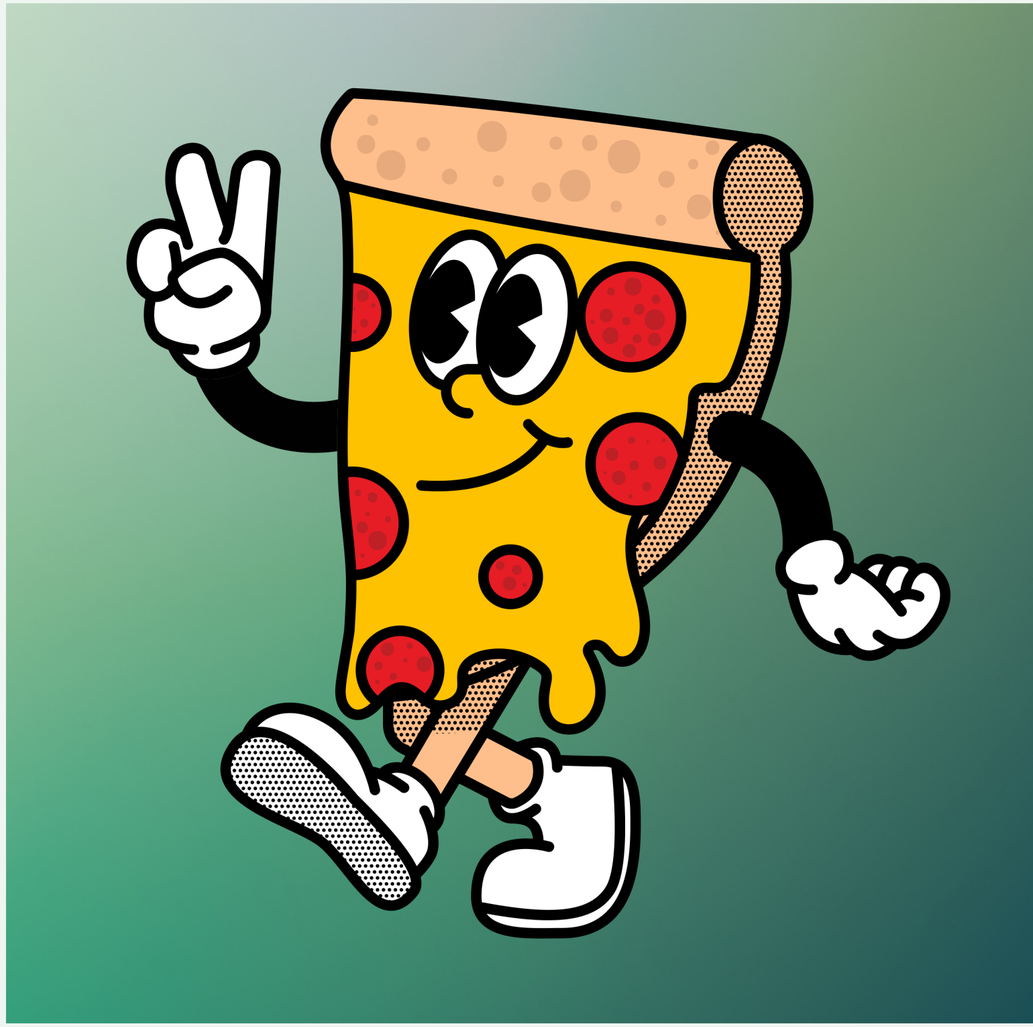
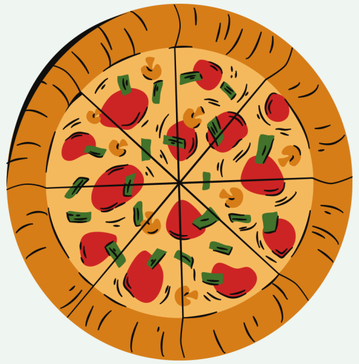
THE

