Anicia Relational Database Project

Introduction

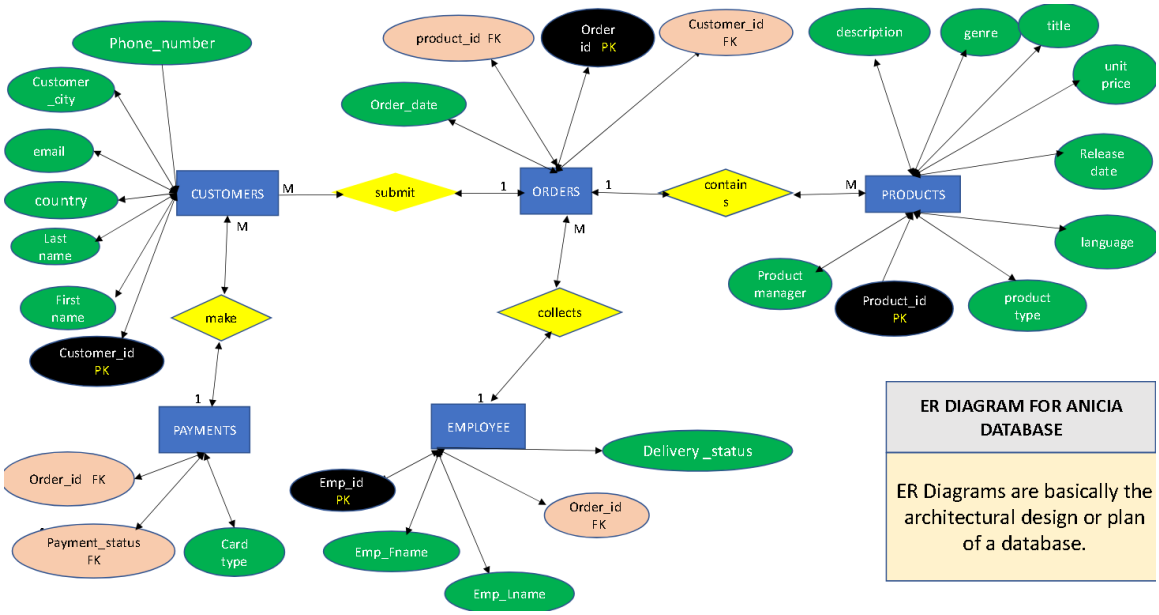
Anicia is a global online platform offering a wide range of books, music, and movies to customers across America, Europe, Asia, and Africa. This project demonstrates the design and implementation of a relational database system to support Anicia's operations, using MySQL Workbench.

Key Features

- Customer registration and tracking.
- Product catalog for books, movies, and music.
- Order and payment processing.
- Employee delivery tracking.
- Support for GDPR and ISO27001 compliance.

ER Diagram Overview

The ER diagram defines the relationships between the Customers, Products, Orders, Payments, and Employees tables.



Database Tables and SQL Scripts

Each table is defined with SQL CREATE and INSERT statements.

Customers Table

```
CREATE TABLE Customers (
  customer_id VARCHAR(20) PRIMARY KEY,
  first_name VARCHAR(50) NOT NULL,
  last_name VARCHAR(50),
  phone_number VARCHAR(20),
  email VARCHAR(50) NOT NULL,
  customer_city VARCHAR(15),
  country VARCHAR(20)
);

INSERT INTO Customers
(customer_id, first_name, last_name, email, customer_city, country, phone_number)
VALUES
('D0011', 'Kush', 'Felix', 'kusanpi@dmail.com', 'Paris', 'France', '+337845454'),
('D0015', 'John', 'Oore', 'johmo@dmail.com', 'London', 'UK', '+4478659787'),
('D00112', 'Melly', 'Demons', 'demoi@dmail.com', 'Chicago', 'USA', '+124554545'),
('D00121', 'John', 'Bezoz', 'juanpi@dmail.com', 'Madrid', 'Spain', '+345475554'),
('D00124', 'Kah', 'Lis', 'juanpi@dmail.com', 'Levante', 'Spain', '+34874163531'),
('D00175', 'Luzz', 'Ray', 'lusanpi@dmail.com', 'London', 'UK', '+4478659187'),
('D0066', 'Dominic', 'Ohanaka', 'domhgg@dmail.com', 'Owerri', 'Nigeria', '+23480875555');
```

