

Apple Store DB

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Background

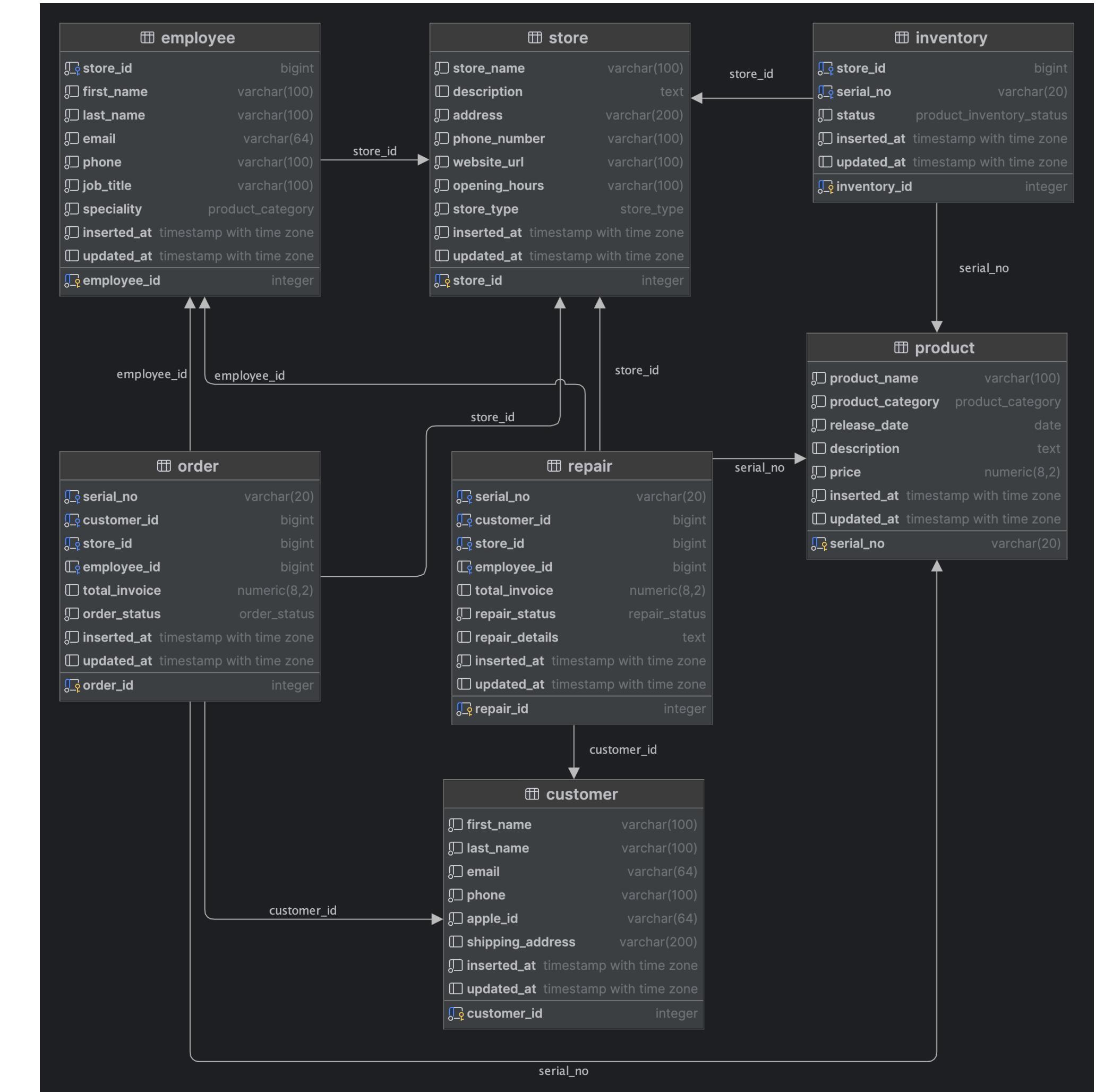


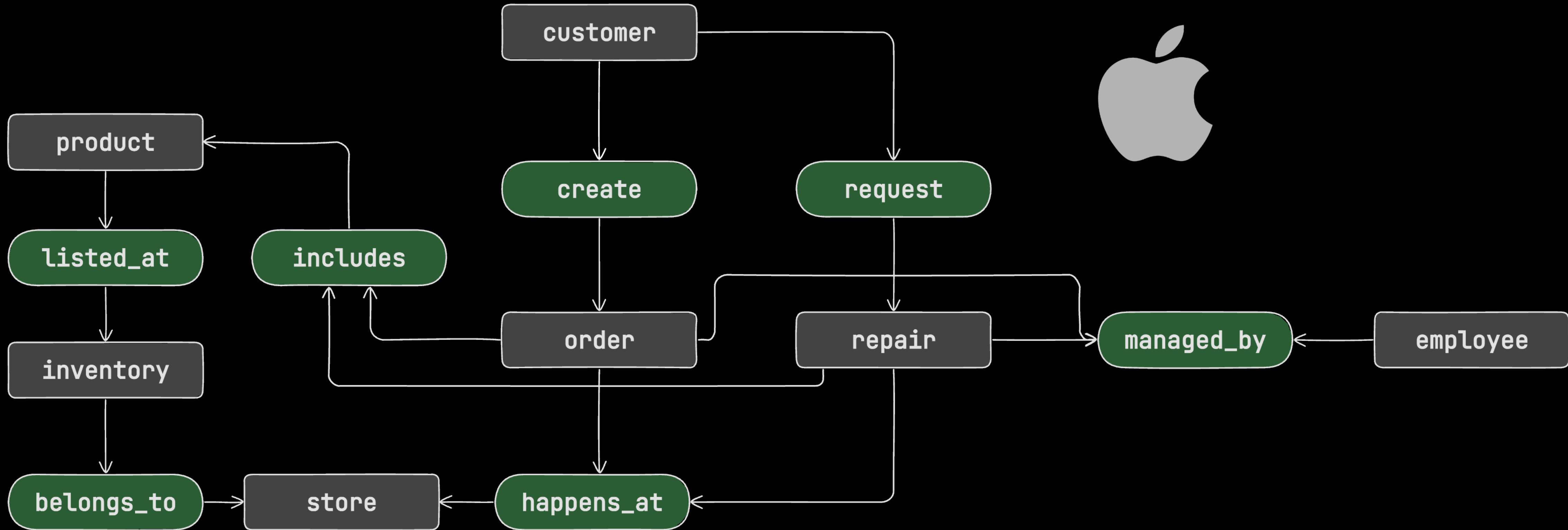
Goal

1. Design SQL Database for Apple Store to track basic transactions

2. Include main business entities

3. Implement core operations





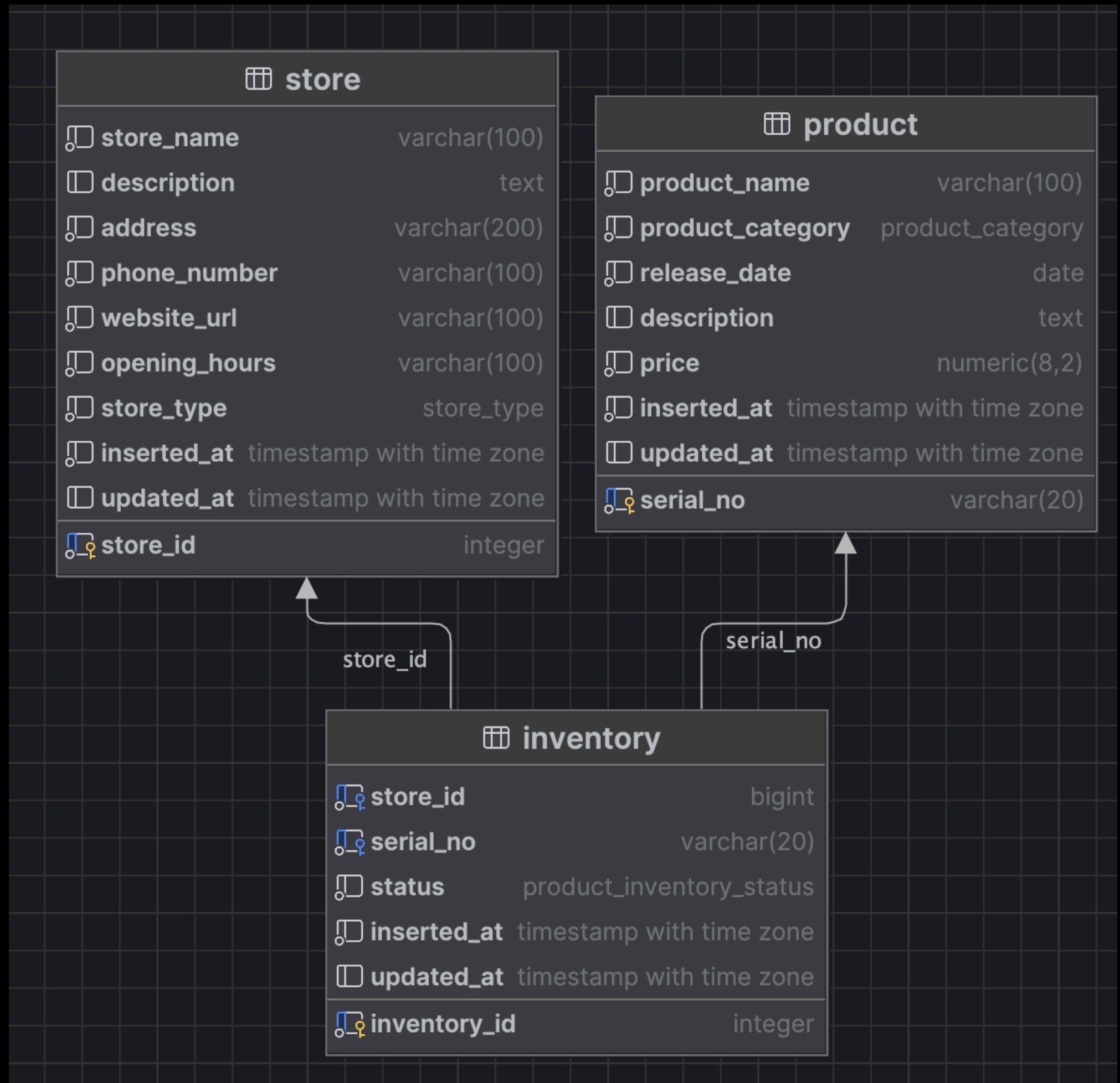
Inventory

Procedure add_inventory_item

Used to fill inventory with new products.

```
-- Add inventory items:  
CALL add_inventory_item(_store_name: 'Apple Fifth Avenue', _serial_no: 'ABC1234567890123456');  
