# Gisma University
## of Applied Sciences

## Assessment Submission Form

| | |
|---|---|
| **Student Number** | Mehmet Akif Ozkoc (GH1026518) |
| **Assessment Title** | Designing Database for an online shop of ABC e-commerce company |
| **Module Code** | M605 |
| **Module Title** | Advanced Databases (SS0324) |
| **Module Tutor** | Alireza Mahmoudi |
| **Date Submitted** | 03 July 2024 |

# Database Documentation for Online Shop of ABC e-commerce Company

## Table of Contents

## Introduction

ABC company is an online shop that sells products around Europe. As a data engineer I am responsible for designing a database for their website. I have been tasked with designing and developing a comprehensive database schema. I implemented the database schema using an appropriate DBMS (MySQL). And created the tables, defined relationships, and populated the database with relevant sample data to simulate real-world scenarios.

This document provides comprehensive details of the `abc_onlineshop` database, including its structure, the tables it contains, and the views that are used to query and report data. The goal is to give a clear understanding of the database design and the purpose of each table and view within the system. This documentation provides also explanation the structure and purpose of each table and view. It serves as a reference for developers, database administrators, and other stakeholders involved in the maintenance and use of the database.

# Database Description and Design

The `abc_onlineshop` database is designed to support an online shopping platform. It contains multiple tables that store information about brands, categories, customers, orders, order items, products, returns, shipments, order statuses, and suppliers. The database is structured to efficiently handle and retrieve data for various operations related to online shopping, such as order processing, product management, customer management, and reporting.

According to the business request, the database includes the following queries implemented as views:

- **Detail information about suppliers and the number of products that they provide:** This query is implemented as the view `suppliers_products`.
- **10 best-selling products with the total amount and their supplier:** This query is implemented as the view `10_best_selling_products`.
- **List of customers and their total purchases:** This query is implemented as the view `customer_total_purchases`.
- **List of returned items:** This query is implemented as the view `list_returned_items`.
- **List of products in the fashion category that were sold last month:** This query is implemented as the view `clothing_products_sold_last_month`.

# Github Repository

The technical documents such as Script, ER Diagram can be accessed through this github repository:

https://github.com/ozkoc/M605A_Advanced_Databases

# ER Diagram
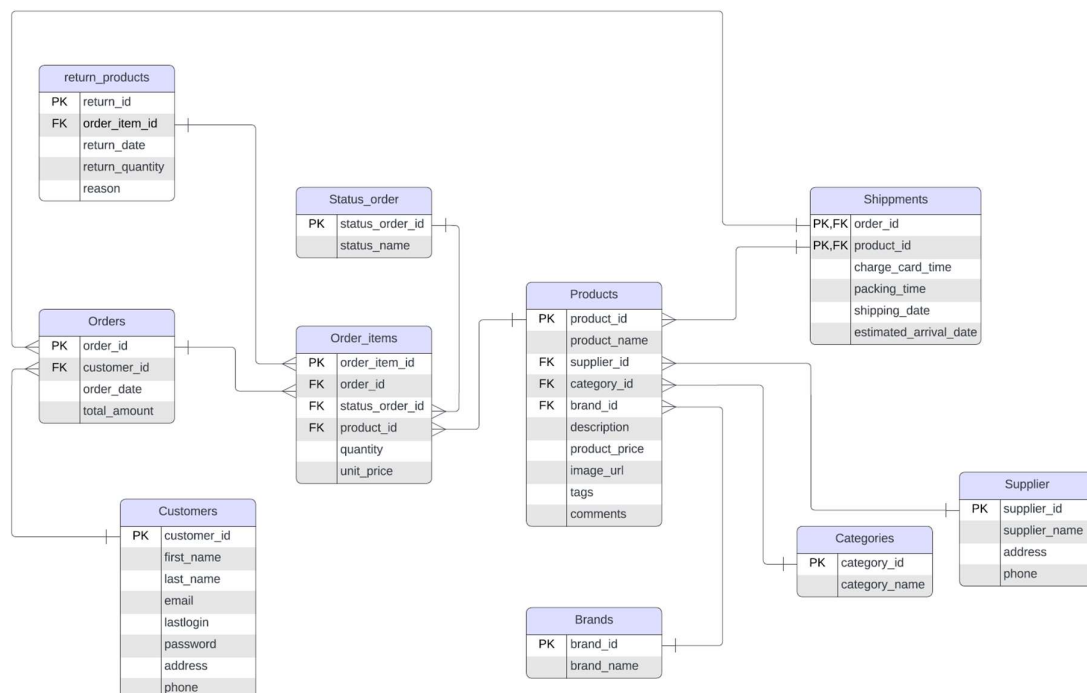
# Tables

## brands

Stores information about product brands.

This table lists all the brands available in the online shop.

| brand_id | brand_name |
|---|---|
| 1 | Sony |
| 2 | Samsung |
| 3 | Apple |
| 4 | Nike |
| 5 | Adidas |
| 6 | Microsoft |
| 7 | Google |
| 8 | Amazon |
| 9 | LG |
| 10 | Dell |
| 11 | HP |
| 12 | Lenova |
| 13 | Panasonic |
| 14 | Toshiba |
| 15 | Puma |
| 16 | Under Armour |
| 17 | Reebook |
| 18 | New Balance |
| 19 | Asics |
| 20 | Philips |

## categories

Stores information about product categories.

| category_id | category_name |
|---|---|
| 1 | Electronics |
| 2 | Clothing |
| 3 | Books |
| 4 | Home & Kitchen |
| 5 | Toys & Games |

This table categorizes products into different groups such as Electronics, Clothing, etc.

## customers

Stores customer information.

| customer_id | first_name | last_name | email | last_login | pass_word | address | phone |
|---|---|---|---|---|---|---|---|
| 1 | John | Doe | john.doe@example.com | 2024-01-01 12:00:00 | password123 | 123 Elm Street, Springfield, IL | 123-456-7890 |
| 2 | Jane | Smith | jane.smith@example.com | 2024-01-02 13:00:00 | password123 | 456 Oak Street, Springfield, IL | 123-456-7891 |
| 3 | Alice | Johnson | alice.johnson@example.com | 2024-01-03 14:00:00 | password123 | 789 Pine Street, Springfield, IL | 123-456-7892 |
| 4 | Mary | Brown | mary.brown@example.com | 2024-01-04 15:00:00 | password123 | 101 Maple Street, Springfield, IL | 123-456-7893 |
| 5 | James | Williams | james.williams@example.com | 2024-01-05 16:00:00 | password123 | 202 Birch Street, Springfield, IL | 123-456-7894 |
| 16 | David | Clark | david.clark@example.com | 2024-01-16 10:00:00 | password123 | 234 Willow Street, Springfield, IL | 234-567-8901 |
| 17 | Emma | Lopez | emma.lopez@example.com | 2024-01-17 11:00:00 | password123 | 345 Pine Street, Springfield, IL | 234-567-8902 |
| 18 | Daniel | Harris | daniel.harris@example.com | 2024-01-18 12:00:00 | password123 | 456 Maple Street, Springfield, IL | 234-567-8903 |
| 19 | Sophia | Clark | sophia.clark@example.com | 2024-01-19 13:00:00 | password123 | 567 Oak Street, Springfield, IL | 234-567-8904 |
| 20 | Oliver | Martinez | oliver.martinez@example.com | 2024-01-20 14:00:00 | password123 | 678 Cedar Street, Springfield, IL | 234-567-8905 |
| 21 | Amelia | Lewis | amelia.lewis@example.com | 2024-01-21 15:00:00 | password123 | 789 Birch Street, Springfield, IL | 234-567-8906 |
| 22 | Lucas | Walker | lucas.walker@example.com | 2024-01-22 16:00:00 | password123 | 890 Walnut Street, Springfield, IL | 234-567-8907 |
| 23 | Mia | Hall | mia.hall@example.com | 2024-01-23 17:00:00 | password123 | 901 Ash Street, Springfield, IL | 234-567-8908 |
| | | | | | | 101 Redwood | |

