



North South University
Department of Electrical & Computer Engineering
Project Report

Course Code: CSE 327

Course Title: Software Engineering

Course Faculty: Mr. AKM Iqtidar Newaz [IqN]

Project Name:

**Digital Tech Hub (Hardware and
Electronics Selling Website system.)**

Date of Submission: 08/11/2025

Section: 06

Group Number: 04

Submitted To: Mr. AKM Iqtidar Newaz [IqN]

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Project: Digital Tech Hub

The **Digital Tech Hub** project is focused on the **introduction of a PHP-based Hardware and Electronics Selling Website system**. This system is designed to serve as a **totally dynamic platform** for managing and selling hardware and electronic products online.

Brief Description of Project Goals and Achievement:

The primary goal of the Digital Tech Hub system is to create a comprehensive, robust, and dynamic e-commerce solution for the sale of hardware and electronic goods. The system will be built using **HTML, CSS, and PHP**, utilizing **XAMPP and MySQL** as the backend infrastructure.

The system aims to achieve the following:

1. **Establish a Dynamic Online Storefront:** Provide a visually appealing and fully functional website where products can be displayed, categorized, searched, and purchased. The dynamic nature of the system ensures that it can be easily adapted for use by a large hardware and electronics production company or by small/large retail stores.
2. **Facilitate E-commerce Operations:** Implement essential e-commerce functionalities, including secure user authentication (login/logout), profile management, a shopping cart feature, a comprehensive checkout process, and the ability to view order history and statuses. The checkout process will support various **Online Payment** options (e.g., Bkash, Nagad).
3. **Provide Comprehensive Administrative Control:** Offer a dedicated control panel for an Admin (Owner) to manage the entire operation. This includes managing the product inventory (add/edit/delete items), categorizing products (add/edit/delete categories), managing registered users (viewing and blocking users), and handling all aspects of order fulfillment, including updating order statuses and generating **official bills**.

In essence, the project will deliver a complete, two-sided marketplace (User and Admin) that digitizes the sales, inventory management, and customer relations processes for hardware and electronics businesses.

❖ End Users of the Project

The Digital Tech Hub system is built around **two primary types of users**:

1. User (Customer):

- **Description:** This is the retail customer who interacts with the public-facing e-commerce storefront.
- **Interaction:** They are responsible for browsing products, searching for specific items, managing their profile, purchasing items via the cart and checkout process, and tracking their orders.

2. Admin (Owner):

- **Description:** This is the business owner or management staff responsible for operating and maintaining the online store.
- **Interaction:** They have privileged access to the backend system to manage inventory (items and categories), oversee user accounts (viewing and blocking), fulfill orders by updating statuses, and generating bills.

❖ Functional Requirements/Specifications

Functional requirements define **what the system must do**.

User Functionalities (Customer-Facing)

- **FRU.0:** The system shall allow users to **register and log in** using credentials.
- **FRU.1:** The system shall allow users to **view all Hardware and Electronics** items.
- **FRU.2:** The system shall allow users to **view all product categories**.
- **FRU.3:** The system shall allow users to **view products filtered by category**.
- **FRU.4:** The system shall support a **search function** to find products.
- **FRU.5:** The system shall allow users to **add items to a shopping cart** and **view the cart contents**.
- **FRU.6:** The system shall facilitate a **checkout process**.
- **FRU.7:** The system shall offer **online payment methods** (e.g., Bkash, Nagad).
- **FRU.8:** The system shall allow users to **view their order history** and the **current status of each order**.

- **FRU.9:** The system shall provide **Profile Management** allowing users to **edit their profile/address** and **change their password**.
- **FRU.10:** The system shall allow users to **log out**.

❖ **Admin Functionalities (Owner-Facing)**

- **FRA.0:** The system shall allow the Admin to **log in**.
- **FRA.1:** The system shall allow the Admin to **Add, Edit, and Delete Hardware and Electronics categories**.
- **FRA.2:** The system shall allow the Admin to **Add, Edit, and Delete Hardware and Electronics items** (inventory management).
- **FRA.3:** The system shall allow the Admin to **view a list of all registered users**.
- **FRA.4:** The system shall provide the ability for the Admin to **block specific users**.
- **FRA.5:** The system shall allow the Admin to **view all submitted orders**.
- **FRA.6:** The system shall allow the Admin to **update the status of an order**.
- **FRA.7:** The system shall enable the Admin to **generate customer bills in PDF format**.
- **FRA.8:** The system shall allow the Admin to **log out**.

