**Table Design**

**1. Users Table**

**Purpose:** Stores information about users.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique user identifier |
| email | VARCHAR(255) | UNIQUE, NOT NULL | User email address |
| password | VARCHAR(255) | NOT NULL | Encrypted user password |
| first\_name | VARCHAR(100) | NULL | User's first name |
| last\_name | VARCHAR(100) | NULL | User's last name |

**2. Categories Table**

**Purpose:** Stores product categories.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique category identifier |
| name | VARCHAR(255) | NOT NULL | Category name |

**3. Products Table**

**Purpose:** Stores product details.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique product identifier |
| name | VARCHAR(255) | NOT NULL | Product name |
| description | TEXT | NULL | Product description |
| price | DECIMAL(10, 2) | NOT NULL | Product price |
| stock | INT | NOT NULL | Product stock level |
| category\_id | INT | NULL, FOREIGN KEY REFERENCES Categories(id) | Category of the product |
| image\_url | VARCHAR(255) | NULL | URL of product image |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP | Product creation timestamp |
| updated\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP | Last update timestamp |

**4. Orders Table**

**Purpose:** Stores order information.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique order identifier |
| user\_id | INT | FOREIGN KEY REFERENCES Users(id) | ID of the user who placed the order |
| total\_price | DECIMAL(10, 2) | NOT NULL | Total price of the order |
| status | ENUM('pending', 'processing', 'completed', 'canceled') | DEFAULT 'pending' | Order status |
| shipping\_address | VARCHAR(255) | NULL | Shipping address |
| billing\_address | VARCHAR(255) | NULL | Billing address |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP | Order creation timestamp |

**5. OrderItems Table**

**Purpose:** Stores items within an order.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique order item identifier |
| order\_id | INT | FOREIGN KEY REFERENCES Orders(id) | ID of the associated order |
| product\_id | INT | FOREIGN KEY REFERENCES Products(id) | ID of the product |
| quantity | INT | NOT NULL | Quantity of the product |
| price | DECIMAL(10, 2) | NOT NULL | Price of the product |

**6. Reviews Table**

**Purpose:** Stores product reviews.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique review identifier |
| product\_id | INT | FOREIGN KEY REFERENCES Products(id) | ID of the reviewed product |
| user\_id | INT | FOREIGN KEY REFERENCES Users(id) | ID of the user who wrote the review |
| rating | INT | CHECK (rating >= 1 AND rating <= 5) | Rating out of 5 |
| review\_text | TEXT | NULL | Review content |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP | Review creation timestamp |

**7. Discounts Table**

**Purpose:** Stores discount codes and coupons.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique discount identifier |
| code | VARCHAR(50) | UNIQUE, NOT NULL | Discount code |
| discount\_type | ENUM('percentage', 'fixed\_amount') | NOT NULL | Type of discount |
| value | DECIMAL(10, 2) | NOT NULL | Discount value |
| expiry\_date | DATE | NULL | Expiry date of the discount |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP | Discount creation timestamp |

**8. Carts Table**

**Purpose:** Stores shopping carts for users.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique cart identifier |
| user\_id | INT | FOREIGN KEY REFERENCES Users(id) | ID of the user |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP | Cart creation timestamp |

**9. CartItems Table**

**Purpose:** Stores items within a shopping cart.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique cart item identifier |
| cart\_id | INT | FOREIGN KEY REFERENCES Carts(id) | ID of the associated cart |
| product\_id | INT | FOREIGN KEY REFERENCES Products(id) | ID of the product |
| quantity | INT | NOT NULL | Quantity of the product |

**Admin Table**

**Purpose:** Stores additional information specific to admin users.

| **Column Name** | **Data Type** | **Constraints** | **Description** |
| --- | --- | --- | --- |
| id | INT | PRIMARY KEY, AUTO\_INCREMENT | Unique admin identifier |
| user\_id | INT | FOREIGN KEY REFERENCES Users(id) | ID of the user in the Users table |
| role | ENUM('superadmin', 'manager', 'support') | NOT NULL | Admin role, e.g., Super Admin, Manager, Support |
| permissions | JSON | NULL | JSON field to store permissions for specific actions |
| created\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP | Admin creation timestamp |
| updated\_at | TIMESTAMP | DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP | Last update timestamp |