Power BI Work Sample: Pizza Sales Report

1. Technical Implementation

Data Source: Azure SQL Database

- Developed SQL queries to extract key KPIs and analyze sales trends by day and month.
- Queried top and bottom performers using GROUP BY, SUM(), and COUNT().
- Implemented DAX measures for core metrics including revenue, order value, and quantity insights.
- Time-based slicing and sorting handled using calculated columns and Power Query logic.
- Built on a **single-table model** (pizza_sales) for simplicity and performance.
- Version control maintained via GitHub, with annotated .pbix file versions for traceability.

Example KPI's extracted: Total Revenue, Avg Order Value

DAX Meaures:

1)Total Revenue: *Explicitly calculates the total revenue while maintaining filter context flexibility.*

```
Total Revenue :=
CALCULATE(
    SUM(pizza_sales[total_price])
)
```

2) Average Order Value (AOV): Safely divides total revenue by distinct orders, returning 0 if denominator is blank or zero.

```
Avg Order Value :=
DIVIDE(
    [Total Revenue],
    DISTINCTCOUNT(pizza_sales[order_id]),
    0
)
```

3) Total Orders:

```
Total Orders :=
CALCULATE(
    DISTINCTCOUNT(pizza_sales[order_id])
)
```

4) Average Pizzas per Order:

```
Avg Pizzas per Order :=
DIVIDE(
    SUM(pizza_sales[quantity]),
    [Total Orders],
    0
)
```

Calculated Columns:

1) Order Day:

```
Order Day :=
SWITCH(
    WEEKDAY(pizza_sales[Order Date], 1),
    1, "SUN",
    2, "MON",
    3, "TUE",
    4, "WED",
    5, "THU",
    6, "FRI",
    7, "SAT"
)
```

This ensures that abbreviations are always consistent and avoids reliance on text parsing.

2) Order Month:

```
Order Month :=
FORMAT(pizza_sales[Order Date], "MMM")
```

Uses the FORMAT() function to get three-letter month codes (e.g., JAN, FEB).

Data Modeling Approach

This report follows a **single-table modeling strategy**, leveraging the pizza_sales table as the core dataset. All relevant dimensions—including order dates, item details, and transaction metrics—are embedded directly within this table to reduce complexity.

This report follows a **single-table modeling strategy**, using the `pizza_sales` table as the centralized data source. All critical dimensions—including date, items, and transaction details—are embedded directly, removing the need for additional lookup tables.

- Calendar elements such as `Day Name`, `Month Name`, and sorting indexes were derived using a mix of Power Query and DAX.
- By consolidating all DAX logic and visuals into a single table, the model remains **lightweight**, **performant**, and **easy to maintain**—ideal for dynamic slicing, filtering, and quick publishing.

2. Business Impact & Stakeholder Collaboration

Audience: Sales managers, marketing teams, supply chain analysts

- Identified **peak sales periods** (e.g., Friday evenings, July) and **best/worst selling pizzas**.
- Informed promotional campaign timing and inventory planning.
- Enabled data-driven decisions using clear KPIs and filterable visual layouts.
- Drove decisions on promotion strategy and stock planning.

Stakeholder Collaboration

The report design was **iteratively refined** based on continuous feedback from stakeholders, particularly around layout clarity, KPI visibility, and user navigation.

- **Interactive elements** such as slicers and navigation buttons were added to enhance usability and ensure the report could be easily explored by **non-technical users**.
- Design decisions prioritized clarity and business relevance, ensuring the dashboard met the needs of sales, marketing, and supply chain teams across different decision-making levels.

3. Documentation & Usability

- SQL scripts categorized by goals (KPIs, trends, product ranking).
- DAX formulas inline with comments in Power BI Desktop.
- Clear Power Query labels and reduced transformation steps.

User guide includes:

Page 1: KPI overview with date trends

Page 2: Best/worst sellers visualized by quantity, orders, and revenue

- Visuals organized for intuitive reading; slicers added for category-level exploration
- All of these stored within GitHub repository with markdown annotations

4. Technical Stack & Architecture

Component	Tool/Technology
Database	Azure SQL
ETL	SQL + Power Query (M Language)
Data Modeling	DAX, calculated columns (single table)
Visualization	Power BI Desktop
Version Control	GitHub (.pbix with version history)
Sharing	.pbix file published to Power BI Service

5. Business Context & Summary

This report analyzes one year of pizza sales to uncover insights that support marketing strategy and operational planning. It highlights trends by **time**, **product**, and **order behavior**, helping teams:

- Understand peak demand patterns
- Identify top/bottom performing items
- Optimize promotional timing and inventory decisions

By combining **clean data modeling**, **intuitive UX**, and **robust SQL/DAX logic**, this report translates raw transactional data into **actionable business intelligence** in a scalable, collaborative format.