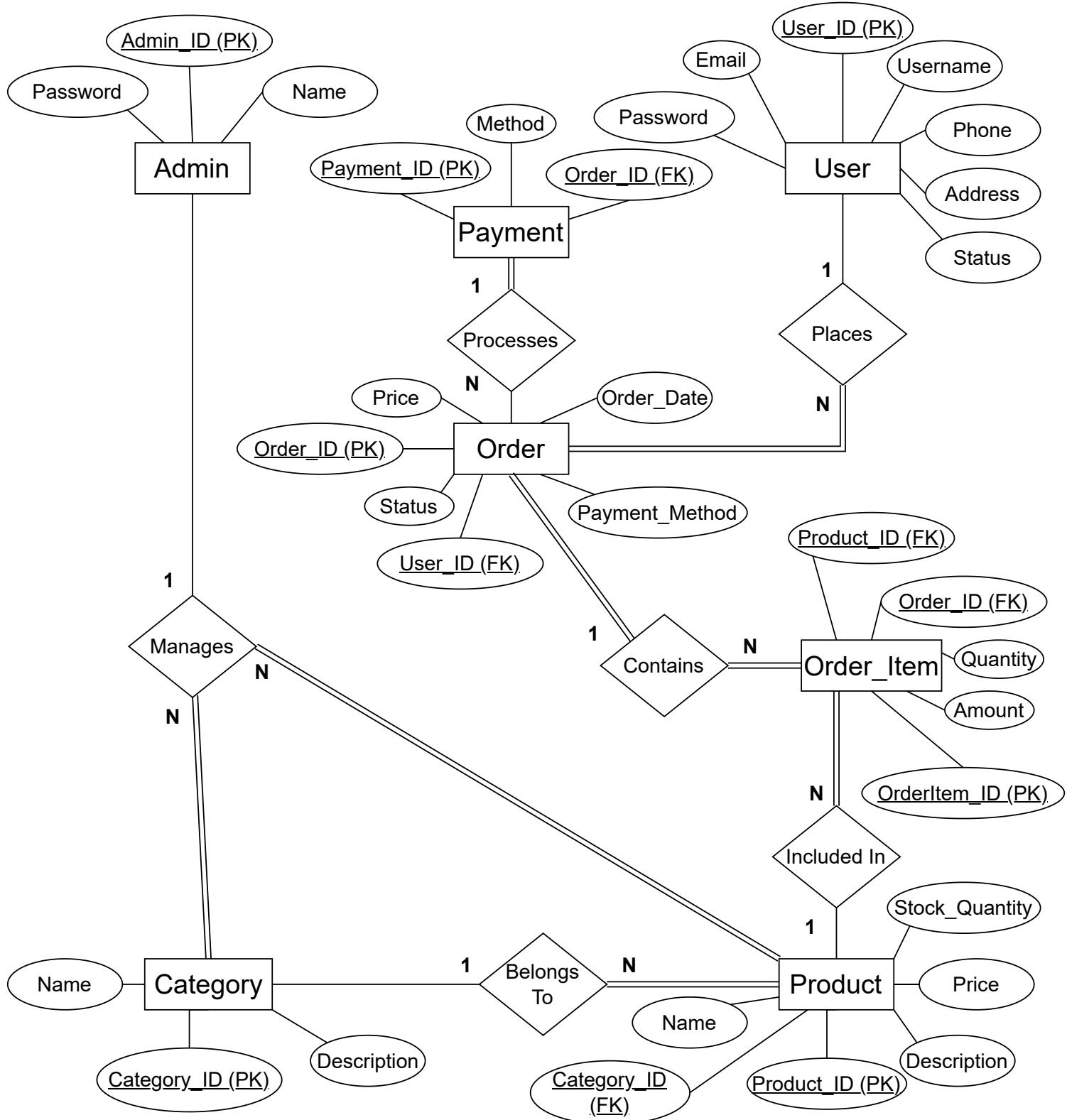
Non-Functional Requirements/Specifications

Non-functional requirements define **how the system operates** and its quality attributes.

