**django-admin startproject [projectname]启动一个新项目**

**python manage.py startapp Database**

inventory表

CREATE TABLE inventory (

product\_id SERIAL PRIMARY KEY,

product\_name VARCHAR(255) NOT NULL,

quantity INT NOT NULL CHECK (quantity >= 0),

price DECIMAL(10, 2) NOT NULL CHECK (price >= 0),

alert\_quantity INT NOT NULL CHECK (alert\_quantity >= 0),

is\_below\_alert BOOLEAN DEFAULT FALSE

sales INT NOT NULL DEFAULT 0,

discount NUMERIC(3, 2) DEFAULT 1.0 CHECK (discount >= 0 AND discount <= 1);

total\_sales NUMERIC(10, 2) DEFAULT 0;

);

INSERT INTO inventory (product\_name, quantity, price, alert\_quantity) VALUES

('Milk', 50, 1.99, 10),

('Bread', 30, 2.49, 5),

('Eggs', 100, 0.99, ,20),

('Cheese', 40, 3.99, 5),

('Apples', 60, 0.69, 10),

('Bananas', 55, 0.59, 10),

('Chicken', 25, 5.99, 5),

('Fish', 20, 7.99, 5),

('Water Bottles', 150, 3.50, 30),

('Chocolate', 80, 2.99, 10),

('Pasta', 75, 1.29, 15);

加一行

ALTER TABLE inventory ADD COLUMN is\_below\_alert BOOLEAN DEFAULT FALSE;

触发器

CREATE OR REPLACE FUNCTION check\_alert\_quantity()

RETURNS TRIGGER AS $$

BEGIN

NEW.is\_below\_alert := NEW.quantity < NEW.alert\_quantity;

RETURN NEW;

END;

$$ LANGUAGE plpgsql;

DROP TRIGGER IF EXISTS check\_alert\_quantity\_before\_insert\_or\_update ON inventory;

CREATE TRIGGER check\_alert\_quantity\_before\_insert\_or\_update

BEFORE INSERT OR UPDATE ON inventory

FOR EACH ROW EXECUTE FUNCTION check\_alert\_quantity();

进货记录

CREATE TABLE importi\_log (

log\_id SERIAL PRIMARY KEY,

product\_id INT REFERENCES inventory(product\_id) ON DELETE CASCADE,

delta\_quantity INT NOT NULL,

change\_date TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

changed\_by VARCHAR(255) NOT NULL

);

CREATE TABLE exporti\_log (

log\_id SERIAL PRIMARY KEY,

product\_id INT REFERENCES inventory(product\_id) ON DELETE CASCADE,

delta\_quantity INT NOT NULL,

change\_date TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

changed\_by VARCHAR(255) NOT NULL

);

新增的user，用于普通用户登录：

CREATE TABLE users (

    user\_id SERIAL PRIMARY KEY,

    username VARCHAR(50) UNIQUE NOT NULL,

    password VARCHAR(255) NOT NULL,

    sex CHAR(1) CHECK (sex IN ('M', 'F', 'O')), *-- 'M' 代表男性, 'F' 代表女性, 'O' 代表其他*

    birthday DATE,

    address TEXT,

    phone VARCHAR(20),

    email VARCHAR(25)

);

更改inventory：

ALTER TABLE inventory

ADD COLUMN sales INT NOT NULL DEFAULT 0,

ADD COLUMN discount NUMERIC(3, 2) DEFAULT 1.0 CHECK (discount >= 0 AND discount <= 1);

添加购物车

CREATE TABLE carts (

user\_id INT NOT NULL,

product\_id INT NOT NULL,

quantity INT NOT NULL CHECK (quantity > 0),

FOREIGN KEY (user\_id) REFERENCES users(user\_id) ON DELETE CASCADE ON UPDATE CASCADE,

FOREIGN KEY (product\_id) REFERENCES inventory(product\_id) ON DELETE CASCADE ON UPDATE CASCADE,

PRIMARY KEY (user\_id, product\_id)

);

添加商品：

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('牛奶', 32.80, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('方便面', 7.99, 0, 0.90);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('苹果', 6.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('饼干', 17.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('矿泉水', 2.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('纸巾', 27.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('蛋糕', 8.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('iPhone', 9.99, 0, 0.10);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('红楼梦',  49.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('牙刷', 10.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('帽子', 37.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('冰箱', 99.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('消毒水', 5.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('键盘', 79.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('面霜', 45.99, 0, 1.00);

INSERT INTO inventory (product\_name, price, sales, discount)

VALUES ('雨伞', 25.99, 0, 1.00);

添加购物记录

CREATE TABLE orders (

    order\_id SERIAL PRIMARY KEY,

    user\_id INT NOT NULL,

    totalprice NUMERIC(10, 2) NOT NULL,

    orderdate TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

    FOREIGN KEY (user\_id) REFERENCES users(user\_id)

);

添加商品-订单关系表

CREATE TABLE belong\_to\_order (

    order\_id INT NOT NULL,

    product\_id INT NOT NULL,

    quantity INT NOT NULL CHECK (quantity > 0),

    FOREIGN KEY (order\_id) REFERENCES orders(order\_id),

    PRIMARY KEY (order\_id, product\_id)

);