OptiChain

PROJECT SYNOPSIS

Title of the Project:

OptiChain : Analytics and Management

Contribution / Team members:

Developed by Om Awthankar

- All coding and design aspects completed by Om Awthankar
- Project duration: Approximately 10 days with 1-2 hours of daily work

Background:

The Fast-Moving Consumer Goods (FMCG) sector operates in a dynamic and competitive market environment where efficient supply chain management is crucial for success. FMCG companies face challenges such as fluctuating demand, inventory management, transportation optimization, and ensuring timely delivery to meet customer expectations.

Problem Statement:

The objective of this project is to develop a supply chain optimization tool tailored for FMCG sector businesses. The tool will empower FMCG companies to streamline their supply chain operations, enhance efficiency, reduce costs, and improve customer satisfaction through data-driven decision-making and analytics.

Objectives:

- To create a supply chain management app for FMCG sector firms.
- To create an inventory management app for the firm.
- To create a revenue record app for the firm.
- To create a sales pitch app for the firm.

Expected Deliverables:

Supply Chain Optimization Tool:
Develop a robust and scalable supply chain optimization tool with features for data management, analytics, and visualization.

Database Schema and Data Integration:
Design and implement a database schema for storing data and integrate data from multiple sources.

Analytics Algorithms and Models:
Implement algorithms and models for demand forecasting, inventory optimization, production planning, transportation routing, and distribution optimization.

User Interface Design:
Design an intuitive and user-friendly interface for the supply chain optimization tool, incorporating interactive dashboards, reports, and visualization tools.

Data exporting
Provide users with an option to export their data and save it locally. For sharing and other purposes.

Hardware Requirements:

A computer/laptop with:

- Operating System: Windows
- x86 64-bit CPU (Intel/AMD architecture)
- 2 GB RAM
- 1 GB free disk space

Software Requirements:

- Python 3.x or higher version
- Tkinter GUI library
- Matplotlib library

Limitations:

Limited User Interface (UI)
The UI of the app is functional but may not be very visually appealing. More effort could have been put into designing a more user-friendly and visually attractive interface.

Limited Error Handling
The app lacks comprehensive error handling mechanisms. It could be improved by implementing error handling for various user inputs and database operations.

Limited Data Validation
There is minimal data validation in the app. Adding more robust data validation mechanisms could improve the accuracy and reliability of the data entered by users.

Limited Analytics Features
While the app provides basic analytics features such as revenue tracking and sales analysis, more advanced analytics features could have been added, such as predictive analytics, trend analysis, and forecasting.

Limited Security
The app does not implement any security measures such as user authentication or data encryption. Enhancing security features would be important, especially if the app is used in a production environment.

Limited Scalability
The app may not be easily scalable to handle large datasets or a high volume of user interactions. Improving scalability would require optimizing database queries and improving the overall performance of the app.

Limited Testing
The app may not have undergone thorough testing, including unit testing, integration testing, and user acceptance testing.