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| Business Template  **Subject areas** |
| **Logo / Image** |

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# Business Description

## Business background

The main goal of the home equipment store is to make it easier for customers to find what they need for the home, from small to large products. The database itself must provide information both to the users who buy the desired product, but also to the employees who keep records of procurement and stock, as well as the payment process itself and whether everything was done on time

## Problems. Current Situation

As far as the customers themselves are concerned, most of them have everything they need, basic information about the products as well as the choice of payment (cash or card), but the problem is mostly in the background of the store itself.

The problems are as follows: regarding the process itself and the payment record, we find many problems in the background of these stores because we do not have detailed information about the products themselves, as well as the procurement process itself too, how much stock is available and when it needs to be renewed. This is the basic information that we must have so that a store like this is always well equipped, and that all information is available to it

## the Benefits of implementing a database. Project Vision

The benefits of implementing this database should facilitate the key processes of delivery, procurement, payment, available products in the warehouse, as well as detailed information that will be available at any time for analysis and overview

# Model description

## Definitions & Acronyms

**Product:** The Product table stores information about each product sold in the store, including its name, brand, model, price, available stock quantity, and links to its category and supplier.

**Customer:** The Customer table contains personal and contact information about customers who place orders, including their first and last names, email, phone number, and address.

**Order:** The Order table records customer purchase transactions. Each order is associated with a customer and an employee who handled the order and includes the order date and its current status.

**Order\_Product:** The Order\_Product table serves as a junction table that connects products and orders. It records the quantity of each product ordered and the amount per product line.

**Stock:** The Stock table tracks movements of products in the inventory, either incoming (stock replenishment) or outgoing (product sale), along with the date of the movement and the quantities moved.

**Payment:** The Payment table captures payment details related to an order, including payment date, amount paid, payment method, and the payment status.

**Employee:** The Employee table stores information about employees who manage customer orders. It contains their personal details (first name, last name, email) and their job position.

**Category:** The Category table classifies products into different groups based on category name and size. It also includes a description of each category.

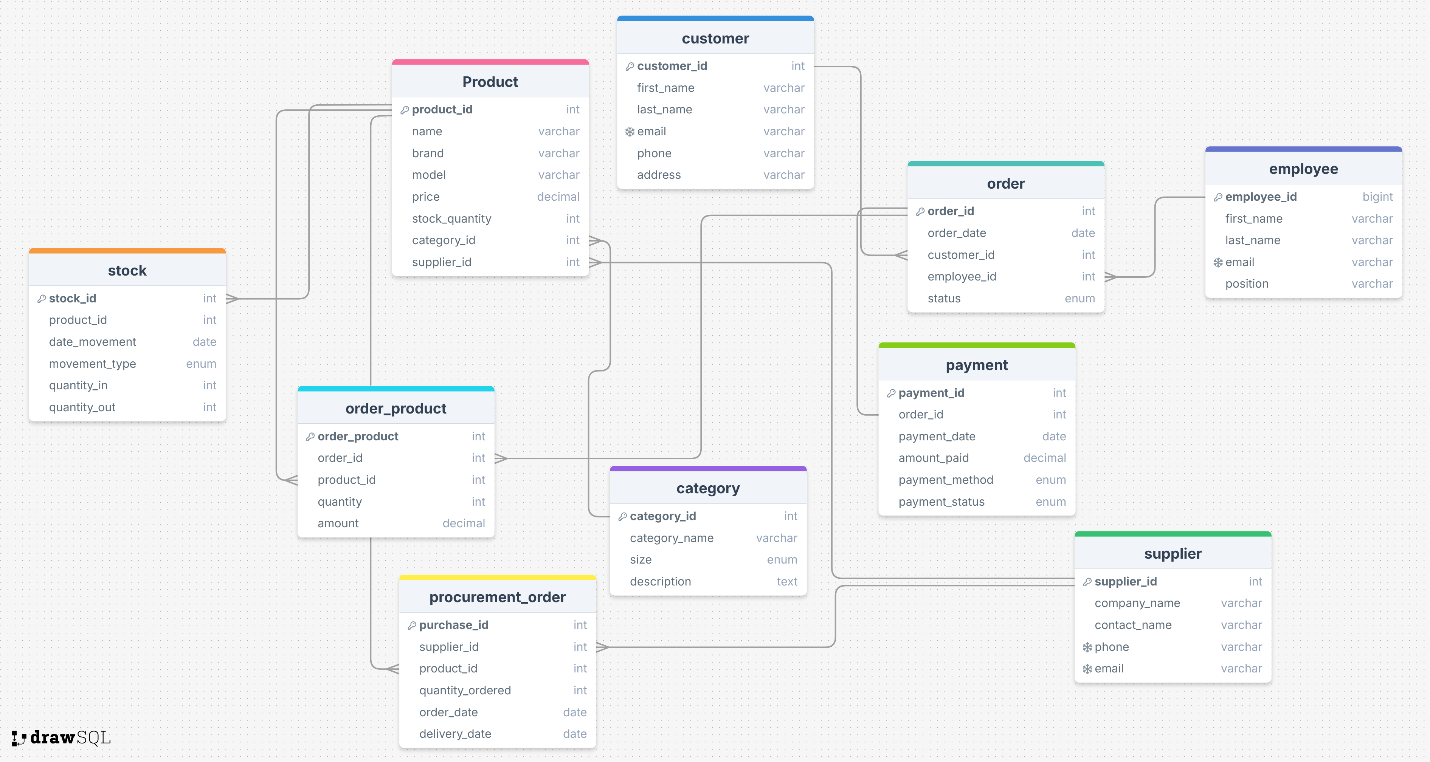
**Supplier:** The Supplier table maintains details of companies that supply products to the store, including the supplier’s company name, contact person, phone number, and email address.

