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SQL Project on pizza sale



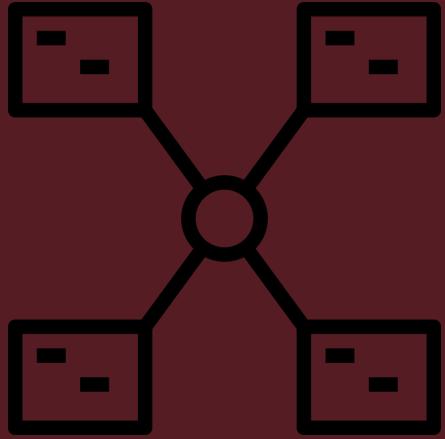
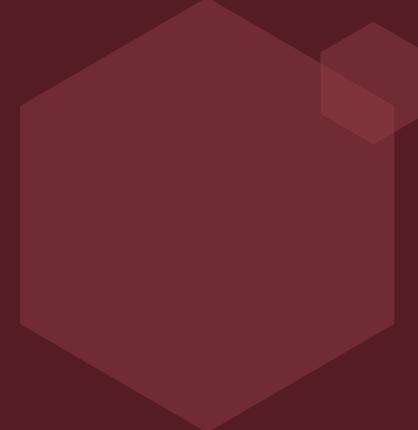


Hello

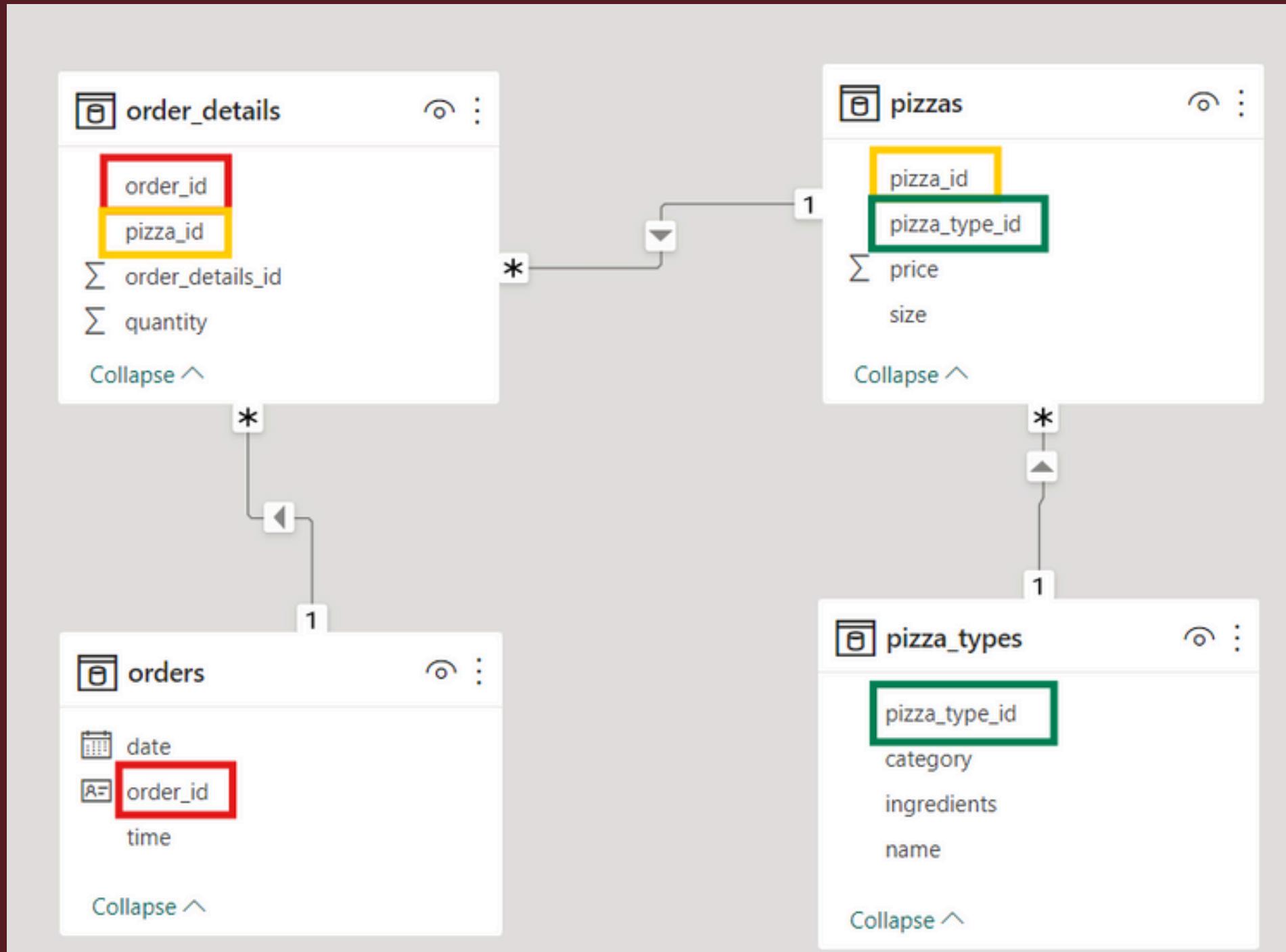
My name is **Manish Kumar** and in this project, I used SQL queries to solve a question related to pizza sales.

