

# ECOMMERCE DATABASE DESIGN (B2C)

## 1. Categories

**Description:** This table contains information about the main categories of products in the store.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
  - **category\_name:** VARCHAR(255) NOT NULL
  - **description:** TEXT
  - **url\_slug:** VARCHAR(255) UNIQUE
  - **status:** TINYINT(1) DEFAULT 1
  - **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
  - **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
  - **deleted\_at:** DATETIME DEFAULT NULL
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## 2. Sub\_Categories

**Description:** Stores details of subcategories linked to categories.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
  - **parent\_id:** INTEGER DEFAULT NULL
  - **name:** VARCHAR(255) NOT NULL
  - **description:** TEXT
  - **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
  - **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
  - **deleted\_at:** DATETIME DEFAULT NULL
  - **FOREIGN KEY (parent\_id) REFERENCES categories(id) ON DELETE SET NULL**
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## 3. Brands

**Description:** Holds details of product brands available in the store.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **brand\_name:** VARCHAR(255) NOT NULL UNIQUE
- **logo:** VARCHAR(255) DEFAULT NULL
- **description:** TEXT DEFAULT NULL
- **website:** VARCHAR(255) DEFAULT NULL
- **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
- **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
- **deleted\_at:** DATETIME DEFAULT NULL

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## 4. Products

**Description:** Stores details of all products available in the store.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **product\_name:** VARCHAR(255) NOT NULL
- **url\_slug:** VARCHAR(255) UNIQUE
- **category\_id:** INTEGER NOT NULL
- **sub\_category\_id:** INTEGER DEFAULT NULL
- **brand\_id:** INTEGER DEFAULT NULL
- **description:** TEXT
- **summary:** TEXT
- **price:** DECIMAL(10, 2) NOT NULL
- **stock\_quantity:** INTEGER DEFAULT 0
- **weight:** DECIMAL(10, 2) DEFAULT NULL
- **dimensions:** VARCHAR(100) DEFAULT NULL
- **is\_active:** TINYINT(1) DEFAULT 1
- **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
- **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
- **deleted\_at:** DATETIME DEFAULT NULL
- **FOREIGN KEY (category\_id)** REFERENCES categories(id) ON DELETE CASCADE
- **FOREIGN KEY (sub\_category\_id)** REFERENCES sub\_categories(id) ON DELETE SET NULL
- **FOREIGN KEY (brand\_id)** REFERENCES brands(id) ON DELETE SET NULL

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## 5. Product\_Attributes

**Description:** Defines attributes for products, such as size, color, and material.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **name:** VARCHAR(100) NOT NULL
- **value:** VARCHAR(255) NOT NULL
- **description:** TEXT DEFAULT NULL
- **is\_filterable:** TINYINT(1) DEFAULT 0

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## 6. Product\_SKUs

**Description:** Stores stock-keeping unit (SKU) information for products, including variants.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
  - **product\_id:** INTEGER NOT NULL
  - **size\_attribute\_id:** VARCHAR(50)
  - **color\_attribute\_id:** VARCHAR(50)
  - **material:** VARCHAR(100) DEFAULT NULL
  - **stock\_quantity:** INTEGER DEFAULT 0
  - **weight:** DECIMAL(10, 2) DEFAULT NULL
  - **SKU:** VARCHAR(255)
  - **price:** DECIMAL(10, 2) NOT NULL
  - **is\_active:** TINYINT(1) DEFAULT 1
  - **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
  - **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
  - **deleted\_at:** DATETIME DEFAULT NULL
  - **FOREIGN KEY (product\_id)** REFERENCES products(id) ON DELETE CASCADE
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## 7. Offers

**Description:** Contains promotional offers applicable to products.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **product\_id:** INTEGER NOT NULL
- **discount\_percentage:** DECIMAL(10,2)
- **color\_attribute\_id:** VARCHAR(50)
- **start\_date:** DATETIME DEFAULT CURRENT\_TIMESTAMP
- **end\_date:** DATETIME DEFAULT CURRENT\_TIMESTAMP
- **conditions:** JSON

