



**Assessment Submission Form**

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<b>Assessment Title</b>	Individual Final Project
<b>Module Code</b>	M605
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**Declaration of Authorship**

I declare that all material in this assessment is my own work except where there is clear acknowledgement and appropriate reference to the work of others.

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Signed.....

Date .....

26/09/2024

## **Database Design Document (DDD) for Online Shop**

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## 1. Introduction

This document outlines the database design for a online shop system using MariaDB. It includes tables for storing customer details, product details, suppliers, order details and returned orders.

## 2. Purpose

The key objective of the database is to implement a structured and effective means of organization and control of core business information that allows ABC Company to thrive in the highly competitive arena of online retailing. In utilizing this database, the company achieves enhanced customer contentment, improved efficiency of operations, and access to information needed for making critical management decisions.

## 3. Database

The database will consist mainly of **five** tables:

- Customers
- Products
- Orders
- Order Items
- Returns
- Suppliers
- Product Comments
- Product Tags
- Product Images

## 4. Entity-Relationship Diagram (ERD)

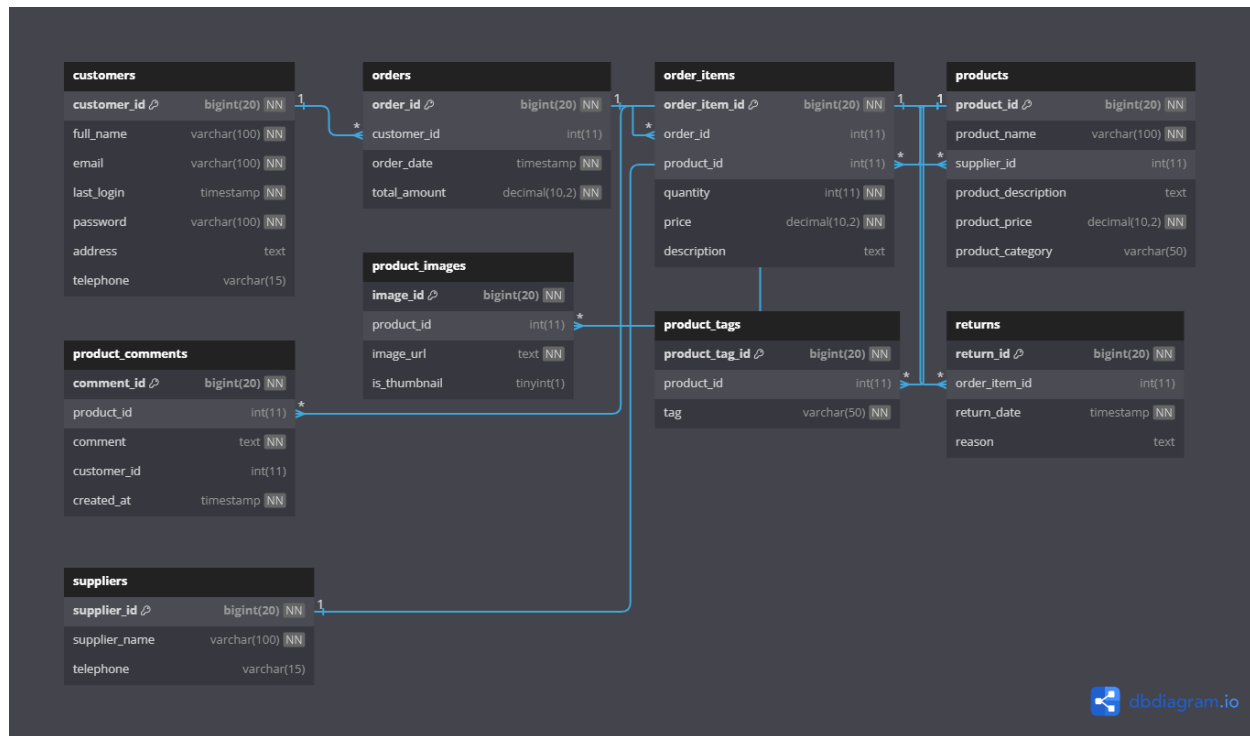


Figure 1 Entity Relationship Diagram (ERD)

## 5. Tables and Fields Description

### 5.1 Customer

Column	Description	Data Type
<b>customer_id (Primary Key)</b>	Unique identifier for each passenger	bigint(20)
<b>full_name</b>	Name of the customer	varchar(100)
<b>email</b>	Email address	varchar(100)
<b>last_login</b>	Timestamp of last login	timestamp
<b>password</b>	Physical Address	varchar(100)
<b>address</b>	Physical Address	varchar(100)
<b>telephone</b>	Telephone of the customer	varchar(15)

