Module 03 – Production Modeling

Exploratory Data Analysis

Model Formulation

Model Optimized for Cost Reduction

A screenshot of a computer

AI-generated content may be incorrect.

Model with Stipulation

*Please copy the tab of your original model before continuing with the next part to avoid messing up your original solution. If we remove the production capacity constraint from the model & we removed the carrying cost, what do you think will happen? Try it out and see if it matches your expectation. Try to explain what is happening and talk a bit about fallbacks of models.*

Without the capacity constraint, production can fully match demand in each period. There will be no stockouts since production will always meet demand. Since inventory carrying costs are removed, there will be no penalty for holding excess inventory. Real-world constraints (like limited factory capacity or warehousing costs) exist for a reason. Removing them may not reflect reality. Businesses often stockpile inventory to buffer against demand uncertainty. Without carrying costs, there's no incentive to manage inventory levels. A model without constraints may suggest unrealistic production schedules, leading to operational inefficiencies in a real setting.