Project 2: Amazon Competitor Database

In this project, you will design, implement, and test a database for an Amazon competitor/clone. In your design, you will need to determine

a) necessary information to store (using second page as *suggestions*)
b) an E/R diagram to construct (using MS Visio or any similar *tool*)
c) business reports to produce (using at least four *views*)
d) business logic to incorporate into the design (using several *triggers and constraints*)
e) security levels to establish (using *scripts* for password assignments, roles and encryptions)
f) performance and efficiency improvements to apply (using at least four *stored procedures* and four *functions*)

g) regular business transactions (using at least four *transactions*)

In your implementation, you will need to

a) determine the tables, columns, primary keys, datatypes, nullabilities, and relationships.
b) normalize your design into its 3rd Normal Form.
c) address potential integrity and security issues.

In your testing, you will need to

a) populate your database with test data (about 10 rows in each table)
b) produce about five reports (please use also your views)
c) demonstrate its reliability through several complex scenarios
d) perform several transactions like customer purchasing goods from the company, company gets goods from the supplier, customers leave reviews for the supplier, customer perform returns, etc.

Please submit your typed report as a single file (.doc or .pdf) on Blackboard. Your report should include following sections:

1. [5] Cover page: a descriptive title, a short abstract, and your information
2. [50] Design: your introduction, design considerations and choices, and E/R diagrams
3. [10] Implementation: source codes with your comments, and screenshots of your design
4. [10] Testing: testcases and screenshots with your comments
5. [5] Conclusions: your project analysis, and your remarks on this project

All reports that satisfy all the following basic requirements will have a base score of 20 points. The maximum points deducted for noncompliance is indicated in parentheses.

1. General report guidelines followed, i.e. sections labeled, pages numbered [10]
2. Report adheres to basic standards of grammar and spelling [10]

Business Problem:

Your job is to create a database for an Amazon competitor. This database is to contain the following suggested information but more shall be added as you deem necessary. Please note that each order has a single shipping address, and can contain multiple products from one or more warehouses. Multiple warehouses may have the same product and the originating warehouse for a shipment is chosen based on the shipping cost, which can be determined by the zip codes of the originating warehouse and the shipping address. Suppliers may also have multiple products in various warehouses.

Customers:
- Name
- Username
- Email
- Phone numbers (home, cell, business)
- Address book (several shipping and billing addresses)
    - City
    - State
    - Street
- Orders/Returns Information
- Wishlist
- Reviews
    - Date when the review is left
    - Which Order
    - Score
    - Text
    - Which product

Products:
- ProductID
- ProductName
- Description
- Price
- Customer ratings:
    - Text
    - Score
    - Date when created
    - Customer who left it

Suppliers:
- SupplierID
- Name
- Address
- Phone
- EmailAddress
- Products information:
    - ProductID
    - Number of Products Available

Orders/Returns:
- OrderNumber
- Status (Ready to go, Shipped, Delivered, Return)
- OrderDate
- OrderItems:
    - ProductID
    - ProductName
    - Quantity
    - UnitPrice
- TotalPrice
- Shipping Service (USPS, FedEx, ...)
- Shipping Address
    - City
    - State
    - Street
- Shipping fare (depends on the address between the warehouse and the shipping address)
- Expected Shipping date
- Actual Shipping date
- Shipping Information

Warehouses:
- WarehouseID
- Address
    - City
    - State
    - Street
- Stored Products:
    - ProductID
    - SupplierID
    - ProductName
    - Number in stock
    - Number on the way
    - Number in return