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## 8. Users

This table stores the details of all users registered in the system.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **avatar**: VARCHAR(255) DEFAULT NULL
- **first\_name**: VARCHAR(100) NOT NULL
- **last\_name**: VARCHAR(100) NOT NULL
- **user\_name**: VARCHAR(100) NOT NULL
- **email**: VARCHAR(255) UNIQUE NOT NULL
- **password**: VARCHAR(255) NOT NULL
- **phone\_number**: VARCHAR(15) UNIQUE DEFAULT NULL
- **birth\_date**: DATE DEFAULT NULL
- **age**: INTEGER NOT NULL
- **preferences**: JSON DEFAULT NULL
- **loyalty\_points**: INTEGER DEFAULT 0
- **subscription\_status**: TINYINT
- **account\_created\_date**: DATETIME DEFAULT CURRENT\_TIMESTAMP
- **last\_login\_date**: DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP

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## 9. User\_Addresses

This table manages addresses associated with users for shipping or billing purposes.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **user\_id**: INTEGER NOT NULL
- **title**: VARCHAR(50) DEFAULT NULL
- **address\_line\_1**: VARCHAR(255) NOT NULL
- **address\_line\_2**: VARCHAR(255) DEFAULT NULL
- **country**: VARCHAR(100) NOT NULL
- **state**: VARCHAR(100) NOT NULL
- **city**: VARCHAR(100) NOT NULL
- **postal\_code**: VARCHAR(20) NOT NULL
- **landmark**: VARCHAR(255) DEFAULT NULL
- **created\_at**: DATETIME DEFAULT CURRENT\_TIMESTAMP
- **updated\_at**: DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
- FOREIGN KEY (**user\_id**) REFERENCES **users(id)** ON DELETE CASCADE
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## 10. Cart

This table manages users' shopping carts, tracking the total items and price of products added.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **user\_id:** INTEGER NOT NULL
- **total\_items:** INTEGER DEFAULT 0
- **total\_price:** DECIMAL(10, 2) DEFAULT 0.00
- **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
- **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
- FOREIGN KEY (user\_id) REFERENCES customers(id) ON DELETE CASCADE

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## 11. Cart\_Items

This table tracks the items added to a cart, including their quantities and prices.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **cart\_id:** INTEGER NOT NULL
- **product\_id:** INTEGER NOT NULL
- **product\_sku\_id:** INTEGER DEFAULT NULL
- **quantity:** INTEGER NOT NULL
- **unit\_price:** DECIMAL(10, 2) NOT NULL
- **total\_price:** DECIMAL(10, 2) NOT NULL (calculated as unit\_price \* quantity)
- **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
- **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
- FOREIGN KEY (cart\_id) REFERENCES cart(id) ON DELETE CASCADE
- FOREIGN KEY (product\_id) REFERENCES products(id) ON DELETE CASCADE

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## 12. Orders

This table records details of orders placed by users.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **user\_id**: INTEGER NOT NULL
- **total\_amount**: DECIMAL(10, 2) NOT NULL
- **discount\_amount**: DECIMAL(10, 2) DEFAULT 0.00
- **shipping\_amount**: DECIMAL(10, 2) DEFAULT 0.00
- **net\_amount**: DECIMAL(10, 2) NOT NULL
- **status**: ENUM('Pending', 'Processing', 'Shipped', 'Delivered', 'Cancelled', 'Refunded') DEFAULT 'Pending'
- **order\_date**: DATETIME DEFAULT CURRENT\_TIMESTAMP
- **shipped\_date**: DATETIME DEFAULT NULL
- **delivery\_date**: DATETIME DEFAULT NULL
- FOREIGN KEY (**user\_id**) REFERENCES **users(id)** ON DELETE CASCADE

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## 13. Order\_Items

This table tracks the items included in each order.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **order\_id**: INTEGER NOT NULL
- **product\_id**: INTEGER NOT NULL
- **product\_sku\_id**: INTEGER DEFAULT NULL
- **quantity**: INTEGER NOT NULL
- **unit\_price**: DECIMAL(10, 2) NOT NULL
- **total\_price**: DECIMAL(10, 2) NOT NULL
- FOREIGN KEY (**order\_id**) REFERENCES **orders(id)** ON DELETE CASCADE
- FOREIGN KEY (**product\_id**) REFERENCES **products(id)** ON DELETE CASCADE
- FOREIGN KEY (**product\_sku\_id**) REFERENCES **product\_variants(id)** ON DELETE CASCADE