**Procurement\_Order:** The Procurement\_Order table records procurement activities, including the supplier, product, quantity ordered, order date, and expected delivery date. It helps manage the stock replenishment process.

Acronyms

* **PK** – Primary Key
* **FK** – Foreign Key
* UQ- Unique key
* CHECK- A constraint that ensures a column's values meet a specific condition(here is part where I checked type of payment, status of order and payment, movement\_type,)
* **ENUM** – Enumerated Data Type (Predefined Set of Values)
* **INT** – Integer (Numeric Data Type)
* **VARCHAR** – Variable-Length String
* **TEXT** – Large Text Field
* **DECIMAL** – Numeric Field with Decimal Precisio

## Logical Scheme



## Objects

Table description

**Table 1: customer**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| customer | customer\_id | Unique identifier for each customer (PK) | SERIAL (INT) |
|  | first\_name | Customer's first name | VARCHAR(255) |
| last\_name | Customer's last name | VARCHAR(255) |
| full\_name\_customer | Generated: first\_name + last\_name (STORED) | VARCHAR(100) |
| email | Customer's email (Unique) | VARCHAR(255) |
| phone | Customer's phone number | VARCHAR(255) |
| address | Customer's address | VARCHAR(255) |
|  |  |  |

**Table 2: supplier**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| supplier | supplier\_id | Unique identifier for each supplier (PK) | SERIAL (INT) |
|  | company\_name | Supplier's company name | VARCHAR(255) |
| contact\_name | Supplier's contact person | VARCHAR(255) |
| phone | Supplier's phone number | VARCHAR(255) |
| full\_supplier\_info | Generated: contact\_name + phone (STORED) | VARCHAR(100) |
| email | Supplier's email | VARCHAR(255) |

**Table 3: category**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| category | category\_id | Unique identifier for each category (PK) | SERIAL (INT) |
|  | category\_name | Name of the category | VARCHAR(255) |
| size | Size classification (Small/Big/Undefined) | VARCHAR(50) |
| description | Description of the category | TEXT |

**Table 4: employee**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| employee | employee\_id | Unique identifier for each employee (PK) | SERIAL (INT) |
|  | first\_name | Employee's first name | VARCHAR(255) |
| last\_name | Employee's last name | VARCHAR(255) |
| full\_name\_employee | Generated: first\_name + last\_name (STORED) | VARCHAR(100) |
| email | Employee's email | VARCHAR(255) |
| position | Employee's job position | VARCHAR(255) |

**Table 5: product**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| product | product\_id | Unique identifier for each product (PK) | SERIAL (INT) |
|  | name | Product name | VARCHAR(255) |
| brand | Product brand | VARCHAR(255) |
| model | Product model | VARCHAR(255) |
| full\_info\_product | Generated: name + brand + model (STORED) | VARCHAR(100) |
| price | Product price (must be > 0) | DECIMAL(8,2) |
| stock\_quantity | Current stock quantity | INTEGER |
| category\_id | Foreign key to category (FK) | INTEGER |
| supplier\_id | Foreign key to supplier (FK) | INTEGER |

**Table 6: ordered**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| ordered | order\_id | Unique identifier for each order (PK) | SERIAL (INT) |
|  | order\_date | Date when the order was placed | DATE |
| customer\_id | Foreign key to customer (FK) | INTEGER |
| employee\_id | Foreign key to employee (FK) | INTEGER |
| status | Order status (e.g., "Pending", "Shipped") | VARCHAR(50) |
| Total\_price | Total price of each order | DECIMAL (8,2) |

**Table 7: order\_product**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| order\_product | order\_product\_id | Unique identifier (PK) | SERIAL (INT) |
|  | order\_id | Foreign key to ordered (FK) | INTEGER |
| product\_id | Foreign key to product (FK) | INTEGER |
| quantity | Quantity of product ordered | INTEGER |
| amount | Total amount for this product in order | DECIMAL(8,2) |

