

Manufacturing System - Use Case Documentation

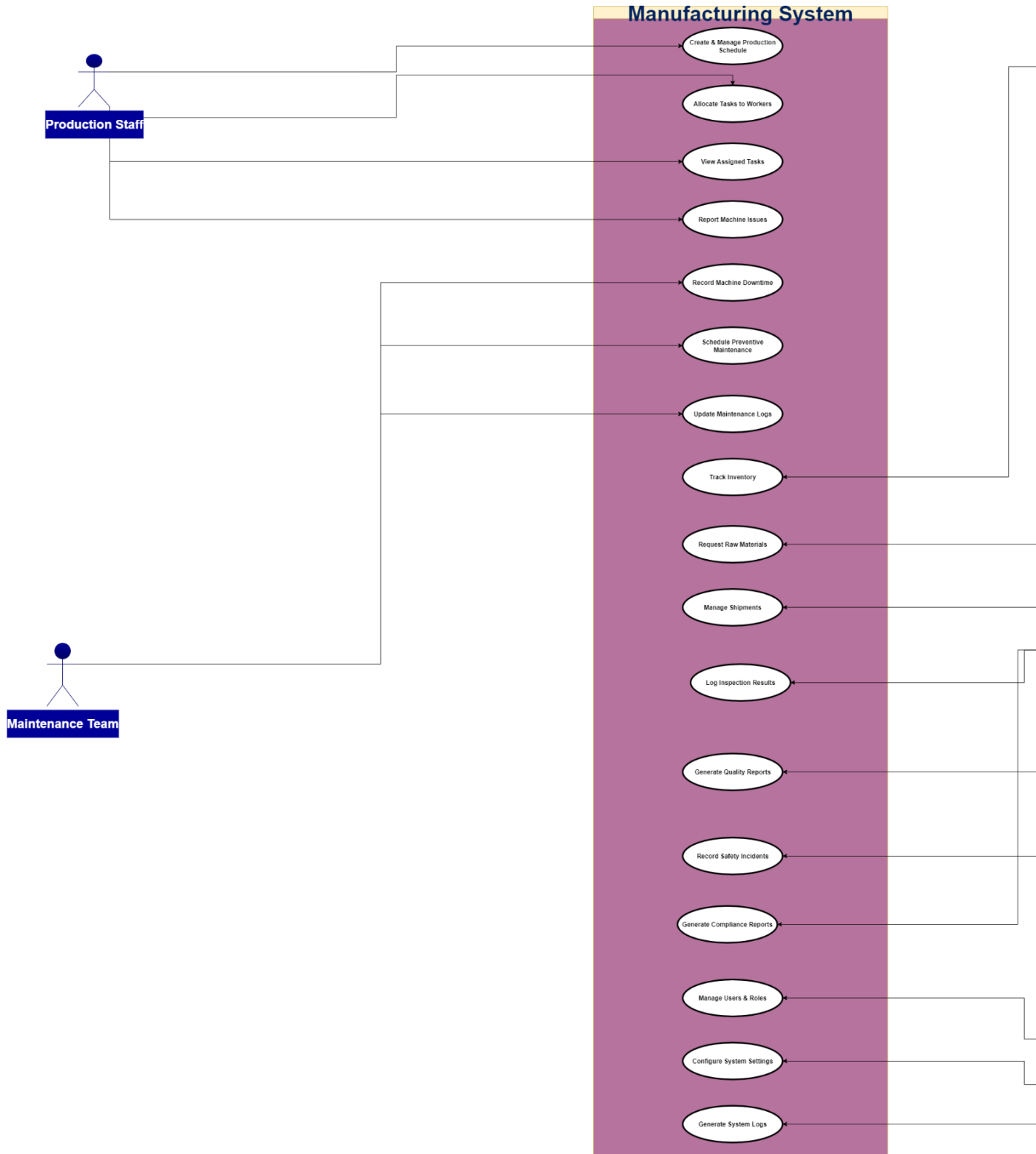


Figure 1: Use Case Diagram for Manufacturing System

Use Case Narratives

Use Case ID	FR1.1	
Use Case name	create and manage production schedules.	
Actors	Production Manager.	
Pre-conditions	<ul style="list-style-type: none">• The production manager is authenticated and logged into the system.• Relevant production data (like available machines, materials) exists in the system.	
Post-conditions	<ul style="list-style-type: none">• A new or updated production schedule is stored in the system.• The system reflects the latest version of the production schedule and notifies relevant stakeholders.	
Flow Event	User Action	System Action
	<ol style="list-style-type: none">1. The Production Manager logs into the system.3. The Production Manager selects “Create New Schedule”.	<ol style="list-style-type: none">2. The system displays the Production Dashboard with options for schedule management.4. The system prompts the manager to enter details such as:

	<p>5. The Production Manager reviews the entered details.</p> <p>6. The Production Manager submits the schedule.</p>	<ul style="list-style-type: none"> ○ Product type and quantity ○ Production start and end dates ○ Assigned machines and worker ○ Shift details and priorities <p>7 . The system validates resource availability and any conflicts.</p> <p>8 . If all details are valid, the system saves the schedule in the database and displays a confirmation message and the new schedule appears in the schedule list. Notifications are sent to relevant team members.</p>
exceptions	<p>9. The production manager corrects the</p>	<p>7. if some data (like unavailable machine or overlapping shifts) is invalid.</p> <p>8. The system highlights the issues.</p>

	data and resubmits.	
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Use Case ID	FR1.2	
Use Case name	Allocate Production Tasks	
Actors	Supervisor	
Pre-conditions	<ul style="list-style-type: none"> Supervisor is logged into the system. Production schedule exists (created by manager). 	
Post-conditions	<ul style="list-style-type: none"> Workers receive their task assignments. Workflow organization is updated in the system. 	
Flow Event	User Action	System Action
	<ol style="list-style-type: none"> Supervisor logs into the system. Supervisor selects the production schedule for the current day. Supervisor views available workers and their current workload. 	<ol style="list-style-type: none"> The system displays the Production schedule management.

	<p>5.Supervisor assigns tasks to workers based on skill and availability.</p> <p>7.Supervisor can monitor workflow status through a dashboard</p>	<p>6. System updates task assignments and notifies workers.</p>
exceptions	<p>1.If a worker is unavailable</p> <p>3.If workload is unbalanced</p>	<p>2. system suggests another worker.</p> <p>3. system alerts supervisor.</p>

Use Case ID	FR1.3	
Use Case name	View Assigned Daily Tasks	
Actors	Worker	
Pre-conditions	<ul style="list-style-type: none">• The worker must be registered in the system.• The worker must have successfully logged into the system.• Daily tasks must be assigned to the Worker in the system's database for the current day.	
Post-conditions	<ul style="list-style-type: none">• The worker can view the list of daily assigned tasks.• The system displays task details, such as task name, due time, status, and priority.	
Flow Event	User Action	System Action

	<p>2. The Worker logs into the system.</p> <p>4. The Worker selects "View My Tasks".</p> <p>8. The Worker views and reviews the displayed tasks.</p>	<p>3. The system Validates login credentials.</p> <p>4. Once credentials are valid, the system grants access to the worker's dashboard.</p> <p>5. The system authenticates the worker and queries the database to retrieve all tasks assigned to this worker whose due date matches the current day.</p> <p>6. The system fetches the relevant tasks from the database and prepares them for display.</p> <p>7. The System displays the prepared list of tasks (Task ID, Description, Start Time, Location, Status, etc.) on the Worker's dashboard.</p>
exceptions	<p>9. The Worker selects "View My Tasks," but has no assigned tasks for today.</p>	<p>10. The system queries the database but finds</p>

	<p>11. The Worker selects “View My Tasks,” but the system fails to connect to the database.</p>	<p>no records, then displays a message: “No tasks assigned for today.”</p> <p>12. The system displays an error message: “Unable to load tasks. Please try again later.”</p>
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Use Case ID	FR1.4	
Use Case name	Record and report machine down time	
Actors	Technician	
Pre-conditions	<ul style="list-style-type: none"> • The technician is logged into the system • The machine exists in the system 	
Post-conditions	<ul style="list-style-type: none"> • The downtime record is stored in the system • A downtime report is generated and sent to management 	
Flow Event	User Action	System Action
	<p>1- the technician selects a machine form the list</p> <p>3-the technician chooses the option to record down time</p> <p>5- the technician enters the required information and submits the form</p>	<p>2-the system displays the selected machine</p> <p>4- prompts appear asking for down time details</p> <p>6- the system</p>

	<p>8- a pop-up thankyou-prompt appears that when closed sends the technician to the list</p>	<p>validates the input and stores the records in the database</p> <p>7- the system creates a report and sends it to management</p>
exceptions	<p>A-1-1- the technician enters invalid data for downtime detail</p> <p>A-2-1- the technician finishes the downtime report</p>	<p>A1-2- the system sends an error message asking to reenter info about downtime</p> <p>A-2-1 the system get an error in storing the downtime details or the report sending a message to prompt the t</p>

Use Case ID	FR1.5
Use Case name	Monitor Work Orders
Actors	Production Manager

Post-conditions	<ul style="list-style-type: none"> • Manager has real-time visibility of production progress. • Any delays or issues are identified immediately. 	
Flow Event	User Action	System Action
	1- Manager logs into the system. 2-Manager navigates to the "Work Orders" dashboard. 5-Manager monitors real-time updates (task completion, delays, machine downtime). 6-Manager can generate progress reports if needed. 7- Manager uses insights to make informed decisions or adjust schedules.	4-System displays all active work orders with status (pending, in progress, completed).
exceptions	A-1-1- If data is not updated (e.g., network issue) A-2-1- If a machine failure occurs	A1-2- system shows last recorded status and alerts manager.

		A-2-1 the system downtime highlighted in the dashboard.
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