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## 14. Payments

This table contains information about payments made for orders.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
  - **order\_id**: INTEGER NOT NULL
  - **transaction\_id**: VARCHAR(255) UNIQUE DEFAULT NULL
  - **provider**: VARCHAR(100) NOT NULL
  - **status**: ENUM('Pending', 'Completed', 'Failed', 'Refunded') DEFAULT 'Pending'
  - **amount**: DECIMAL(10, 2) NOT NULL
  - **payment\_date**: DATETIME DEFAULT CURRENT\_TIMESTAMP
  - FOREIGN KEY (**order\_id**) REFERENCES **orders(id)** ON DELETE CASCADE
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## 15. Reviews

This table stores reviews provided by users for products.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **user\_id**: INTEGER NOT NULL
- **product\_id**: INTEGER NOT NULL
- **rating**: TINYINT(1) NOT NULL
- **review**: TEXT DEFAULT NULL
- **status**: TINYINT(1) DEFAULT 1
- **created\_at**: DATETIME DEFAULT CURRENT\_TIMESTAMP
- **updated\_at**: DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
- FOREIGN KEY (**user\_id**) REFERENCES **users(id)** ON DELETE CASCADE
- FOREIGN KEY (**product\_id**) REFERENCES **products(id)** ON DELETE CASCADE

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## 16. Shipping

This table manages the shipping details of orders.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **order\_id**: INTEGER NOT NULL
- **courier\_service**: VARCHAR(255) DEFAULT NULL
- **address\_id**: INTEGER NOT NULL
- **full\_address**: VARCHAR(255) DEFAULT NULL
- **state** : VARCHAR(255) DEFAULT NULL
- **city**: VARCHAR(255) DEFAULT NULL
- **zip\_code**: VARCHAR(255) DEFAULT NULL
- **phone** : VARCHAR(255) DEFAULT NULL
- **tracking\_number**: VARCHAR(255) DEFAULT NULL
- **shipping\_provider**: VARCHAR(255) DEFAULT NULL
- **estimated\_delivery\_date**: DATE DEFAULT NULL
- **actual\_delivery\_date**: DATE DEFAULT NULL
- **shipment\_status**: ENUM('Pending', 'In Transit', 'Delivered', 'Cancelled') DEFAULT 'Pending'
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- FOREIGN KEY (**order\_id**) REFERENCES **orders(id)** ON DELETE CASCADE
- FOREIGN KEY (**address\_id**) REFERENCES **user\_addresses(id)** ON DELETE CASCADE

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## 17. Refund

This table manages the refund details of orders.

- **id**: INTEGER NOT NULL AUTO\_INCREMENT
- **order\_id**: INTEGER NOT NULL
- **reason**: TEXT
- **refund\_status**: TINYINT
- **refund\_amount**: DECIMAL(10, 2)
- **processed\_date**: DATE DEFAULT NULL



## 18. Wishlist

This table manages the products that users save to their wishlist.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
  - **user\_id:** INTEGER NOT NULL
  - **product\_id:** INTEGER NOT NULL
  - **status:** TINYINT
  - **created\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP
  - **updated\_at:** DATETIME DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP
  - **deleted\_at:** DATETIME DEFAULT NULL
  - FOREIGN KEY (user\_id) REFERENCES customers(id) ON DELETE CASCADE
  - FOREIGN KEY (product\_id) REFERENCES products(id) ON DELETE CASCADE
  - FOREIGN KEY (product\_sku\_id) REFERENCES product\_variants(id) ON DELETE SET NULL
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## 19. Analytics

This table tracks user interactions with products, such as views and purchases, for analysis purposes.

- **id:** INTEGER NOT NULL AUTO\_INCREMENT
- **user\_id:** INTEGER NOT NULL
- **views\_count:** INTEGER NOT NULL
- **purchase\_count:** INTEGER NOT NULL
- **product\_sku\_id:** INTEGER DEFAULT NULL
- **date:** DATETIME DEFAULT CURRENT\_TIMESTAMP