Title: Product Inventory Management System

Description: Develop a simplified Product Inventory Management System database for a small retail business. The system should allow for basic inventory tracking and management. Below are the requirements and guidelines for the project:

Database Schema:

1. Create tables for products and categories.
2. Ensure appropriate relationships between tables (e.g., one-to-many).
3. Define proper data types and constraints.

Functionality:

1. Implement CRUD operations for products and categories.
2. Enable the system to add, update, and delete products.
3. Allow products to belong to one or more categories.
4. Implement basic search functionality to retrieve product information by name or category.
5. Include error handling in SQL statements.

Sample Data:

1. Populate the tables with sample data for testing purposes.
2. Include several products belonging to different categories.

Testing:

1. Write test queries to verify CRUD operations for products and categories.
2. Test search functionality to ensure accurate retrieval of product information.
3. Validate error handling in SQL statements.

Deliverables:

1. SQL scripts to create the database schema, tables, relationships, and stored procedures.
2. Sample data scripts to populate the tables.
3. Test scripts and reports documenting the test results.
4. Documentation detailing the database schema, table structures, and basic functionality.

Additional Guidelines:

1. Follow best practices for database design and development.
2. Use appropriate naming conventions for tables, columns, and stored procedures.
3. Document any assumptions or constraints in your design.
4. Optimize queries for performance where possible.
5. Ensure compatibility with SQL Server and provide setup instructions if necessary.