Screenshot of the Salesforce Classic App Manager interface:

**Top Navigation Bar:**

- Smartinternz Credential
- Welcome to Salesforce
- DeepSeek - Into the L
- Apps ~ Salesforce
- deepseek - Yahoo Inc
- Smartinternz

**Header:**

- Switch to Lightning Experience
- Narasimha K
- Setup
- Help
- Sales

**Left Sidebar:**

- Home
- Chatter
- Campaigns
- Leads
- Accounts
- Contacts
- Opportunities
- Forecasts
- Contracts
- Orders
- Cases
- Solutions
- Products
- Reports
- Dashboards
- +

**Quick Find / Search...**

**Salesforce Mobile Quick Start:**

- Home
- Administrator
- Release Updates
- Manage Users
- Manage Apps
- Manage Territories
- Company Profile
- Data Classification
- Privacy Center
- Security Controls
- Domain Management
- Communication Templates
- Translation Workbench
- Data Management
- Mobile Administration
- Desktop Administration

**Current Weather:** 31°C Mostly cloudy

**Bottom Status Bar:**

- ENG IN
- 24-06-2025
- 22:01

Screenshot of the Salesforce Lightning Experience App Manager interface:

**Top Navigation Bar:**

- Smartinternz
- Welcome to
- DeepSeek
- Narasimha
- App Manager
- deepseek
- Smartinternz
- medical inv...

**Header:**

- Search Setup
- Star
- Plus
- Question
- Gear
- Bell
- Hand

**Left Sidebar:**

- Setup
- Home
- Object Manager

**Search Bar:** Q App

**Section Headers:**

- Salesforce Mobile App
- Data
- Mass Transfer Approval Requests
- Apps
- App Manager
- AppExchange Marketplace
- Connected Apps
- Connected Apps OAuth Usage
- Manage Connected Apps
- External Client Apps
- External Client App Manager
- OAuth Usage

**Lightning Experience App Manager:**

SETUP Lightning Experience App Manager

27 items • Sorted by App Name • Filtered by All appmenuitems - TabSet Type, App Type

App Name	Developer...	Description	Last Modified ...	App ...	Visi...
11 Digital Experiences	SalesforceCMS	Manage content and media for all of your sites.	6/17/2025, 7:56 PM	Lightning	✓
12 Lightning Usage App	LightningInstr...	View Adoption and Usage Metrics for Lightning Experience	6/17/2025, 7:56 PM	Lightning	✓
13 Marketing CRM Cla...	Marketing	Track sales and marketing efforts with CRM objects.	6/17/2025, 7:56 PM	Classic	✓
14 Medical Inventory ...	Medical_Inven...		6/24/2025, 10:03 AM	Lightning	✓
15 My Service Journey	MSJApp	Discover new customer service capabilities.	6/17/2025, 7:56 PM	Lightning	✓
16 Platform	Platform	The fundamental Lightning Platform	6/17/2025, 7:56 PM	Classic	✓
17 Queue Management	QueueManage...	Create and manage queues for your business.	6/17/2025, 7:56 PM	Lightning	✓
18 Sales	Sales	The world's most popular sales force automation (SFA) solution	6/17/2025, 7:56 PM	Classic	✓
19 Sales	LightningSales	Manage your sales process with accounts, leads, opportunities, and m...	6/17/2025, 7:56 PM	Lightning	✓
20 Sales Cloud Mobile	SalesCloudMo...	New seller focused mobile first experience	6/17/2025, 7:56 PM	Lightning	✓

**Bottom Status Bar:**

- ENG IN
- 24-06-2025
- 22:34

**Product**

**New Custom Field**

**Step 3. Establish field-level security**

Field Label: Current Stock Level  
 Data Type: Auto Number  
 Field Name: Current\_Stock\_Level  
 Description:

Select the profiles to which you want to grant edit access to this field via field-level security. The field will be hidden from all profiles if you do not add it to field-level security.

