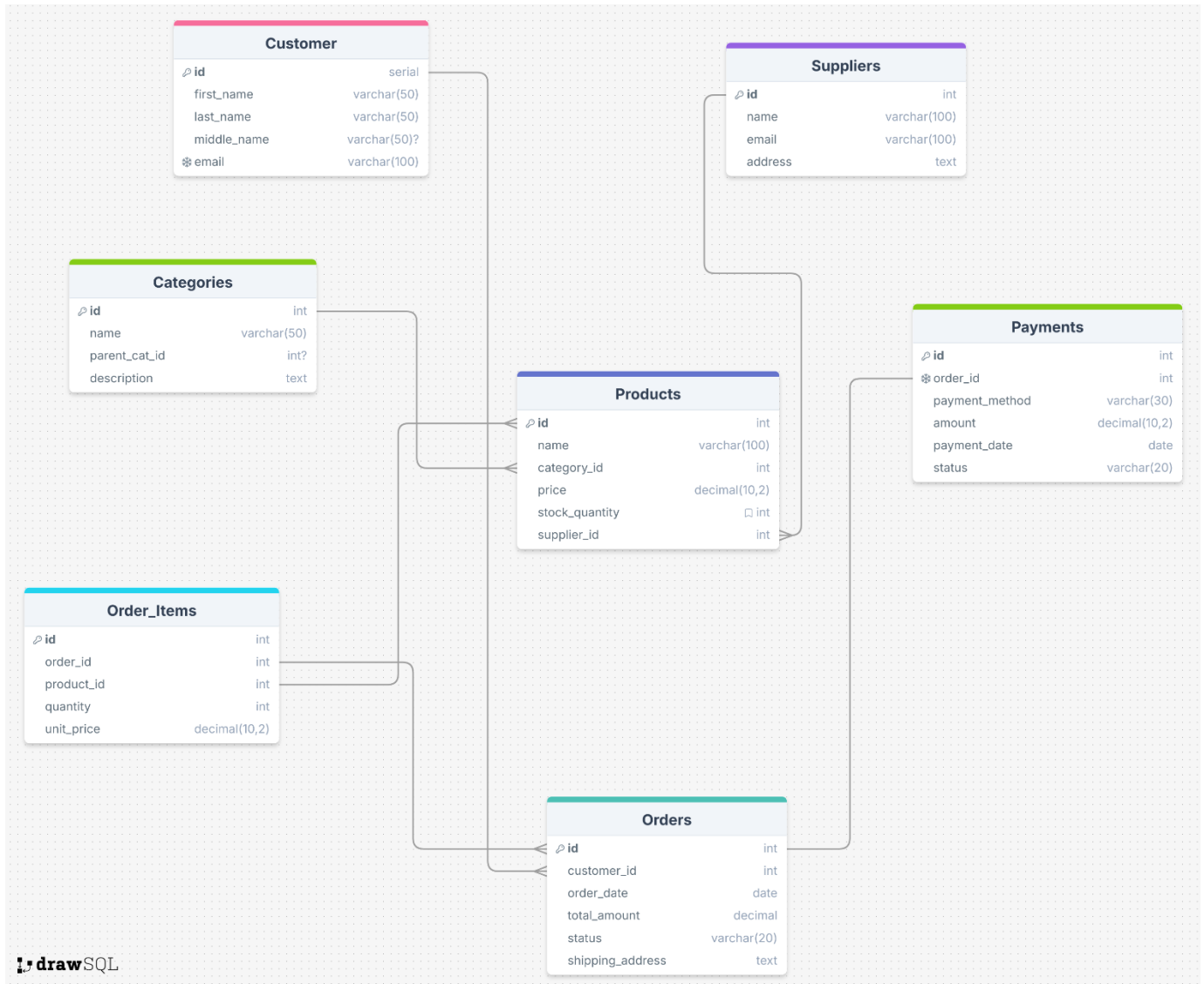


Система управления базой данных инвентаря интернет-магазина

(Online-Store inventory Database Management System)



Обзор системы базы данных (Database System Overview)

База данных будет управлять онлайн-платформой электронной коммерции.

Сущности (Entities):

1. Клиенты (Customers)

Attributes and Data types:

- id (int)
- first_name (varchar(50) NOT NULL)
- last_name (varchar(50) NOT NULL)
- email (varchar(100) NOT NULL)

Primary key:

- id

Constraints:

- email – UNIQUE

2. Поставщики (Suppliers)

Attributes and Data types:

- id (int)
- name (varchar(100) NOT NULL)
- email (varchar(100) NOT NULL)
- address (text NOT NULL)

Primary key:

- id

Constraints:

- email – UNIQUE

3. Продукты (Products)

Attributes and Data types:

- id (int)
- name (varchar(100) NOT NULL)
- category_id (int)
- price (decimal(10, 2))
- stock_quantity (int NOT NULL)
- supplier_id (int NOT NULL)

Primary key:

- id

Foreign key(s):

- supplier_id REFERENCES Suppliers(id)
- category_id REFERENCES Categories(id)

Constraints:

- price > 0
- stock_quantity >= 0

Default values:

- stock_quantity DEFAULT (0)

4. Заказы (Orders)

Attributes and Data types:

- id (int)
- customer_id (int NOT NULL)
- order_date (timestamp NOT NULL)
- total_amount (decimal(12, 2) NOT NULL)
- status (varchar(20))
- shipping_address (text NOT NULL)

Primary key:

- id

Foreign key(s):

- customer_id REFERENCES Customers(id)

Constraints:

- total_amount > 0
- status IN ('Processing', 'Shipped', 'Delivered', 'Cancelled')

Default values:

- order_date DEFAULT CURRENT_TIMESTAMP
- status DEFAULT 'Processing'

5. Элементы заказа (Order_Items)**Attributes and Data types:**

- id (int)
- order_id (int NOT NULL)
- product_id (int NOT NULL)
- quantity (int NOT NULL)
- unit_price (decimal(10, 2) NOT NULL)

Primary key:

- id

Foreign key(s):

- order_id REFERENCES Orders(id)
- product_id REFERENCES Products(id)

Constraints:

- unit_price > 0
- quantity > 0

6. Платежи (Payments)**Attributes and Data types:**

- id (int)
- order_id (int NOT NULL)

- payment_method (varchar(30) NOT NULL)
- amount (decimal(12, 2) NOT NULL)
- payment_date (timestamp)
- status (varchar(20))

Primary key:

- id

Foreign key(s):

- order_id REFERENCES Orders(id)

Constraints:

- amount > 0
- order_id - UNIQUE
- status IN ('Pending', 'Completed', 'Failed', 'Refunded')
- payment_method IN ('Credit Card', 'PayPal', 'Bank Transfer', 'Cash on Delivery')

Default values:

- payment_date DEFAULT CURRENT_TIMESTAMP
- status DEFAULT 'Pending'

7. Категории (Categories)

Attributes and Data types:

- id (int)
- name (varchar(50) NOT NULL)
- parent_cat_id (int NULL)
- description (text)

Primary key:

- id

Foreign key(s):

- parent_cat_id REFERENCES Categories(id)

Демонстрация отношений (Relationships demonstration)

- **1-к-1 (One-To-One)**
 - Заказы ↔ Платежи (Orders ↔ Payments)
- **1-ко-многим**
 - Клиенты → Заказы (Customers → Orders)
 - Поставщики → Продукты (Suppliers → Products)
 - Категории → Продукты (Categories → Products)
- **Многие-ко-многим**
 - Заказы ↔ Продукты (Orders ↔ Products) через Order_Items