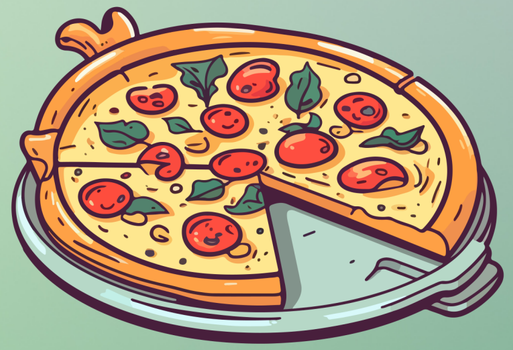
PIZZA SALES ANALYSIS



OVERVIEW



In this project, I conducted an in-depth analysis of a dataset from Kaggle on pizza sales, utilizing SQL for data exploration and answering a series of questions spanning basic, intermediate, and advanced levels of complexity. The analysis included a variety of tasks such as determining the total number of orders, calculating total revenue, and identifying the highest-priced pizza. Additionally, I delved into more intricate analyses such as the distribution of orders by the hour of the day, the cumulative revenue generated over time, and the percentage contribution of each pizza type to total revenue. This comprehensive exploration provided valuable insights into pizza sales trends and customer preferences.



ABOUT THE PROJECT

The aim of this project was to leverage SQL for performing exploratory data analysis (EDA) on a pizza sales dataset. By joining necessary tables and employing SQL queries, I was able to extract meaningful insights and trends from the data. Basic queries helped in understanding fundamental metrics like total orders and revenue, while intermediate queries provided insights into order patterns and pizza category distributions. Advanced queries further deepened the analysis by focusing on revenue contributions and temporal sales patterns. This project not only demonstrated the power of SQL in handling and analyzing large datasets but also provided actionable insights for optimizing pizza sales strategies.

ORDER_DETALS TABLE

```sql
SELECT * FROM pizzahut.order_details;
```

	order_details_id	order_id	pizza_id	quantity
▶	1	1	hawaiian_m	1
	2	2	classic_dlx_m	1
	3	2	five_cheese_l	1
	4	2	ital_supr_l	1
	5	2	mexicana_m	1
	6	2	thai_ckn_l	1
	7	3	ital_supr_m	1
	8	3	prsc_argla_l	1
	9	4	ital_supr_m	1

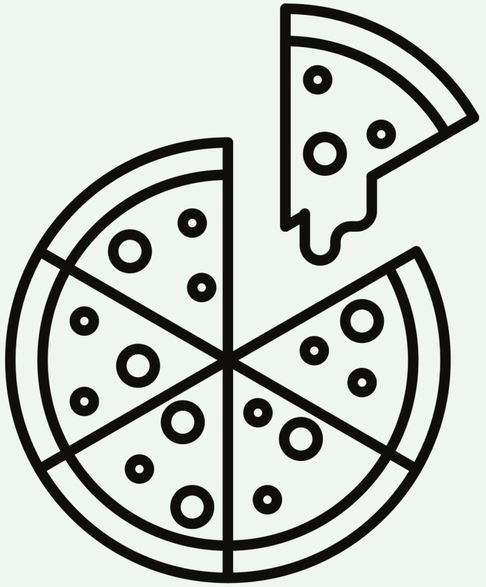
ORDERS TABLE

```
SELECT * FROM pizzahut.orders;
```

order_id	order_date	order_time
1	2015-01-01	11:38:36
2	2015-01-01	11:57:40
3	2015-01-01	12:12:28
4	2015-01-01	12:16:31
5	2015-01-01	12:21:30
6	2015-01-01	12:29:36
7	2015-01-01	12:50:37
8	2015-01-01	12:51:37
9	2015-01-01	12:52:01

PIZZA_TYPES TABLE

```
SELECT * FROM pizzahut.pizza_types;
```



pizza_type_id	name	category	ingredients
bbq_ckn	The Barbecue Chicken Pizza	Chicken	Barbecued Chicken, Red Peppers, Green Peppe...
cali_ckn	The California Chicken Pizza	Chicken	Chicken, Artichoke, Spinach, Garlic, Jalapeno P...
ckn_alfredo	The Chicken Alfredo Pizza	Chicken	Chicken, Red Onions, Red Peppers, Mushrooms...
ckn_pesto	The Chicken Pesto Pizza	Chicken	Chicken, Tomatoes, Red Peppers, Spinach, Garl...
southw_ckn	The Southwest Chicken Pizza	Chicken	Chicken, Tomatoes, Red Peppers, Red Onions, ...
thai_ckn	The Thai Chicken Pizza	Chicken	Chicken, Pineapple, Tomatoes, Red Peppers, T...
big_meat	The Big Meat Pizza	Classic	Bacon, Pepperoni, Italian Sausage, Chorizo Sau...
classic_dlx	The Classic Deluxe Pizza	Classic	Pepperoni, Mushrooms, Red Onions, Red Peppe...
hawaiian	The Hawaiian Pizza	Classic	Sliced Ham, Pineapple, Mozzarella Cheese
ital_cpcllo	The Italian Capocollo Pizza	Classic	Capocollo, Red Peppers, Tomatoes, Goat Chee...
napolitana	The Napolitana Pizza	Classic	Tomatoes, Anchovies, Green Olives, Red Onion...
pep_msh_pep	The Pepperoni, Mushroom, ...	Classic	Pepperoni, Mushrooms, Green Peppers
pepperoni	The Pepperoni Pizza	Classic	Mozzarella Cheese, Pepperoni