Field-Level Security for Profile	Visible	Read-Only
Analytics Cloud Integration User	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Analytics Cloud Security User	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Anypoint Integration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Product**

**New Custom Field**

**Step 3. Establish field-level security**

Field Label: Unit Price  
 Data Type: Currency  
 Field Name: Unit\_Price  
 Description:

Select the profiles to which you want to grant edit access to this field via field-level security. The field will be hidden from all profiles if you do not add it to field-level security.

Field-Level Security for Profile	Visible	Read-Only
Analytics Cloud Integration User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Analytics Cloud Security User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Anypoint Integration	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Authenticated Website	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Step 4. Establish field-level security for reference field**

Field Label	Supplier	Visible	Read-Only
Data Type	Lookup	✓	□
Field Name	Supplier_ID	✓	□
Description		✓	□

Select the profiles to which you want to grant edit access to this field via field-level security. The field will be hidden from all profiles if you do not add it to field-level security.

Field-Level Security for Profile	Visible	Read-Only
Analytics Cloud Integration User	✓	□
Analytics Cloud Security User	✓	□
Apypoint Integration	✓	□
Authenticated Website	✓	□
Authenticated Website	✓	□
B2B Reordering Portal Buyer Profile	✓	□
Contract Manager	✓	□

**Purchase Order Validation Rule**

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**

Rule Name: **Order\_Count**

Active:

Description:

**Error Condition Formula**

Example: **Discount\_Percent\_c>0.30** [More Examples...](#)

Display an error if Discount is more than 30%

If this formula expression is true, display the text defined in the Error Message area

Functions: **-- All Function Categories --**

**Insert Field** **Insert Operator**

**Quick Tips**

- Operators & Functions

**I = Required Information**

The screenshot shows the Salesforce Setup interface. On the left, a sidebar lists various setup categories: Setup Home, Salesforce Go, Service Setup Assistant, Commerce Setup Assistant, Field Service Setup Home (Beta), Hyperforce Assistant, Release Updates, Salesforce Mobile App, Lightning Usage, Optimizer, Sales Cloud Everywhere, and ADMINISTRATION (with a 'Users' sub-item). The main content area is titled 'SETUP' and contains a 'Formula Editor' for creating an error message. The formula input field contains the expression: `Discount_Percent__c>0.30`. A tooltip for the `ABS` function is visible, stating: "Returns the absolute value of a number, a number without its sign". Below the formula editor, there is an 'Error Message' section with the example: `Discount percent cannot exceed 30%`. A note says: "This message will appear when Error Condition formula is true". At the bottom of the editor, there are 'Check Syntax' and 'Save' buttons. The status bar at the bottom of the browser window shows the date and time as 25-06-2025 and 15:58.

Two screenshots of the Salesforce Setup interface are shown side-by-side.

**Screenshot 1: Validation Rule Creation**

The page shows the "Error Condition Formula" section of the Validation Rule Creation wizard. The formula entered is:

```
Discount_Percent_c > 0.30
```

The "Functions" dropdown menu is open, showing various mathematical functions like ABS, ACOS, ADDMONTHS, AND, ASCII, ASIN, etc. A tooltip for the ABS function is displayed:

**ABS(number)**  
Returns the absolute value of a number, a number without its sign

**Screenshot 2: Object Manager - Order Item**

The page shows the "New Custom Field" step of the Object Manager wizard. The formula entered is:

```
Unit_Price_C = Product_ID_x.(number)
```

The "Functions" dropdown menu is open, showing various utility functions like ISNOTCAP, ISBLANK, ISNULL, ISNUMBER, ISO\_WEEK, ISOYEAR, ISDICKEN, etc. A tooltip for the ISNOTCAP function is displayed:

**ISNOTCAP**  
Identifies if the input is not a valid capital letter

Both screenshots show the Windows taskbar at the bottom with various application icons and system status.

Two screenshots of the Salesforce Object Manager interface showing the creation of a custom formula field.

