

IDC Pizza



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# THE GREAT PIZZA ANALYTICS CHALLENGE

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IDC PIZZA

# PROJECT OVERVIEW

## OBJECTIVE:

ANALYZE RAW PIZZA SALES DATA FROM IDC PIZZA  
AND GENERATE INSIGHTS USING SQL.

## WHAT I DID:

- CREATED IDC\_PIZZA DATABASE
- IMPORTED FOUR DATASETS
- ANSWERED QUESTIONS ACROSS THREE PHASES
- APPLIED SQL CONCEPTS: FILTERING, JOINS, GROUPING, AGGREGATION, NULL HANDLING, SELF JOINS



# IDC PIZZA

## Dataset overview

The database consists of 4 main tables:

### 1. **PIZZA\_TYPES**

- PIZZA TYPE ID, NAME, CATEGORY, INGREDIENTS

### 2. **PIZZAS**

- PIZZA ID, PIZZA TYPE ID, SIZE, PRICE

### 3. **ORDERS**

- ORDER ID, DATE, TIME

### 4. **ORDER\_DETAILS**

- ORDER DETAIL ID, ORDER ID, PIZZA ID, QUANTITY



# IDC PIZZA

## Phase 1: Foundation & Inspection

### Key Tasks:

#### 1. Install IDC\_Pizza.dump as IDC\_Pizza server

```
CREATE DATABASE IF NOT EXISTS IDC_Pizza;
```

#### 2. List all unique pizza categories

```
SELECT DISTINCT category FROM pizza_types;
```

Insight: Four unique pizza categories identified: Chicken, Classic, Supreme, Veggie.

#### 3. Check for pizzas missing a price

```
SELECT * FROM pizzas  
WHERE price IS NULL;
```

### Output

category
Chicken
Classic
Supreme
Veggie

### Output

pizza_id	pizza_type_id	size	price
NUL	NUL	NUL	NUL

Insight: All pizzas have valid price values; there are no missing or NULL prices in the dataset.

# IDC PIZZA

## Key Tasks:

**4. Display pizza\_type\_id, name, and ingredients, replacing NULL ingredients with "Missing Data". Show first 5 rows.**

```
SELECT
    pizza_type_id, name,
    COALESCE(ingredients, 'Missing Data') AS ingredients
FROM pizza_types
LIMIT 5;
```

## Output

pizza_type_id	name	ingredients
big_meat	The Big Meat Pizza	Bacon, Pepperoni, Italian Sausage, Chorizo Sausage
bbq_ckn	The Barbecue Chicken Pizza	Barbecued Chicken, Red Peppers, Green Peppers, Tomatoes, Red Onions, Barbecue Sauce
brie_carre	The Brie Carre Pizza	Brie Carre Cheese, Prosciutto, Caramelized Onions, Pears, Thyme, Garlic
cali_ckn	The California Chicken Pizza	Chicken, Artichoke, Spinach, Garlic, Jalapeno Peppers, Fontina Cheese, Gouda Cheese
calabrese	The Calabrese Pizza	'Nduja Salami, Pancetta, Tomatoes, Red Onions, Friggitello Peppers, Garlic

## Phase 2: Filtering &amp; Exploration

**Key Tasks:****1. Orders placed on '2015-01-01'**

```
SELECT * FROM orders
WHERE date = '2015-01-01';
```

Insight: A total of 69 orders were placed on 01-01-2025.

**2. List pizzas with price descending.**

```
SELECT * FROM pizzas
ORDER BY price DESC;
```

Insight: The highest-priced pizzas are the Greek series, with the Greek XXL topping the list at \$35.95, followed by the Greek XL at \$25.50.

**Output**

	order_id	date	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
	10	2015-01-01	13:00:15
	11	2015-01-01	13:02:59
	12	2015-01-01	13:04:41
	13	2015-01-01	13:11:55
	14	2015-01-01	13:14:19

**Output**

	pizza_id	pizza_type_id	size	price
▶	the_greek_xxL	the_greek	XXL	35.95
	the_greek_xL	the_greek	XL	25.50
	brie_carre_s	brie_carre	S	23.65
	ital_veggie_l	ital_veggie	L	21.00
	bbq_ckn_l	bbq_ckn	L	20.75
	soppressata_l	soppressata	L	20.75
	southw_ckn_l	southw_ckn	L	20.75
	spicy_ital_l	spicy_ital	L	20.75
	peppr_salami_l	peppr_salami	L	20.75
	spin_pesto_l	spin_pesto	L	20.75
	thai_ckn_l	thai_ckn	L	20.75
	ckn_pesto_l	ckn_pesto	L	20.75

# IDC PIZZA

## Key Tasks:

### 3. Pizzas sold in sizes 'L' or 'XL'

```
SELECT * FROM pizzas  
WHERE size in ('L', 'XL');
```

Insight: IDC Pizza sells 31 pizzas in size L and 1 pizza in size XL, indicating that large-size pizzas dominate the menu options.

