Task :- Sarfertek backend

Python queries

CREATE DATABASE retail\_store;

USE retail\_store;

CREATE TABLE Customers (

CustomerID INT PRIMARY KEY,

FirstName VARCHAR(50),

LastName VARCHAR(50),

Email VARCHAR(100),

DateOfBirth DATE

);

CREATE TABLE Products (

ProductID INT PRIMARY KEY,

ProductName VARCHAR(100),

Price DECIMAL(10, 2)

);

CREATE TABLE Orders (

OrderID INT PRIMARY KEY,

CustomerID INT,

OrderDate DATE,

FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)

);

CREATE TABLE OrderItems (

OrderItemID INT PRIMARY KEY,

OrderID INT,

ProductID INT,

Quantity INT,

FOREIGN KEY (OrderID) REFERENCES Orders(OrderID),

FOREIGN KEY (ProductID) REFERENCES Products(ProductID)

);

-- Insert sample data

INSERT INTO Customers VALUES (1, 'John', 'Doe', 'john.doe@example.com', '1985-01-15');

INSERT INTO Customers VALUES (2, 'Jane', 'Smith', 'jane.smith@example.com', '1990-06-20');

INSERT INTO Products VALUES (1, 'Laptop', 1000);

INSERT INTO Products VALUES (2, 'Smartphone', 600);

INSERT INTO Products VALUES (3, 'Headphones', 100);

INSERT INTO Orders VALUES (1, 1, '2023-01-10');

INSERT INTO Orders VALUES (2, 2, '2023-01-12');

INSERT INTO OrderItems VALUES (1, 1, 1, 1);

INSERT INTO OrderItems VALUES (2, 1, 3, 2);

INSERT INTO OrderItems VALUES (3, 2, 2, 1);

INSERT INTO OrderItems VALUES (4, 2, 3, 1);

import mysql.connector

def fetchall\_query(query, params=None):

conn = mysql.connector.connect(

host='your\_host',

user='your\_username',

password='your\_password',

database='retail\_store'

)

cursor = conn.cursor()

cursor.execute(query, params or ())

results = cursor.fetchall()

conn.close()

return results

# 1. List all customers.

query1 = "SELECT \* FROM Customers"

customers = fetchall\_query(query1)

print("All Customers:", customers)

# 2. Find all orders placed in January 2023.

query2 = """

SELECT \* FROM Orders

WHERE OrderDate BETWEEN '2023-01-01' AND '2023-01-31'

"""

orders\_january = fetchall\_query(query2)

print("Orders in January 2023:", orders\_january)

# 3. Get the details of each order, including the customer name and email.

query3 = """

SELECT Orders.OrderID, Customers.FirstName, Customers.LastName, Customers.Email, Orders.OrderDate

FROM Orders

JOIN Customers ON Orders.CustomerID = Customers.CustomerID

"""

order\_details = fetchall\_query(query3)

print("Order Details:", order\_details)

# 4. List the products purchased in a specific order (e.g., OrderID = 1).

order\_id = 1

query4 = """

SELECT Products.ProductName, OrderItems.Quantity

FROM OrderItems

JOIN Products ON OrderItems.ProductID = Products.ProductID

WHERE OrderItems.OrderID = %s

"""

order\_products = fetchall\_query(query4, (order\_id,))

print(f"Products in Order {order\_id}:", order\_products)

# 5. Calculate the total amount spent by each customer.

query5 = """

SELECT Customers.CustomerID, Customers.FirstName, Customers.LastName,

SUM(Products.Price \* OrderItems.Quantity) AS TotalSpent

FROM Customers

JOIN Orders ON Customers.CustomerID = Orders.CustomerID

JOIN OrderItems ON Orders.OrderID = OrderItems.OrderID

JOIN Products ON OrderItems.ProductID = Products.ProductID

GROUP BY Customers.CustomerID, Customers.FirstName, Customers.LastName

"""

total\_spent = fetchall\_query(query5)

print("Total Spent by Each Customer:", total\_spent)

# 6. Find the most popular product (the one that has been ordered the most).

query6 = """

SELECT Products.ProductID, Products.ProductName,

SUM(OrderItems.Quantity) AS TotalQuantityOrdered

FROM OrderItems

JOIN Products ON OrderItems.ProductID = Products.ProductID

GROUP BY Products.ProductID, Products.ProductName

ORDER BY TotalQuantityOrdered DESC

LIMIT 1

"""

most\_popular\_product = fetchall\_query(query6)

print("Most Popular Product:", most\_popular\_product)

# 7. Get the total number of orders and the total sales amount for each month in 2023.

query7 = """

SELECT DATE\_FORMAT(OrderDate, '%Y-%m') AS Month,

COUNT(DISTINCT Orders.OrderID) AS TotalOrders,

SUM(Products.Price \* OrderItems.Quantity) AS TotalSalesAmount

FROM Orders

JOIN OrderItems ON Orders.OrderID = OrderItems.OrderID

JOIN Products ON OrderItems.ProductID = Products.ProductID

WHERE YEAR(OrderDate) = 2023

GROUP BY DATE\_FORMAT(OrderDate, '%Y-%m')

"""

monthly\_sales = fetchall\_query(query7)

print("Monthly Sales in 2023:", monthly\_sales)

# 8. Find customers who have spent more than $1000.

query8 = """

SELECT Customers.CustomerID, Customers.FirstName, Customers.LastName,

SUM(Products.Price \* OrderItems.Quantity) AS TotalSpent

FROM Customers

JOIN Orders ON Customers.CustomerID = Orders.CustomerID

JOIN OrderItems ON Orders.OrderID = OrderItems.OrderID

JOIN Products ON OrderItems.ProductID = Products.ProductID

GROUP BY Customers.CustomerID, Customers.FirstName, Customers.LastName

HAVING TotalSpent > 1000

"""

big\_spenders = fetchall\_query(query8)

print("Customers who spent more than $1000:", big\_spenders)