STOCK MAINTAINANCE SYSTEM

- **Problem Statement :-** Most organizations still rely on manual methods or outdated systems for stock management. This often leads to problem such as inaccurate stock levels due to human errors, over-stocking or under-stocking issues, delay in processing stock requests, difficulty in generating timely reports for decision-making.

1) **Purpose :-** The purpose of the Stock Maintenance System is to automate the process of tracking, updating and managing stock levels in an organization. It will replace traditional manual methods with a computerized System that ensures efficiency, accuracy, & real-time visibility of inventory.

2) **Scope :-** The (SMS) will maintain a centralized database of stock items.
- allow admins to add, update & delete stock items.
- enable staff/users to request, issue & return stock.
- Provide real-time updates of stock quantities.
- Support report generation.
- Generate automatic alerts for low stock & overstocking.
- Ensure role-based access.

③ **Overview :-** The System will be web-based application with the following modules:

- **authentication module:** secure login for admin & users.
- **stock management module :** add, update, delete & view stock items.
- **transaction module**
- **alert module**
- **reporting module.**

④ **General Description :-** • [User] - admin.
- Manager - approve stock requests
- Staff / Users - can request stock & view availability.
- [Assumptions] - users will have basic knowledge
- System depends on internet connectivity.
- Requires a relational database (MySQL).

⑤ **Functional Requirement :-** login & authentication.
- adding, updating, deleting stock items.
- transaction handling - issue stock to staff/users, return unused stock, request new stock items.
- notify admin when stock falls below min threshold.
- reports - generate daily, weekly & monthly.

⑥ **Non-Functional Requirement :-** Performance.
- Reliability   - Portability.
- Usability
- Security
- Maintainability

7) **Interface Requirement :-** • **User Interface :-** web based dashboard for admin, manager & staff
- mobile-friendly design.
• **Hardware Interface :-** minimum 4GB RAM, 2GHz processor, 500MB Storage.
• **Software Interface :-** backend - Python / Java.
- database - MySQL
- frontend - HTML, CSS, JavaScript.
- internet connectivity req. for cloud-based access.

8) **Design Constraints :-** must comply with data security regulations.
- limit budget for infrastructure.
- System must be scalable to handle future stock growth.

9) **Performance Requirement :-** response time - related to stock (add, update, search, delete) should be processed within 2-3 seconds.
- **Scalability -** The system should handle a growing database of least 100,000 stock items without significant performance loss
- **Availability -** The system should be available 24/7 with at least 99% uptime, excluding scheduled maintenance.
- data accuracy
- resource utilization
- Throughput

10) **Schedule & Budget :-** Total duration ~ 15 weeks.
- estimated budget ~$10,700 (excluding maintenance cost)