Hackathon Idea Documentation

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Problem Statement

Retail businesses often face issues of stockouts or overstocking, leading to poor customer satisfaction and financial loss. Inventory optimization is essential but complex due to fluctuating demand and multiple products.

Proposed Solution

We propose an AI-powered inventory optimization system using multi-agents that predict demand, track stock levels, and dynamically adjust prices. These agents will work independently yet cooperatively to ensure optimal stock availability and pricing.

Technologies Used

- Python

- TensorFlow

- Flask

- MySQL

- AWS

System Architecture (High-Level)

1. Data Collection Module

2. Demand Forecasting Agent

3. Inventory Manager Agent

4. Pricing Strategy Agent

5. Admin Dashboard

Benefits

- Reduces stock wastage

- Prevents out-of-stock situations

- Increases customer satisfaction

- Automates pricing for maximum revenue

- Adaptable to changing market trends

Benefits