CALL add_inventory_item(_store_name: 'Apple Union Square', _serial_no: 'DEF9876543210123456');  
CALL add_inventory_item(_store_name: 'Simply Mac', _serial_no: 'GHI7654321012345678');  
CALL add_inventory_item(_store_name: 'Best Buy', _serial_no: 'JKL5432101234567890');  
CALL add_inventory_item(_store_name: 'Apple Online Store', _serial_no: 'MNO3210123456789012');  
CALL add_inventory_item(_store_name: 'Apple Online Store', _serial_no: 'PQR1012345678901234');
```

| | inventory_id | store_id | serial_no | status | inserted_at | updated_at |
|---|--------------|----------|---------------------|-----------|-----------------------------------|------------|
| 1 | | 1 | ABC1234567890123456 | available | 2024-02-29 20:07:24.784842 +00:00 | <null> |
| 2 | | 2 | DEF9876543210123456 | available | 2024-02-29 20:07:24.812214 +00:00 | <null> |
| 3 | | 3 | GHI7654321012345678 | available | 2024-02-29 20:07:24.822560 +00:00 | <null> |
| 4 | | 4 | JKL5432101234567890 | available | 2024-02-29 20:07:24.829816 +00:00 | <null> |
| 5 | | 5 | MNO3210123456789012 | available | 2024-02-29 20:07:24.836664 +00:00 | <null> |
| 6 | | 6 | PQR1012345678901234 | available | 2024-02-29 20:07:24.842374 +00:00 | <null> |



