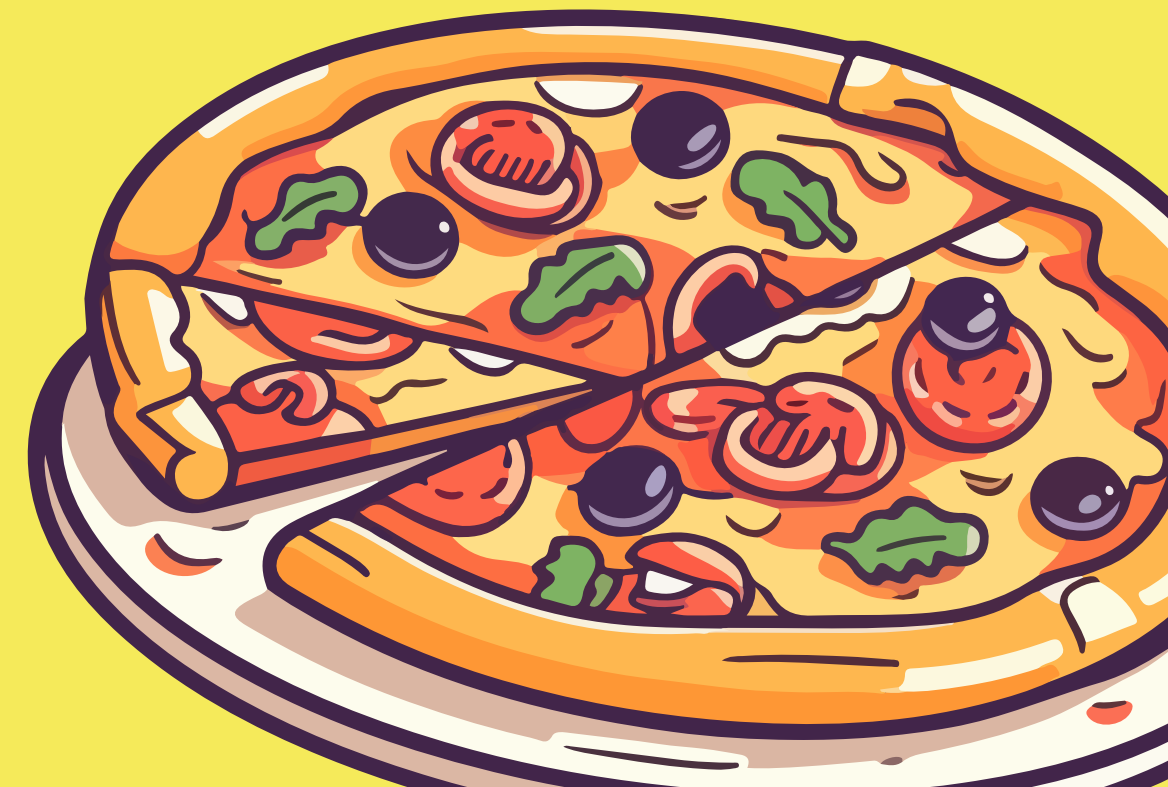
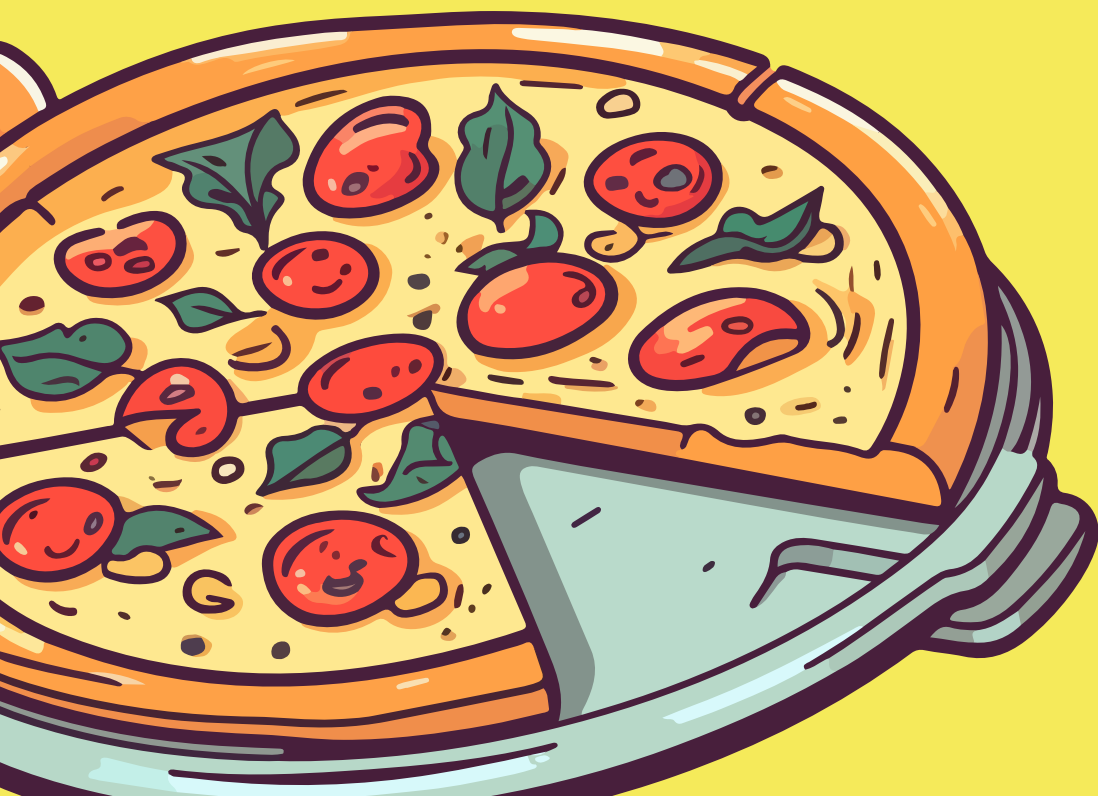
