Gisma University
of Applied Sciences

Assessment Submission Form

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Assessment Title	Individual Final Project
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Declaration of Authorship

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Signed..... Date 26/09/2024

Database Design Document (DDD) for Online Shop

Table of Contents

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 **nine** tables:

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

4. Entity-Relationship Diagram (ERD)

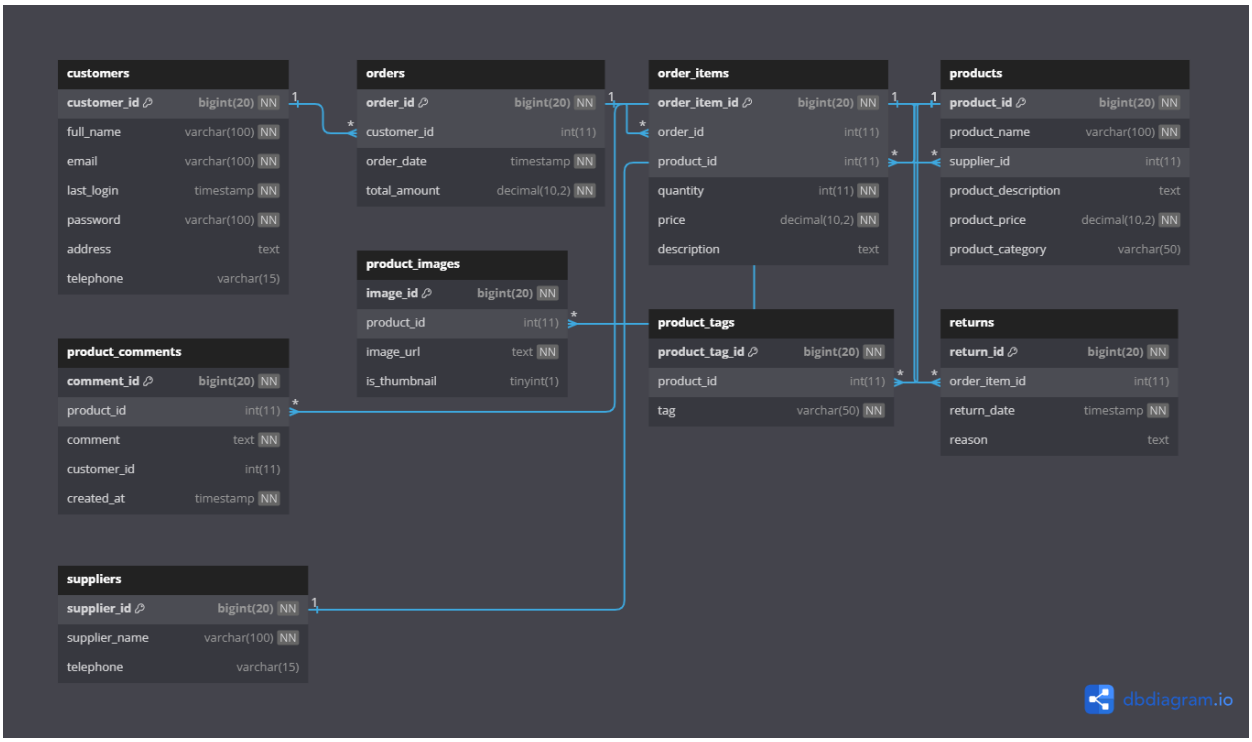

Figure 1 Entity Relationship Diagram (ERD)

5. Tables and Fields Description

5.1 Customer

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

Table 1 Passengers Table

5.2 Products

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

Table 2 Products Table

5.3 Orders

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

Table 3 Orders Table

5.4 Order Items

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

Table 4 Order Item Table

5.5 Returns

Column	Description	Data Type
return_id (Primary Key)	Unique identifier for each return	bigint(20)
order_item_id (Foreign Key)	References the order_item_id in the order item table	int(11)
return_date	Timestamp of return date	timestamp
reason	Text value of the return reason	text

Table 5 Returns Table

5.6 Suppliers

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

Table 6 Suppliers Table

5.7 Product Comments

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

Table 7 Order Item Table

5.8 Product Tags

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

Table 8 Suppliers Table

5.9 Product Images

Column	Description	Data Type
image_id (Primary Key)	Unique identifier for each Image	bigint(20)
product_id (Foreign Key)	References the product_id in the Products table	int(11)
image_url	Link for each image	text
is_thumbnail	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