Case Study on
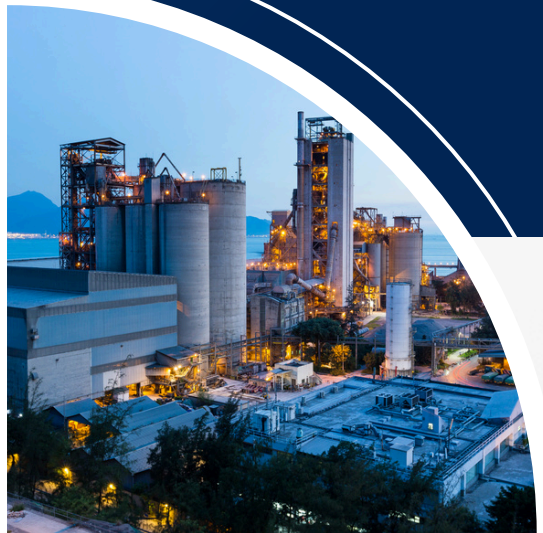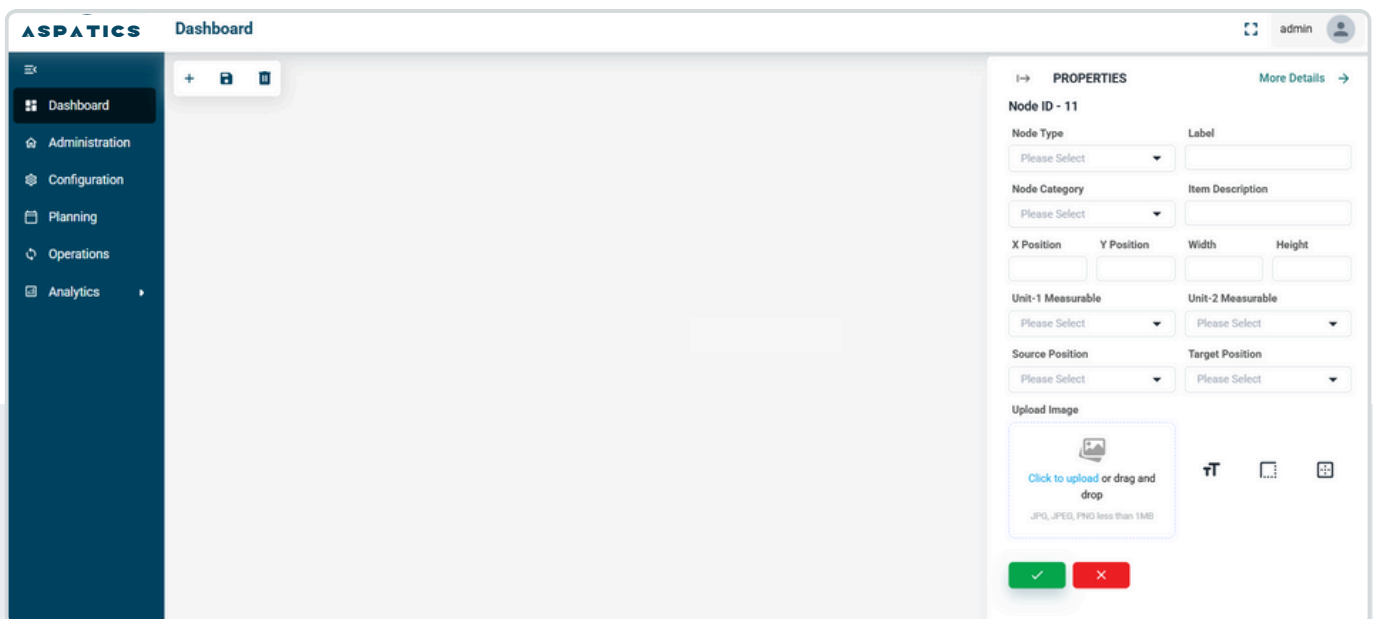
Factory Automation System

Project Overview

This project is a comprehensive solution designed to **streamline production management** and **visualization** in **manufacturing systems**. It focuses on **mapping** the journey of **raw materials** as they are processed by **machines**, resulting in **finished products** and **waste materials.**

The project features a **graph-like visualization** to illustrate **material flow,** machine interactions, and outputs, providing insights into **production efficiency**. Additionally, it integrates an employee attendance system to monitor **workforce participation** and **productivity**.

It also includes **Gantt charts** to effectively **plan, schedule, and track production timelines,** ensuring **optimized resource allocation** and **project execution**. Together, these features aim to enhance **operational transparency** and **efficiency** in **production environments.**

Project Feature View

1. Dashboard
- **Properties Form**: Centralized hub to manage and input essential production properties and settings for seamless operations.