Our approach involved a thorough analysis of the current database structure, identifying key areas for improvement, and applying SQL optimization techniques. We implemented indexing strategies, normalized the database tables, and conducted extensive testing to ensure significant performance enhancements.

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SCHEMA TABLE



Objectives

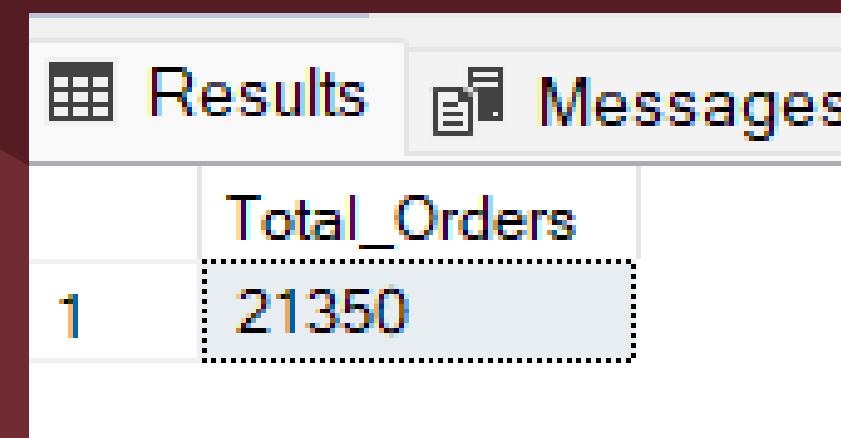
Improve the performance of the sales database.

Reduce query response times.

Enhance the accuracy and speed of sales reporting.

RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED?

```
SELECT COUNT(order_id) AS Total_Orders  
FROM orders
```