**Screenshot 1: Formula Editor**

The screenshot shows the "Fields & Relationships" section of the Object Manager for the "Order Item" object. A formula is being created for the "Unit Price (Currency)" field:

```
Unit Price (Currency) =  
Unit Price = Product_ID.c.(number)
```

The formula editor includes tabs for "Simple Formula" and "Advanced Formula". A sidebar lists available functions like ABS, ACOS, ADDMONTHS, AND, ASCII, ASIN, etc. A "Check Syntax" button is present at the bottom left, and an "Error: Syntax error. Extra Price" message is displayed at the bottom right.

**Screenshot 2: New Custom Field Wizard**

The screenshot shows the "New Custom Field" wizard, Step 5: Add to page layouts. The field details are as follows:

Field Label	Unit Price
Data Type	Formula
Field Name	Unit_Price
Description	

The "Add Field" checkbox is checked, and the "Page Layout Name" dropdown contains "Order Item Layout". Below the table, instructions state: "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." Buttons for "Previous", "Save & New", "Save", and "Cancel" are visible at the top right.

**Order Item**

**New Custom Field**

**Step 5. Add to page layouts**

Field Label	Amount1
Data Type	Formula
Field Name	Amount1
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  
 Order Item Layout

When finished, click Save & New to create more custom fields, or click Save if you are done.

**Step 5 of 5**

Previous Save & New Save Cancel

**Inventory Transaction**

**New Custom Field**

**Step 3. Establish field-level security**

Field Label	Transaction Type
Data Type	Picklist
Field Name	Transaction_Type
Description	

Select the profiles to which you want to grant edit access to this field via field-level security. The field will be hidden from all profiles if you do not add it to field-level security.

Field-Level Security for Profile	Visible	Read-Only
Analytics Cloud Integration User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Analytics Cloud Security User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Anypoint Integration	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Contract Manager	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cross Org Data Proxy User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Custom: Marketing Profile	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Custom: Sales Profile	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Custom: Support Profile	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Step 3 of 4**

Previous Next Cancel

orgfarm-d28a596ee5-dev-ed.lightning.force.com/lightning/setup/ObjectManager/01lgL000000zEHN/FieldsAndRelationships/view

Setup Home Object Manager

Inventory Transaction

Fields & Relationships

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
Inventory Transaction ID	Name	Text(80)		✓
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Transaction Type	Transaction_Type__c	Picklist		

Quick Find New Deleted Fields Field Dependencies Set History Tracking

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

28°C Mostly cloudy

Search ENG IN 20:52 25-06-2025

**Inventory Transaction**

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

Total Order Cost (Currency) =  
Purchase\_Order\_ID\_\_r.Label.All

Insert Field Insert Operator All Function Categories

ABS AGOS ADDMONTHS AND ASCII ASIN

Check Syntax Error: Syntax error: Extra \$Label.All

Description Help Text

28°C Mostly cloudy Search Setup 20:59 25-06-2025

**Supplier**

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

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		
Phone Number	Phone_Number__c	Phone		
Supplier ID	Name	Text(80)		

Quick Find New Deleted Fields Field Dependencies Set History Tracking

28°C Light rain Search Setup 22:20 25-06-2025

Two screenshots of the Salesforce Setup interface for the 'Supplier' object.

**Screenshot 1: New Custom Field**

The page shows 'Step 4. Add to page layouts'. A new field 'Email' has been created with type 'Email'. It is being added to the 'Supplier Layout'.

Field Label	Data Type	Field Name	Description
Email	Email	Email	

**Screenshot 2: Fields & Relationships**

The page lists fields for the 'Supplier' object. The 'Email' field is visible in the list.

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
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)		✓

Three screenshots of the Salesforce Setup interface showing the configuration of Page Layouts for the Product and Order Item objects.

