\*\*Report\*\*

\*\*Name:\*\* [Your Name]

\*\*Course Name:\*\* Database Management Systems

\*\*Description of Data:\*\*

The database is designed for an online store. It includes tables to store information about customers, products, orders, suppliers, and reviews.

- \*\*Customers\*\*: Stores information about customers, including their names, email addresses, phone numbers, and addresses.

- \*\*Products\*\*: Contains details about the products available in the store, such as product names, prices, stock levels, and categories.

- \*\*Orders\*\*: Stores information about customer orders, including the order date, total amount, and customer ID.

- \*\*OrderItems\*\*: Contains details about items within each order, such as the quantity, unit price, and product ID.

- \*\*Suppliers\*\*: Stores information about product suppliers, including supplier names, contact names, phone numbers, and email addresses.

- \*\*ProductSuppliers\*\*: Contains a many-to-many relationship between products and suppliers, indicating which suppliers provide which products.

- \*\*Reviews\*\*: Stores reviews submitted by customers for products, including the rating, review text, review date, product ID, and customer ID.

\*\*Description of Database Structure:\*\*

The database follows a relational model and is designed to adhere to the third normal form (3NF). Below is the structure of the database:

1. \*\*Customers\*\*:

- CustomerID (Primary Key)

- FirstName

- LastName

- Email

- PhoneNumber

- Address

2. \*\*Products\*\*:

- ProductID (Primary Key)

- ProductName

- CategoryID (Foreign Key)

- Price

- Stock

3. \*\*Orders\*\*:

- OrderID (Primary Key)

- CustomerID (Foreign Key)

- OrderDate

- TotalAmount

4. \*\*OrderItems\*\*:

- OrderItemID (Primary Key)

- OrderID (Foreign Key)

- ProductID (Foreign Key)

- Quantity

- UnitPrice

5. \*\*Suppliers\*\*:

- SupplierID (Primary Key)

- SupplierName

- ContactName

- PhoneNumber

- Email

6. \*\*ProductSuppliers\*\*:

- ProductID (Foreign Key)

- SupplierID (Foreign Key)

7. \*\*Reviews\*\*:

- ReviewID (Primary Key)

- ProductID (Foreign Key)

- CustomerID (Foreign Key)

- Rating

- ReviewText

- ReviewDate

\*\*Database Schema Diagram:\*\*

[Insert database schema diagram here]

\*\*Description of Scripts:\*\*

- The script includes SQL commands to create tables, indexes, constraints, roles, and users.

- It also includes scripts for creating procedures, triggers, and subqueries to manage database functionality.

- Additionally, there is a script for database backup and maintenance.

\*\*Description of Permission Gradation:\*\*

- Three roles are created: Admin, Manager, and User.

- Admin has full permissions on Customers, including SELECT, INSERT, UPDATE, and DELETE.

- Manager has permissions to perform SELECT, INSERT, and UPDATE operations on Orders.

- User has permission to SELECT data from the Products table.

\*\*Roles and Users:\*\*

- Admin: admin\_user

- Manager: manager\_user

- User: regular\_user

\*\*Conclusions:\*\*

The database design successfully organizes data for an online store, providing efficient storage and retrieval of information. Roles and permissions are implemented to ensure appropriate access control. Procedures, triggers, and subqueries enhance functionality and automation.

\*\*Future Extensions:\*\*

- Implement additional features such as discounts, promotions, and customer loyalty programs.

- Enhance reporting capabilities to analyze sales trends, customer behavior, and product performance.

- Integrate with external systems for inventory management, shipping, and payment processing.

\*\*Problems Encountered and Solved:\*\*

- Ensured proper normalization to prevent data redundancy and maintain data integrity.

- Addressed syntax errors in SQL scripts by carefully reviewing and correcting the code.

- Handled permission issues by granting the necessary privileges to users and roles.

Overall, the database implementation meets the requirements of an online store system and lays the foundation for future enhancements and scalability.