**Table 8: payment**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| payment | payment\_id | Unique identifier (PK) | SERIAL (INT) |
|  | order\_id | Foreign key to ordered (FK) | INTEGER |
| payment\_date | Date of payment | DATE |
| amount\_paid | Amount paid | DECIMAL(8,2) |
| payment\_method | Payment method (e.g., "Credit Card", "Cash") | VARCHAR(50) |
| payment\_status | Payment status (e.g., "Completed", "Failed") | VARCHAR(50) |

**Table 9: procurement\_order**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| procurement\_order | purchase\_id | Unique identifier (PK) | SERIAL (INT) |
|  | supplier\_id | Foreign key to supplier (FK) | INTEGER |
| product\_id | Foreign key to product (FK) | INTEGER |
| quantity\_ordered | Quantity ordered from supplier | INTEGER |
| order\_date | Date when the order was placed | DATE |
| delivery\_date | Expected delivery date | DATE |

**Table 10: stock**

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Field Name** | **Field Description** | **Data Type** |
| stock | stock\_id | Unique identifier (PK) | SERIAL (INT) |
|  | product\_id | Foreign key to product (FK) | INTEGER |
| date\_movement | Date of stock movement | DATE |
| movement\_type | Type of movement ("In", "Out") | VARCHAR(50) |
| quantity\_in | Quantity added to stock | INTEGER |
| quantity\_out | Quantity removed from stock | INTEGER |

Example with data

Customer table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **First Name** | **Last Name** | **Email** | **Phone** | **Address** |
| Anna | Smith | anna.smith@email.com | 555-1234 | 123 King Street, London |
| Michael | Johnson | michael.johnson@email.com | 555-2345 | 456 Queen Road, Manchester |
| Olivia | Brown | olivia.brown@email.com | 555-3456 | 789 Prince Avenue, Birmingham |
| James | Taylor | james.taylor@email.com | 555-4567 | 101 Duke Lane, Leeds |
| Emily | Wilson | emily.wilson@email.com | 555-5678 | 202 Earl Street, Liverpool |
| William | Moore | william.moore@email.com | 555-6789 | 303 Baron Street, Bristol |

Supplier table

|  |  |  |  |
| --- | --- | --- | --- |
| **Company Name** | **Contact Name** | **Phone** | **Email** |
| ElectroMax Ltd. | Peter Green | 020-111-2345 | peter.green@electromax.com |
| FurniCo | Emma White | 020-222-3456 | emma.white@furnico.com |
| KitchenKing | Alexander Black | 020-333-4567 | alex.black@kitchenking.com |
| GardenStyle | Sophia Miller | 020-444-5678 | sophia.miller@gardenstyle.com |
| OfficePro | Liam Davis | 020-555-6789 | liam.davis@officepro.com |
| HouseHold Goods | Isabella Clark | 020-666-7890 | isabella.clark@household.com |

Category table

|  |  |  |
| --- | --- | --- |
| **Category Name** | **Size** | **Description** |
| Electronics | Small | Electronic devices and gadgets |
| Furniture | Big | Furniture for homes and offices |
| Kitchenware | Small | Appliances and kitchen utensils |
| Garden | Big | Garden tools and furniture |
| Office Supplies | Small | Office materials and equipment |
| Home Decor | Small | Decorative items for homes |

Employee table

|  |  |  |  |
| --- | --- | --- | --- |
| **First Name** | **Last Name** | **Email** | **Position** |
| Sarah | Evans | sarah.evans@email.com | Sales Manager |
| Marco | Hindo | marco1hidno@email.com | Deliverer |
| David | Smith | david.s@email.com | Deliverer |
| David | Walker | david.walker@email.com | Customer Support Agent |
| Jessica | Robinson | jessica.robinson@email.com | Warehouse Associate |
| Daniel | Hall | daniel.hall@email.com | Accountant |
| Mia | Young | mia.young@email.com | Marketing Specialist |
| Matthew | Allen | matthew.allen@email.com | Logistics Coordinator |

Product table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Product ID** | **Name** | **Brand** | **Model** | **Price (€)** | **Stock Quantity** | **Category ID** | **Supplier ID** |
| 3 | Refrigerator | Samsung | RT29K5030S8 | 599.99 | 20 | [Electronics ID] | [HouseHold Goods ID] |
| 4 | Microwave Oven | Panasonic | NN-SN966S | 199.99 | 25 | [Kitchenware ID] | [ElectroMax Ltd. ID] |
| 5 | Vacuum Cleaner | Dyson | V11 Torque Drive | 599.99 | 30 | [Electronics ID] | [HouseHold Goods ID] |
| 6 | Blender | Philips | HR3652/00 | 129.99 | 40 | [Office Supplies ID] | [OfficePro ID] |
| 7 | Garden Table Set | Madamehome | NU-725774 | 499.99 | 15 | [Garden ID] | [GardenStyle ID] |
| 8 | Wall Painting | Artsy | photo-731 | 299.99 | 25 | [Home Decor ID] | [HouseHold Goods ID] |

