Task 4 – Formative Assessment

Unit Code:

DWIN309

Unit Title:

Developing Web Information Systems

Student ID:

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Date:

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Introduction:

Camden Highlands is a well-known dairy farm that produces a variety of dairy products, including cheese, milk, and butter. The farm currently uses Microsoft Office to record customer orders, inventory information, shipment, payment, and delivery information. However, the farm is looking to shift toward a web information system to provide and manage a dynamic ordering, tracking, and inventory management system.

The current system is not efficient or user-friendly. It is difficult for customers to place orders, and it is difficult for the farm to track inventory and shipments. The farm is also losing money due to inaccurate pricing.

The new system will be designed to address these problems. It will be easy for customers to use, and it will provide the farm with real-time information on inventory, shipments, and orders. The system will also be able to automatically generate quotes for customers based on the volume of their order.

The new system will save the farm time and money, and it will improve customer satisfaction. The farm is confident that the new system will be a success.

Functional Requirements:

Functional requirements based on the provided information:

Deposit Collection:
a. The system should allow deposits to be collected from customers when placing an order.
b. The deposit amount can vary based on customer type (new or frequent).
c. The system should apply the deposit to the order and allow it to be forfeited if the customer cancels the order.
d. For orders exceeding 1000 Kg/Ltr, the customer should be required to pay half of the balance amount (minus any deposit).

Product Ordering:
a. The system should check the inventory database to determine if a requested product is in stock.
b. A discount rate should be applied based on the order volume.
c. Customer contact information (name, phone number, and shipping address), delivery date, and payment information should be recorded for each order.

d. An order number should be generated and provided to the customer for reference during cancellation or order updates.
e. The system should allow customers to cancel an order using the provided order number.

Payment Processing:
a. The system should record payment details such as the payment date, payment amount, and any additional comments.

Website Design:
a. The website should be informative, attractive, and easily navigable.
b. The web pages should serve as a source of information for both current and future customers.
c. The website should have separate components for security login, inventory management, and the dairy farm's ordering process and history.

Security Login:
a. The system should include a security login feature with username and password authentication.
b. Access to other parts of the application should only be granted upon successful login.

Inventory Management:
a. The system should support adding, editing, and deleting product information.
b. Two levels of system permissions should be implemented: Level 1 for system administrators with access to managing system support data and Camden Dairy Farm information, and Level 2 for users with access to Camden Dairy Farm data only.

Dairy Farm Ordering Process and History:
a. The system should allow tracking of customer orders, customer payments, and order status.
b. Any authenticated user should be able to add, edit, or delete data related to customer orders, customer payments, and order status.

Non Functional Requirements

Non-functional requirements based on the provided information:

Usability:
a. The website should have a user-friendly interface and intuitive navigation to enhance user experience.

b. The ordering process should be simple and streamlined to minimize user effort.
c. The website should be accessible to users with disabilities, following relevant accessibility guidelines.

Performance:
a. The system should provide quick response times, ensuring minimal delays in loading pages and processing requests.
b. The website should be able to handle multiple concurrent users without significant performance degradation.
c. Inventory management operations, such as adding, editing, and deleting information, should be efficient and responsive.

Security:
a. The login mechanism should provide secure authentication and prevent unauthorized access.
b. User data, including personal and payment information, should be stored securely and protected from unauthorized access or breaches.
c. The system should have appropriate access controls and user permissions to prevent unauthorized modifications or deletions of data.
d. Any sensitive information transmitted over the network should be encrypted to maintain confidentiality.

Reliability:
a. The system should be highly reliable, minimizing downtime and ensuring continuous availability to users.
b. Data integrity should be maintained, preventing loss or corruption of customer orders, payments, or inventory information.
c. The system should have backup and recovery mechanisms in place to restore data in case of failures or disasters.

Scalability:
a. The system should be scalable to accommodate a growing number of users, orders, and inventory items without significant performance degradation.
b. The database should be designed to handle increasing data volume over time without impacting system performance.

