Pizza Sales Database Management System

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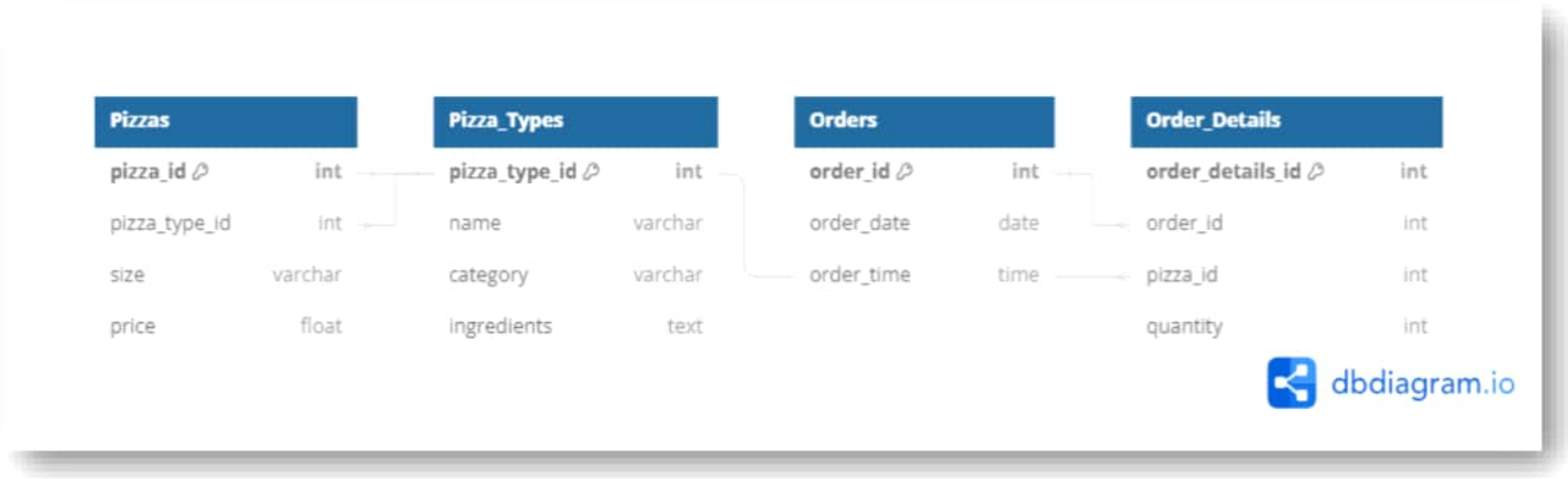
Introduction

This project involves creating a MySQL database to manage and analyze pizza sales data, focusing on customer orders, sales trends, and inventory management.

The objective is to streamline sales data management and provide insights into sal es trends, popular pizzas, and customer preferences.

Database Design

Entity Relationship (ER) Diagram:



The ER diagram illustrates the relationships between four tables: Pizzas, Pizza_Types, Orders, and Order_Details. Pizzas are categorized by Pizza_Types, Orders contain multiple Order_Details, and each Order_Detail links a specific pizza to an order. This structure ensures efficient data management for tracking pizza sales and order details. Primary keys are shown as

Database Schema

- *pizzas (pizza_id : text, pizza_type_id : text, size : text, price : double)*
- *pizza_types (pizza_type_id : text, name : text , category : text, ingredients : text)*
- *orders (order_id : int , order_date : date , order_time : time)*
- *orders_details (order_details_id : int ,order_id : int , pizza_id : text ,quantity : int)*

Key Queries & Codes

Retrieve the total number of orders placed.

```
1   -- Retrieve the total number of orders placed
2 • SELECT COUNT(order_id) AS total_order FROM orders;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_order
21350

Key Queries & Codes

Calculate the total revenue generated from pizza sales.

```sql
-- Calculate the total revenue generated from pizza sales.

SELECT
    ROUND(SUM(pizzas.price * orders_details.quantity),2)
        AS total_revenue
FROM
    pizzas
        JOIN
    orders_details ON pizzas.pizza_id = orders_details.pizza_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_revenue
817860.05

Key Queries & Codes

Identify the highest-priced pizza.

```
1   -- Identify the highest-priced pizza.
2
3 • SELECT
4       pizza_types.name, pizzas.price
5   FROM
6       pizza_types
7           JOIN
8       pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
9   ORDER BY pizzas.price DESC
10  LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

name	price
The Greek Pizza	35.95

Key Queries & Codes

Identify the most common pizza size ordered.