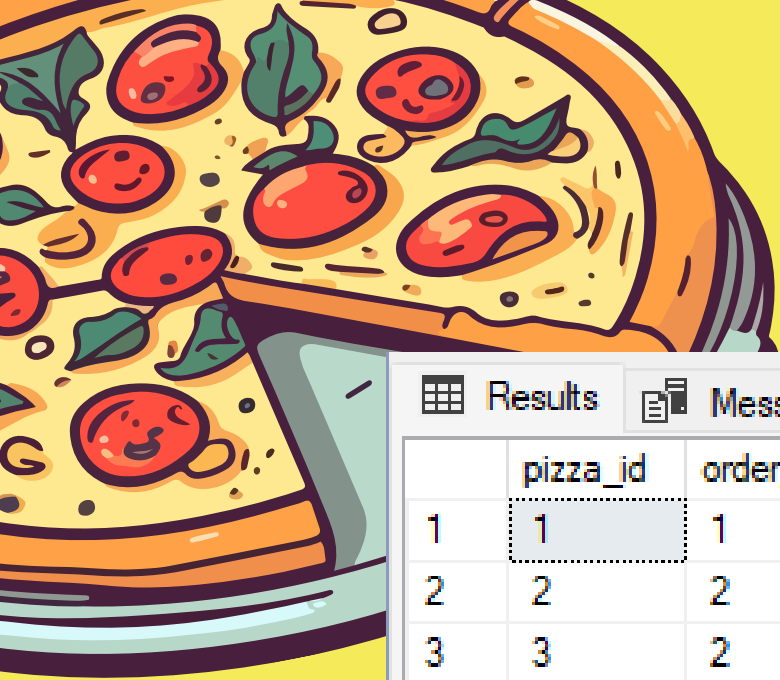