This table stores personal information about the customers of the online shop

## orders

Stores information about customer orders.

| order_id | customer_id | order_date | total_amount |
|---|---|---|---|
| 1 | 1 | 2024-01-01 10:00:00 | 100.50 |
| 2 | 2 | 2024-01-02 11:00:00 | 150.75 |
| 3 | 3 | 2024-01-03 12:00:00 | 200.00 |
| 4 | 4 | 2024-01-04 13:00:00 | 250.25 |
| 5 | 5 | 2024-01-05 14:00:00 | 300.50 |
| 6 | 16 | 2024-01-06 15:00:00 | 350.75 |
| 7 | 17 | 2024-01-07 16:00:00 | 400.00 |
| 8 | 18 | 2024-01-08 17:00:00 | 450.25 |
| 9 | 19 | 2024-01-09 18:00:00 | 500.50 |
| 10 | 20 | 2024-01-10 19:00:00 | 550.75 |
| 11 | 21 | 2024-01-11 20:00:00 | 600.00 |
| 12 | 22 | 2024-01-12 21:00:00 | 650.25 |
| 13 | 23 | 2024-01-13 22:00:00 | 700.50 |
| 14 | 24 | 2024-01-14 23:00:00 | 750.75 |
| 15 | 25 | 2024-01-15 08:00:00 | 800.00 |
| 16 | 26 | 2024-01-16 09:00:00 | 850.25 |
| 17 | 27 | 2024-01-17 10:00:00 | 900.50 |
| 18 | 28 | 2024-01-18 11:00:00 | 950.75 |
| 19 | 29 | 2024-01-19 12:00:00 | 1000.00 |
| 20 | 30 | 2024-01-20 13:00:00 | 1050.25 |

This table contains details about customer orders including the customer who placed the order and the total amount.

## order_items

Stores information about items in each order.

| order_item_id | order_id | status_order_id | product_id | quantity | unit_price |
|---|---|---|---|---|---|
| 11 | 1 | 1 | 1 | 2 | 25.00 |
| 12 | 2 | 2 | 2 | 1 | 50.00 |
| 13 | 3 | 3 | 3 | 3 | 30.00 |
| 14 | 4 | 4 | 4 | 1 | 100.00 |
| 15 | 5 | 5 | 5 | 4 | 75.00 |
| 16 | 6 | 6 | 6 | 2 | 25.00 |
| 17 | 7 | 7 | 7 | 1 | 50.00 |
| 18 | 8 | 8 | 8 | 3 | 30.00 |
| 19 | 9 | 9 | 9 | 1 | 100.00 |
| 20 | 10 | 10 | 10 | 4 | 75.00 |
| 21 | 11 | 11 | 11 | 2 | 25.00 |
| 22 | 12 | 12 | 12 | 1 | 50.00 |
| 23 | 13 | 13 | 13 | 3 | 30.00 |
| 24 | 14 | 14 | 14 | 1 | 100.00 |
| 25 | 15 | 15 | 15 | 4 | 75.00 |
| 26 | 16 | 16 | 16 | 2 | 25.00 |
| 27 | 17 | 17 | 17 | 1 | 50.00 |
| 28 | 18 | 18 | 18 | 3 | 30.00 |
| 29 | 19 | 19 | 19 | 1 | 100.00 |
| 30 | 20 | 20 | 20 | 4 | 75.00 |
| 31 | 41 | 4 | 4 | 1 | 90.00 |
| 32 | 42 | 4 | 15 | 2 | 69.99 |
| 33 | 43 | 4 | 16 | 3 | 29.99 |
| 34 | 44 | 4 | 19 | 2 | 89.99 |
| 35 | 45 | 4 | 35 | 3 | 29.99 |

This table details the products included in each order.