### Product Page Layout Configuration

**Fields:**

- Buttons
- Quick Actions
- Mobile & Lightning Actions
- Expanded Lookups
- Related Lists
- Report Charts

**Information (Header visible on edit only):**

Product ID	Sample Text
Product Name	Sample Text
Product Description	Sample Text
Unit Price	\$123.45
Supplier	Sample Text
Order Date	6/25/2025
Current Stock Level	19,845

**System Information (Header visible on edit only):**

Created By	Sample Text
Last Modified By	Sample Text

### Order Item Page Layout Configuration

**Fields:**

- Buttons
- Quick Actions
- Mobile & Lightning Actions
- Expanded Lookups
- Related Lists
- Report Charts

**Information (Header visible on edit only):**

Order Item ID	Sample Text
Product ID	Sample Text
Unit Price	\$123.45
Product	Sample Text
Amount	Sample Text
Quantity_Received	Sample Text
Amount	\$123.45

**System Information (Header visible on edit only):**

Created By	Sample Text
Last Modified By	Sample Text

**Standard Buttons:**

- Edit
- Delete
- Clone
- Change Owner
- Change Record Type
- Printable View
- Sharing
- Sharing Hierarchy
- Edit Labels
- Custom Buttons

**Inventory Transaction**

SETUP > OBJECT MANAGER

Inventory Transaction Detail

Standard Buttons: Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, Sharing Hierarchy, Edit Labels, Custom Buttons.

Fields:

- Buttons
- Quick Actions
- Mobile & Lightning Actions
- Expanded Lookups
- Related Lists
- Report Charts

Layout Properties: Save, Quick Save, Preview As, Cancel, Undo, Redo, Layout Properties, Quick Find, Field Name.

Inventory Transaction Detail Fields:

Field	Type	Value
Last Modified By	Owner	Sample Text
Created By	Purchase_Order_ID	Inventory Transac...
Inventory Transac...	total Order Cost	Sample Text

Information (Header visible on edit only):

- Inventory Transaction ID: Sample Text
- Transaction Type: Sample Text
- Purchase\_Order\_ID: Sample Text
- total Order Cost: Sample Text

System Information (Header visible on edit only):

- Created By: Sample Text
- Last Modified By: Sample Text

Custom Links (Header visible on edit only):

Mobile Cards (Salesforce mobile only):

Drag expanded lookups and mobile-enabled Visualforce pages here to display them as mobile cards.

**Supplier**

SETUP > OBJECT MANAGER

Supplier Detail

Standard Buttons: Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, Sharing Hierarchy, Edit Labels, Custom Buttons.

Fields:

- Buttons
- Quick Actions
- Mobile & Lightning Actions
- Expanded Lookups
- Related Lists
- Report Charts

Layout Properties: Save, Quick Save, Preview As, Cancel, Undo, Redo, Layout Properties, Quick Find, Field Name.

Supplier Detail Fields:

Field	Type	Value
Last Modified By	Owner	Sample Text
Created By	Email	sarah.sample@company.com
Supplier ID	Sample Text	1-415-555-1212
Phone Number	Email	1-415-555-1212

Information (Header visible on edit only):

- Supplier ID: Sample Text
- Phone Number: 1-415-555-1212
- Email: sarah.sample@company.com

System Information (Header visible on edit only):

- Created By: Sample Text
- Last Modified By: Sample Text

Custom Links (Header visible on edit only):

Mobile Cards (Salesforce mobile only):

Drag expanded lookups and mobile-enabled Visualforce pages here to display them as mobile cards.

Three screenshots of the Salesforce Setup interface showing the configuration of Page Layouts for the Product and Order Item objects.

### Product Page Layout Configuration

**Fields:**

- Buttons
- Quick Actions
- Mobile & Lightning Actions
- Expanded Lookups
- Related Lists
- Report Charts

**Information (Header visible on edit only):**

Product ID	Sample Text
Product Name	Sample Text
Product Description	Sample Text
Unit Price	\$123.45
Supplier	Sample Text
Order Date	6/25/2025
Current Stock Level	19,845

**System Information (Header visible on edit only):**

Created By	Sample Text
Last Modified By	Sample Text

### Order Item Page Layout Configuration

**Fields:**

- Buttons
- Quick Actions
- Mobile & Lightning Actions
- Expanded Lookups
- Related Lists
- Report Charts

**Information (Header visible on edit only):**

Order Item ID	Sample Text
Product ID	Sample Text
Unit Price	\$123.45
Product	Sample Text
Amount	Sample Text
Quantity_Received	Sample Text
Amount	\$123.45

**System Information (Header visible on edit only):**

Created By	Sample Text
Last Modified By	Sample Text

**Standard Buttons:**

- Edit
- Delete
- Clone
- Change Owner
- Change Record Type
- Printable View
- Sharing
- Sharing Hierarchy
- Edit Labels
- Custom Buttons

**Inventory Transaction**

SETUP > OBJECT MANAGER

Inventory Transaction Detail

Standard Buttons: Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, Sharing Hierarchy, Edit Labels.

