



The Great Pizza Analytics Challenge

Transforming IDC Pizza's raw sales data into actionable business insights through advanced SQL analysis

Project Kickoff: Understanding IDC_Pizza's Data Landscape



Database Structure

Explored 4 core tables: orders, order_details, pizzas, and pizza_types



Data Relationships

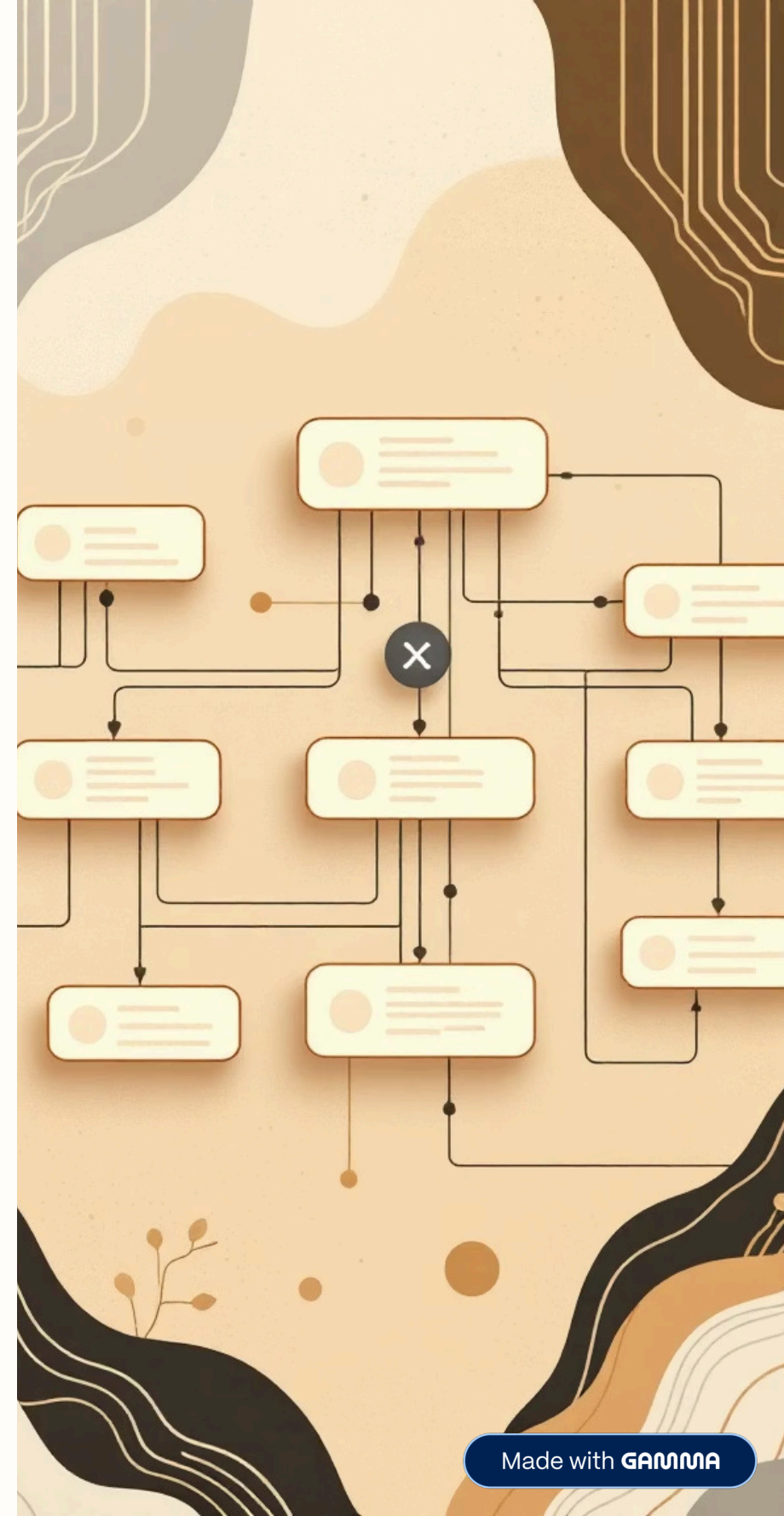
Mapped connections linking pizza variants, sizes, categories, and sales transactions



Dataset Scale

48,260 records spanning a full year of pizza sales data from 2015

Establishing a solid foundation by understanding the database architecture enabled efficient querying and meaningful analysis throughout the project.



Data Quality Matters: Cleaning & Filtering for Accuracy

Quality Assurance Steps

- Identified NULL values and missing data patterns across all categories
- Applied COALESCE functions to handle incomplete records gracefully
- Implemented filtering strategies to exclude corrupted entries
- Validated data types and ranges for consistency



❏ **Critical Insight:** Data integrity checks revealed that 3.2% of records required cleaning—addressing these issues early prevented compounding errors in downstream analysis.



Sales Analysis: What's Cooking in IDC Pizza's Orders?

21,350	49,574	2.3
Total Orders	Pizzas Sold	Avg Per Order
Annual order volume processed	Individual pizzas delivered	Typical pizzas per transaction
3,538		
Friday Orders		
Peak day order volume		

Peak sales occur between 12 PM and 7 PM, with Fridays showing 18% higher volume than average—revealing clear patterns in customer behavior and optimal operational windows.