2. Administration
- **Shift Management:** Define and manage work shifts for employees to optimize production schedules.
- **Employee Management:** Maintain a database of employees, track roles, and manage individual profiles.
- **Department Management:** Organize and oversee different departments involved in the production process.

3. Configuration
- **Route Configuration:** Define production routes and material flows to streamline the manufacturing process.
- **Staff Configuration:** Assign roles, manage teams, and ensure workforce alignment with production goals.
- **Material Configuration:** Maintain details about raw materials, intermediate products, and finished goods.
- **Device Configuration:** Integrate and manage machines/devices involved in the production process for efficiency improvements.

.4. Planning
- **Attendance Tracking:** Monitor employee attendance for better workforce planning.
- **Staff Allocation:** Assign employees to specific machines, tasks, or production stages.
- **Job Assignment:** Allocate and schedule jobs effectively to meet production timelines.

5. Operations
- **Jobs:** Oversee production jobs in one place.

6. Analytics
- **Job Status:** Visualize and track the progress of individual jobs within the production cycle.
- **Machine-wise Report:** Analyze machine performance and usage for efficiency improvements.
- **Material Data Report:** Access detailed insights on material usage, waste, and inventory levels.
- **Material Production Report:** Evaluate production output and material transformation rates.
- **Gantt Chart:** Plan and visualize production timelines, dependencies, and schedules for better project management.

