**Business Requirements Document (BRD)**

**Project: Pizza sales Analysis**

**Project Overview**

The Pizza Sales Analysis project is designed to analyse transactional sales data from a pizza store. The goal is to identify key business insights, trends, and KPIs that will help management make informed decisions related to sales, marketing, and operations.

**Business Objectives**

* Identify overall revenue, total pizzas sold, and total number of orders.
* Determine sales distribution by pizza category, size, and type.
* Analyse time-based trends in sales (daily, monthly, and yearly).
* Highlight best-selling and least-selling pizzas by revenue and quantity.
* Understand customer purchasing behaviour through **Average Order Value (AOV)** and **Average Pizza per Order**.
* Provide visualization dashboards for effective decision-making.

**Data Source & Description**

**Dataset:** pizza\_sales.csv

**Key fields:**

* **order\_id** → Unique identifier for each order
* **pizza\_id** → Unique identifier for each pizza
* **pizza\_name** → Name of the pizza sold
* **quantity** → Number of pizzas sold per order
* **total\_price** → Total revenue for each transaction
* **date, time** → Order timestamp for time-based analysis
* **pizza\_category, pizza\_size** → Attributes for pizza classification

**Key Performance Indicators (KPIs)**

* **Total Revenue** = Sum of total\_price
* **Total Pizzas Sold** = Sum of quantity
* **Total Orders** = Count of unique order\_id
* **Average Order Value (AOV)** = Total Revenue ÷ Total Orders
* **Average Pizza per Order** = Total Pizzas Sold ÷ Total Orders

**Analysis & Visualizations**

**Ingredient Analysis**

The pizza business aims to understand which ingredients are most frequently used across different pizza types. By identifying the most common ingredients, the store can

**Daily Trend**

A **line/bar chart** showing sales by day of the week.

* Useful for staffing and operations planning.

**Hourly Trend**

A **line/bar chart** showing sales by hour of the day.

Useful for staffing, ingredients, customer rush and operations planning

**Monthly Trend**

A **line chart** depicting monthly revenue and orders.

* Helps track seasonality and identify peak sales months.
* Summer months show higher sales due to promotional campaigns.

**% of Sales by Category**

A **bar chart** representing revenue and quantity sold for each pizza category (Classic, Supreme, Veggie, Chicken).

* Helps identify customer preferences.
* Classic pizzas dominate sales, while Veggie has lower demand.

**% Sales by Pizza Size & Category**

A **bar/ donut chart** comparing sales revenue and quantity by pizza size (S, M, L, XL).

* Highlights demand distribution by size and assist inventory planning.
* Large (L) pizzas contribute the highest revenue.

**Total Pizzas Sold by Pizza Category**

* Manage inventory by stocking ingredients used in the most popular categories.
* Evaluate if low-performing categories should be optimized, redesigned, or discontinued.

**Top 5 Best-Selling Pizzas**

A **horizontal bar chart** showing pizzas with the highest sales (by revenue, orders or quantity).

* Supports promotional and menu strategy.

**Bottom 5 Least-Selling Pizzas**

A **horizontal bar chart** of pizzas with the lowest sales.

* Identifies products for improvement or possible removal from the menu.

**Business Questions Answered**

* What is the total revenue generated?
* How many pizzas were sold in total?
* Which category and size of pizzas perform best?
* Which pizzas are the top and bottom performers?
* What is the average order value and average pizzas per order?
* What are the sales trends by day, month, and time of day?

**Deliverables**

* Jupyter Notebook with complete Python analysis.
* Visualizations (bar charts, line charts, trend charts).
* Business Requirements Document (BRD).
* Insights and recommendations for management.

**Conclusion & Recommendations**

The analysis provides a comprehensive view of pizza sales performance. Management can leverage these insights to:

* Focus marketing on high-performing categories.
* Optimize the menu by reconsidering least-selling pizzas.
* Plan inventory and staffing based on sales peaks.
* Monitor KPIs regularly through dashboards for continuous improvement.