# SQL Project

## Pizza Sales Analysis





# Dataset

Results		Messages										
	pizza_id	order_id	pizza_name_id	quantity	order_date	order_time	unit_price	total_price	pizza_size	pizza_category	pizza_ingredients	pizza_name
1	1	1	hawaiian_m	1	2015-01-01 ...	1899-12-30...	13.25	13.25	M	Classic	Sliced Ham, Pin...	The Hawaiian Piz...
2	2	2	classic_dlx_m	1	2015-01-01 ...	1899-12-30...	16	16	M	Classic	Pepperoni, Mus...	The Classic Delu...
3	3	2	five_cheese_l	1	2015-01-01 ...	1899-12-30...	18.5	18.5	L	Veggie	Mozzarella Chee...	The Five Cheese ...
4	4	2	ital_supr_l	1	2015-01-01 ...	1899-12-30...	20.75	20.75	L	Supreme	Calabrese Salam...	The Italian Supre...
5	5	2	mexicana_m	1	2015-01-01 ...	1899-12-30...	16	16	M	Veggie	Tomatoes, Red ...	The Mexicana Pi...
6	6	2	thai_ckn_l	1	2015-01-01 ...	1899-12-30...	20.75	20.75	L	Chicken	Chicken, Pineap...	The Thai Chicke...
7	7	3	ital_supr_m	1	2015-01-01 ...	1899-12-30...	16.5	16.5	M	Supreme	Calabrese Salam...	The Italian Supre...
8	8	3	prsc_argla_l	1	2015-01-01 ...	1899-12-30...	20.75	20.75	L	Supreme	Prosciutto di Sa...	The Prosciutto an...
9	9	4	ital_supr_m	1	2015-01-01 ...	1899-12-30...	16.5	16.5	M	Supreme	Calabrese Salam...	The Italian Supre...
10	10	5	ital_supr_m	1	2015-01-01 ...	1899-12-30...	16.5	16.5	M	Supreme	Calabrese Salam...	The Italian Supre...
11	11	6	bbq_ckn_s	1	2015-01-01 ...	1899-12-30...	12.75	12.75	S	Chicken	Barbecued Chic...	The Barbecue Ch...

About Dataset: This dataset contains pizza sales data in a year, with a total of 48620 data. This dataset was sourced from Kaggle.

Column:

**pizza\_id**: pizza purchase number

**order\_id**: customer number

**pizza\_name\_id**: pizza id name

**quantity**: quantity of pizza purchased

**order\_date**: pizza purchase date

**order\_hour**: pizza purchase hour

**unit\_price**: pizza price per unit

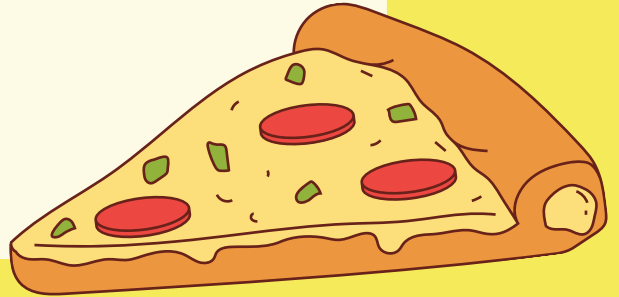
**total\_price**: total price of pizza purchase