PIZZAS TABLE

```sql
SELECT * FROM pizzahut.pizzas;
```

pizza_id	pizza_type_id	size	price
bbq_ckn_s	bbq_ckn	S	12.75
bbq_ckn_m	bbq_ckn	M	16.75
bbq_ckn_l	bbq_ckn	L	20.75
cali_ckn_s	cali_ckn	S	12.75
cali_ckn_m	cali_ckn	M	16.75
cali_ckn_l	cali_ckn	L	20.75
ckn_alfredo_s	ckn_alfredo	S	12.75
ckn_alfredo_m	ckn_alfredo	M	16.75
ckn_alfredo_l	ckn_alfredo	L	20.75
ckn_pesto_s	ckn_pesto	S	12.75
ckn_pesto_m	ckn_pesto	M	16.75
ckn_pesto_l	ckn_pesto	L	20.75
southw_ckn_s	southw_ckn	S	12.75

Retrieve the total number of Orders Placed .

```
select count(order_id) as total_orders from orders ;
```

	total_orders
▶	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 pizzas.pizza_id=order_details.pizza_id ;
```

	total_sales
▶	817860.05

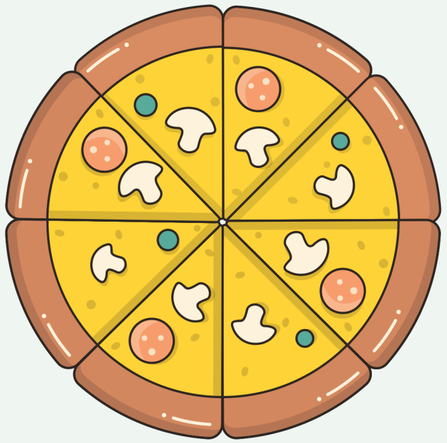
Identify the highest-priced pizza.

```
select pizza_types.name ,pizzas.price
from pizza_types join pizzas
on pizza_types.pizza_type_id =pizzas.pizza_type_id
order by pizzas.price desc limit 1;
```

	name	price
▶	The Greek Pizza	35.95

Identify the most common pizza size ordered.

```
select pizzas.size ,
count(order_details.order_details_id) as order_count
from pizzas
 join order_details
 on pizzas.pizza_id=order_details.pizza_id
 group  by pizzas.size order by order_count desc
 ;
```



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

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

```
select pizza_types.name,
sum(order_details.quantity) as quantity
from pizza_types join pizzas
on pizza_types.pizza_type_id =pizzas.pizza_type_id
join order_details
on order_details.pizza_id=pizzas.pizza_id
group by pizza_types.name order by quantity desc limit 5;
```

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

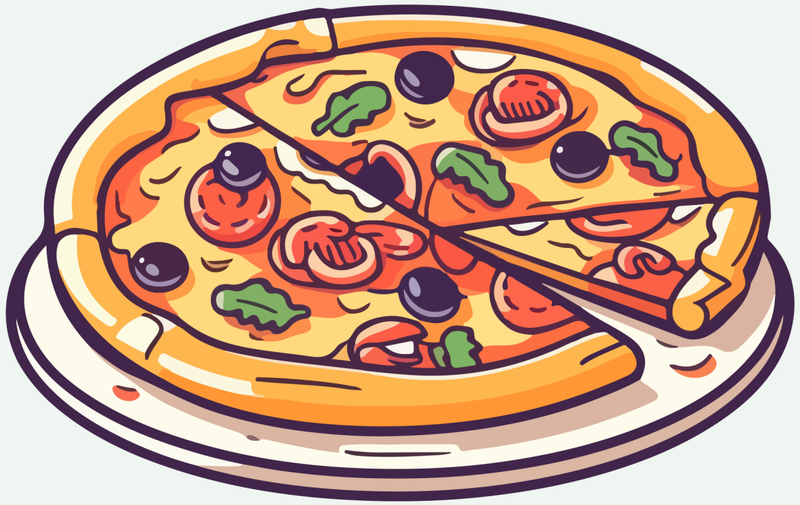
Join the necessary tables to find the total quantity of each pizza category ordered.

