CAD_Phase1

Project name:

3118-Data Warehousing with IBM Cloud Db2 Warehouse

PROBLEM STATEMENT:

Certainly, I can provide the information in the format you requested based on the sample dataset you provided .

ABSTRACT:

This project involves creating a data management system for a retail business. The system's goal is to track product information, sales transactions, and inventory levels. It will provide data architects with tools for analysis, reporting, and informed decision-making.

1. Proposed System:

The proposed system comprises the following components and activities:

- Data Structure:Design a structured database to store product-related information, including ProductID, ProductName, Category, and InventoryCount. Additionally, capture sales data with SalesDate and SalesAmount.

- Data Integration:Implement data integration strategies to ensure seamless flow of information from various sources, consolidating product data, sales records, and inventory details.

2.ETL Processes:Develop Extract, Transform, Load (ETL) processes to extract data, transform it into a suitable format, and load it into the database. This will include transforming SalesDate into a consistent format and performing data validation.

- Data Exploration:Create user-friendly query interfaces and data exploration tools to empower data architects to analyze sales trends, product performance, and inventory levels. Enable them to retrieve insights such as top-selling products and low-stock items.

- Actionable Insights:Build reports and dashboards that deliver actionable insights, allowing stakeholders to make informed decisions. These insights may include monthly sales reports,

inventory alerts, and product category analysis.

3. Software / Hardware Used:

- Software:

  - Relational Database Management System (RDBMS): Used to store and manage the structured data.

  - ETL Tools: Employed for data extraction, transformation, and loading processes.

  - Data Visualization Tools: Utilized for creating interactive dashboards and reports.

-Hardware:

  - Server(s): Configured to host the database and support data processing tasks.

4. Existing System:

Before implementing the proposed system, the retail business might have relied on manual record-keeping, spreadsheets, or disparate systems for managing product data and sales. This fragmented approach could have led to challenges in tracking inventory, analyzing sales trends, and making data-driven decisions. The proposed system aims to address these limitations by centralizing data, automating processes, and providing tools for efficient data exploration and decision-making.