**High-Level Design Document (HLD) - E-Commerce Website Application**

**Overview:**

The e-commerce website application facilitates online buying and selling activities through three main user roles: Admin, Seller, and Buyer. Each role has specific functionalities tailored to their needs within the platform.

**Modules and Functionalities:**

**1.Authentication and Authorization**:

* Manages user registration, login, and access control based on user roles.

**2.Admin Module:**

* Admin Dashboard:
* Provides access to various functionalities:

2.1. View all selling products details.

2.2. View all buyer's details.

2.3. View all seller's details.

2.4. View total production amount from sellers.

2.5. View most selling product.

2.6. Access shipping/tracking information.

2.7. Manage reviews or customer care messages.

2.8. Logout.

**3.Seller Module:**

* Seller Dashboard:
* Allows sellers to manage their products and orders:

3.1. Add, delete, update products and their stock.

3.2. View orders list with two statuses: PENDING, ORDER SENT.

3.3. View total revenue from payments.

3.4. Manage profile details.

3.5. Logout.

**4.Buyer Module:**

* Buyer Dashboard:
* Provides functionalities for buyers:

4.1. View and update profile details.

4.2. View orders history.

4.3. Track order status.

4.4. Manage shopping cart.

4.5. Logout.

* Customer Support Module:
* Home Page:

Accessible to all users for customer support.

* Search Bar:

Allows users to search for products within the catalog.

**Additional Functionalities:**

* Product Management:

Allows sellers to add, delete, and update product details including stock availability and offers.

* Order Management:

Tracks order status (PENDING, ORDER SENT) and provides order history for buyers.

* Payment Management:

Calculates total revenue from payments made by buyers.

* Profile Management:

Allows users to manage their profile information such as email, phone number, and seller ID.

* Review and Customer Care:

Facilitates interaction between users by managing reviews and customer care messages.

* Catalog and Search:

Provides a catalog of products for buyers to browse and search using a search bar.

**Architecture Considerations**:

* Database Schema:

Design a database schema to store user information, product details, orders, payments, etc.

* Authentication Security:

Implement secure authentication mechanisms to protect user data.

* Scalability:

Design the system to handle many users, products, and transactions efficiently.

* Performance Optimization:

Optimize system performance to ensure fast response times and smooth user experience.

**Conclusion:**

This high-level design outlines the architecture and key functionalities of the e-commerce website application, catering to the needs of administrators, sellers, and buyers while ensuring security, scalability, and performance.