**pizza\_size**: there are 5 types of pizza sizes: S, M, L, XL, and XXL.

**pizza\_category**: There are 4 types of pizza categories, namely chicken, classic, supreme, and veggie.

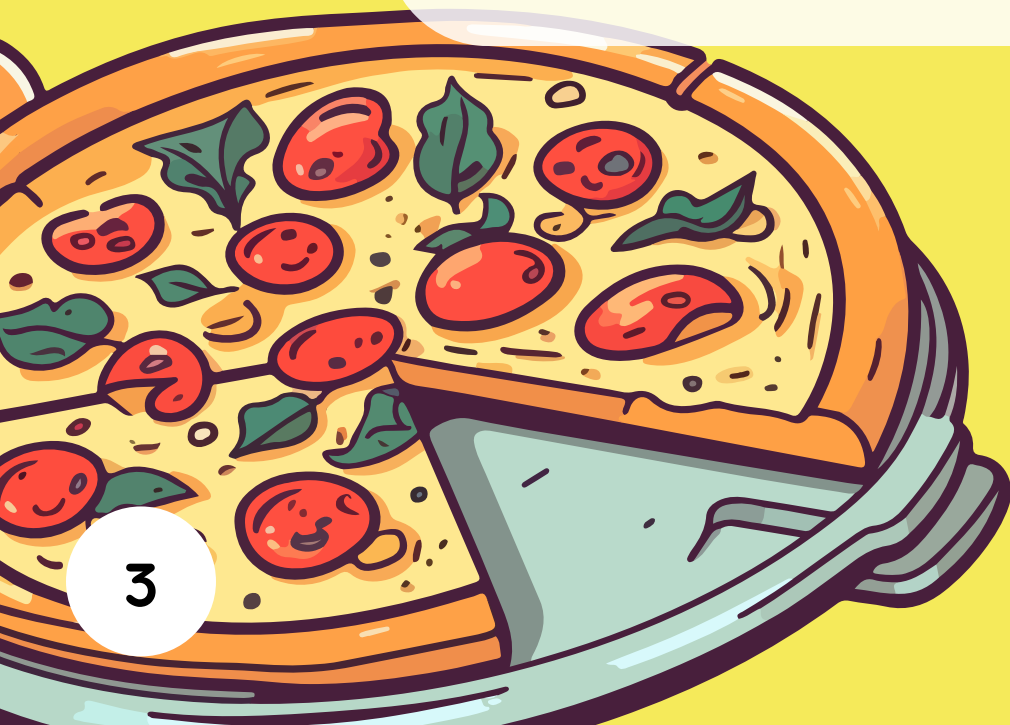
**pizza\_ingredients**: pizza ingredients

**pizza\_name**: pizza name



# Business Question

- 1 What pizzas have the highest and lowest sales, and what are the categories?
- 2 Is there a preference for a certain pizza size among customers?
- 3 What is the trend of revenue and sales by month?
- 4 Is there a specific time pattern that shows peak sales?
- 5 Which pizza has the highest sales each month?



What pizzas have the highest and lowest sales, and what are the categories?

Query:

```
select
  pizza_category,
  pizza_name,
  sum(quantity) AS total_sold
from
  Sales
group by
  pizza_category, pizza_name
order by
  total_sold desc
```

Result:

	pizza_category	pizza_name	total_sold
1	Classic	The Classic Deluxe Pizza	2453
2	Chicken	The Barbecue Chicken Pizza	2432
3	Classic	The Hawaiian Pizza	2422
4	Classic	The Pepperoni Pizza	2418
29	Supreme	The Spinach Supreme Pizza	950
30	Supreme	The Calabrese Pizza	937
31	Veggie	The Mediterranean Pizza	934
32	Supreme	The Brie Carre Pizza	490

Interpretation:

There are 4 pizza categories and 32 different types of pizza menus. The pizza with the **highest sales** is "The Classic Deluxe Pizza" with total sales of 2453 items, this pizza is categorized as Classic. While the pizza with the **lowest sales** is "The Brie Carre Pizza", with total sales of 490 items, this pizza is categorized as Supreme.

Is there a preference for a certain pizza size among customers?

Query:

```
select
  pizza_size,
  sum(quantity) AS total_sold
from
  Sales
group by
  pizza_size
order by
  total_sold desc;
```

Result:

	pizza_size	total_sold
1	L	18956
2	M	15635
3	S	14403
4	XL	552
5	XXL	28

Interpretation:

The pizza size with **the highest number of sales indicates customer preference**. Of the five types of pizza sizes, the Large size has the highest sales, followed by the Medium and Small sizes.





