

Business Requirements: Product Database Management System

Introduction:

The Product Database Management System (PDMS) project is a practical solution that aims to simplify how businesses manage their product-related data. It's designed to help companies keep track of product information, manage inventory, set prices, and use smart technology to predict future product demand. Additionally, the PDMS provides insights into which products are popular and which ones aren't, helping businesses make informed decisions. In essence, it's a tool that streamlines store operations and improves decision-making.

Database Rules:

1. Each table should have a primary key (PK) that ensures each record is uniquely identifiable.
2. Foreign key constraints should be enforced to maintain referential integrity between related tables.
3. The database should be organized in at least BCNF to minimize data redundancy and prevent anomalies.
4. Index columns that are frequently used in WHERE clauses or JOIN conditions to optimize query performance.
5. Configure cascade operations (e.g., cascade delete or update) in foreign key relationships to propagate changes in the parent entity to related child entities if necessary.
6. Implement constraints (e.g., check constraints) to enforce rules on data values to maintain data quality.

Business Rules:

1. Each product must have a unique ProductID.
2. The Category should be one of the predefined categories (e.g., electronics, groceries, clothing).
3. Inventory information, including InStockQuantity and ReorderLevel, must be maintained for each product.
4. InStockQuantity will represent the actual quantity of the product in stock.
5. ReorderLevel will indicate the threshold at which the system alerts for replenishment.
6. Every sales transaction should record a unique TransactionID and be associated with the corresponding product.
7. Customer reviews must include a unique ReviewID.
8. Customer ratings should be within a predefined rating scale (e.g., 1 to 5 stars).
9. ReviewText should contain valid feedback from customers.
10. The system should maintain a unique ForecastID for each forecast.
11. ConfidenceLevel indicates the reliability of the forecast.
12. The system will determine best-selling products based on sales quantity and revenue.
13. The system should analyze sales and inventory trends by store category.
14. The prices will be mentioned in USD.

Nouns:

1. Product
2. Inventory
3. Pricing
4. Demand Forecasting
5. Category
6. Transaction
7. Quantity
8. Revenue
9. Customer Reviews
10. Ratings

Verbs:

1. Manage
2. Analyze
3. Identify
4. Track
5. Update
6. View
7. Recommend
8. Include