Table 1 Passengers Table

## 5.2 Products

Column	Description	Data Type
<b>product_id (Primary Key)</b>	Unique identifier for each product	bigint(20)
<b>product_name</b>	Product Name	varchar(100)
<b>supplier_id (Foreign Key)</b>	Reference to supplier id from supplier table	int(11)
<b>product_description</b>	Description about the product	text
<b>product_price</b>	Price of the product	decimal(10,2)
<b>product_category</b>	Category of the product	varchar(50)

Table 2 Products Table

## 5.3 Orders

Column	Description	Data Type
<b>order_id (Primary Key)</b>	Unique identifier for each order	bigint(20)
<b>customer_id (Foreign Key)</b>	References the customer_id in the customer table	int(11)
<b>order_date</b>	Timestamp of Order date	Timestamp
<b>total_amount</b>	Total amount of the order	decimal(10,2)

Table 3 Orders Table

## 5.4 Order Items

Column	Description	Data Type
<b>order_item_id (Primary Key)</b>	Unique identifier for each items in an order	bigint(20)
<b>order_id (Foreign Key)</b>	References the order_id in the Orders table	int(11)
<b>product_id (Foreign Key)</b>	References the product_id in the Products table	int(11)
<b>quantity</b>	Quantity of each item of the order	int(11)
<b>price</b>	Price of the item	decimal(10,2)
<b>description</b>	Description of the item	text

Table 4 Order Item Table

## 5.5 Returns

Column	Description	Data Type
<b>return_id (Primary Key)</b>	Unique identifier for each piece of luggage	bigint(20)
<b>order_item_id (Foreign Key)</b>	References the passenger_id in the Passengers table	int(11)
<b>return_date</b>	References the flight_id in the Flights table	timestamp
<b>reason</b>	Start date of the sharing preference	text

Table 5 Returns Table

## 5.6 Suppliers

Column	Description	Data Type
<b>supplier_id (Primary Key)</b>	Unique identifier for each Supplier	bigint(20)
<b>supplier_name</b>	Supplier name	varchar(100)
<b>Telephone</b>	Telephone of the supplier	varchar(15)

Table 6 Suppliers Table

## 5.7 Product Comments

Column	Description	Data Type
<b>comment_id (Primary Key)</b>	Unique identifier for each comment	bigint(20)
<b>product_id (Foreign Key)</b>	References the product_id in the Products table	int(11)
<b>comment</b>	Comment for this product	text
<b>customer_id (Foreign Key)</b>	References the customer_id in the Customer table	int(11)
<b>created_at</b>	Timestamp of when this comment is posted	timestamp

Table 7 Order Item Table

## 5.8 Product Tags

Column	Description	Data Type
<b>product_tag_id (Primary Key)</b>	Unique identifier for each Tag	bigint(20)
<b>product_id (Foreign Key)</b>	References the product_id in the Products table	int(11)
<b>tag</b>	Tags for each item	varchar(50)

Table 8 Suppliers Table

## 5.9 Product Images

Column	Description	Data Type
<b>image_id (Primary Key)</b>	Unique identifier for each Image	bigint(20)
<b>product_id (Foreign Key)</b>	References the product_id in the Products table	int(11)
<b>image_url</b>	Link for each image	text
<b>is_thumbnail</b>	This field is used to identify the main image of the product	Tinyint(1)

Table 9 Suppliers Table



## 6. Relationships of the Database

Here's a list of the foreign keys in your database schema for ABC Company, along with the tables they reference:

### 6.1 Orders Table

- Foreign Key: customer\_id
- References: Customers(customer\_id)

### 6.2 Order\_Items Table

- Foreign Key: order\_id
- References: Orders(order\_id)
- Foreign Key: product\_id
- References: Products(product\_id)

### 6.3 Comments Table

- Foreign Key: product\_id
- References: Products(product\_id)

### 6.4 Images Table

- Foreign Key: product\_id
- References: Products(product\_id)

### 6.5 Tags Table

- Foreign Key: product\_id
- References: Products(product\_id)

### 6.6 Products Table

- Foreign Key: supplier\_id
- References: Suppliers(supplier\_id)

### 6.7 Returns Table

- Foreign Key: order\_item\_id
- References: Order\_Items(order\_item\_id)

## 7. Future Enhancements

- **Promotions and Discounts Table**

Having a separate table for management of promotions, discount codes and seasonal sales would allow them to increase their outreach and retention through effective marketing strategies.

- **Enhanced Product Reviews System**

Adding more features for consumers who want to write a review about a product, such as rating its various aspects or even its overall value, would better inform the potential customers.

## 8. Conclusion

This project demonstrates the use of good database design concepts of normalization and relationship modeling which meets the requirements of the business's current situation, while at the same time preparing it for future growth and change.

Also, it reflects a deep understanding of database design principles and how we can imply these concepts on real world projects, such as ABC retailing online shop.

Github Link

<https://github.com/wakka-2/DataBaseAssignmentRetake>