# What is the trend of revenue and sales by month?

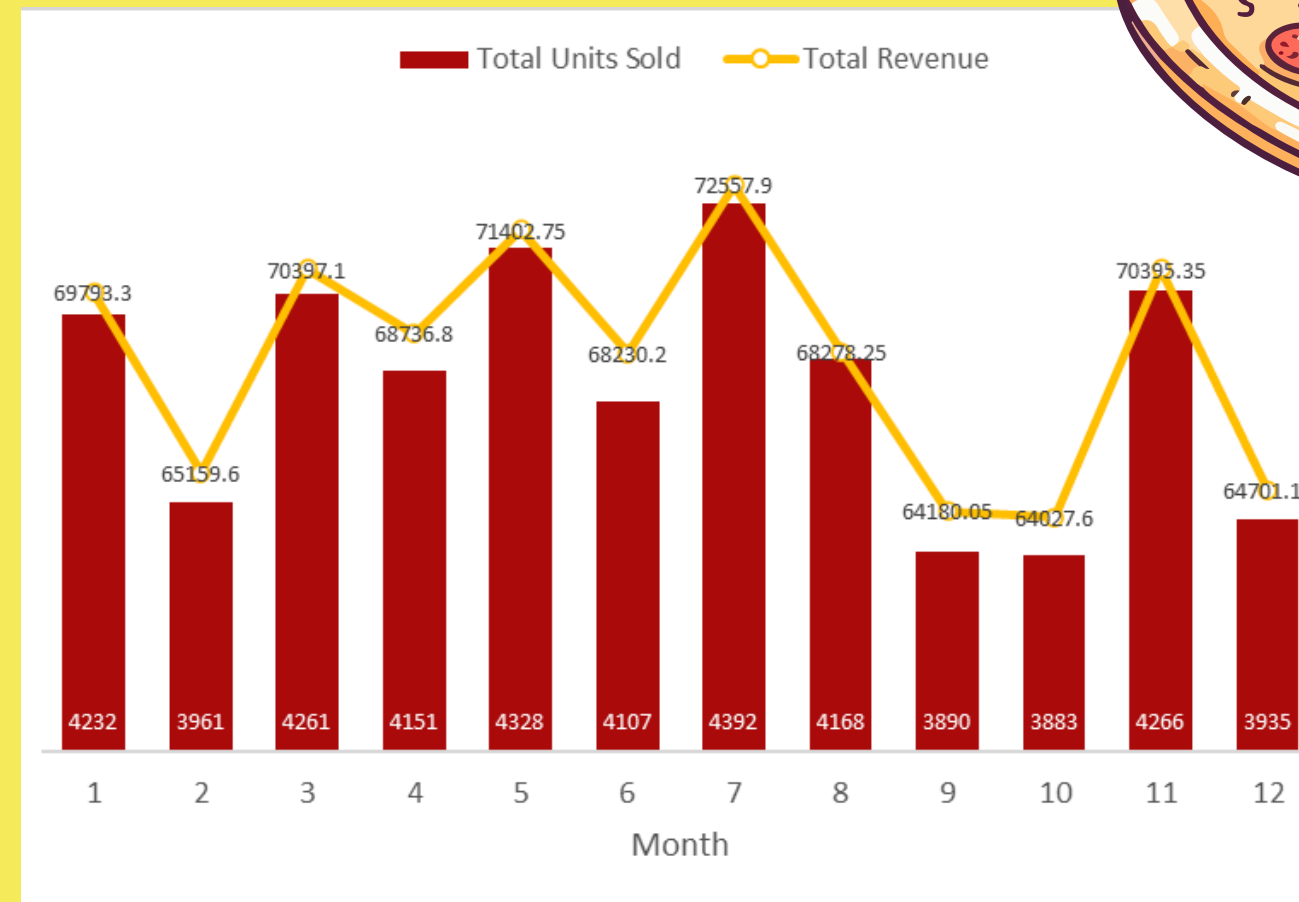
## Query:

```
select
    format(order_date, 'MM') as month_order,
    sum(quantity) AS total_units_sold,
    round(sum(total_price), 2) as total_revenue
from
    Sales
group by
    format(order_date, 'MM')
order by
    month_order
```