Custom Buttons:

Section	Last Modified By	Transaction Type
Blank Space	Owner	
Created By	Purchase_Order_ID	
Inventory Transac...	total Order Cost	

Information (Header visible on edit only)

- Inventory Transaction ID: Sample Text
- Transaction Type: Sample Text
- Purchase\_Order\_ID: Sample Text
- total Order Cost: Sample Text

System Information (Header visible on edit only)

- Created By: Sample Text
- Last Modified By: Sample Text

Custom Links (Header visible on edit only)

Mobile Cards (Salesforce mobile only) i

Drag expanded lookups and mobile-enabled Visualforce pages here to display them as mobile cards.

**Supplier**

SETUP > OBJECT MANAGER

Supplier Detail

Standard Buttons: Edit, Delete, Clone, Change Owner, Change Record Type, Printable View, Sharing, Sharing Hierarchy, Edit Labels.

Custom Buttons:

Section	Last Modified By	Phone Number	Email	Supplier ID
Blank Space	Owner			
Created By	Sarah Sample	1-415-555-1212	sarah.sample@company.com	

Information (Header visible on edit only)

- Supplier ID: Sample Text
- Phone Number: 1-415-555-1212
- Email: sarah.sample@company.com

System Information (Header visible on edit only)

- Created By: Sample Text
- Last Modified By: Sample Text

Custom Links (Header visible on edit only)

Mobile Cards (Salesforce mobile only) i

Drag expanded lookups and mobile-enabled Visualforce pages here to display them as mobile cards.

Smartinternz

Permission Sets | Salesforce

Recently Viewed | Purchase

Create Expected Delivery Date

Welcome to Salesforce: Res...

orgfarm-d28a596ee5-dev-ed.lightning.force.com/lightning/setup/PermSets/0PSgL000003DuOU/PermissionSetAssignment/new

Gmail YouTube Maps News Translate CONSTABLES (GD) I... ICG : Stage-I Notific...

All Bookmarks

Cloud icon

Setup Home Object Manager

Q\_ perm

Users

Permission Set Groups

Permission Sets

Custom Code

Custom Permissions

Didn't find what you're looking for? Try using Global Search.

PERMISSION SET 'MANAGE ASSESSMENT SURVEYS' > MANAGE ASSIGNMENT EXPIRATION

### Manage Assessment Surveys

Select an Expiration Option For Assigned Users

No expiration date

Specify the expiration date

Time Zone: Select a time zone...

1 Day 1 Week 30 Days 60 Days Custom Date

Selected Users

Full Name	Role	Profile	Active	User License	Expires On
John PurchaseM	Purchasing Manager	Purchase Manager	✓	Salesforce	Never Expires

Cancel Back Assign

30°C Mostly cloudy

Smartinternz

Recently Viewed | Purchase

Create Expected Delivery Date

Welcome to Salesforce: Res...

orgfarm-d28a596ee5-dev-ed.lightning.force.com/one/one.app#eyJjb21wb25lbnREZWYiOiJzZXr1cF9wbGF0Zm9ybV9wZXJtczpwc2FSZXN1bHRQYWdli...

Gmail YouTube Maps News Translate CONSTABLES (GD) I... ICG : Stage-I Notific...

All Bookmarks

Cloud icon

Setup Home Object Manager

Q\_ perm

Users

Permission Set Groups

Permission Sets

Custom Code

Custom Permissions

Didn't find what you're looking for? Try using Global Search.

PERMISSION SET 'MANAGE ASSESSMENT SURVEYS' > MANAGE ASSIGNMENT EXPIRATION

### Manage Assessment Surveys

1 assignments were successful.