```
select pizza_types.category ,
sum(order_details.quantity) as quantity
from pizza_types join pizzas on pizza_types.pizza_type_id = pizzas.pizza_type_id
join order_details
on order_details.pizza_id = pizzas.pizza_id
group by pizza_types.category order by quantity desc;
```

	category	quantity
▶	Classic	14888
	Supreme	11987
	Veggie	11649
	Chicken	11050

Determine the distribution of orders by hour of the day.

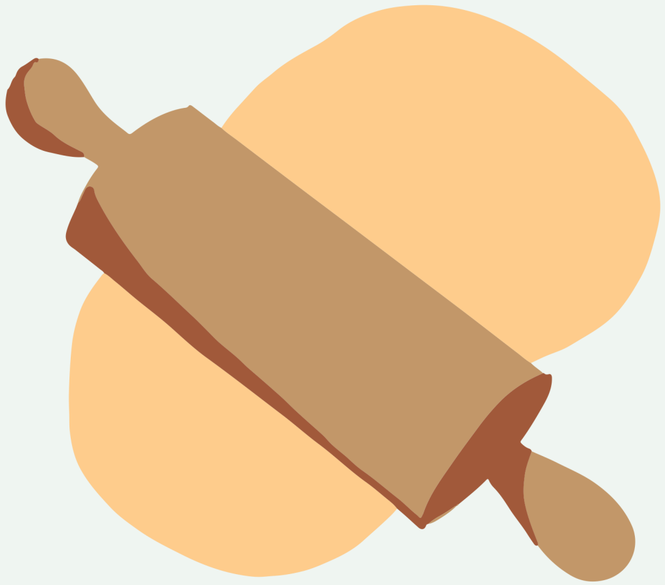
```
select hour(order_time) as hour ,
count(order_id) as order_count
from
orders
group by hour(order_time) ;
```



hour	order_count
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

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

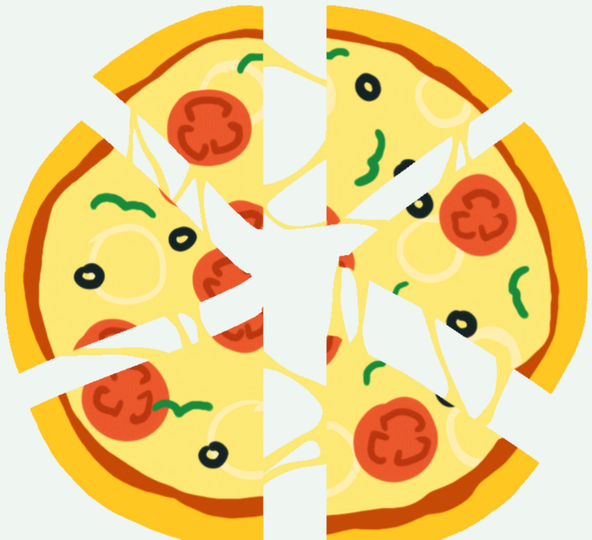
```
select category , count(name ) from pizza_types
group by category;
```



	category	count(name)
▶	Chicken	6
	Classic	8
	Supreme	9
	Veggie	9

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

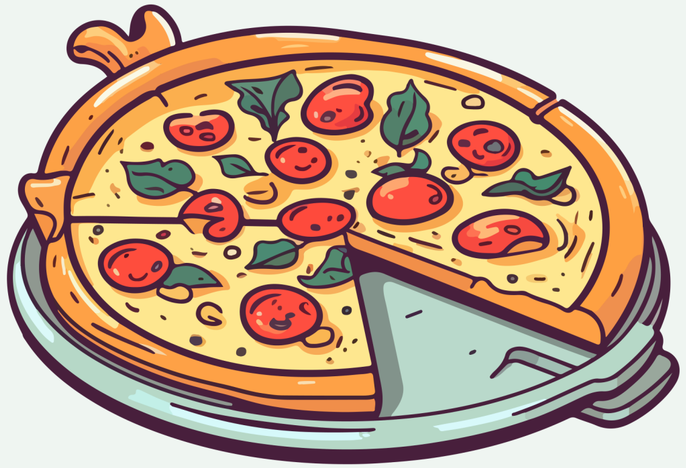
```
select round(avg(quantity),0) as avg_pizza_ordered_perday from
(select orders.order_date, sum(order_details.quantity) as quantity
from orders join order_details
on orders.order_id = order_details.order_id
group by orders.order_date) as order_quantity;
```



	avg_pizza_ordered_perday
▶	138

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

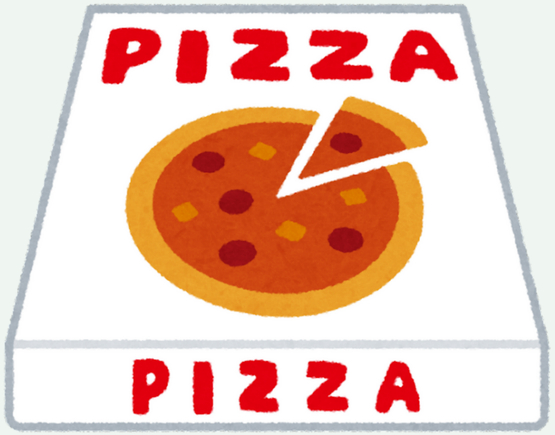
```
select pizza_types.name ,
sum(order_details.quantity* pizzas.price) as revenue
from pizza_types join pizzas
on pizzas.pizza_type_id =pizza_types.pizza_type_id
join
order_details
on order_details.pizza_id = pizzas.pizza_id
group by pizza_types.name order by revenue desc limit 3;
```



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

Calculate the percentage contribution of each pizza type to total revenue.