## Result:

	month_order	total_units_sold	total_revenue
1	01	4232	69793.3
2	02	3961	65159.6
3	03	4261	70397.1
4	04	4151	68736.8
5	05	4328	71402.75
6	06	4107	68230.2
7	07	4392	72557.9
8	08	4168	68278.25
9	09	3890	64180.05
10	10	3883	64027.6
11	11	4266	70395.35
12	12	3935	64701.15

## Visualization:



## Interpretation:

The total pizza sales and revenue tended to fluctuate throughout the year. July was the peak of sales and revenue, with 4392 pizzas sold and revenue of 72557.9. While October showed the lowest performance of pizza sales and revenue, with 3882 pizzas sold and revenue of 64027.6.

## Is there a specific time pattern that shows peak sales?

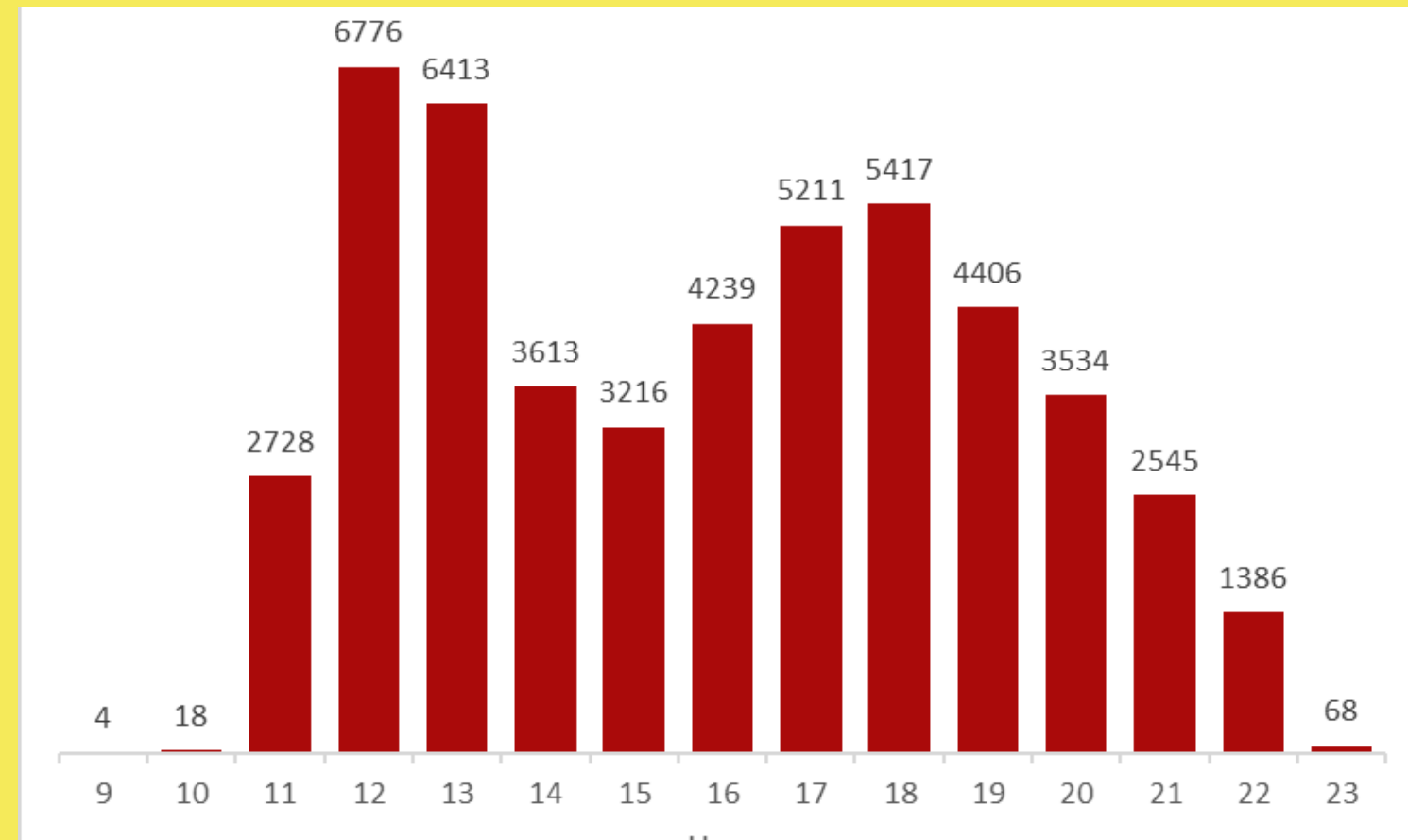
### Query:

```
select
    datepart(hour, order_time) as hour_order,
    sum(quantity) AS total_units_sold
from
    Sales
group by
    datepart(hour, order_time)
order by
    hour_order;
```

