Ideation Phase

Define the Problem Statement

Date	03 November 2025
Team ID	NM2025TMID01909
Project Name	Medical Inventory Management
Maximum Marks	2 Marks

Medical Inventory Management System

Hospitals, clinics, and pharmacies manage a wide range of medical supplies, medicines, and equipment that are critical for patient care. However, many healthcare institutions still rely on **manual or semi-automated systems** to track inventory. This often leads to **inefficient stock management**, **expired medicines**, **inaccurate record-keeping**, and **delays in replenishment**.

As a result, medical staff face challenges such as **shortages of essential drugs**, **overstocking of low-demand items**, and **financial losses** due to wastage and poor forecasting. Furthermore, the lack of real-time visibility into inventory levels across departments makes it difficult for administrators to make informed decisions and ensure compliance with medical safety standards.

Therefore, there is a need for a **Medical Inventory Management System** that provides an **automated, real-time, and reliable solution** to track medical items, monitor expiry dates, manage suppliers, and generate analytical reports to support better decision-making and reduce operational inefficiencies.

Functional Requirements

1. **User Management**
    - Roles: Admin, Pharmacist, Staff, Supplier
    - Login/Logout, Access control
2. **Inventory Control**
    - Add, update, and remove medicines/equipment
    - Track quantity, location, and expiry date
    - Generate automatic reorder alerts
3. **Procurement Management**
    - Manage supplier details
    - Purchase orders and supplier tracking

4. **Stock Monitoring**
    - Low stock and expiry alerts
    - Category-wise item grouping
    - Audit logs for inventory movement
5. **Reporting and Analytics**
    - Daily/Monthly inventory reports
    - Usage trends, wastage analytics
    - Financial summaries
6. **Barcode/QR Integration**
    - Quick item identification and check-in/check-out tracking

Example:

Problem Statement(PS)	I am as	I' m trying to	But	Become	Which makes me feel
PS-1	Student Research Focus	automated Medical Inventory Management System that can efficiently track medical supplies, monitor stock levels	I struggle because current manual methods are time-consuming, error-prone, and do not provide real-time updates.	it becomes difficult to maintain accurate records and ensure timely availability of medical items.	frustrated and concerned about the delay in patient care,

PS-2	Developer	Helps hospitals track medicines and supplies efficiently,	Many healthcare institutions still rely on manual processes that cause errors and poor visibility,	It becomes vital to enhance operational efficiency and maintain uninterrupted healthcare services.	Determined to build an automated system that integrates real-time data,

Problem Statement 1 – Environmental Focus

A large amount of leftover food from homes, restaurants, and institutions is discarded daily and ends up in landfills, where it decomposes and releases harmful greenhouse gases such as methane. At the same time, there is an increasing demand for clean and renewable energy sources. The lack of an efficient system to convert food waste into usable energy results in both environmental pollution and energy scarcity.

Problem Statement 2 – Energy Sustainability Focus

Non-renewable energy resources are depleting rapidly, and energy costs are rising. Meanwhile, a significant portion of biodegradable food waste remains underutilized. There is a pressing need for an innovative approach to transform leftover food into a reliable source of renewable power to support sustainable energy systems and reduce dependency on fossil fuels.