## products

Stores information about the products available for sale.

| product_id | product_name | supplier_id | category_id ▲ 1 | brand_id | description | product_price | image_url | tags | comments |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Sony 4K TV | 1 | 1 | 1 | High-quality 4K TV | 499.99 | https://example.com/image1.jpg | TV, 4K, Electronics | Best TV ever |
| 2 | Samsung Galaxy S21 | 2 | 1 | 2 | Latest smartphone from Samsung | 799.99 | https://example.com/image2.jpg | Smartphone, Electronics | Great phone with excellent features |
| 3 | Apple MacBook Pro | 1 | 1 | 3 | Powerful laptop from Apple | 1299.99 | https://example.com/image3.jpg | Laptop, Electronics | Highly recommended for professionals |
| 6 | Microsoft Surface Pro | 1 | 1 | 6 | Versatile 2-in-1 laptop | 999.99 | https://example.com/image6.jpg | Laptop, Electronics | Excellent for both work and play |
| 7 | Google Pixel 6 | 2 | 1 | 7 | Advanced smartphone from Google | 699.99 | https://example.com/image7.jpg | Smartphone, Electronics | Amazing camera quality |
| 8 | Amazon Echo Dot | 3 | 1 | 8 | Smart speaker with Alexa | 49.99 | https://example.com/image8.jpg | Smart Home, Electronics | Very useful for home automation |
| 9 | LG Refrigerator | 4 | 1 | 9 | Spacious refrigerator | 1099.99 | https://example.com/image9.jpg | Appliance, Home & Kitchen | Keeps food fresh |
| 10 | Dell XPS 13 | 5 | 1 | 10 | Compact and powerful laptop | 1199.99 | https://example.com/image10.jpg | Laptop, Electronics | Perfect for business use |
| 11 | HP Envy Printer | 1 | 1 | 11 | High-quality printer | 199.99 | https://example.com/image11.jpg | Printer, Electronics | Fast and reliable |
| 12 | Lenovo ThinkPad | 2 | 1 | 12 | Durable and powerful laptop | 899.99 | https://example.com/image12.jpg | Laptop, Electronics | Ideal for business professionals |

This table contains details about each product available in the shop.

## return_products

Stores information about returned products.

| return_id | order_item_id | return_date | return_quantity | reason |
|---|---|---|---|---|
| 34 | 11 | 2024-03-01 10:00:00 | 1 | Defective product |
| 35 | 12 | 2024-03-02 11:00:00 | 1 | Wrong item shipped |
| 36 | 13 | 2024-03-03 12:00:00 | 2 | Changed mind |
| 37 | 14 | 2024-03-04 13:00:00 | 1 | Item damaged in transit |
| 38 | 15 | 2024-03-05 14:00:00 | 1 | Not as described |
| 39 | 16 | 2024-03-06 15:00:00 | 3 | Better price found elsewhere |
| 40 | 17 | 2024-03-07 16:00:00 | 1 | Received too late |
| 41 | 18 | 2024-03-08 17:00:00 | 2 | Incorrect size |
| 42 | 19 | 2024-03-09 18:00:00 | 1 | Not satisfied with quality |
| 43 | 20 | 2024-03-10 19:00:00 | 1 | Product expired |
| 44 | 21 | 2024-03-11 20:00:00 | 2 | Received duplicate items |
| 45 | 22 | 2024-03-12 21:00:00 | 1 | Allergic reaction |
| 46 | 23 | 2024-03-13 22:00:00 | 1 | Ordered by mistake |
| 47 | 24 | 2024-03-14 23:00:00 | 1 | No longer needed |
| 48 | 25 | 2024-03-15 08:00:00 | 2 | Different from website image |

This table tracks products that have been returned by customers along with reasons for return.

