PHASE II: PROJECT PLANNING

Date	06 November 2025
Team ID	NM2025TMID04603
Project Name	Medical Inventory Management
Maximum Marks	4 Marks

Title: Project Planning for *"MedicalConnect –Medical Inventory Management"*

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1. Objective

The objective of project planning for **medical inventory management** is to ensure that the entire process—ranging from procurement to storage, tracking, and distribution of medical supplies—is optimized for efficiency, cost-effectiveness, and compliance with safety and regulatory standards. Effective project planning helps healthcare facilities maintain the right levels of inventory, avoid shortages or overstock situations, and ensure the timely availability of critical supplies**.**

2. Overview of the Planning Process

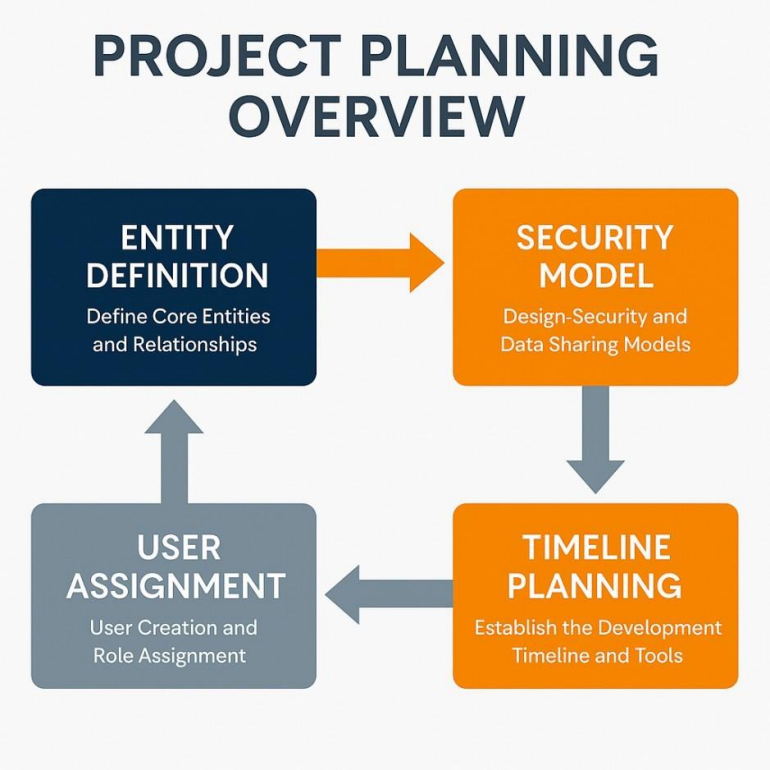
The planning phase involves four key components:

1. Needs Assessment and Demand Forecasting

- **Objective**: Understand the inventory needs of the healthcare facility based on usage patterns, historical data, and future demand forecasts.
- **Actions**:
  - **Data Collection**: Analyze historical consumption data of medical supplies (e.g., medications, surgical instruments, personal protective equipment).
  - **Demand Forecasting**: Use predictive models to forecast future demand based on seasonality, patient volume, and specific departmental needs (e.g., surgical vs. emergency supplies).
  - **Stakeholder Input**: Consult with healthcare providers and department heads to understand specific requirements (e.g., operating room needs, critical care supplies).
- **Tools/Methods**:
  - Statistical analysis, forecasting software, historical trend analysis.

Inventory Categorization and Classification

- **Actions**:
  - **Classification**: Classify items based on their usage rate, importance, shelf life, and criticality (e.g., high-use items vs. low-use items).
  - **ABC Analysis**: Categorize inventory using an **ABC analysis** (A = high-priority items, B = medium-priority items, C = low-priority items).
  - **Critical Items Identification**: Identify mission-critical items that are essential for patient care and need constant stock monitoring.
- **Tools/Methods**:



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3. Core Entity identification

Definition:

Represents each individual medical item, equipment, or consumable managed in the

inventory system.

This is the **central entity** around which the system revolves.