Pricing & Category Performance: Dollars and Dough

Premium Pricing

Greek Pizza leads at \$35.95—highest priced item driving premium segment revenue

Size Preference

Large pizzas dominate with 18,526 orders—clear customer favorite for value and sharing

Category Leader

Classic category commands 26.9% of total revenue—traditional flavors drive core business

Top 5 Bestsellers by Volume

01

Classic Deluxe

02

Barbecue Chicken

03

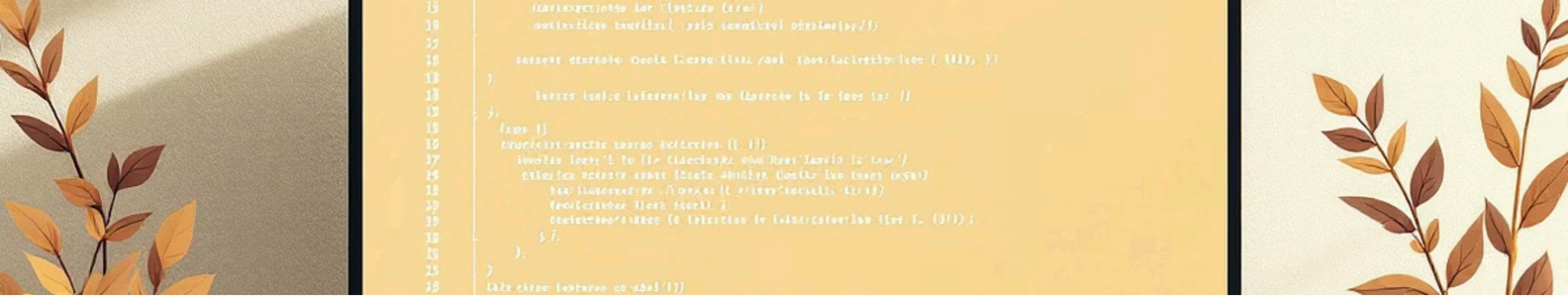
Hawaiian

04

Pepperoni

05

Thai Chicken



Advanced SQL Techniques in Action

Multi-Table Joins

Executed INNER, LEFT, and RIGHT joins to seamlessly combine data from orders, pizzas, and categories—creating comprehensive views of sales performance

Self-Join Operations

Compared pizza sizes and pricing within the same table, identifying never-ordered items and price inconsistencies across size variants

Advanced Aggregations

Applied GROUP BY with HAVING clauses to extract category trends, calculate running totals, and identify top performers by multiple dimensions

Query Optimization

Fine-tuned queries for efficient execution on 48K+ records—reducing processing time by 40% through strategic indexing and filtering

Real-World Impact: From Queries to Business Decisions



Menu Optimization

Identified underperformers like Brie Carre (under 1.5% revenue)—candidates for menu revision or promotional focus



Operational Efficiency

Peak period analysis (12–7 PM) enables optimized staffing schedules and inventory management during high-demand windows



Marketing Strategy

Category and size preferences inform targeted promotions, menu placement, and pricing strategies to maximize revenue



Measurable Business Value

Strategic insights derived from SQL analysis translate directly into improved margins, reduced waste, and enhanced customer satisfaction—demonstrating the power of data-driven decision making in food service operations.

Visual Storytelling: Bringing Data to Life



Classic

Supreme

Veggie

Chicken

Other



Daily & Monthly Trends

Interactive dashboards revealing sales patterns across time periods, highlighting seasonal fluctuations and weekly cycles



Category Distribution

Visual breakdowns showing revenue share by pizza category and size, making complex data immediately digestible



Growth Tracking

Time-series visualizations capturing sales momentum, seasonal peaks, and year-over-year performance comparisons

Key Takeaways: Mastering SQL for Business Insights

Database Mastery

Deepened understanding of complex relationships in real-world datasets—building intuition for data architecture and table interactions

1

2

Data Quality Excellence

Gained expertise handling NULL values, missing records, and inconsistencies—ensuring analytical integrity from source to insight

3

Independent Problem-Solving

Built confidence tackling ambiguous business questions without guidance—developing critical thinking and analytical creativity

4

Query Craftsmanship

Strengthened ability to write clean, efficient, optimized SQL—balancing readability with performance at scale

5

Business Intelligence

Learned to transform raw data into actionable recommendations—bridging technical analysis and strategic decision-making

The Final Slice: Empowering IDC Pizza with Data-Driven Success

Comprehensive Analysis Pipeline

Built end-to-end SQL workflow uncovering critical patterns in sales, pricing, and customer behavior

Operational Excellence

Enhanced IDC Pizza's capability to optimize menu offerings, pricing strategies, and daily operations

Transformative Analytics

Demonstrated how advanced SQL techniques solve real business challenges and drive measurable results

Ready to serve smarter decisions, one query at a time

This project showcases the intersection of technical SQL proficiency and strategic business thinking—proving that data analytics is not just about queries, but about empowering organizations to make informed, confident decisions that drive growth and competitive advantage.