Order

Procedures:

```
-- Test order functionality
CALL create_order( _serial_no: 'ABC1234567890123456', _customer_id: 1, _store_id: 1);
CALL process_order( _serial_no: 'ABC1234567890123456', _customer_id: 1, _store_id: 1, _employee_id: 2, _total_invoice: 1020.00);
CALL create_order( _serial_no: 'DEF9876543210123456', _customer_id: 2, _store_id: 2);
CALL cancel_order( _serial_no: 'DEF9876543210123456', _customer_id: 2, _store_id: 2);
```

create_order - validate if product is available and create order using serial number, customer id, store id

| | order_id | serial_no | customer_id | store_id | employee_id | total_invoice | order_status | inserted_at | updated_at |
|---|----------|---------------------|-------------|----------|-------------|---------------|--------------|-----------------------------------|------------|
| 1 | 1 | ABC1234567890123456 | 1 | 1 | <null> | 999.00 | created | 2024-02-29 20:14:22.617981 +00:00 | <null> |

| order | |
|---------------|--------------------------|
| serial_no | varchar(20) |
| customer_id | bigint |
| store_id | bigint |
| employee_id | bigint |
| total_invoice | numeric(8,2) |
| order_status | order_status |
| inserted_at | timestamp with time zone |
| updated_at | timestamp with time zone |
| order_id | integer |

process_order - assign the order to employee, set total cost, change status to completed, and unlist the item using the trigger

| | order_id | serial_no | customer_id | store_id | employee_id | total_invoice | order_status | inserted_at | updated_at |
|---|----------|---------------------|-------------|----------|-------------|---------------|--------------|-----------------------------------|-----------------------|
| 1 | 1 | ABC1234567890123456 | 1 | 1 | 2 | 1020.00 | completed | 2024-02-29 20:14:22.617981 +00:00 | 2024-02-29 20:16:2... |

| inventory_id | store_id | serial_no | status |
|--------------|----------|---------------------|-------------|
| 2 | 2 | DEF9876543210123456 | available |
| 3 | 3 | GHI7654321012345678 | available |
| 4 | 4 | JKL5432101234567890 | available |
| 5 | 5 | MN03210123456789012 | available |
| 6 | 5 | PQR1012345678901234 | available |
| 1 | 1 | ABC1234567890123456 | unavailable |

cancel_order - cancel uncompleted only order

| | order_id | serial_no | customer_id | store_id | employee_id | total_invoice | order_status | inserted_at | updated_at |
|---|----------|---------------------|-------------|----------|-------------|---------------|--------------|-----------------------------------|------------|
| 1 | 3 | DEF9876543210123456 | 2 | 2 | <null> | 699.00 | created | 2024-02-29 20:18:25.798416 +00:00 | <null> |

| | order_id | serial_no | customer_id | store_id | employee_id | total_invoice | order_status | inserted_at | updated_at |
|---|----------|---------------------|-------------|----------|-------------|---------------|--------------|-----------------------------------|-----------------------|
| 1 | 3 | DEF9876543210123456 | 2 | 2 | <null> | 699.00 | canceled | 2024-02-29 20:18:25.798416 +00:00 | 2024-02-29 20:18:5... |

