Project: Manufacturing

Functional Requirements	
1. Production Roles (workers, supervisors, managers)	FR1.1 – The system should allow production managers to create and manage production schedules. FR1.2 – Supervisors should be able to allocate production tasks to workers and monitor workflow organization. FR1.3 – Technicians should be able to record and report machine downtime for management review. FR1.4 – Managers should be able to monitor work orders in real time to track production progress.
2. Maintenance Roles (technicians, maintenance managers)	FR2.1 – Technicians should be able to schedule and manage preventive maintenance tasks to prevent unexpected machine breakdowns. FR2.2 – Maintenance managers should be able to view machine health reports and analyze performance to reduce downtime.
3. Inventory & Supply Chain Roles (warehouse, procurement, logistics)	FR3.1 – Warehouse staff should be able to record all incoming raw materials and outgoing finished goods to maintain accurate stock levels. FR3.2 – The system should automatically trigger material reorders when stock levels fall below predefined thresholds. FR3.3 – The system should allow storekeepers to track finished goods inventory for shipment preparation. FR3.4 – Logistics managers should be able to generate and manage delivery schedules to ensure timely customer deliveries. FR3.5 – Supplier managers should be able to track and evaluate supplier performance for reliability.
4. Quality Roles (inspectors, QA managers, auditors)	FR4.1 – Quality inspectors should be able to log inspection results and mark defective items. FR4.2 – The system should allow QA managers to generate detailed defect and quality reports to identify recurring issues. FR4.3 – QA auditors should be able to access and review historical inspection records for compliance verification.
5. Safety & Compliance Roles (safety officers, compliance officers)	FR5.1 – The system should allow safety officers to record and track safety incidents and near-misses for workplace improvement.

	FR5.2 – The system should integrate with cameras to monitor production areas for unsafe behaviors or hazards. FR5.3 – The system should maintain audit-ready compliance and safety records to meet regulatory inspection requirements.
6. Customer & Sales	FR6.1– The system shall allow sales officers to view real-time inventory levels of finished goods to confirm customer orders accurately. FR 6.2– The system shall enable customer service agents to track and view the status of customer orders
7. HR & Workforce	FR 7.1– The system shall allow HR managers to create, assign, and modify worker shift schedules to ensure continuous staffing on production lines. FR 7.2 – The system shall record and monitor employee training activities, including completed sessions, certifications, and upcoming training requirements.

Non-Functional Requirements

1. Performance	NFR1.1 – The system should respond to most user actions within two seconds. NFR1.2 – It should handle real-time production updates without performance issues, even during peak hours.
2. Reliability	NFR2.1 – The system should maintain an uptime of at least 99.5%. NFR2.2 – Data backups should run automatically several times a day.
3. Usability	NFR3.1 – The interface should be simple, clean, and easy to navigate for users of all skill levels. NFR3.2 – The system should support multiple languages and accessibility options (Arabic, English).
4. Security	NFR4.1 – All users should log in securely using role-based access control. NFR4.2 – Sensitive data must be encrypted during both storage and transmission.
5. Scalability	NFR5.1 – The system should easily scale to support new users, locations, or modules.
6. Maintainability	NFR6.1 – Updates and maintenance should be possible without major downtime. NFR6.2 – The system should maintain detailed activity and error logs to simplify troubleshooting.

| 7. Compliance | NFR7.1 – The system should comply with manufacturing and data protection standards like ISO 9001 and GDPR.

NFR7.2 – All user activities should be logged for audit and traceability purposes. |