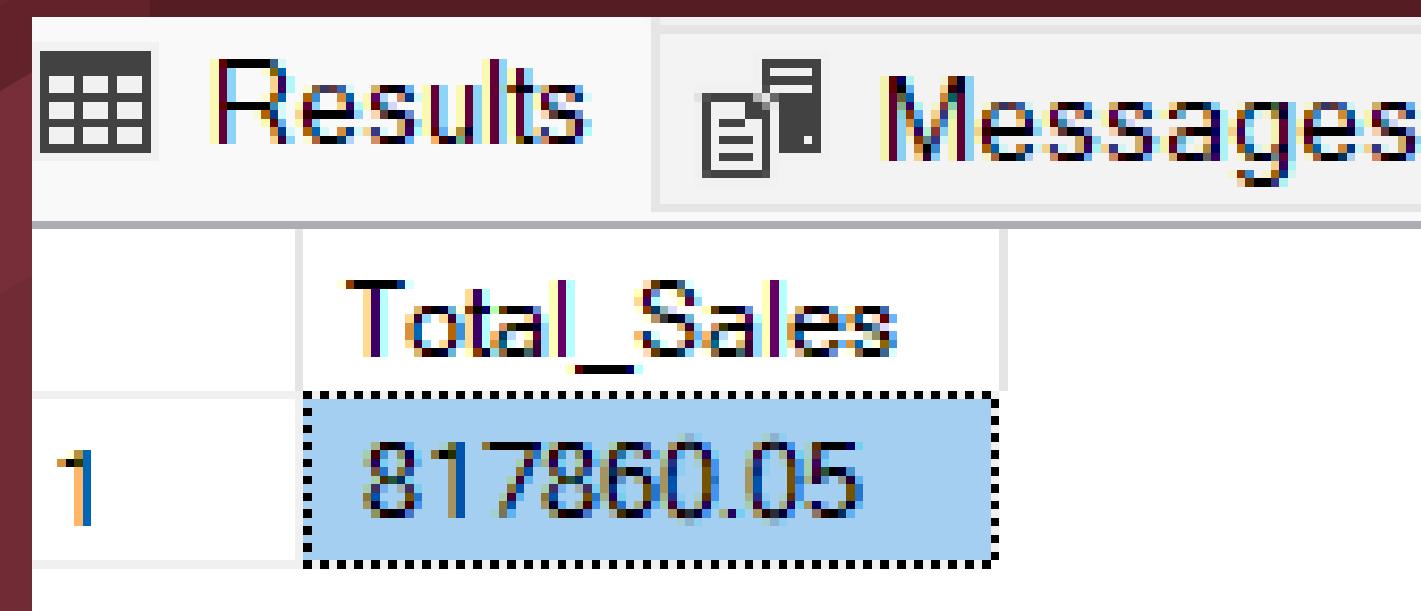


	Total_Orders
1	21350

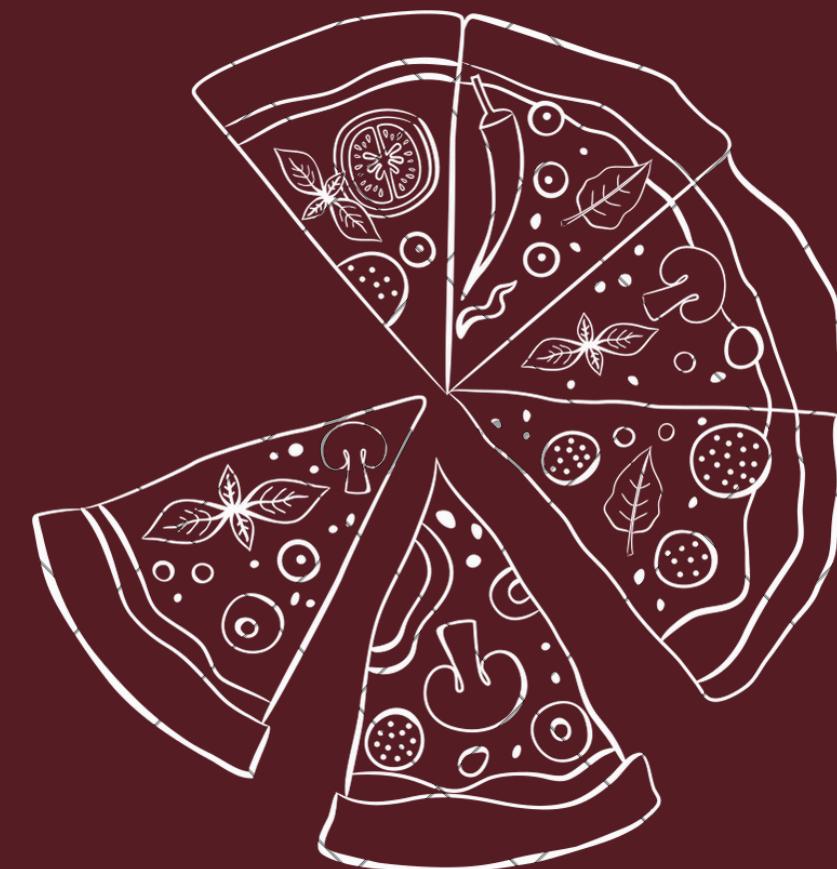


CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

```
SELECT  
    ROUND(SUM(order_details.quantity * pizzas.price),2)  
    AS Total_Sales  
  
FROM  
    order_details  
    JOIN  
    pizzas ON order_details.pizza_id = pizzas.pizza_id
```



