Supply Chain Management System

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Project Description:

Supply chain database management system aims to streamline and optimize the flow of information and raw materials between suppliers, manufacturers, wholesalers and retailers to consumers. It focuses on effectively managing and coordinating critical parts in the chain of operations including planning, sourcing, manufacturing, delivering, and returns. With the help of it, businesses can have more control over costs and production time while still be able to main high-quality products and also reduce wastes. Because supply chain database management system is not industry specific, a wide range of industries like manufacturing, retail and E-commerce, logistics and transportation, pharmaceutical and healthcare, etc. that involves in supply chain operations can greatly benefit from the database. In essence, the system helps companies make accurate production plans from demand planning and forecasting which helps optimizing inventory levels and minimizing stockouts or excess inventory. On the supplier side, the system helps facilitate effective supplier management by maintaining supplier information, managing contracts, tracking supplier performance, and streamlining order purchases. This ensures that the whole process is reliable and efficient time management. In addition, the system support order management where it keeps track of order processing, tracking, and fulfillment by maintaining customer information, managing inventory levels leading companies meet customer demands, reduce order lead time, and enhance customer satisfaction. Overall, the supply chain database management system helps companies overcome various challenges, such as inefficient inventory management, poor demand forecasting, supplier reliability issues, order fulfillment delays. It provides end-to-end visibility, collaboration, and control over the supply chain.

Functional Database Requirements:

1. Supplier
    1.1 A supplier shall supply multiple types of materials at a time.
    1.2 A supplier shall have at least one contact
    1.3 A supplier shall have at least one contract with company
    1.4 A supplier shall have multiple purchase orders with company.
    1.5 A supplier shall provide delivery information for each purchase order.
2. Material:
    2.1 A material shall be provided by multiple suppliers.
    2.2 A material shall be used by multiple products.
    2.3 A material shall be stored in multiple inventories.
3. Product
    3.1 A product shall be created by multiple materials
    3.2 A product shall be created for multiple product orders
    3.3 A product shall be stored in multiple inventories
    3.4 A product shall be undergo multiple inspections
4. Customer
    4.1 A customer shall order multiple products
    4.2 A customer shall have at least one contact information
5. Inventory
    5.1 An inventory shall store multiple materials
    5.2 An inventory shall store multiple products
    5.3 An inventory shall be stored in multiple warehouses