## shippments

Stores shipment information for orders. Here I used a Composite KEY combination of order_id, product_id.

| order_id | product_id | charge_card_time | packing_time | shipping_date | estimated_arrival_date |
|---|---|---|---|---|---|
| 1 | 1 | 2024-01-01 12:05:00 | 2024-01-01 13:00:00 | 2024-01-02 09:00:00 | 2024-01-05 |
| 2 | 2 | 2024-01-02 12:05:00 | 2024-01-02 13:00:00 | 2024-01-03 09:00:00 | 2024-01-06 |
| 3 | 3 | 2024-01-03 12:05:00 | 2024-01-03 13:00:00 | 2024-01-04 09:00:00 | 2024-01-07 |
| 4 | 4 | 2024-01-04 12:05:00 | 2024-01-04 13:00:00 | 2024-01-05 09:00:00 | 2024-01-08 |
| 5 | 5 | 2024-01-05 12:05:00 | 2024-01-05 13:00:00 | 2024-01-06 09:00:00 | 2024-01-09 |
| 6 | 6 | 2024-01-06 12:05:00 | 2024-01-06 13:00:00 | 2024-01-07 09:00:00 | 2024-01-10 |
| 7 | 7 | 2024-01-07 12:05:00 | 2024-01-07 13:00:00 | 2024-01-08 09:00:00 | 2024-01-11 |
| 8 | 8 | 2024-01-08 12:05:00 | 2024-01-08 13:00:00 | 2024-01-09 09:00:00 | 2024-01-12 |
| 9 | 9 | 2024-01-09 12:05:00 | 2024-01-09 13:00:00 | 2024-01-10 09:00:00 | 2024-01-13 |
| 10 | 10 | 2024-01-10 12:05:00 | 2024-01-10 13:00:00 | 2024-01-11 09:00:00 | 2024-01-14 |
| 11 | 11 | 2024-01-11 12:05:00 | 2024-01-11 13:00:00 | 2024-01-12 09:00:00 | 2024-01-15 |
| 12 | 12 | 2024-01-12 12:05:00 | 2024-01-12 13:00:00 | 2024-01-13 09:00:00 | 2024-01-16 |
| 13 | 13 | 2024-01-13 12:05:00 | 2024-01-13 13:00:00 | 2024-01-14 09:00:00 | 2024-01-17 |
| 14 | 14 | 2024-01-14 12:05:00 | 2024-01-14 13:00:00 | 2024-01-15 09:00:00 | 2024-01-18 |
| 15 | 15 | 2024-01-15 12:05:00 | 2024-01-15 13:00:00 | 2024-01-16 09:00:00 | 2024-01-19 |
| 16 | 16 | 2024-01-16 12:05:00 | 2024-01-16 13:00:00 | 2024-01-17 09:00:00 | 2024-01-20 |
| 17 | 17 | 2024-01-17 12:05:00 | 2024-01-17 13:00:00 | 2024-01-18 09:00:00 | 2024-01-21 |
| 18 | 18 | 2024-01-18 12:05:00 | 2024-01-18 13:00:00 | 2024-01-19 09:00:00 | 2024-01-22 |
| 19 | 19 | 2024-01-19 12:05:00 | 2024-01-19 13:00:00 | 2024-01-20 09:00:00 | 2024-01-23 |
| 20 | 20 | 2024-01-20 12:05:00 | 2024-01-20 13:00:00 | 2024-01-21 09:00:00 | 2024-01-24 |
| 1 | 21 | 2024-01-21 12:05:00 | 2024-01-21 13:00:00 | 2024-01-22 09:00:00 | 2024-01-25 |
| 2 | 22 | 2024-01-22 12:05:00 | 2024-01-22 13:00:00 | 2024-01-23 09:00:00 | 2024-01-26 |
| 3 | 23 | 2024-01-23 12:05:00 | 2024-01-23 13:00:00 | 2024-01-24 09:00:00 | 2024-01-27 |

This table contains shipment details for each order. To look up for shippments, order_id, product_id must use together.