	Total_Sales
1	817860.05



IDENTIFY THE HIGHEST-PRICED PIZZA.

```
SELECT * FROM pizzas
SELECT * FROM pizza_types

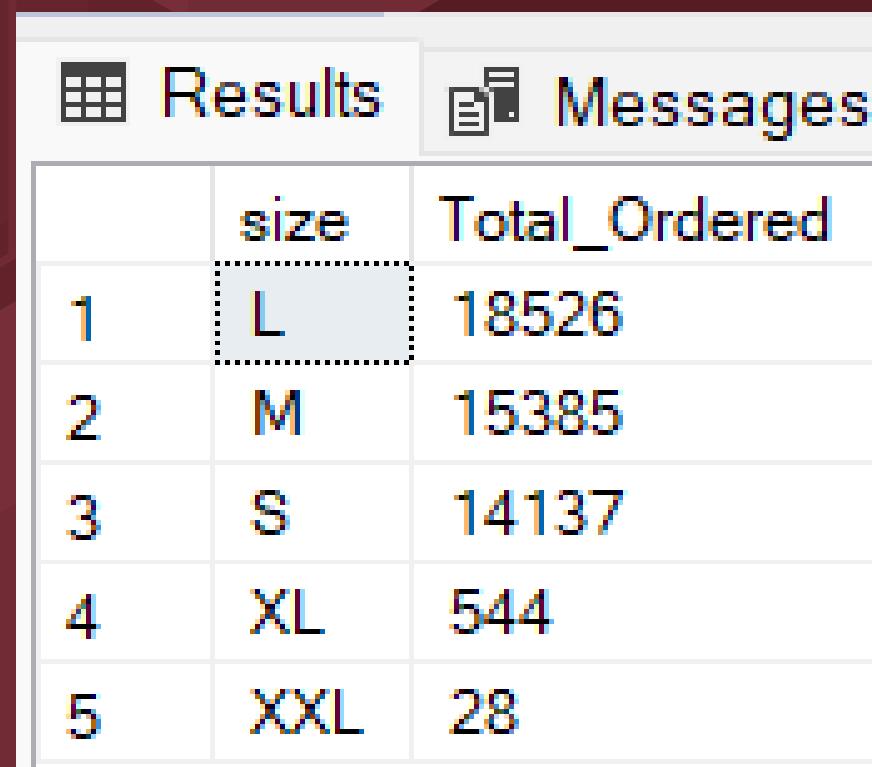
]SELECT TOP 1
    pizza_types.name AS Pizza_Name, pizzas.price AS Highest_Priced_Pizza
FROM
    pizzas
    JOIN
    pizza_types ON pizza_types.pizza_type_id = pizzas.pizza_type_id
ORDER BY price DESC
```

	Results	Messages
	Pizza_Name	Highest_Priced_Pizza
1	The Greek Pizza	35.9500007629395