Repair

Procedures:

```
-- Test repair functionality
CALL request_repair( _serial_no: 'ABC1234567890123456' , _customer_id: 1 , _store_id: 1 );
CALL process_repair( _serial_no: 'ABC1234567890123456' , _customer_id: 1 , _store_id: 1 , _employee_id: 3 , _total_invoice: 200.50 , _repair_details: 'Display exchange' );
CALL complete_repair( _serial_no: 'ABC1234567890123456' , _customer_id: 1 , _store_id: 1 , _repair_details: 'Display exchanged and charging port cleaner to enable charging' );
```

| repair | |
|----------------|--------------------------|
| | |
| serial_no | varchar(20) |
| customer_id | bigint |
| store_id | bigint |
| employee_id | bigint |
| total_invoice | numeric(8,2) |
| repair_status | repair_status |
| repair_details | text |
| inserted_at | timestamp with time zone |
| updated_at | timestamp with time zone |
| repair_id | integer |

request_repair - place a request to repair the product using serial number, customer id, store id

| | repair_id | serial_no | customer_id | store_id | employee_id | total_invoice | repair_status | repair_details | inserted_at | updated_at |
|---|-----------|---------------------|-------------|----------|-------------|---------------|---------------|----------------|-----------------------------------|------------|
| 1 | 1 | ABC1234567890123456 | 1 | 1 | <null> | 0.00 | initiated | <null> | 2024-02-29 20:28:54.043023 +00:00 | <null> |

process_repair - assign the repair to employee, set total repair cost, change status to “in progress”

| | repair_id | serial_no | customer_id | store_id | employee_id | total_invoice | repair_status | repair_details | inserted_at | updated_at |
|---|-----------|---------------------|-------------|----------|-------------|---------------|---------------|----------------|-----------------------------------|-----------------------|
| 1 | 1 | ABC1234567890123456 | 1 | 1 | 3 | 200.50 | in progress | Display change | 2024-02-29 20:28:54.043023 +00:00 | 2024-02-29 20:32:3... |

complete_repair - complete the repair

| | repair_id | serial_no | customer_id | store_id | employee_id | total_invoice | repair_st... | repair_details | inserted_at | updated_at |
|---|-----------|---------------------|-------------|----------|-------------|---------------|--------------|-----------------------|-----------------------------------|-----------------------|
| 1 | 1 | ABC1234567890123456 | 1 | 1 | 3 | 200.50 | completed | Display changed an... | 2024-02-29 20:28:54.043023 +00:00 | 2024-02-29 20:34:2... |

