Online Bookstore Management System

Course Title: CS502052 – Enterprise System Development Concepts (ESDC)

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1. Topic Selection and Initial Research

- **Project Topic:** *Online Bookstore Management System*
- **Project Proposal:** The goal of this project is to develop an Online Bookstore Management System, which allows users to browse, purchase, and manage books online. The system will also include an inventory management module for administrators to manage the stock of books. The core functions will focus on the purchasing process, inventory management, and order tracking.
- **Scope:** The project will involve creating a system that supports user authentication, a product catalog, a shopping cart, order processing, and basic inventory management. The system will be designed using the SDLC model, with a focus on the analysis, design, and implementation stages.

2. Analysis and Design

Use-case Diagram: The use-case diagram will include the following actors and use cases:

Actors	Customer
	Administrator
Use Cases	Browse books
	Add books to cart
	Purchase books
	View order history
	Manage inventory (Administrator only)
	Update book information (Administrator only)

Data Flow Diagram (DFD):

Processes	Search books
	Add to cart
	Process payment
	Manage inventory

Data Stores	Book catalog
	User accounts
	Orders
	Inventory
External Entities	Payment gateway
	Shipping service

Entity-Relationship Diagram (ERD):

Entities	User (attributes: user_id, name, email, password)
	Book (attributes: book_id, title, author, price, stock_quantity)
	Order (attributes: order_id, user_id, order_date, status)
	OrderItem (attributes: order_item_id, order_id, book_id, quantity, price)
Relationships	A user can place multiple orders.
	An order can have multiple order items.
	A book can appear in multiple order items.

Other UML Diagrams:

- Class Diagram: Shows classes such as *User*, *Book*, *Order*, *OrderItem*, and their relationships.
- Sequence Diagram: Demonstrates the process flow for placing an order, from browsing books to completing the purchase.

3. Implementation

Core Functions to Implement:

- Purchasing Process:
    - Browse books: Allows users to search and view available books.
    - Shopping cart: Users can add books to the cart and proceed to checkout.
    - Order processing: Users can enter payment information and complete the purchase.
- Inventory Management (Administrator):
    - Manage inventory: Administrators can add new books, update stock levels, and remove books from the catalog.
- Order Tracking:

    - View order history: Users can view their past orders and check the status of current orders.

Mandatory Basic Functions:

- User Authentication:
    - Users must register, log in, and log out to access the system.
    - Password recovery and profile management are also included.
- Error Handling:
    - The system should gracefully handle errors, such as out-of-stock books or payment failures.
- Basic Navigation:
    - A user-friendly interface with clear navigation between the catalog, cart, order history, and account management.

Deliverables:

- Functional Demo Program: A working application that demonstrates the core functionalities listed above, with a focus on the user experience and system reliability.

4. Project Deliverables

Detailed Report (Minimum 40 Pages):

- *Introduction:* Overview of the Online Bookstore Management System, objectives, and relevance.
- *Analysis and Design:* Includes the use-case diagram, DFD, ERD, and other UML diagrams. Explains the rationale behind design decisions.
- *Implementation:* Describes the technologies used, code structure, and how the core functions were implemented. Discusses any challenges encountered and how they were resolved.
- *Conclusion:* Summarizes the project, its outcomes, and potential future enhancements.
- *Appendix:* Includes source code snippets, database schema, and any additional documentation.

Functional Demo Program:

- The completed Online Bookstore Management System, with the implemented core functions and mandatory basic features.