Assignment Summary

Full Name	User License	Expires On	Time Zone	Status
John PurchaseM	Salesforce			Success

Done

30°C Mostly cloudy

ENG INTL 10:42 26-06-2025

**Flow Builder - Get Purchase Record**

```

graph TD
    Start((Record-Triggered Flow)) --> GetPurchaseRecord[Get Purchase Record]
    GetPurchaseRecord --> End((End))
  
```

**Get Purchase Record (Get Records)**

- Label:** Get Purchase Record
- API Name:** Get\_Purchase\_Record
- Description:** Get Records of This Object
- Object:** Purchase Order
- Filter Purchase Order Records:**
  - Condition Requirements: All Conditions Are Met (AND)
  - Field: A\_B Purchase Order ID, Operator: Equals, Value: A\_B\_Purchase\_Order\_c > Record ID
- Sort Purchase Order Records:**
  - Sort Order:

**Flow Builder - ActualDeliveryDate - V1**

```

graph TD
    Start((Record-Triggered Flow)) --> GetPurchaseRecord[Get Purchase Record]
    GetPurchaseRecord --> Assignment[Assignment]
    Assignment --> End((End))
  
```

**Assignment (Assignment)**

- Label:** ActualDeliveryDate
- API Name:** ActualDeliveryDate
- Description:**
- Set Variable Values:**
  - Each variable is modified by the operator and value combination.
  - Variable: ActualDeliveryDate1, Operator: Equals, Value: ...e Record > Last Referenced Date
  - Variable: ActualDeliveryDate2, Operator: Equals, Value: ...Purchase Record > Created Date

Screenshot of a Salesforce Flow Builder interface showing a Record-Triggered Flow named "ActualDeliveryDate - V1".

The flow consists of the following steps:

```

graph TD
    Start((Record-Triggered Flow)) --> GetPurchaseRecord[Get Purchase Record  
Get Records]
    GetPurchaseRecord --> ActualDeliveryDate[ActualDeliveryDate  
Assignment]
    ActualDeliveryDate --> UpdatingPurchasingOrder[Updating Purchasing Order  
Assignment]
    UpdatingPurchasingOrder --> End((End))
    
```

Below the flow, the developer console shows the code for the trigger:

```

trigger CalculateTotalAmountTrigger on Order_Item__c (after insert, after update, after delete, after undelete) {
    // Call the handler class to handle the logic
    CalculateTotalAmountHandler.calculateTotal(Trigger.new, Trigger.old, Trigger.isInsert, Trigger.isUpdate, Trigger.isDelete, Trigger.isUndelete);
}

Step 4:
i) In the Developer Console window, go to the top menu and click on "File".

```

The developer console also displays logs and other tabs.

Screenshot of a web browser showing a report builder interface for "Purchase Orders Report".

The URL is: orgfarm-d28a596ee5-dev-ed.lightning.force.com/one/one.app#eyJjb21wb25lbnREZWYiOiJyZXBvcnRzOnJlcG9ydEJ1aWxkZXliLCJhdHRyaWJ1dGVzJjp7In...

The report title is "New Purchase Orders Report".

Fields section:

- Groups: Purchase Order: ID, Total\_Order\_Cost\_c
- Columns: Purchase Order: Purchase Order ID, Total Order Cost

Details section (0 Rows): Purchase Order: Purchase Order ID, Total Order Cost.

Report toolbar buttons: Save & Run, Save, Close, Run, Update Preview Automatically (checked).

System tray icons: Top Stories, Weather (29°C, Mostly cloudy), Search, Taskbar icons (File Explorer, Control Panel, etc.), Network status (ENG IN), Date (26-06-2025).

### Add Widget

Widget configuration:

- Title: Purchase Orders based on Suppliers
- Subtitle: (empty)
- Footer: (empty)
- Legend Position: Right

Preview:

**Purchase Orders based on Suppliers**

Sum of Total Order Cost

Supplier ID	Value
Supplier-001	₹4.5k
Supplier-002	₹26k

System tray icons: Weather (29°C, Mostly cloudy), Search, Taskbar icons (File Explorer, Control Panel, etc.), Network status (ENG IN), Date (26-06-2025).

