

# Mini Manufacturing ERP Project (PPO-Oriented Guide)

## Project Objective

Build a Mini Manufacturing ERP inspired by TRUERP to demonstrate real-world ERP workflows, clean backend architecture, and business logic using Spring Boot and React.

## Technology Stack

- Backend: Java 17, Spring Boot, Spring Security (JWT), JPA, MySQL
- Frontend: React + Tailwind CSS
- Tools: GitHub, Postman, VS Code, MySQL Workbench

## Core ERP Workflow

Customer → Sales Order → Purchase Order → GRR → Inventory → Invoice → Expense → Reports

## Mandatory Modules

- Authentication & Role Management (ADMIN, STAFF)
- Sales Order Management
- Purchase Order & Supplier Management
- GRR (Goods Receipt Report)
- Inventory & Item Master
- Expenses Management
- Dashboard & Reports

## Key Business Rules

- Stock increases only via GRR
- Stock decreases only via Sales Order completion
- Purchase Order does not affect stock directly
- Sales Order cannot complete without sufficient stock

## Optional / UI-Only Modules

- Quality Management
- Production Planning
- AI Features (UI placeholders only)

## Backend Architecture

controller → service → repository → entity  
DTO usage, global exception handling, role-based APIs

## 1-Month Execution Plan

Week 1: Auth, DB schema, base UI  
Week 2: Sales, Purchase, Supplier, Items  
Week 3: GRR, Inventory logic, Expenses  
Week 4: Dashboard, Reports, Testing, Documentation

## Final Deliverables

- GitHub Repository
- ER Diagram
- Project PPT
- Demo Video (5–7 minutes)
- README with business logic explanation

## Review Talking Points

- Focused on core ERP workflows
- Manufacturing-ready architecture
- Scalable and extendable design
- PPO-ready implementation