Key Attributes:

- Item ID / SKU
- Item Name / Description
- Category (e.g., medication, equipment, consumable, PPE)
- Unit of Measure (e.g., box, piece, vial, pack)
- Supplier / Manufacturer
- Batch or Lot Number
- Expiry Date
- Reorder Level
- Storage Requirements (e.g., temperature control)
- Cost per Unit

Relationships:

- Supplied by → *Supplier*
- Stored in → *Inventory Location*
- Tracked in → *Inventory Transaction*

4. Relationship Strategy

The main relationships to manage in medical inventory include:

- **Supplier–Organization Relationships**
- **Internal Department Relationships**
- **User–System Relationships**
- **Inventory–Information Relationships**
- **Regulatory and Compliance Relationships**

Each of these requires targeted strategies to ensure efficiency, transparency, and trust.

5. Security and Profile Planning

The **Salesforce Security Model** was implemented to ensure that data access is role-based and adheres to the principle of least privilege.

Security and profile planning in medical inventory management ensures that medicines, equipment, and data are protected from misuse, theft, or errors. It helps maintain accuracy, accountability, and compliance with healthcare regulations

2. Security Planning
3. Security planning focuses on protecting physical and digital inventory assets.
4. a) Physical Security
5. Access Control: Only authorized staff (like pharmacists or store managers) can enter inventory storage areas.
6. Surveillance Systems: CCTV cameras monitor sensitive zones like drug stores and high-value equipment rooms.
7. Barcode & RFID Tracking: Each item is tagged to monitor movement and prevent theft or misplacement.
8. Emergency Measures: Fire alarms, temperature controls, and safety locks protect medical supplies.
9. b) Data Security
10. Data Encryption: Secures patient-related and inventory information.
    Secure Servers: Protects software systems from cyber threats.

3. Profile Planning

Profile planning involves defining user roles, permissions, and responsibilities in the inventory system.

a) User Profiles
b) Different users have different access rights:

User Role Access Level Responsibilities

Administrator Full Access Configure system, manage users, approve purchases

Pharmacist / Store Manager Moderate Access Update stock, record issues, generate reports

Staff / Nurse Limited Access Request items, record usage

Auditor Read-only Review transactions and ensure compliance

4. Integration of Security & Profile Planning

Both aspects work together to:

Ensure confidentiality, integrity, and availability of medical inventory data.

Maintain traceability of stock movements.

Role-based Access Control (RBAC):

6. Data Access and Sharing Rules

Data Access Rules

These define who can view, modify, or manage inventory data within the system.

Access is granted based on user roles (e.g., admin, pharmacist, nurse, auditor**).**

Data Sharing Rules :These govern how and when data is shared between departments, systems, or organizations**.**

Internal Data Sharing:

Shared among departments (e.g., pharmacy, surgery, accounts) for coordination.

7. User Creation and Role Assignment

User creation followed a systematic process within the Salesforce setup:

7.1 Procedure

1. Navigate to **Setup → Users → New User**.
2. Enter details like First Name, Last Name, Email, and Username.
3. Assign a **Salesforce Platform License** to Volunteers.
4. Assign a **Salesforce License** to medical Admins.
5. Allocate profiles and public groups accordingly.

7.2 User Hierarchy

A user hierarchy defines the different roles and authority levels of people who access and manage the inventory system in a healthcare or medical setting. It ensures proper control, accountability, and data security

1. **Administrator / System Manager**

   Role:

   Highest authority in the system

   Manages overall settings, access rights, and system configurations

   Responsibilities:

   Create, edit, and delete user accounts

   Set permission levels

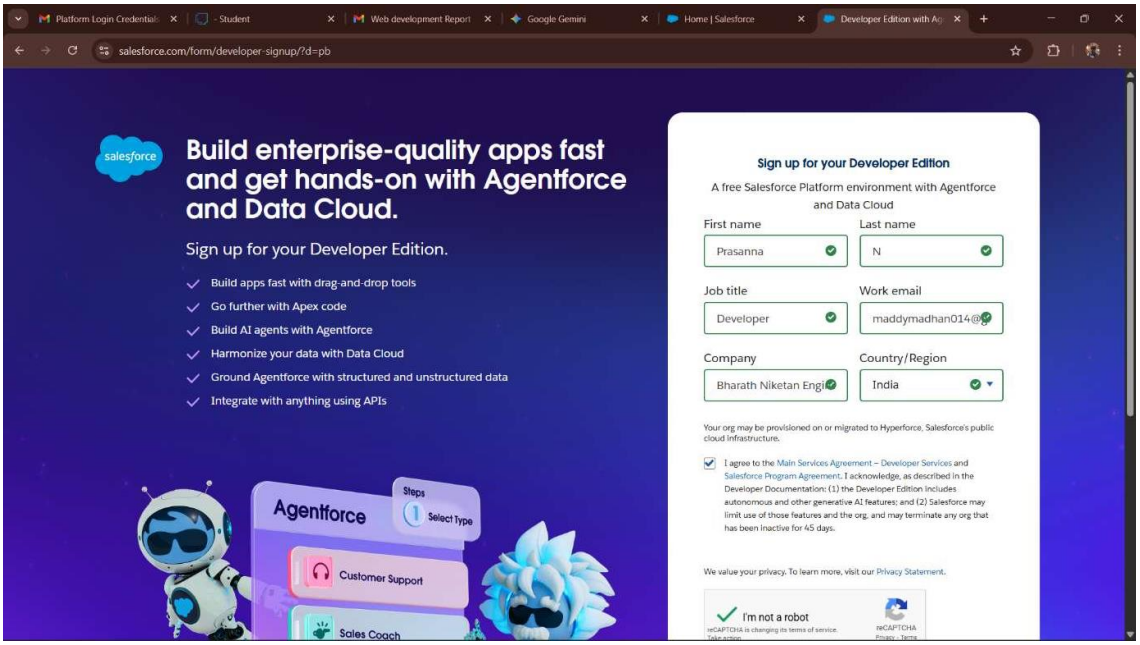
   Monitor system usage and data security

8. Environment Setup and Configuration

This part ensures a consistent working environment for testing and future scalability.

Steps:

1. Developer Edition account created from developer.salesforce.com/signup.
2. Verified access and enabled Salesforce Lightning Experience.
3. Set organization branding (App Name: *medicalConnect*).
4. Installed essential tools like **Flow Builder**, **App Manager**, and **Schema Builder**.
5. Created **Custom Tabs** for easy navigation to all entities.



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9. Project Timeline and Resource Plan

Phase	Duration	Key Deliverables
Ideation	2 Days	Problem Definition, Brainstorming
Planning	3 Days	ERD, Security Model, User Creation
Requirement Analysis	4 Days	Object and Field Configuration
Design & Implementation	5 Days	App, Flow, Dashboard
Testing & Deployment	2 Days	Validation, Reporting

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10. Tools and Resources Used

Tool	Purpose
Salesforce Lightning App Builder	UI and App Design
Flow Builder	Automation of Data Entry
Apex Trigger	Distance Calculation
Dashboard Builder	Data Visualization

Tool	Purpose
Schema Builder	Object Relationship Design
SmartInternz Platform	Project Mentorship and Submission

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11. Expected Outcomes of the Planning Phase

At the end of the Project Planning Phase:

- Data models and relationships were finalized.
- User profiles and permissions configured.
- The technical environment was fully prepared.
- Clear workflow and access strategy established.

This ensures a **solid foundation** for the upcoming **Requirement Analysis** and **Implementation Phases**.

12. Summary

The **Project Planning Phase** serves as the blueprint for the successful execution of the medicalConnect project.In the project planning of a medical inventory management system, establishing a clear user hierarchy is essential for smooth operations, accountability, and effective decision-making.The hierarchy defines the roles, authority levels, and responsibilities of each user involved in planning, controlling, and monitoring medical supplies.