## status_order

Stores order status information.

| status_order_id | status_name |
|---|---|
| 1 | Pending |
| 2 | Processing |
| 3 | Shipped |
| 4 | Delivered |
| 5 | Canceled |
| 6 | Returned |
| 7 | Refunded |
| 8 | Awaiting Payment |
| 9 | Payment Received |
| 10 | Awaiting Fulfillment |
| 11 | Awaiting Shipment |
| 12 | Partially Shipped |
| 13 | Completed |
| 14 | On Hold |
| 15 | Awaiting Pickup |
| 16 | In Production |
| 17 | Partially Refunded |
| 18 | Failed |
| 19 | Manual Verification |
| 20 | Backordered |

This table lists possible statuses for orders such as Pending, Shipped, Delivered, etc.

## suppliers

Stores information about suppliers.

| supplier_id | supplier_name | address ▾ 1 | phone |
|---|---|---|---|
| 3 | Tech Distributors | 789 Oak Avenue, Capital City, IL | 123-456-7890 |
| 2 | Quality Goods Ltd. | 456 Elm Street, Shelbyville, IL | 234-567-8901 |
| 5 | Book World | 202 Pine Lane, North Haverbrook, NY | 345-678-9012 |
| 1 | Best Supplies Inc. | 123 Main Street, Springfield, IL | 456-789-0123 |
| 4 | Fashion Hub | 101 Maple Road, Ogdenville, CA | 567-890-1234 |

This table contains information about suppliers who provide products for the shop.

# Views

## 10_best_selling_products

| product_id | product_name | supplier_id | supplier_name | total_amount |
|---|---|---|---|---|
| 15 | Puma Sports Jacket | 5 | Book World | 439.98 |
| 55 | Adidas Ultraboost | 5 | Book World | 359.98 |
| 5 | Adidas Soccer Ball | 5 | Book World | 300.00 |
| 20 | Philips Headphones | 5 | Book World | 300.00 |
| 10 | Dell XPS 13 | 5 | Book World | 300.00 |
| 19 | Asics Running Shoes | 4 | Fashion Hub | 279.98 |
| 4 | Nike Running Shoes | 4 | Fashion Hub | 190.00 |
| 16 | Under Armour T-Shirt | 1 | Best Supplies Inc. | 139.97 |
| 54 | Nike Air Max 270 | 4 | Fashion Hub | 129.99 |
| 66 | Under Armour Hoodie | 1 | Best Supplies Inc. | 119.98 |

Displays the top 10 best-selling products based on the total sales amount.

**Note:** This view aggregates sales data to show the top 10 products by sales amount.

## clothing_products_sold_last_month

| product_id | product_name | description | product_price | image_url | quantity | unit_price | order_date |
|---|---|---|---|---|---|---|---|
| 4 | Nike Running Shoes | Comfortable running shoes | 89.99 | https://example.com/image4.jpg | 1 | 90.00 | 2024-06-02 10:00:00 |
| 15 | Puma Sports Jacket | Stylish sports jacket | 69.99 | https://example.com/image15.jpg | 2 | 69.99 | 2024-06-05 11:30:00 |
| 16 | Under Armour T-Shirt | Breathable sports T-shirt | 29.99 | https://example.com/image16.jpg | 3 | 29.99 | 2024-06-07 14:45:00 |
| 19 | Asics Running Shoes | High-performance running shoes | 89.99 | https://example.com/image19.jpg | 2 | 89.99 | 2024-06-10 16:15:00 |
| 35 | Puma Running Shorts | Lightweight running shorts | 29.99 | https://example.com/image35.jpg | 3 | 29.99 | 2024-06-12 09:20:00 |
| 66 | Under Armour Hoodie | Comfortable and stylish hoodie | 59.99 | https://example.com/image66.jpg | 2 | 59.99 | 2024-06-15 13:50:00 |
| 54 | Nike Air Max 270 | Comfortable and stylish sneakers | 129.99 | https://example.com/image54.jpg | 1 | 129.99 | 2024-06-17 08:30:00 |
| 55 | Adidas Ultraboost | High-performance running shoes | 179.99 | https://example.com/image55.jpg | 2 | 179.99 | 2024-06-20 11:00:00 |
| 74 | Nike Yoga Mat | Non-slip yoga mat | 49.99 | https://example.com/image74.jpg | 1 | 49.99 | 2024-06-22 15:10:00 |
| 75 | Adidas Running Shorts | Lightweight running shorts | 29.99 | https://example.com/image75.jpg | 3 | 29.99 | 2024-06-25 17:25:00 |

Displays clothing products sold in the last month.