### 4. Pizzas priced between \$15.00 and \$17.00.

```
SELECT * FROM pizzas  
WHERE price BETWEEN 15.00 AND 17.00;
```

Insight: There are 29 pizzas priced between \$15.00 and \$17.00. Among them, 27 are Medium-sized (M) and 2 are Large-sized (L) — pepperoni\_l and hawaiian\_l.

## Output

pizza_id	pizza_type_id	size	price
bbq_ckn_l	bbq_ckn	L	20.75
big_meat_l	big_meat	L	20.50
calabrese_l	calabrese	L	20.25
cali_ckn_l	cali_ckn	L	20.75
ckn_alfredo_l	ckn_alfredo	L	20.75
ckn_pesto_l	ckn_pesto	L	20.75
classic_dlx_l	classic_dlx	L	20.50
five_cheese_l	five_cheese	L	18.50
four_cheese_l	four_cheese	L	17.95
green_garden_l	green_garden	L	20.25
hawaiian_l	hawaiian	L	16.50

## Output

pizza_id	pizza_type_id	size	price
calabrese_m	calabrese	M	16.25
cali_ckn_m	cali_ckn	M	16.75
ckn_alfredo_m	ckn_alfredo	M	16.75
ckn_pesto_m	ckn_pesto	M	16.75
classic_dlx_m	classic_dlx	M	16.00
five_cheese_m	five_cheese	M	15.50
green_garden_m	green_garden	M	16.00
hawaiian_l	hawaiian	L	16.50
ital_cpcloo_m	ital_cpcloo	M	16.00

# IDC PIZZA

## Key Tasks:

### 5. Pizzas with "Chicken" in the name.

```
SELECT * FROM pizza_types  
WHERE name LIKE '%Chicken%';
```

pizza_type_id	name	category	ingredients
bbq_ckn	The Barbecue Chicken Pizza	Chicken	Barbecued Chicken, Red Pepper...
cali_ckn	The California Chicken Pizza	Chicken	Chicken, Artichoke, Spinach, G...
ckn_alfredo	The Chicken Alfredo Pizza	Chicken	Chicken, Red Onions, Red Pepp...
ckn_pesto	The Chicken Pesto Pizza	Chicken	Chicken, Tomatoes, Red Pepp...
southw_ckn	The Southwest Chicken Pizza	Chicken	Chicken, Tomatoes, Red Pepp...
thai_ckn	The Thai Chicken Pizza	Chicken	Chicken, Pineapple, Tomatoes, ...

Insight: There are 6 chicken pizza types offered by IDC Pizza.

### 6. Orders on '2015-02-15' or placed after 8 PM.

```
SELECT * FROM orders  
WHERE date = '2015-02-15' OR time > '20:00:00';
```

Insight: Out of 21,350 total orders placed in 2015, 3,576 orders were either placed after 8 PM or on 15-02-2015, indicating strong late-evening customer activity and notable order volume on that date.

order_id	date	time
60	2015-01-01	20:05:16
61	2015-01-01	20:08:43
62	2015-01-01	20:50:16
63	2015-01-01	20:51:42
64	2015-01-01	20:52:08
65	2015-01-01	21:16:00
66	2015-01-01	21:47:55
67	2015-01-01	22:03:40
68	2015-01-01	22:07:32

## Phase 3: Sales Performance

### Key Tasks:

#### 1. Total quantity of pizzas sold.

```
SELECT SUM(quantity) AS total_quantity_pizzas_sold  
FROM order_details;
```

Insight: A total of 49,574 pizzas were sold in the year 2015, reflecting consistent customer engagement and strong year-round demand.

#### 2. Average pizza price

```
SELECT ROUND(AVG(price),2) AS avg_pizza_price  
FROM pizzas;
```

Insight: The average pizza price is \$16.44, while prices range from a minimum of \$9.75 to a maximum of \$35.95 across all pizza types.

This shows that IDC Pizza's pricing is centered in the mid-range, with a few premium options significantly increasing the upper limit.

### Output

total_quantity_pizzas_sold
49574

### Output

avg_pizza_price
16.44

# IDC PIZZA

## Key Tasks:

### 3. Total order value per order

```
SELECT o.order_id, SUM(od.quantity*p.price) AS order_value
FROM orders o
JOIN order_details od
ON o.order_id = od.order_id
JOIN pizzas p
ON p.pizza_id = od.pizza_id
GROUP BY o.order_id;
```

Insight: The dataset contains 21,350+ orders, each with its own total order value, enabling analysis of customer spending patterns.

