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COMPARISON BETWEEN EXISTING SYSTEM AND PROPOSED SYSTEM

Feature	Existing System (Manual)	Proposed System (AutoWeave)
Data Entry	Handwriting on slips/registers	Digital entry via UI
Salary Calc	Manual multiplication/summation	Automated via shift logs
Real-time Stats	None (End of day only)	Live Dashboard & Metrics
Data Security	High risk of loss (physical damage)	Secure Cloud/Database Storage
Error Rate	High (Human math errors)	Minimal (Automated logic)

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ABSTRACT

- The system replaces manual registers by digitally managing raw materials, cloth meterage, financial transactions, and daily production records, reducing errors and delays.
- It accurately calculates usable cloth meters from customer-provided yarn or fabric, ensuring proper tracking, fair exchange, and prevention of material mismanagement.
- Maintains complete employee profiles including attendance, assigned work, productivity, and automated salary calculation based on output, work type, or monthly basis.
- Provides interactive dashboards with daily, weekly, and monthly reports on production, employee performance, raw material usage, and salary expenses to support informed decision-making.

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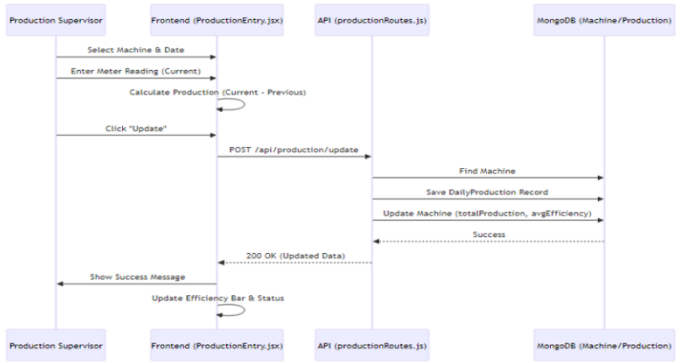
SYSTEM FLOW DIAGRAMS

- PRODUCTION TRACKING FLOW



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PROBLEM DEFINITION

- Inefficient Production Tracking: Relying on manual entries for daily meter production leads to data entry errors, lack of real-time efficiency monitoring, and difficulty in calculating remaining production targets for specific orders.
- Fragmented Worker Management: Tracking worker attendance and shifts on paper makes transparency difficult. Manual calculation of salaries based on varying shift rates is time-consuming and prone to mathematical errors.
- Lack of Integrated Financials: Payment processing (salaries) is often disconnected from attendance records, leading to delays in payouts and difficulties in maintaining payment history.
- No Data-Driven Decisions: The absence of a consolidated dashboard means owners cannot easily see a bird's-eye view of their mill's health, such as active machines, daily output trends, and overall efficiency.

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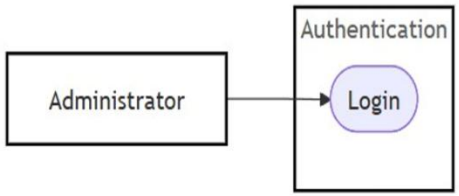
USE CASE DIAGRAM

- AUTHENTICATION MODULE



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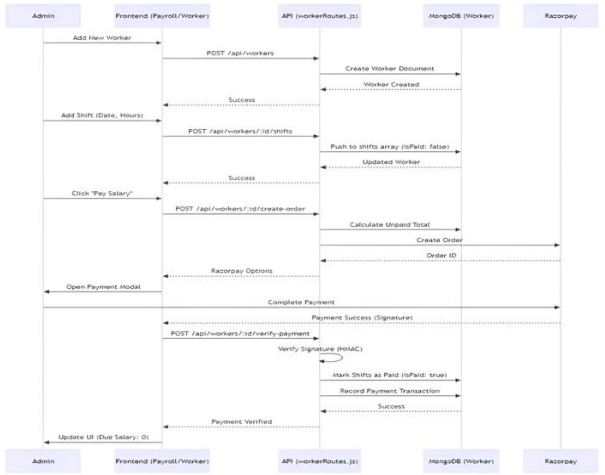
- WORKER AND PAYROLE FLOW



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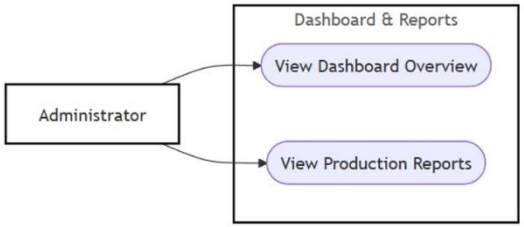
- DASHBOARD AND REPORTS MODULE



