

Project Design Phase-II

Data Flow Diagram & User Stories

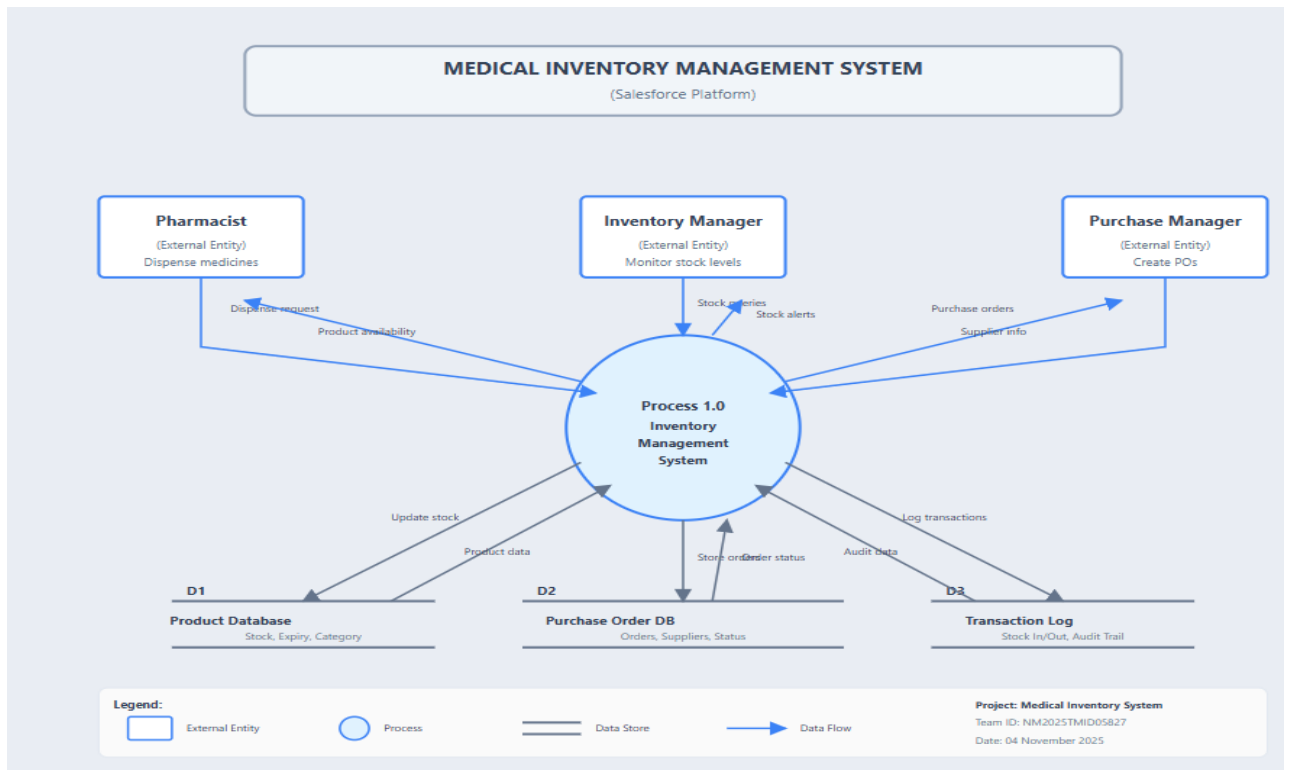
Field	Details
Date	04 November 2025
Team ID	NM2025TMID05827
Project Name	Medical Inventory Management System
Maximum Marks	4 Marks

Data Flow Diagrams:

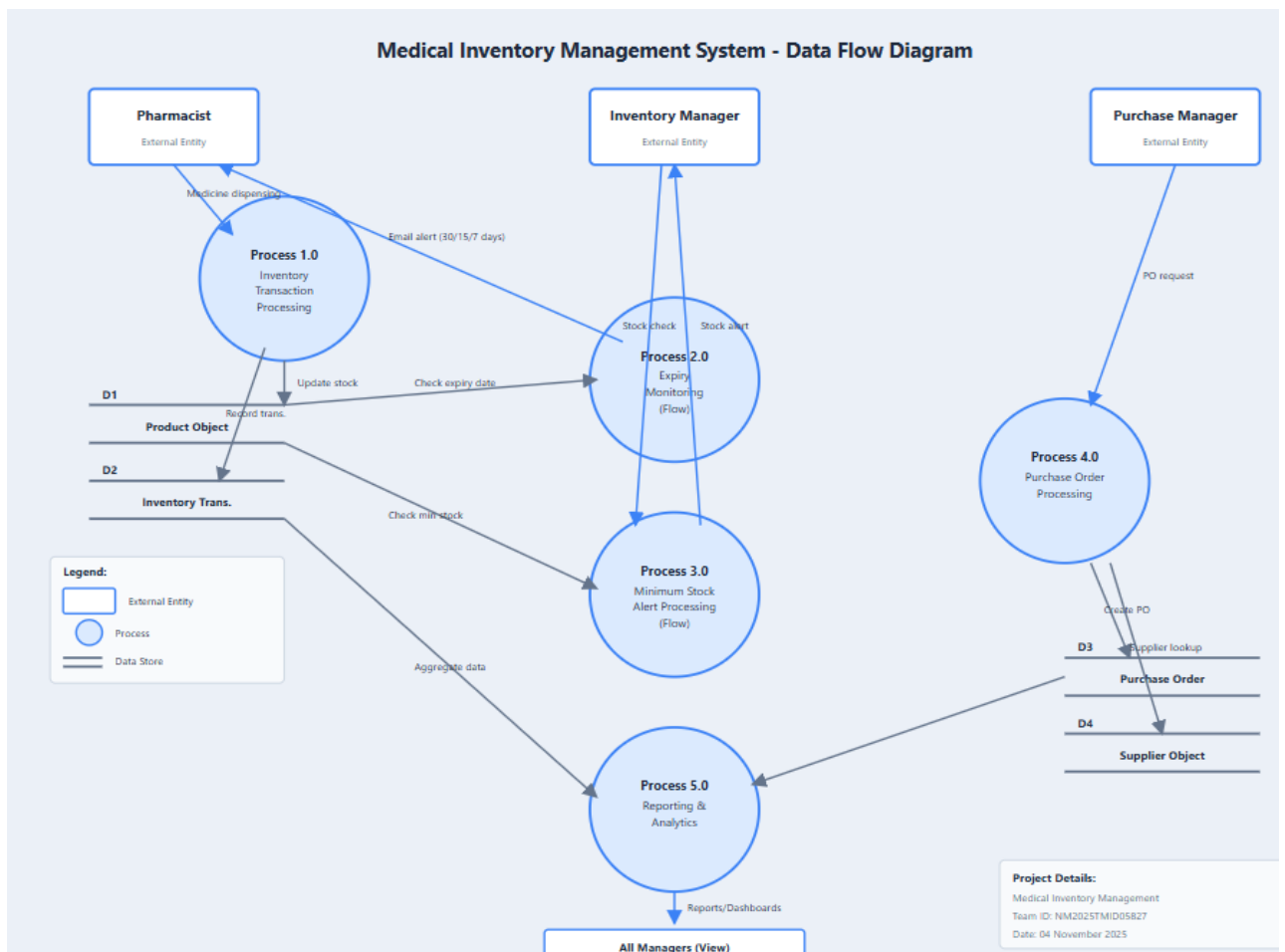
A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

In the project "Medical Inventory Management System", Data Flow Diagrams (DFDs) illustrate how inventory transactions, purchase orders, and expiry monitoring are processed within the system. The DFD shows the interaction between the pharmacist, inventory manager, purchase manager, the Salesforce system, and the database to validate stock levels, monitor expiry dates, and track supplier deliveries. If a product's stock falls below minimum levels or expiry approaches, the system triggers automated alerts to maintain patient safety and operational efficiency.

Example:



Data Flow Diagram - Level 1 (Detailed Process)



Data Flow Details:

1. Pharmacist initiates medicine dispensing → System validates stock availability
2. System records Inventory Transaction (Stock Out) → Updates Product.Current_Stock
3. Flow monitors Expiry_Date daily → Sends alerts at 30, 15, 7 days
4. Flow monitors Current_Stock → If below minimum, alerts Inventory Manager
5. Inventory Manager reviews alerts → Creates Purchase Order
6. Purchase Manager selects Supplier → Adds Order Items
7. Trigger calculates PO Total Amount automatically
8. Validation Rule ensures Expected_Delivery > Order_Date
9. When PO Status = "Delivered" → Flow updates Actual_Delivery_Date
10. Stock arrives → Inventory Transaction (Stock In) → Updates Current_Stock
11. Reports aggregate data → Dashboards visualize metrics

User Stories:

User stories define what different users need from the system in simple, goal-focused language. In this project, they help ensure the system prevents expired medicine dispensing, maintains optimal stock levels, and enables efficient purchase order management.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Pharmacist	Expiry Monitoring	MIS-US-1	As a pharmacist, I want to receive automated alerts 30 days before product expiry.	System sends email alert when Expiry_Date - TODAY() = 30 days. Alert includes Product Name, Current Stock, Expiry Date.	High	Sprint -8
Pharmacist	Expiry Monitoring	MIS-US-2	As a pharmacist, I want to receive alerts 15 and 7 days before product expiry.	System sends escalating alerts at 15 and 7 days. Alert includes urgency level and recommended action.	High	Sprint -8