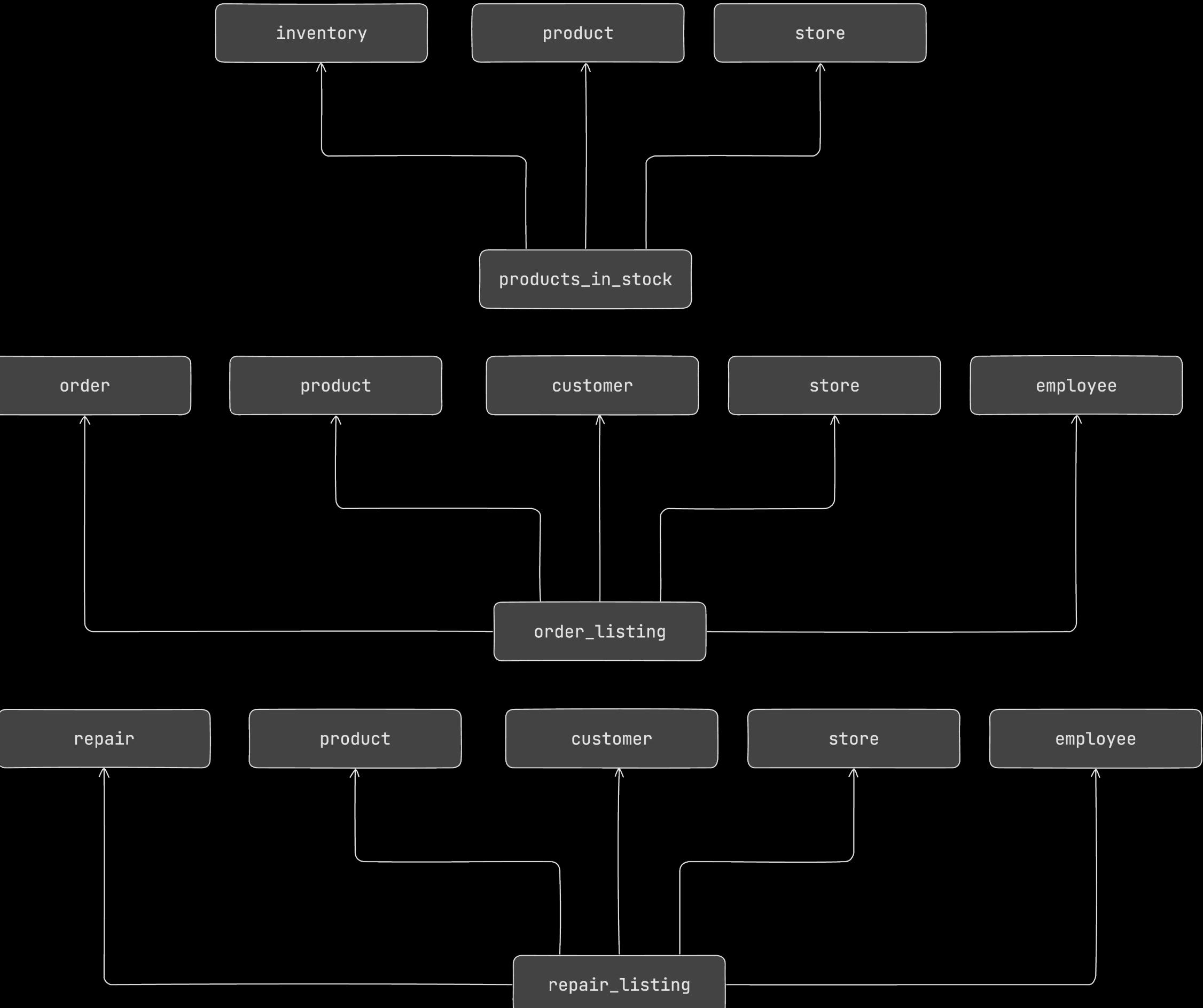
Denormalized Views

3 denormalized views

products_in_stock - display all products available for purchase

order_listing - all orders with all data from related tables
Brought together

repair_listing - all repairs with all data from related tables
Brought together



| | |
|-----------------------------|---|
| 1 | |
| □ order_id | 4 |
| □ product_serial_no | ABC1234567890123456 |
| □ product_name | iPhone 14 Pro |
| □ product_category | iPhone |
| □ product_release_date | 2022-09-16 |
| □ product_description | A high-quality Apple iPhone |
| □ product_price | 999.00 |
| □ customer_id | 1 |
| □ customer_first_name | John |
| □ customer_last_name | Smith |
| □ customer_email | john.smith@gmail.com |
| □ customer_phone | (555) 123-4567 |
| □ customer_apple_id | jsmith123 |
| □ customer_shipping_address | 123 Main St, Anytown, CA 1... |
| □ store_id | 1 |
| □ store_name | Apple Fifth Avenue |
| □ store_description | Iconic flagship store in t... |
| □ store_address | 767 5th Ave, New York, NY ... |
| □ store_phone_number | (212) 336-1440 |
| □ store_website_url | https://www.apple.com/reta... |
| □ store_opening_hours | Mon-Sun: 10am to 8pm |
| □ store_store_type | Apple Store |
| □ employee_id | 2 |
| □ employee_first_name | John |
| □ employee_last_name | Smith |
| □ employee_email | john.smith@apple.com |
| □ employee_phone | (212) 555-3434 |
| □ employee_job_title | Sales Specialist |
| □ employee_speciality | iPhone |
| □ order_total_invoice | 1020.00 |
| □ order_status | completed |
| □ order_created_at | 2024-02-29 20:28:49.829901... |
| □ order_updated_at | 2024-02-29 20:28:49.838255... |