### Result:

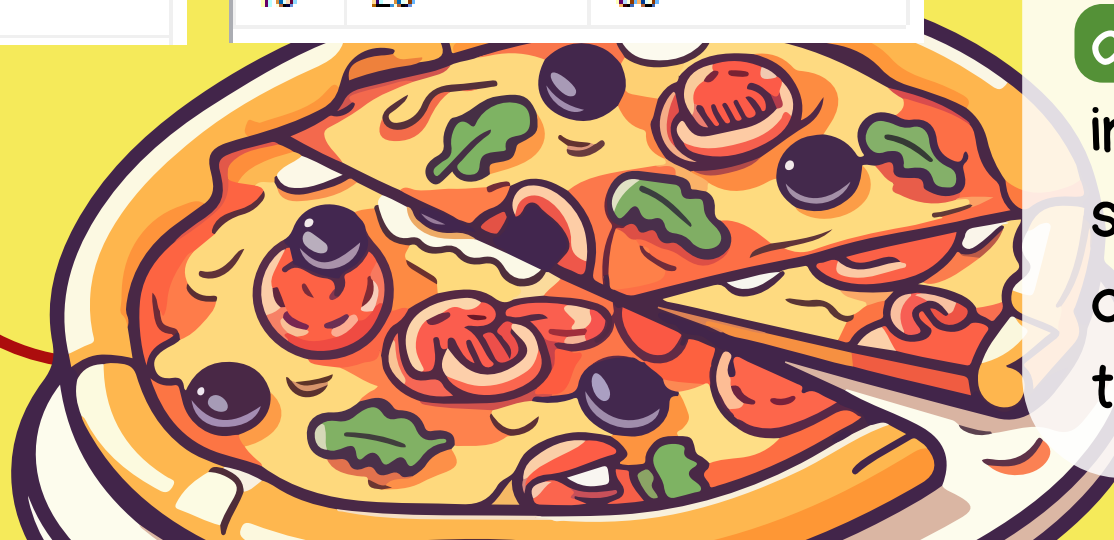
	hour_order	total_units_sold
1	9	4
2	10	18
3	11	2728
4	12	6776
5	13	6413
6	14	3613
7	15	3216
8	16	4239
9	17	5211
10	18	5417
11	19	4406
12	20	3534
13	21	2545
14	22	1386
15	23	68

### Visualization:



### Interpretation:

There is a pattern of pizza sales at certain times, especially during lunchtime and dinnertime. At 11am pizza sales start to increase until it peaks at 12pm and decreases slightly but is still high at 1pm. This shows that at lunchtime many people order pizza for lunch. Pizza sales increase again from 4pm to 6pm, indicating that many people choose pizza for dinner.



Which pizza has the highest sales each month?