Category	Requirement ID	Specification
Performance	NFR-P1	The website's main pages (homepage, category pages) shall load within 10 seconds under normal load conditions.
Security	NFR-S1	All user and admin login credentials shall be hashed (e.g., using PHP's password hashing functions) and stored securely in the MySQL database.
Security	NFR-S2	The system shall employ input validation on all forms (login, registration, profile update, product entry) to prevent SQL Injection and XSS attacks.
Usability	NFR-U1	The User interface shall be intuitive and easy to navigate , allowing first-time users to complete a purchase within 5 minutes of browsing.
Usability	NFR-U2	The system shall be responsive , ensuring the interface is accessible and functional across various devices (desktop, Laptop , tablet).
Reliability	NFR-R1	The database (MySQL) must ensure data integrity for all critical transactions (e.g., order placement, inventory updates).
Maintainability	NFR-M1	The code base (PHP, HTML, CSS) shall be well-documented and follow standard coding practices to facilitate future updates and bug fixes.

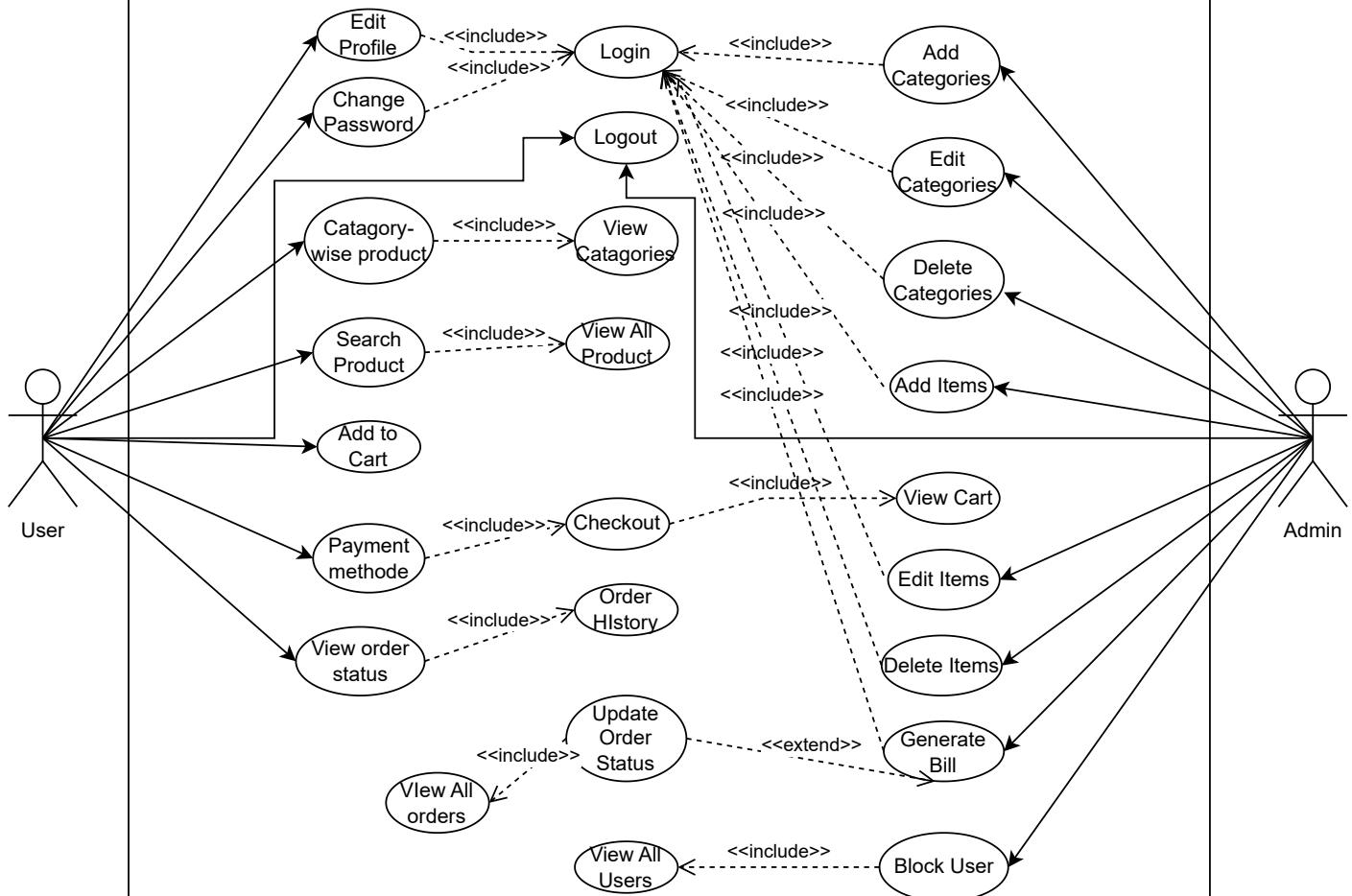
Would you like me to help you start outlining the structure for your Entity-Relationship Diagram (ERD) based on these requirements?