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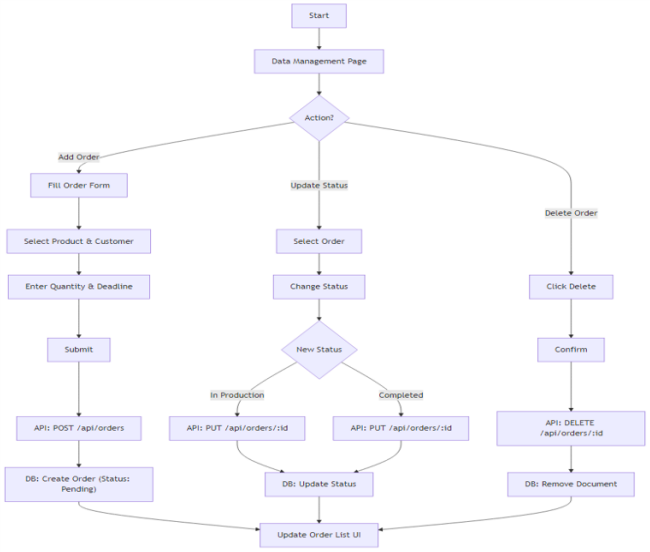
- ORDER MANAGEMENT FLOW



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MODULES

- **WORKER MODULE:** Manages worker profiles, shift history, and payroll calculations.
- **ORDER MODULE:** Handles order creation, status updates, and deletion. It also integrates with Razorpay for payments.
- **METRICS MODULE:** Provides data for performance tracking and overview statistics.
- **MACHINE MODULE:** Manages industrial machine data or statuses.
- **PRODUCTION MODULE:** Tracks production progress and output details.

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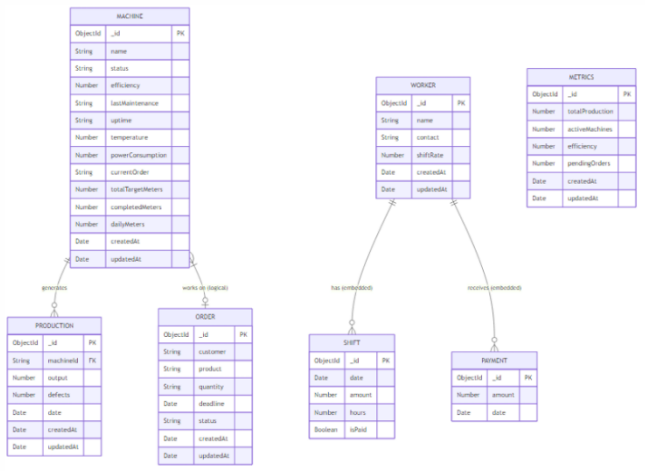
ER DIAGRAM



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MODULE SPECIFICATION

AUTHENTICATION MODULE:

- Authentication Module-Purpose: To ensure secure access to the system and protect sensitive production and payroll data.
- Key Features: Secure Login/Logout functionality.
- Data Entities: User (Email, Password).

MACHINE MANAGEMENT MODULE:

- Purpose: To track the status, efficiency, and production output of every loom in the factory.
- Key Features: Inventory Tracking: Add, edit, and remove machines.
- Production Logging: Record daily meter counts.
- Automated Calculations: Dynamic calculation of "Remaining Meters" based on target orders.
- Status Monitoring: Real-time status indicators (Running, Stopped, Maintenance, Faulty).
- Data Entities: Machine (Name, Status, Daily Meters, Completed Meters, Target Meters).

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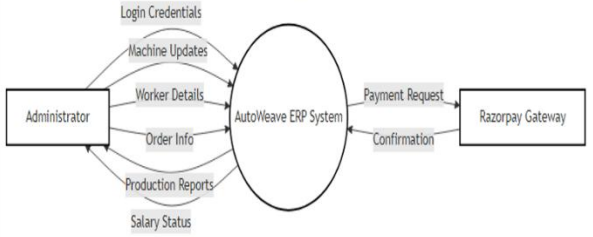
DATA FLOW DIAGRAM LEVEL 0



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TECHNOLOGIES USED

Component	Technology
Frontend	React, Vite, Tailwind CSS, Lucide Icons
Backend	Node.js, Express
Database	MongoDB (Mongoose)
Payments	Razorpay
Visuals	Recharts (for Dashboard Graphs)

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WORKER AND PAYROLL MODULE:

- Purpose: To manage the workforce and automate salary distribution.
- Key Features: Maintain profiles with contact info and base shift rates.
- Shift Management: Record daily attendance/shifts.
- Payroll Processing: Automated calculation of due salary (Unpaid Shifts × Shift Rate).
- Payment Integration: Digital payout via Razorpay and manual cash entry recording.
- Shift Corrections: Ability to delete or edit erroneous shift entries.
- Data Entities: Worker, Shift, Payment.

ORDER MANAGEMENT MODULE:

- Purpose: To manage customer demands and ensure production alignment with deadlines.
- Key Features: Customer Records: Store customer names and specific product requirements.
- Quantity Tracking: Track orders in meters or relevant textile units.
- Status Workflow: Track order lifecycle (Pending → In Production → Completed).
- Deadline Monitoring: Alert administrators of upcoming delivery dates.
- Data Entities: Order (Customer, Product, Quantity, Deadline, Status).

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DASHBOARD AND REPORTS MODULE:

- Purpose: To provide a high-level visual summary of the entire manufacturing operation.
- Key Features: Metrics Overview: Display total production, active machines, and overall mill efficiency.
- Visual Data: Charts for shift distributions and production trends.
- Status Snapshots: Quick-view counters for pending orders and worker stats.
- Data Entities: Metrics, Aggregate data from Machine and Worker collections.