Business Requirements Document Project: Pizza Sales Performance Analysis

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Purpose

The goal of this project is to analyze one year of pizza sales to understand demand patterns, revenue drivers, menu performance, and ingredient utilization. The analysis will help optimize operational, marketing, and inventory decisions.

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1. Business Objective

The business wants to understand:

- When customers order
- What they order
- Which products generate the most value
- Which products underperform
- How ingredient usage correlates with demand
- How to adjust inventory and staffing
- Where to improve pricing, promotion, or product design

The analysis should deliver actionable insights that increase revenue, improve cost efficiency, and strengthen menu strategy.

2. Project Scope

This project will focus on the following activities:

Status	Activity
In-Scope	Cleaning and transforming raw sales data
In-Scope	Generating KPIs: revenue, orders, pizzas sold, AOV

Status	Activity
In-Scope	Demand analysis by day, hour, and month
In-Scope	Category and size-level performance
In-Scope	Ingredient usage frequency
In-Scope	Top and bottom product performance
In-Scope	Executive summary + recommendations
Out-of-Scope	Profit margin calculations (cost data not provided)
Out-of-Scope	Customer segmentation (customer-level data unavailable)
Out-of-Scope	Forecasting models (future enhancement)

3. Data Description

The analysis will utilize a dataset containing 48,620 rows and 12 features. Key features include:

- Order timestamps (date, time)
- Pizza type, category, size
- Quantity and pricing
- Ingredient breakdown

4. Business Questions Answered

Revenue & Demand

1. What is total revenue, total pizzas sold, and average order value (AOV)?
2. Which days and hours generate the highest sales?
3. How does demand vary monthly or seasonally?

Product & Menu Performance

1. Which pizza categories perform best?
2. Which sizes contribute the most revenue?
3. Which pizzas are top sellers by quantity, orders, and revenue?
4. Which pizzas are bottom performers?

Inventory & Ingredients

1. Which ingredients are used most frequently?
2. Which ingredients drive most of the revenue?

Operational Insights

1. When should staffing be increased or decreased?
2. Which products should be promoted, redesigned, or removed?

5. Requirements

Functional Requirements

- Clean and preprocess the dataset
- Generate visualizations for each KPI
- Build summary tables for top/bottom performers
- Produce final insights and recommendations

Non-Functional Requirements

- Code must be reproducible
- Visuals must be clear and labeled
- Document must be presentable for stakeholders

6. Deliverables

The following are the planned project deliverables:

- Jupyter notebook with full analysis
- Visualizations for each major insight
- KPI summary
- Executive summary
- Recommendations

7. Recommendations Summary

The final analysis will support the following types of actionable recommendations:

- Promote top sellers; redesign/remove weak performers
- Introduce weekday promotions to boost midweek sales
- Increase staffing during lunch and dinner peaks
- Adjust inventory ordering to align with ingredient frequency
- Reduce purchases of ingredients linked to bottom-performing pizzas