Entity relationship diagram (ER)

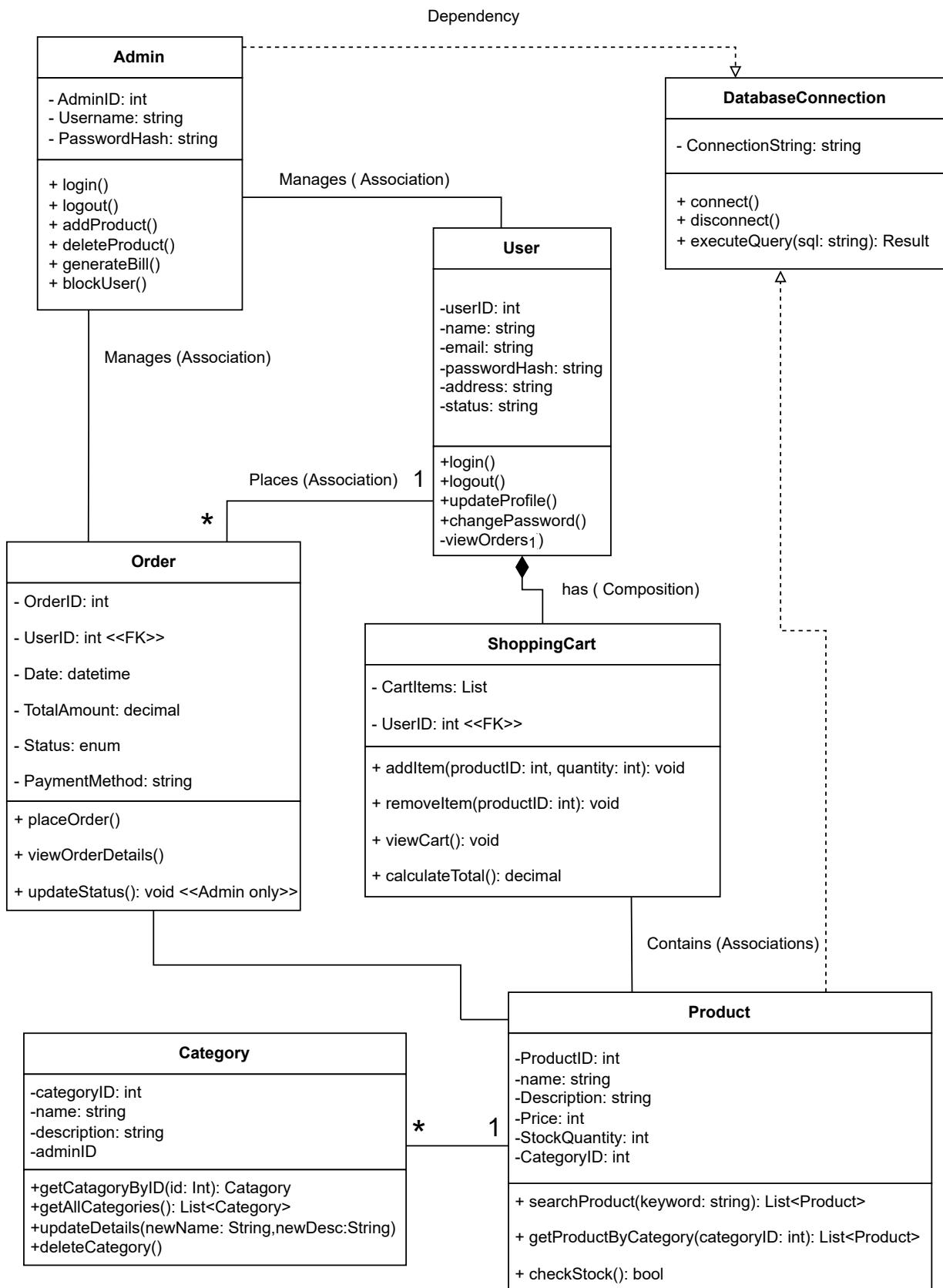


Use-case diagram

Digital Tech Hub



Class diagram



Sequence diagram