## FINAL OUT PUT:



## **7.ADVANTAGES & DISADVANTAGES :**

### **7.1Comparative Analysis: Before vs After Implementation :**

<b>Criteria</b>	<b>Before Implementation</b>	<b>After Implementation</b>
<b>Inventory Tracking</b>	Manual using Excel or paper logs	Real-time, digital, automated via Salesforce
<b>Stock Alerts</b>	No notifications; required manual checking	Automated alerts for low stock and expirations
<b>Approval Workflow</b>	Paper-based or verbal approvals	System-driven with timestamped approvals
<b>Reporting</b>	Inconsistent and time-consuming	Auto-generated dashboards and exportable reports
<b>Audit Trail</b>	Not available or incomplete	Detailed activity logs with user-level tracking
<b>Scalability</b>	Difficult as volume grows	Easily scalable across multiple departments/locations
<b>User Access Control</b>	Shared access; low accountability	Role-based access with secure permissions
<b>Data Integrity</b>	Prone to errors	Validated and centralized data entries

## 7.2 SWOT Analysis

The SWOT analysis offers a strategic view of the project's internal strengths and weaknesses as well as external opportunities and threats.

---

### Strengths

- **Real-time tracking** of medical inventory across multiple departments.
  - Built on **Salesforce**, ensuring high availability, security, and rapid deployment.
  - Automated **email alerts, reporting, and workflow approvals** reduce manual effort.
  - **Role-based access** improves accountability and audit compliance.
  - Easy integration with **other hospital systems or APIs** in future.
- 

### Weaknesses

- Dependent on **Salesforce licensing and customization**, which may involve costs.
  - Users unfamiliar with cloud systems may require **basic training**.
  - Limited **offline support** in case of no internet availability.
- 

### Opportunities

- Can be integrated with **supplier systems** for automated reordering.
- Potential to add **predictive analytics** (e.g., demand forecasting).
- Expandable into a **full Hospital Resource Planning (HRP)** suite.

- Can integrate with **IoT** for live usage tracking (e.g., smart medicine cabinets).
- 

## ⚡ Threats

- Data privacy regulations (e.g., HIPAA) may require **additional compliance measures**.
  - Resistance to adoption from users accustomed to manual processes.
  - Downtime in Salesforce (though rare) can temporarily **disrupt access**.
  - Cybersecurity threats demand ongoing **platform-level monitoring**.
- 

This analysis highlights that while the project offers major operational improvements and future scalability, success will also depend on user training, security awareness, and proactive adoption planning.

## **9.CONCLUSION :**

The Salesforce Medical Inventory Management System has been successfully designed and implemented to solve key challenges in the healthcare domain related to inventory tracking, management, and optimization. By digitizing and automating critical processes such as stock monitoring, expiry alerts, and approval workflows, the system has significantly reduced manual workload and the risk of human error.

This solution leverages the power of Salesforce's secure cloud environment, built-in automation tools, and scalability to deliver a platform that is not only robust and reliable but also user-friendly for medical professionals. Through features like real-time dashboards, audit logs, and automated notifications, it ensures timely decision-making and improves patient care by maintaining the availability of essential medical supplies.

Overall, the project meets its core objectives — enhancing operational efficiency, improving compliance, and supporting better resource planning in hospitals and clinics. With room for future expansion into predictive analytics, supplier integration, and multi-site deployment, the system serves as a scalable foundation for digital transformation in healthcare inventory management.

The project successfully met its planned objectives, offering a reliable, future-proof, and efficient inventory management system that aligns with the demanding environment of modern healthcare. It also lays the groundwork for continuous innovation—such as predictive analytics, automated restocking, and IoT-based real-time tracking—which can elevate hospital supply chains to new standards of efficiency and safety.

In summary, the Salesforce Medical Inventory Management System is not just a software application but a strategic tool that improves patient outcomes, reduces costs, and empowers healthcare institutions with smarter inventory decisions.

# **THANK YOU**