Pharmacist	Inventory Search	MIS-US-3	As a pharmacist, I want to quickly search for products by name to check stock and expiry.	Search returns results within 2 seconds. Displays Current Stock, Expiry Date, Location.	High	Sprint -3
Inventory Manager	Stock Monitoring	MIS-US-4	As an inventory manager, I want alerts when stock falls below minimum levels.	System sends email when $\text{Current_Stock} < \text{Min_Stock_Level}$. Alert includes reorder quantity recommendation.	High	Sprint -9
Inventory Manager	Transaction Tracking	MIS-US-5	As an inventory manager, I want to record stock movements (Stock In/Out) with complete audit trail.	System captures Product, Type (In/Out), Quantity, Date, Performed By. Transaction updates Current_Stock automatically.	High	Sprint -2
Inventory Manager	Dashboard View	MIS-US-6	As an inventory manager, I want a dashboard showing current stock levels, expiry alerts, and low stock warnings.	Dashboard displays real-time metrics with color-coded alerts (Red: Critical, Yellow: Warning, Green: OK). Refreshes every 5 minutes.	Medium	Sprint -11
Purchase Manager	Supplier Management	MIS-US-7	As a purchase manager, I want to maintain supplier contact information (Name, Phone, Email, Address).	System stores supplier details. Allows search and filter by name. Displays all active purchase orders per supplier.	High	Sprint -2
Purchase Manager	Purchase Order Creation	MIS-US-8	As a purchase manager, I want to create	PO creation form includes Supplier lookup,	High	Sprint -1

			purchase orders linked to suppliers.	Order Date, Expected Delivery Date, Status picklist.		
Purchase Manager	Order Item Management	MIS-US-9	As a purchase manager, I want to add multiple products to a purchase order with quantities and prices.	System allows adding Order Items. Each item has Product lookup, Quantity, Unit Price. Trigger auto-calculates Line Total and PO Total.	High	Sprint -9
Purchase Manager	Supplier Performance	MIS-US-10	As a purchase manager, I want reports showing supplier on-time delivery rates and total spending.	Report groups POs by Supplier. Shows Total Orders, Total Amount, On-Time %, Average Delay. Sortable and filterable.	Medium	Sprint -10
System (Auto)	Data Validation	MIS-US-11	As a system, I must prevent users from entering Expected Delivery Date before Order Date.	Validation Rule displays error: "Expected Delivery Date must be after Order Date" if rule violated. User cannot save record.	High	Sprint -6
System (Auto)	Automatic Calculation	MIS-US-12	As a system, I must automatically calculate Purchase Order total when items are added/updated/deleted.	Trigger fires on Order Item insert/update/delete. Calculates Total = Sum(Quantity × Unit Price). Updates PO.Total_Amount field.	High	Sprint -9

System (Auto)	Delivery Date Update	MIS-US-13	As a system, I want to auto-populate Actual Delivery Date when PO Status changes to "Delivered".	Flow triggers when Status = "Delivered". Sets Actual_Delivery_Date = TODAY(). Calculates delivery time variance.	Medium	Sprint -9
Administrator	Object Setup	MIS-US-14	As an admin, I want to create custom objects (Product, Purchase Order, Supplier, Inventory Transaction).	Objects created with proper naming conventions. Relationships established (Lookups, Master-Detail).	High	Sprint -1
Administrator	Security Configuration	MIS-US-15	As an admin, I want to create profiles (Inventory Manager, Purchase Manager) with appropriate CRUD permissions.	Inventory Manager: Full access to Product, Inventory Transaction. Read-only to PO, Supplier. Purchase Manager: Full access to PO, Supplier. Read/Edit to Product.	High	Sprint -6
Administrator	User Management	MIS-US-16	As an admin, I want to create users and assign them to appropriate profiles and roles.	User creation includes Profile assignment, Role assignment, Email, License type. User can log in and access permitted objects.	Medium	Sprint -7
Auditor	Audit Trail	MIS-US-17	As an auditor, I want to see complete history of all inventory	Inventory Transaction object tracks: Who (User),	Medium	Sprint -10

			transactions with user information.	What (Product), When (Date/Time), Type (In/Out), Quantity. Records are immutable.		
Auditor	Compliance Reporting	MIS-US-18	As an auditor, I want detailed reports showing all purchase orders with line items for compliance review.	Report includes: PO Number, Supplier, Order Date, Delivery Dates, Product Details, Quantities, Amounts, Status. Exportable to Excel.	Medium	Sprint -10
Healthcare Administrator	Cost Analytics	MIS-US-19	As an administrator, I want dashboards showing monthly spending trends and budget utilization.	Dashboard displays: Monthly Spending (bar chart), Budget vs Actual (gauge), Top 10 Products by Cost (pie chart), Spending by Category (donut chart).	Low	Sprint -11
Tester	Flow Testing	MIS-US-20	As a tester, I should verify expiry alerts are sent at correct intervals (30, 15, 7 days before expiry).	Test creates products with expiry dates. Verifies email alerts received at correct times. Alert content accurate.	High	Sprint -11
Tester	Trigger Testing	MIS-US-21	As a tester, I should verify Purchase Order total calculates correctly for bulk operations.	Test creates PO with 50+ items. Verifies total = sum of all line items. Tests insert, update, delete scenarios.	High	Sprint -12

				Performance under 3 seconds.		
Developer	Documentation	MIS-US-22	As a developer, I want to document all automation (Flows, Triggers) with comments and design specs.	Each Flow has description, version, last modified. Triggers include code comments. Architecture diagrams created.	Medium	Sprint -12