**Note:** This view filters order items to show fashion (clothing) products sold in the last month.

## customer_total_purchases

Displays total purchases by each customer.

| customer_id | full_name | total_purchases |
|---|---|---|
| 18 | Daniel Harris | 449.98 |
| 20 | Oliver Martinez | 389.97 |
| 5 | James Williams | 389.97 |
| 30 | Sofia Baker | 300.00 |
| 25 | Isabella Young | 300.00 |
| 4 | Mary Brown | 279.98 |
| 2 | Jane Smith | 189.98 |
| 17 | Emma Lopez | 179.99 |
| 3 | Alice Johnson | 179.97 |
| 16 | David Clark | 169.98 |
| 19 | Sophia Clark | 149.99 |
| 1 | John Doe | 140.00 |
| 24 | Henry Allen | 100.00 |
| 29 | Benjamin Green | 100.00 |
| 28 | Emily Scott | 90.00 |
| 23 | Mia Hall | 90.00 |
| 21 | Amelia Lewis | 50.00 |
| 27 | Liam King | 50.00 |
| 22 | Lucas Walker | 50.00 |
| 26 | Aiden Hernandez | 50.00 |

**Note:** This view aggregates order items data to show the total amount spent by each customer.

## list_returned_items

Displays a list of returned items.

| return_id | order_item_id | order_id | product_id | product_name | return_date | return_quantity | reason |
|---|---|---|---|---|---|---|---|
| 48 | 25 | 15 | 15 | Puma Sports Jacket | 2024-03-15 08:00:00 | 2 | Different from website image |
| 47 | 24 | 14 | 14 | Toshiba Hard Drive | 2024-03-14 23:00:00 | 1 | No longer needed |
| 46 | 23 | 13 | 13 | Panasonic Microwave | 2024-03-13 22:00:00 | 1 | Ordered by mistake |
| 45 | 22 | 12 | 12 | Lenovo ThinkPad | 2024-03-12 21:00:00 | 1 | Allergic reaction |
| 44 | 21 | 11 | 11 | HP Envy Printer | 2024-03-11 20:00:00 | 2 | Received duplicate items |
| 43 | 20 | 10 | 10 | Dell XPS 13 | 2024-03-10 19:00:00 | 1 | Product expired |
| 42 | 19 | 9 | 9 | LG Refrigerator | 2024-03-09 18:00:00 | 1 | Not satisfied with quality |
| 41 | 18 | 8 | 8 | Amazon Echo Dot | 2024-03-08 17:00:00 | 2 | Incorrect size |
| 40 | 17 | 7 | 7 | Google Pixel 6 | 2024-03-07 16:00:00 | 1 | Received too late |
| 39 | 16 | 6 | 6 | Microsoft Surface Pro | 2024-03-06 15:00:00 | 3 | Better price found elsewhere |
| 38 | 15 | 5 | 5 | Adidas Soccer Ball | 2024-03-05 14:00:00 | 1 | Not as described |
| 37 | 14 | 4 | 4 | Nike Running Shoes | 2024-03-04 13:00:00 | 1 | Item damaged in transit |
| 36 | 13 | 3 | 3 | Apple MacBook Pro | 2024-03-03 12:00:00 | 2 | Changed mind |
| 35 | 12 | 2 | 2 | Samsung Galaxy S21 | 2024-03-02 11:00:00 | 1 | Wrong item shipped |
| | | | | | 2024-03-01 | | |

**Note:** This view lists all returned items along with details such as return date and reason for return.

**suppliers_products**

Displays the number of products supplied by each supplier.