```
1   -- Identify the most common pizza size ordered.
2
3 • SELECT
4       pizzas.size,
5       COUNT(orders_details.order_details_id) AS order_count
6   FROM
7       pizzas
8           JOIN
9       orders_details ON pizzas.pizza_id = orders_details.pizza_id
10  GROUP BY pizzas.size
11  ORDER BY order_count DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

size	order_count
L	18526
M	15385
S	14137
XL	544
XXL	28

Key Queries & Codes

List the top 5 most ordered pizza types along with their quantities.

```sql
-- List the top 5 most ordered pizza types along with their quantities.

SELECT
    pizza_types.name, SUM(orders_details.quantity) AS counts
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    orders_details ON pizzas.pizza_id = orders_details.pizza_id
GROUP BY pizza_types.name
ORDER BY counts DESC
LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

name	counts
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

Key Queries & Codes

Join the necessary tables to find the total quantity of each pizza category ordered.

```
1   -- Join the necessary tables to find the total quantity of each pizza category ordered.
2
3 • SELECT
4       pizza_types.category,
5       SUM(orders_details.quantity) AS total_quantity
6   FROM
7       pizza_types
8           JOIN
9       pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
10          JOIN
11      orders_details ON orders_details.pizza_id = pizzas.pizza_id
12  GROUP BY pizza_types.category
13  ORDER BY total_quantity DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	total_quantity
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

Key Queries & Codes

Determine the distribution of orders by hour of the day.

```
Limit to 1000 rows
1   -- Determine the distribution of orders by hour of the day.
2
3 • SELECT
4       HOUR(order_time) AS hours, COUNT(order_id) AS total_order
5   FROM
6       orders
7   GROUP BY HOUR(order_time);
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

hours	total_order
11	1231
12	2520
13	2455
14	1472
15	1468
16	1920
17	2336
18	2399
19	2009
20	1642
21	1198
22	663
23	28
10	8
9	1

Key Queries & Codes

Join relevant tables to find the category-wise distribution of pizzas.

```sql
-- Join relevant tables to find the category-wise distribution of pizzas.

SELECT
    category, COUNT(name) AS total_types
FROM
    pizza_types
GROUP BY category;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	total_types
Chicken	6
Classic	8
Supreme	9
Veggie	9

Key Queries & Codes

Group the orders by date and calculate the average number of pizzas orde red per day.

```sql
-- Group the orders by date and calculate the average number of pizzas ordered per day.

SELECT
    ROUND(AVG(qty), 0) AS avg_per_day
FROM
    (SELECT
        orders.order_date, SUM(orders_details.quantity) AS qty
    FROM
        orders
    JOIN orders_details ON orders.order_id = orders_details.order_id
    GROUP BY orders.order_date) AS order_qty;
```

avg_per_day
138

Key Queries & Codes

Determine the top 3 most ordered pizza types based on revenue.

```
Limit to 1000 rows
 1    -- Determine the top 3 most ordered pizza types based on revenue.
 2
 3 •  SELECT
 4        pizza_types.name,
 5        SUM(pizzas.price * orders_details.quantity) AS revenue
 6    FROM
 7        pizza_types
 8            JOIN
 9        pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
10            JOIN
11        orders_details ON orders_details.pizza_id = pizzas.pizza_id
12    GROUP BY pizza_types.name
13    ORDER BY revenue DESC
14    LIMIT 3;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5

Data Analysis Summary

- ***Total Number of Orders Placed***: *21,350*
- ***Total Revenue***: *$817,860.05*
- ***Highest Priced Pizza***: *The Greek Pizza at $35.95*
- ***Most Ordered Pizza Size***: *Large (L) size is the most ordered, while XXL size is the least ordered.*
- ***Most Ordered Pizza***: *The Classic Deluxe Pizza*
- ***Most Popular Pizza Category***: *Classic category*
- ***Peak Ordering Times***: *Most pizzas are ordered between 12:00 PM to 1:00 PM and 5:00 PM to 7:00 PM.*
- ***Most Liked Pizza Type***: *Chicken pizzas are the most popular among customers*
- ***Average Number of Pizzas Ordered Per Day***: *138*
- ***Top 3 Ordered Pizzas***:
  I. *The Thai Chicken Pizza*
  II. *The Barbecue Chicken Pizza*
  III. *The California Chicken Pizza*

Conclusion:

- *I successfully created a MySQL database to manage and analyze pizza sales.*
- *The database design captures important details about pizzas, orders, and sales.*
- *SQL queries helped us understand which pizzas a re most popular and when sales are highest.*
- *Future improvements could include adding custo mer feedback and real-time data analysis.*

THANK YOU