Products Table

```
CREATE TABLE Products (
  product_id VARCHAR(20) PRIMARY KEY,
  product_type VARCHAR(30),
  title VARCHAR(30),
  genre VARCHAR(30),
  release_year INT,
  unit_price_$ FLOAT,
  description VARCHAR(100),
  product_manager VARCHAR(50),
  language VARCHAR(20)
);
```

```
INSERT INTO Products
(product_id, product_type, title, genre, release_year, unit_price_$, description,
product_manager, language)
VALUES
('P2127', 'music', 'Pac Man', 'Rap', 2018, 8.00, 'Eminem continues to diss MGK and mumble
rappers', 'Jack Ma', 'English'),
('P2128', 'music', 'Bongo', 'African', 2022, 79.00, 'An African highlife music from South East
Nigeria by Sunny BOBO', 'Jack Ma', 'Igbo'),
('P2527', 'book', 'Romeo and Juliet', 'Romance', 1752, 57.00, 'A sweet love story that ended in
the deaths of the couple', 'Dominic Leo', 'English'),
('P2627', 'movie', 'Faceoff', 'Action', 2001, 25.00, 'John Travolta pursues a terrorist to the point
of losing everything, even his identity', 'John Liu', 'English'),
('P2927', 'book', 'Sneak', 'Crime', 2022, 102.00, 'In this crime story, everybody is a suspect —
including the investigator', 'Dominic Leo', 'Italian'),
('P2027', 'movie', 'The Exorcist', 'Horror', 2012, 29.00, 'Evil is upon us; only one man is willing to
risk his life to face it', 'John Liu', 'Italian');
```

Orders Table

```
CREATE TABLE Orders (
  order_id VARCHAR(10),
  order_date VARCHAR(10),
  product_id VARCHAR(20),
  customer_id VARCHAR(20),
  units INT,
  PRIMARY KEY (order_id, product_id, customer_id),
  FOREIGN KEY (product_id) REFERENCES Products(product_id),
  FOREIGN KEY (customer_id) REFERENCES Customers(customer_id)
);

INSERT INTO orders
(order_id, order_date, product_id, customer_id, units)
VALUES
(11245, '2022-03-20', 'P2127', 'D0011', 8),
(11246, '2022-12-01', 'P2128', 'D00112', 3),
(11247, '2022-12-02', 'P2527', 'D00121', 7),
(11248, '2022-12-12', 'P2627', 'D00121', 5),
(11250, '2022-03-13', 'P2927', 'D00121', 14),
(11249, '2022-11-14', 'P2927', 'D0011', 1);
```

Payments Table

```
CREATE TABLE Payments (
  order_id VARCHAR(10) PRIMARY KEY,
  card_type VARCHAR(20),
  payment_status VARCHAR(20),
  FOREIGN KEY (order_id) REFERENCES Orders(order_id)
);

INSERT INTO payments (order_id, card_type, payment_status)
VALUES
(11245, 'credit_card', 'successful'),
(11247, 'debit_card', 'failed'),
(11246, 'credit_card', 'failed'),
(11248, 'debit_card', 'successful'),
(11249, 'credit_card', 'successful');
```

Employees Table

```
CREATE TABLE Employees (
  employee_id INT,
  employee_fname VARCHAR(20),
  employee_lname VARCHAR(20),
  order_id VARCHAR(10),
  delivery_status VARCHAR(20),
  PRIMARY KEY (employee_id, order_id),
  FOREIGN KEY (order_id) REFERENCES Orders(order_id)
);

INSERT INTO employees (employee_id, employee_fname, employee_lname, order_id)
VALUES
(5427136, 'Dominic', 'Ohanaka', 11245),
(5427137, 'John', 'Max', 11246),
(2427139, 'Lily', 'Payne', 11248),
(2457131, 'Rosamary', 'Sunak', 11247),
(2437132, 'Jincy', 'Nwabueze', 11249);
```

Sample SQL Queries

- **Customers in London:**

```
SELECT * FROM Customers WHERE customer_city = 'London';
```

- **All Available Rap Music:**

```
SELECT * FROM Products WHERE product_type = 'music' AND genre = 'Rap';
```

- **Average Unit Price of Products:**

SELECT AVG(unit_price_$) AS 'Average Price' FROM Products;

- **Undelivered Orders:**

SELECT * FROM Orders JOIN Employees ON Orders.order_id = Employees.order_id WHERE delivery_status = 'pending';

- **Credit Card Payments for Music:**

SELECT product_type, title, card_type, payment_status FROM Products, Orders, Payments WHERE Products.product_id = Orders.product_id AND Payments.order_id = Orders.order_id AND product_type = 'music' AND card_type = 'credit_card';

Use Case

The Anicia database enables the company to manage customer registrations, order fulfillment, payment processing, and delivery tracking. It supports personalized marketing, reliable data storage, and security-compliant operations.

Data Governance

- ISO27001:2022 Information Security Management System.
- Compliance with GDPR and CCPA privacy regulations.
- AWS-based cloud storage and data warehousing.
- Centralised data governance model with role-based access.

Tools & Technologies

- MySQL Workbench – For schema design and SQL scripting.
- SQL – For data manipulation and queries.
- AWS – For future data storage and analytics expansion.
- Python and Tableau – Planned for visualization and reporting.

References

- Forbes: The Age of Analytics and the Importance of Data Quality
- Majesteye: Why is Data Important for Your Business?
- SoftwareTestingHelp: Top Big Data Tools
- Okta: CCPA vs. GDPR