| supplier_id | supplier_name | phone | address | product_count |
|---|---|---|---|---|
| 1 | Best Supplies Inc. | 456-789-0123 | 123 Main Street, Springfield, IL | 19 |
| 2 | Quality Goods Ltd. | 234-567-8901 | 456 Elm Street, Shelbyville, IL | 18 |
| 5 | Book World | 345-678-9012 | 202 Pine Lane, North Haverbrook, NY | 18 |
| 4 | Fashion Hub | 567-890-1234 | 101 Maple Road, Ogdenville, CA | 18 |
| 3 | Tech Distributors | 123-456-7890 | 789 Oak Avenue, Capital City, IL | 17 |

**Note:** This view aggregates product data to show the number of products each supplier provides.

## System Requirements

- You should download and have MariaDB in your computer.
- Download XAMP, Run it.
- Run Apache and MySQL then click on Admin button on XAMP window.
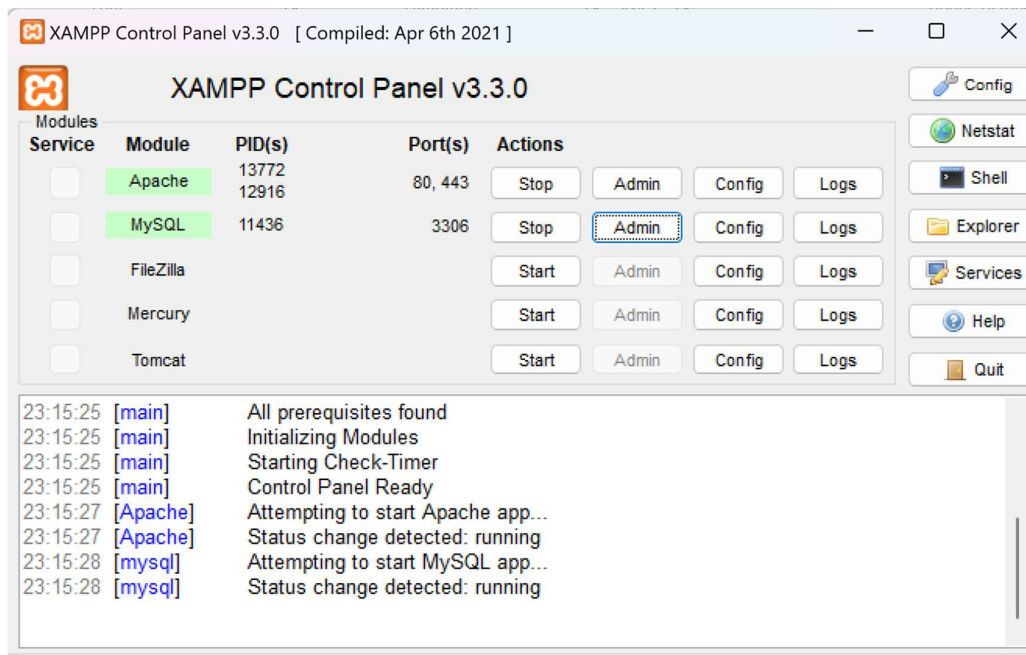


- phpMyAdmin will pop up on the browser.
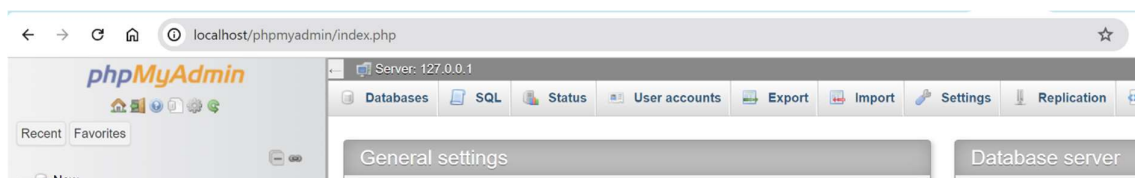


- Create database 'abc_onlineshop'
- Then Import Database SQL Script through the import tab.