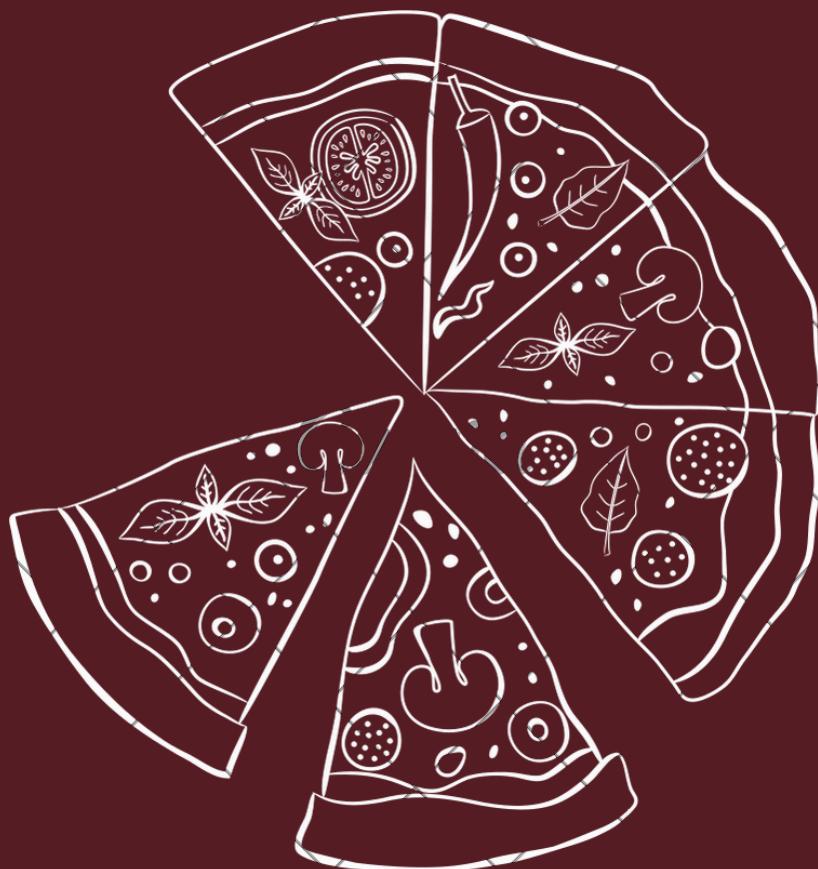


IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.

```
SELECT
    pizzas.size, COUNT(order_details.pizza_id)
    AS Total_Ordered
FROM order_details
    JOIN
        pizzas ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizzas.size
ORDER BY Total_Ordered DESC
```



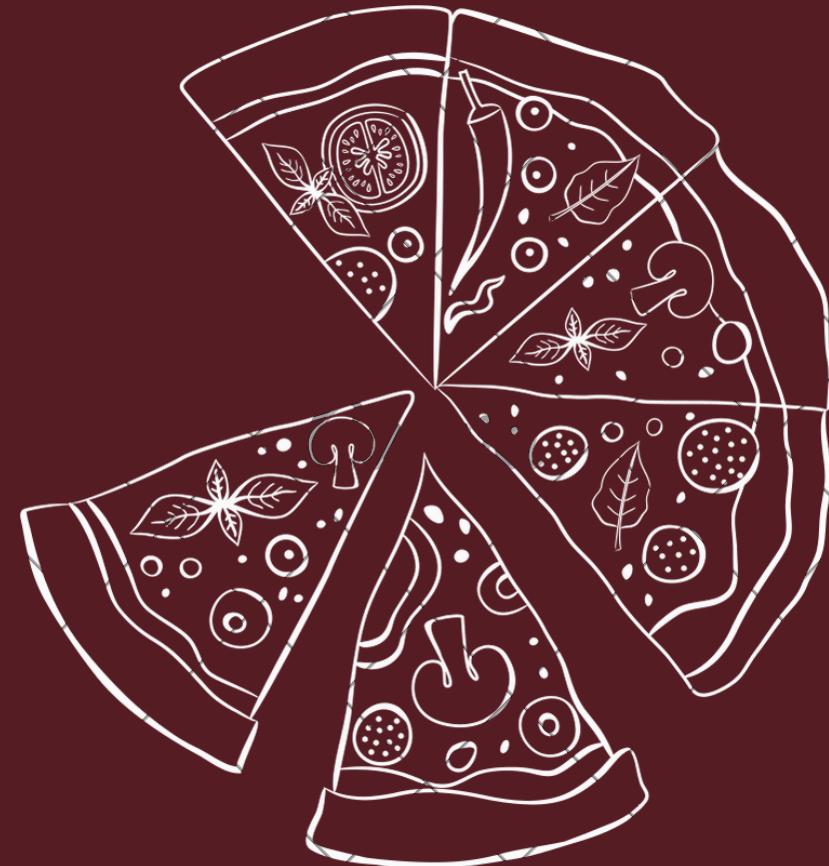
	size	Total_Ordered
1	L	18526
2	M	15385
3	S	14137
4	XL	544
5	XXL	28