## Output

Result Grid		
	order_id	order_value
▶	1	13.25
	2	92.00
	3	37.25
	4	16.50
	5	16.50
	6	24.75
	7	12.50
	8	12.50
(50)	9	143.25
	10	41.00
	11	73.50
	12	70.75
	13	20.25

# IDC PIZZA

## Key Tasks:

### 4. Total quantity sold per pizza category

```
SELECT pt.category, SUM(od.quantity) AS total_quantity
FROM pizza_types pt
JOIN pizzas p
ON pt.pizza_type_id = p.pizza_type_id
JOIN order_details od
ON od.pizza_id = p.pizza_id
GROUP BY pt.category;
```

Output

	category	total_quantity
▶	Classic	14888
	Veggie	11649
	Supreme	11987
	Chicken	11050

Insight: The Classic category sold the highest quantity (14,888 pizzas), followed by Supreme (11,987), Veggie (11,649) and Chicken (11,050). This shows strong customer preference for Classic pizzas.

# IDC PIZZA

## Key Tasks:

### 5. Categories with more than 5,000 pizzas sold (HAVING).

```
SELECT pt.category, SUM(od.quantity) AS total_quantity
FROM pizza_types pt
JOIN pizzas p
ON pt.pizza_type_id = p.pizza_type_id
JOIN order_details od
ON od.pizza_id = p.pizza_id
GROUP BY pt.category
HAVING SUM(od.quantity) > 5000;
```

#### Output

	category	total_quantity
▶	Classic	14888
	Veggie	11649
	Supreme	11987
	Chicken	11050

Insight: All pizza categories sold more than 5,000 units.

# IDC PIZZA

## Key Tasks:

### 6. Pizzas never ordered (LEFT/RIGHT JOIN).

```
SELECT p.pizza_id, p.pizza_type_id, p.size, p.price  
FROM pizzas p  
LEFT JOIN order_details od  
ON p.pizza_id = od.pizza_id  
WHERE od.order_id IS NULL;
```

### Output

pizza_id	pizza_type_id	size	price
big_meat_l	big_meat	L	20.50
four_cheese_s	four_cheese	S	11.75
five_cheese_m	five_cheese	M	15.50
big_meat_m	big_meat	M	16.00
five_cheese_s	five_cheese	S	12.50

Insight: The analysis shows that five pizzas were never ordered in 2015. These items come from the Big Meat, Four Cheese, and Five Cheese categories. Their zero-demand performance indicates very low customer interest, making them strong candidates for menu removal or redesign to improve overall menu efficiency.

# IDC PIZZA

## 7. Price differences between different sizes of the same pizza

```
SELECT
    p1.pizza_type_id,
    p1.size AS size_1,
    p1.price AS price_1,
    p2.size AS size_2,
    p2.price AS price_2,
    (p2.price - p1.price) AS price_difference
FROM pizzas p1
JOIN pizzas p2
    ON p1.pizza_type_id = p2.pizza_type_id
    AND (CASE p1.size WHEN 'S' THEN 1 WHEN 'M' THEN 2 WHEN 'L' THEN 3 WHEN 'XL' THEN 4 WHEN 'XXL' THEN 5 END)
    <
    (CASE p2.size WHEN 'S' THEN 1 WHEN 'M' THEN 2 WHEN 'L' THEN 3 WHEN 'XL' THEN 4 WHEN 'XXL' THEN 5 END);
```

### Output

	pizza_type_id	size_1	price_1	size_2	price_2	price_difference
▶	bbq_ckn	S	12.75	L	20.75	8.00
	bbq_ckn	M	16.75	L	20.75	4.00
	bbq_ckn	S	12.75	M	16.75	4.00
	big_meat	S	12.00	L	20.50	8.50
	big_meat	M	16.00	L	20.50	4.50
	big_meat	S	12.00	M	16.00	4.00
	calabrese	S	12.25	L	20.25	8.00

Insight: Size-based price differences span \$2.75–\$23.95, with The Greek showing the highest jump.

## CONCLUSION

- **4 pizza categories identified — Classic, Veggie, Supreme, Chicken.**
- **49,574 pizzas sold in 2015 — strong demand.**
- **Classic became the top-selling category (14,888 units).**
- **Every category exceeded 5,000+ sales, indicating a balanced menu.**
- **Average pizza price: \$16.44 (mid-level pricing strategy).**
- **High activity after 8 PM, showing a strong evening rush.**
- **5 pizzas had zero orders — mainly Big Meat & Cheese items.**
- **Price differences ranged from \$2.75 to \$23.95, with The Greek showing the highest jump.**

## RECOMMENDATIONS

- Remove or redesign the pizzas with zero orders to improve menu efficiency.
- Boost high-sellers like Classic & Supreme with combo deals.
- Introduce evening-based promotions to target the peak order window.
- Review pricing for premium items (e.g., Greek XXL) to increase affordability.
- Strengthen medium-size pizza offerings, as they lead customer preference.

THANK  
YOU