Query:

```
with MonthlySales as (  
  select  
    format(order_date, 'MM') as month_order,  
    pizza_name,  
    sum(quantity) as total_units_sold  
  from  
    Sales  
  group by  
    format(order_date, 'MM'),  
    pizza_name  
)  
MaxMonthlySales as (  
  select  
    month_order,  
    pizza_name,  
    total_units_sold,  
    rank () over (partition by month_order order by total_units_sold desc) as rank  
  from  
    MonthlySales  
)  
select  
  month_order,  
  pizza_name,  
  total_units_sold  
from  
  MaxMonthlySales  
where  
  rank = 1  
order by  
  month_order
```

Result:

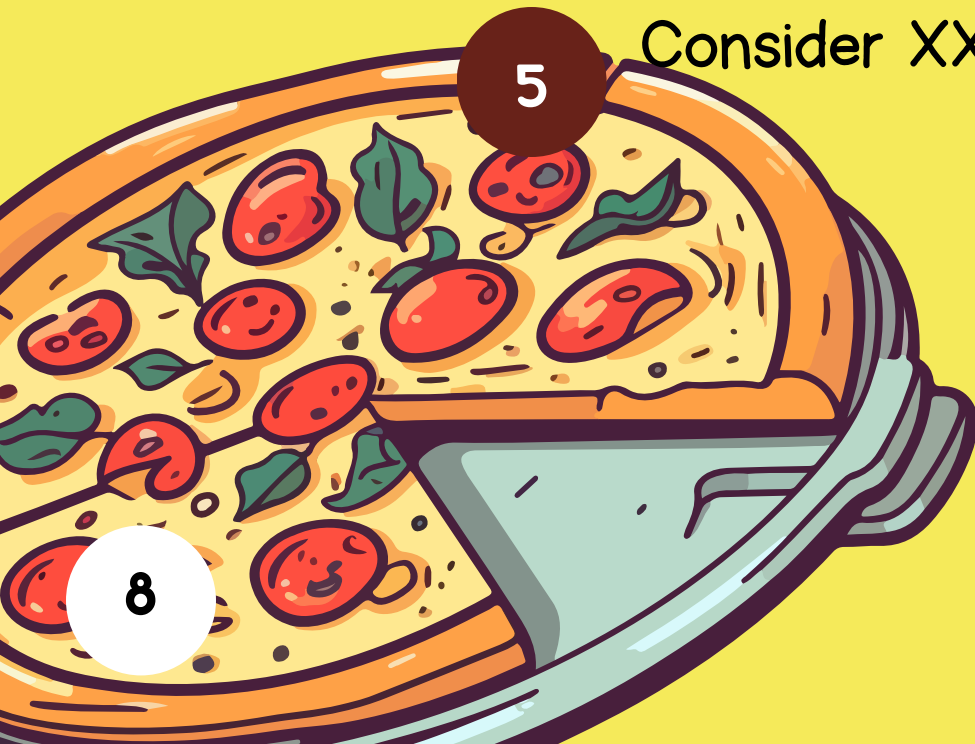
	month_order	pizza_name	total_units_sold
1	01	The Pepperoni Pizza	239
2	02	The Pepperoni Pizza	205
3	03	The Barbecue Chicken Pizza	231
4	04	The Hawaiian Pizza	219
5	05	The Pepperoni Pizza	241
6	06	The California Chicken Pizza	222
7	07	The Classic Deluxe Pizza	227
8	08	The California Chicken Pizza	231
9	09	The Classic Deluxe Pizza	209
10	10	The Pepperoni Pizza	199
11	11	The Hawaiian Pizza	227
12	12	The Hawaiian Pizza	209

Interpretation:

"The Pepperoni Pizza" is a pizza menu that is often purchased in several months, which are January, February, May, and October.

# Strategic recommendations to increase sales and maximize revenue

- 1 Offer bundling packages with special price savings between the most frequently purchased pizza and other pizza variants to increase sales of other pizza variants.
- 2 Launch seasonal events by creating special menus that are only available in certain months with special promos to attract customers so that monthly revenue remains stable.
- 3 Improved and developed a formula for a pizza variant that had little interest ("The Brie Carre Pizza").
- 4 Analyze product prices to ensure that the price offered is in line with the value provided by consumers.
- 5 Consider XXL size to be eliminated as it has few customers in a year's time.





Thank You



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