LIST THE TOP 5 MOST ORDERED PIZZA TYPES ALONG WITH THEIR QUANTITIES.

```
SELECT TOP 5
    pizza_types.name, SUM(order_details.quantity)
        AS Total_Quantity_Ordered
FROM order_details
    JOIN
        pizzas ON order_details.pizza_id = pizzas.pizza_id
    JOIN
        pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
GROUP BY pizza_types.name
ORDER BY Total_Quantity_Ordered DESC
```

	name	Total_Quantity_Ordered
1	The Classic Deluxe Pizza	2453
2	The Barbecue Chicken Pizza	2432
3	The Hawaiian Pizza	2422
4	The Pepperoni Pizza	2418
5	The Thai Chicken Pizza	2371



JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED.

```
SELECT pizza_types.category,
       SUM(order_details.quantity)
          AS Total_Quantity_Order
  FROM order_details
    JOIN pizzas ON order_details.pizza_id = pizzas.pizza_id
    JOIN pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
 GROUP BY pizza_types.category
 ORDER BY Total_Quantity_Order DESC
```

	category	Total_Quantity_Order
1	Classic	14888
2	Supreme	11987
3	Veggie	11649
4	Chicken	11050





DETERMINE THE DISTRIBUTION OF ORDERS BY HOUR OF THE DAY.

	Hour	Order_Count
1	9	1
2	10	8
3	11	1231
4	12	2520
5	13	2455
6	14	1472
7	15	1468
8	16	1920
9	17	2336
10	18	2399
11	19	2009
12	20	1642
13	21	1198
14	22	663
15	23	28

```
SELECT DATEPART(HOUR,(time)) AS Hour,  
COUNT(order_id) AS Order_Count  
FROM orders  
GROUP BY DATEPART(HOUR,(time))  
ORDER BY DATEPART(HOUR,(time))
```



JOIN RELEVANT TABLES TO FIND THE CATEGORY-WISE DISTRIBUTION OF PIZZAS.

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

	category	No_of_Pizzas
1	Chicken	6
2	Classic	8
3	Supreme	9
4	Veggie	9



GROUP THE ORDERS BY DATE AND CALCULATE THE AVERAGE NUMBER OF PIZZAS ORDERED PER DAY.

```
SELECT AVG(Quantity) AS Pizza_Per_Day
FROM
  (SELECT orders.date, SUM(order_details.quantity) AS Quantity
  FROM Orders
  JOIN
    order_details ON orders.order_id = order_details.order_id
  GROUP BY orders.date)
  AS Order_Quantity
```

	Pizza_Per_Day
1	138



DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE.

```
SELECT TOP 3 pizza_types.name,
    SUM(order_details.quantity * pizzas.price)
    AS total_Revenue
FROM order_details
    JOIN
        pizzas ON order_details.pizza_id = pizzas.pizza_id
    JOIN
        pizza_types ON pizzas.pizza_type_id = pizza_types.pizza_type_id
GROUP BY pizza_types.name
ORDER BY total_Revenue DESC
```

	name	total_Revenue
1	The Thai Chicken Pizza	43434.25
2	The Barbecue Chicken Pizza	42768
3	The California Chicken Pizza	41409.5



CALCULATE THE PERCENTAGE CONTRIBUTION OF EACH PIZZA TYPE TO TOTAL REVENUE.

```

SELECT pizza_types.name,
       SUM(order_details.quantity * pizzas.price) AS Total_Sale,
       ROUND(SUM(order_details.quantity * pizzas.price) * 100/ (SELECT
                           SUM(order_details.quantity * pizzas.price)
                      FROM order_details
                     JOIN
                       pizzas ON pizzas.pizza_id = order_details.pizza_id),2) AS Total_Revenue
  FROM pizza_types
  JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
  JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
 GROUP BY pizza_types.name
 ORDER BY Total_Revenue DESC

