PROJECT PROPOSAL

Prototype for Production Scheduling Automation

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# Project Overview

This project aims to develop a prototype system to automate production scheduling in a factory setting. The primary goal is to efficiently distribute the production of various products across different production lines throughout the month to meet target outputs. The system will ensure optimal use of manufacturing resources while preventing machine overload and reducing downtime. By automating production scheduling, the factory can enhance productivity, maintain consistent product quality, and minimize operational costs.

# Project Objectives

## Primary Objective

## Develop a system to automatically create and manage production schedules based on monthly product targets.

## Secondary Objective

* Distribute production tasks across multiple manufacturing lines to prevent machine overload and ensure even workload distribution.

# Scope of Work

Requirement Analysis & Planning

* Document the specific requirements for the automated scheduling system, including the types of products, number of production lines, machine capabilities, and operational constraints.

System Design and Prototype Development

* Design a high-level architecture for the automated scheduling system, including data flow diagrams, communication protocols, and system components.

Development

* Develop a simple, user-friendly interface to display production schedules and allow for manual adjustments if necessary.

Deployment and Testing

* Deploy the prototype in a selected section of the factory to test its performance in a real-world environment.

# Deliverables

* A prototype algorithm that can distribute production tasks across lines and timeframes based on predefined targets and constraints.

# The developed prototype software, including front-end and back-end components, integrated with existing production systems.

# Constraints

* **Limited Scope**: The prototype will focus on automating production scheduling for a specific set of products and a limited number of production lines, rather than the entire factory. This approach will make the project more manageable and allow for targeted testing.
* **Resource Availability**: The system will assume a fixed availability of machines and labor, without accounting for unexpected downtimes or labor shortages due to unforeseen circumstances.
* **Budget and Time Constraints**: The project will operate within a constrained budget and timeline, prioritizing essential features for a functional prototype over additional enhancements or refinements.
* **Real-Time Adjustments**: While the system will allow some level of dynamic adjustment, real-time rescheduling capabilities may be limited in the prototype to maintain simplicity and focus on core functionalities.