```
select pizza_types.category ,
round((sum(order_details.quantity* pizzas.price)  / (select
ROUND(sum(order_details.quantity * pizzas.price),2) as total_sales
from order_details join pizzas
on pizzas.pizza_id=order_details.pizza_id))* 100,2) as revenue
from pizza_types join pizzas
on pizza_types.pizza_type_id =pizzas.pizza_type_id
join
order_details
on order_details.pizza_id = pizzas.pizza_id
group by pizza_types.category order by revenue desc ;
```



	category	revenue
▶	Classic	26.91
	Supreme	25.46
	Chicken	23.96
	Veggie	23.68

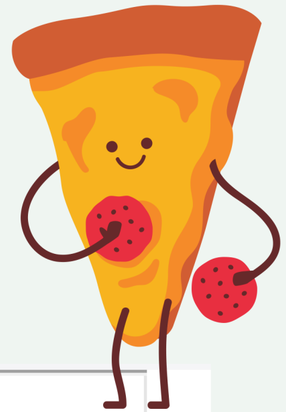
Analyze the cumulative revenue generated over time

```
select order_date,
sum(revenue) over(order by order_date) as cum_reveue from
(select orders.order_date,sum(order_details.quantity*pizzas.price) as
revenue
from order_details join pizzas
on order_details.pizza_id=pizzas.pizza_id
join orders
on orders.order_id = order_details.order_id
group by orders.order_date) as sales;
```

order_date	cum_reveue
2015-01-01	2713.8500000000004
2015-01-02	5445.75
2015-01-03	8108.15
2015-01-04	9863.6
2015-01-05	11929.55
2015-01-06	14358.5
2015-01-07	16560.7
2015-01-08	19399.05
2015-01-09	21526.4
2015-01-10	23990.350000000002
2015-01-11	25862.65
2015-01-12	27781.7
2015-01-13	29831.300000000003

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

```sql
with CTE as(
select category , name ,revenue ,
rank() over(partition by category order by revenue desc) as rn
from
(select pizza_types.category,pizza_types.name,
sum((order_details.quantity)*pizzas.price) as revenue
from pizza_types join pizzas
on pizza_types.pizza_type_id=pizzas.pizza_type_id
join order_details
on order_details.pizza_id=pizzas.pizza_id
group by pizza_types.category, pizza_types.name) as a)
select name ,revenue from CTE where rn<=3
;
```



name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5
The Classic Deluxe Pizza	38180.5
The Hawaiian Pizza	32273.25
The Pepperoni Pizza	30161.75
The Spicy Italian Pizza	34831.25
The Italian Supreme Pizza	33476.75
The Sicilian Pizza	30940.5
The Four Cheese Pizza	32265.70000000065
The Mexicana Pizza	26780.75
The Five Cheese Pizza	26066.5