```

	name	Total_Sale	Total_Revenue
1	The Thai Chicken Pizza	43434.25	5.31
2	The Barbecue Chicke...	42768	5.23
3	The California Chicke...	41409.5	5.06
4	The Classic Deluxe Pi...	38180.5	4.67
5	The Spicy Italian Pizza	34831.25	4.26
6	The Southwest Chicke...	34705.75	4.24
7	The Italian Supreme ...	33476.75	4.09
8	The Four Cheese Pizza	32265.7...	3.95
9	The Hawaiian Pizza	32273.25	3.95
10	The Sicilian Pizza	30940.5	3.78
11	The Pepperoni Pizza	30161.75	3.69
12	The Greek Pizza	28454.1...	3.48
13	The Mexicana Pizza	26780.75	3.27
14	The Five Cheese Pizza	26066.5	3.19
15	The Pepper Salami Pi...	25529	3.12
16	The Italian Capocollo ...	25094	3.07

16	The Italian Capocollo ...	25094	3.07
17	The Vegetables + Veg...	24374.75	2.98
18	The Prosciutto and Ar...	24193.25	2.96
19	The Napolitana Pizza	24087	2.95
20	The Spinach and Feta...	23271.25	2.85
21	The Big Meat Pizza	22968	2.81
22	The Pepperoni, Mush...	18834.5	2.3
23	The Chicken Alfredo P...	16900.25	2.07
24	The Chicken Pesto Pi...	16701.75	2.04
25	The Soppressata Pizza	16425.75	2.01
26	The Italian Vegetables...	16019.25	1.96
27	The Calabrese Pizza	15934.25	1.95
28	The Spinach Pesto Pi...	15596	1.91
29	The Mediterranean Pi...	15360.5	1.88
30	The Spinach Suprem...	15277.75	1.87
31	The Green Garden Pi...	13955.75	1.71
32	The Brie Carre Pizza	11588.4...	1.42





ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME TOP 10.

```
SELECT TOP 10 date,
           SUM(Revenue) OVER(ORDER BY date) AS Cum_Revenue
      FROM
        (SELECT orders.date, ROUND(SUM(order_details.quantity * pizzas.price),2)
           AS Revenue
      FROM order_details
      JOIN
           pizzas ON pizzas.pizza_id = order_details.pizza_id
      JOIN
           orders ON order_details.order_id = order_details.order_id
      GROUP BY orders.date) AS Sale
```

	date	Cum_Revenue
1	2015-01-01	56432343.51
2	2015-01-02	111228966.92
3	2015-01-03	165207730.28
4	2015-01-04	207736452.92
5	2015-01-05	251900895.67
6	2015-01-06	304243938.92
7	2015-01-07	351679821.87
8	2015-01-08	410565745.53
9	2015-01-09	461273068.68
10	2015-01-10	514433971.98



DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE FOR EACH PIZZA CATEGORY.

```
SELECT category, name, Revenue, Rank_
FROM
(SELECT category, name, Revenue,
RANK() OVER(PARTITION BY category ORDER BY Revenue DESC) AS Rank_
FROM
(SELECT pizza_types.category, pizza_types.name, SUM(order_details.quantity * pizzas.price) AS Revenue
FROM pizza_types
JOIN pizzas ON pizzas.pizza_type_id = pizza_types.pizza_type_id
JOIN order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizza_types.category, pizza_types.name) AS a) AS b
WHERE Rank_<=3
```

	category	name	Revenue	Rank_
1	Chicken	The Thai Chicken Pizza	43434.25	1
2	Chicken	The Barbecue Chicken Pizza	42768	2
3	Chicken	The California Chicken Pizza	41409.5	3
4	Classic	The Classic Deluxe Pizza	38180.5	1
5	Classic	The Hawaiian Pizza	32273.25	2
6	Classic	The Pepperoni Pizza	30161.75	3
7	Supre...	The Spicy Italian Pizza	34831.25	1
8	Supre...	The Italian Supreme Pizza	33476.75	2
9	Supre...	The Sicilian Pizza	30940.5	3
10	Veggie	The Four Cheese Pizza	32265....	1
11	Veggie	The Mexicana Pizza	26780.75	2
12	Veggie	The Five Cheese Pizza	26066.5	3





THANK YOU

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DATA SET:-

https://drive.google.com/file/d/1oq8MBAKOTSbr-PBysbpnC3w_ccdMpaL/view?usp=sharing