Client Details

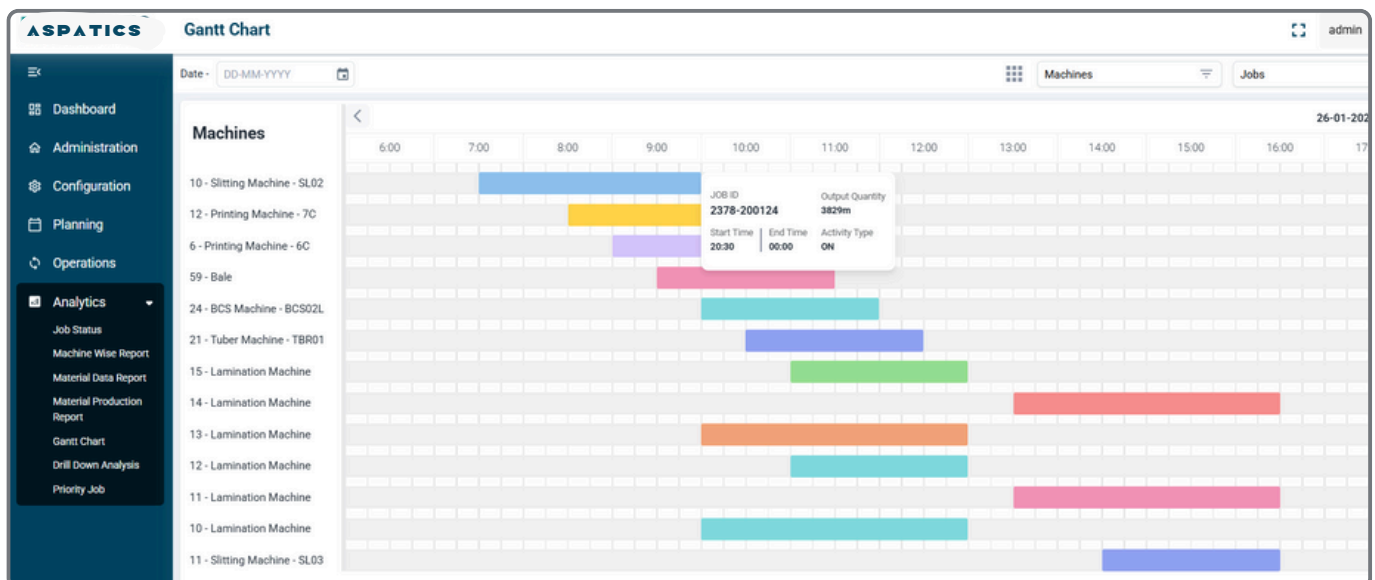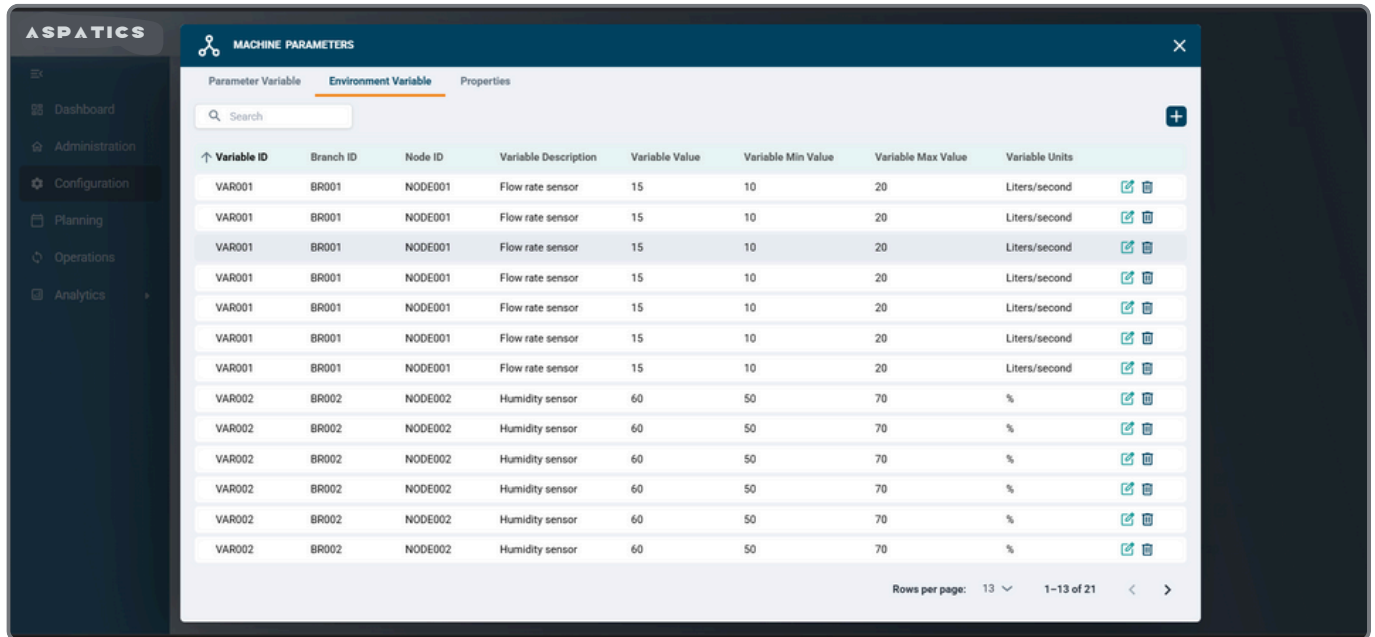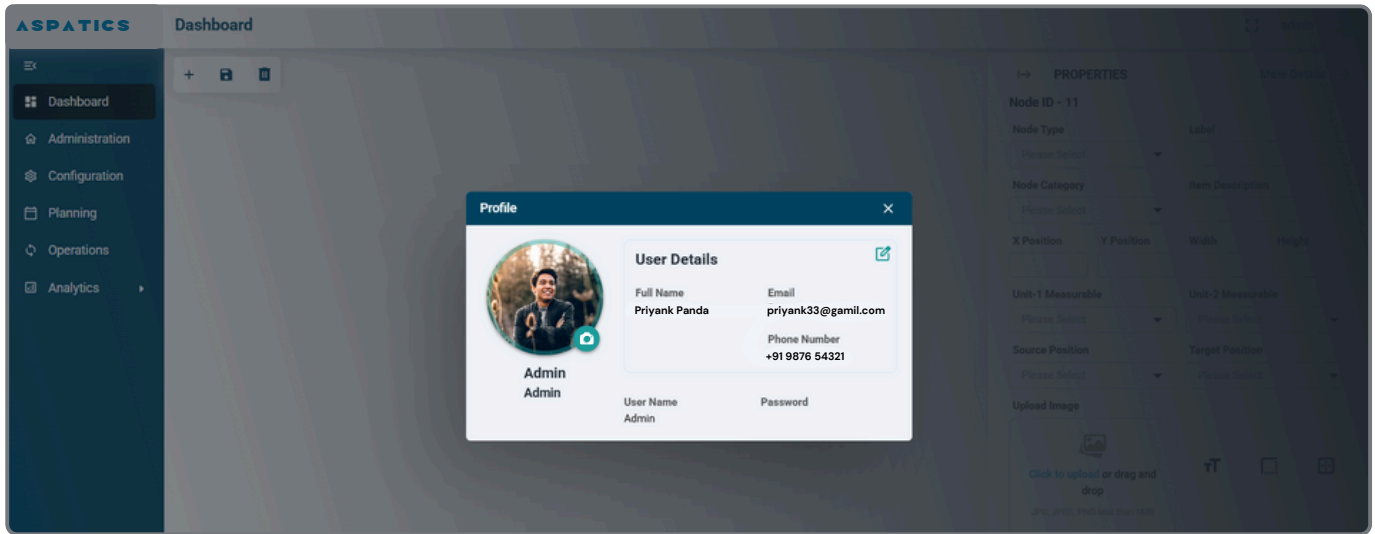» Name: **Confidential**

» Location: **India**

» Industry: **Manufacturing**

Technology Details

» **React.js**

» **Material UI**

Screenshots

UtkalLabs

Ideas To Reality

Thank You

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