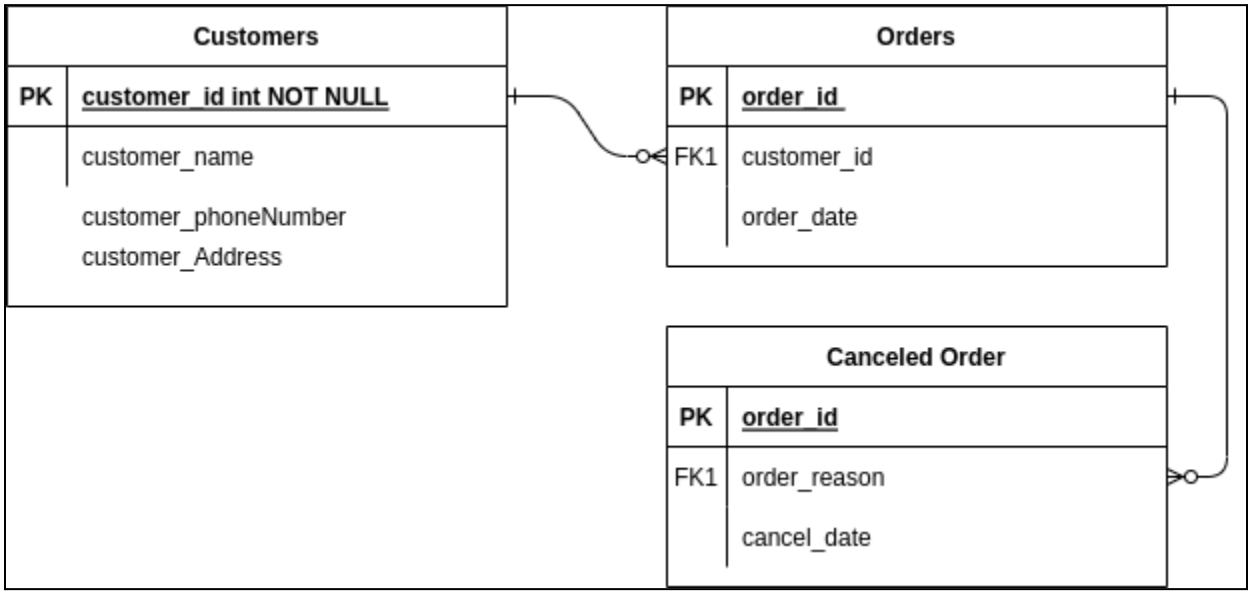
Maintainability:
a. The system should be designed with modular and well-documented code to facilitate future maintenance and enhancements.

b. Changes to product information, pricing, or discounts should be easily configurable without requiring extensive code modifications.

Compatibility:
a. The website should be compatible with various web browsers and devices to ensure broad accessibility for users.
b. Integration with external systems or APIs, such as payment gateways or shipping providers, should be supported as required.

Compliance:
a. The system should adhere to relevant data protection and privacy regulations, such as GDPR or CCPA, to safeguard customer data.
b. The website should comply with industry standards and best practices for web development and security.

Entity Relationship Diagram:



Website Structure:

- Plan the organization of pages and navigation menus to ensure intuitive user experience.
- Define the hierarchy of pages and their relationships.
- Consider implementing a consistent header, footer, and sidebar for easier navigation.

Database Design:

- Entities such as Customer, Product, Order, User, and Discount will be included in the database design.
- Attributes for each entity will be defined, including data types (e.g., numeric, text, date) and constraints (e.g., maximum length, uniqueness).
- Relationships between entities will be established using primary and foreign keys.
- Normalization techniques will be applied to minimize data redundancy and ensure data integrity.

System Design and Implementation:

The website was designed using a combination of HTML, CSS, and JavaScript for the front-end, while the back-end was developed using a server-side language PHP, along with a relational database management system MySQL for data storage. The design followed a client-server architecture, where the client interacts with the website's interface and the server handles the processing and storage of data.

Testing and Deployment:

- Conduct thorough testing of the website functionality, including both positive and negative test cases.
- Test the website across different browsers, devices, and screen sizes.
- Ensure secure data transmission and storage.
- Document the installation and usage instructions for deploying the website on a local machine or a server.

Assumptions and Additional Features:

- It is assumed that the website will be accessible via standard web browsers on desktop and mobile devices.
- The website will support multiple user accounts with different levels of access permissions.
- The inventory management component will include functionality for adding, editing, and deleting product information.
- Payment processing will be integrated with a third-party payment gateway for secure transactions.
- User login and password authentication will be implemented to ensure secure access to the website's features.