Ordered table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Order Date** | **Status** | **Customer (Email)** | **Employee (Email)** | **Total Price (€)** |
| 2025-02-01 | Completed | anna.smith@email.com | david.s@email.com | 567.33 |
| 2025-03-10 | Pending | michael.johnson@email.com | david.s@email.com | 6533.00 |
| 2025-03-15 | Cancelled | olivia.brown@email.com | marco1hidno@email.com | 255.98 |
| 2025-04-05 | Pending | james.taylor@email.com | marco1hidno@email.com | 865.24 |
| 2025-04-12 | Completed | emily.wilson@email.com | david.s@email.com | 8742.86 |
| 2025-04-20 | Cancelled | william.moore@email.com | marco1hidno@email.com | 235.64 |

Ordered table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Order ID** | **Order Date** | **Status** | **Customer email** | **Employee ID** | **Total Price (€)** |
| 1 | 2025-02-01 | Completed | anna.smith@email.com | david.s@email.com | 567.33 |
| 2 | 2025-03-10 | Pending | michael.johnson@email.com | david.s@email.com | 6533.00 |
| 3 | 2025-03-15 | Cancelled | olivia.brown@email.com | marco1hidno@email.com | 255.98 |
| 4 | 2025-04-05 | Pending | james.taylor@email.com | marco1hidno@email.com | 865.24 |
| 5 | 2025-04-12 | Completed | emily.wilson@email.com | david.s@email.com | 8742.86 |
| 6 | 2025-04-20 | Cancelled | william.moore@email.com | marco1hidno@email.com | 235.64 |

Order\_product table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Order\_Product ID** | **Order ID** | **Product ID** | **Quantity** | **Amount (€)** |
| 1 | 2 | 3 | 1 | 6533.00 |
| 2 | 1 | 4 | 2 | 567.33 |
| 3 | 2 | 5 | 6 | 6533.00 |
| 4 | 3 | 6 | 2 | 255.98 |
| 5 | 4 | 7 | 1 | 865.24 |
| 6 | 5 | 8 | 30 | 8742.86 |

Payment table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Payment ID** | **Order ID** | **Payment Date** | **Amount Paid (€)** | **Payment Method** | **Payment Status** |
| 1 | 1 | 2025-02-01 | 567.33 | Card | Paid |
| 2 | 2 | 2025-03-10 | 6533.00 | Card | Pending |
| 3 | 3 | 2025-03-15 | 400.98 | Cash | Failed |
| 4 | 4 | 2025-04-05 | 865.24 | Card | Pending |
| 5 | 5 | 2025-04-12 | 8742.86 | Card | Paid |
| 6 | 6 | 2025-04-20 | 300.64 | Cash | Failed |

procurement\_order table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Supplier ID** | **Product ID** | **Product Name** | **Quantity Ordered** | **Order Date** | **Delivery Date** | **Supplier Company** |
| 1 | 6 | 1 | Refrigerator | 50 | 2025-01-15 | 2025-01-25 | HouseHold Goods |
| 2 | 1 | 2 | Microwave Oven | 100 | 2025-02-10 | 2025-02-20 | ElectroMax Ltd. |
| 3 | 6 | 3 | Vacuum Cleaner | 75 | 2025-02-15 | 2025-02-25 | HouseHold Goods |
| 4 | 5 | 4 | Blender | 120 | 2025-03-05 | 2025-03-15 | OfficePro |
| 5 | 4 | 5 | Garden Table Set | 30 | 2025-03-20 | 2025-03-30 | GardenStyle |
| 6 | 6 | 6 | Wall Painting | 60 | 2025-04-10 | 2025-04-20 | HouseHold Goods |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Product ID** | **Product Name** | **Movement Date** | **Movement Type** | **Quantity In** | **Quantity Out** |
| 1 | 3 | Refrigerator | 2025-01-25 | In | 50 | 30 |
| 2 | 4 | Microwave Oven | 2025-02-20 | In | 100 | 0 |
| 3 | 5 | Vacuum Cleaner | 2025-02-25 | In | 75 | 10 |
| 4 | 6 | Blender | 2025-03-15 | In | 120 | 0 |
| 5 | 7 | Garden Table Set | 2025-03-30 | In | 30 | 0 |
| 6 | 8 | Wall Painting | 2025-04-20 | In | 60 | 5 |