Project Report

Int 217

Project

LOVELY PROFESSIONAL UNIVERSITY

PHAGWARA, PUNJAB

A Data-Driven Dashboard for Analyzing AIR Quality Analysis

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DECLARATION

I, A Shubh Verma, hereby declare that the work done by me on "Excel Project" is a record of original work for the partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer Science - Data Science, Lovely Professional University, Phagwara.

Signature
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ACKNOWLEDGMENT

First and foremost, I would like to express my deepest gratitude to my college for providing me with the opportunity and resources to undertake this project.

I extend my sincere thanks to my Teacher, **Mam Baljinder Kaur,** for her invaluable guidance, constructive feedback, and constant encouragement throughout the project. Her expertise and support were instrumental in achieving the objectives of this work.

Thank you all

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1. **Introduction** :-

In today's data-centric business landscape, the ability to analyze and visualize sales data effectively is essential for making informed decisions. This project focuses on developing an interactive dashboard in Microsoft Excel using a Pizza Sales dataset. The dataset includes key information such as order dates, pizza types, sizes, quantities, prices, and sales revenue.

The primary objective of this dashboard is to provide a comprehensive and user-friendly overview of pizza sales performance over time. Leveraging Excel's powerful features like pivot tables, slicers, dynamic charts, and conditional formatting, we aim to convert raw transactional data into meaningful insights. This dashboard can help restaurant managers, marketers, and stakeholders identify top-selling pizzas, track revenue trends, evaluate peak sales periods, and optimize inventory and promotional strategies accordingly.

2. **Source of Dataset:-** https://catalog.data.gov/dataset/Pizza-sales

3. **Dataset Preprocessing :-**

Before building the pizza sales dashboard, several preprocessing steps were undertaken to ensure data accuracy and usability:

- Handling Missing Values (NA or NaN)
  Missing entries in numeric fields such as quantity and total price were handled by filling them with appropriate aggregated values, like mean or median, depending on context.
- Data Cleaning
  Removed redundant columns (e.g., order IDs not needed for summary-level analysis) and standardized text formatting for consistency—such as pizza names and category labels.
- Column Selection
  Chose only the most relevant columns for sales analysis, including Date, Pizza Name, Category, Size, Quantity, Total Price, and Order Time.
- Data Type Fixing
  Ensured that numerical columns (e.g., Quantity, Total Price) were correctly formatted to allow accurate aggregations and chart plotting.

4. Analysis on Dataset :-

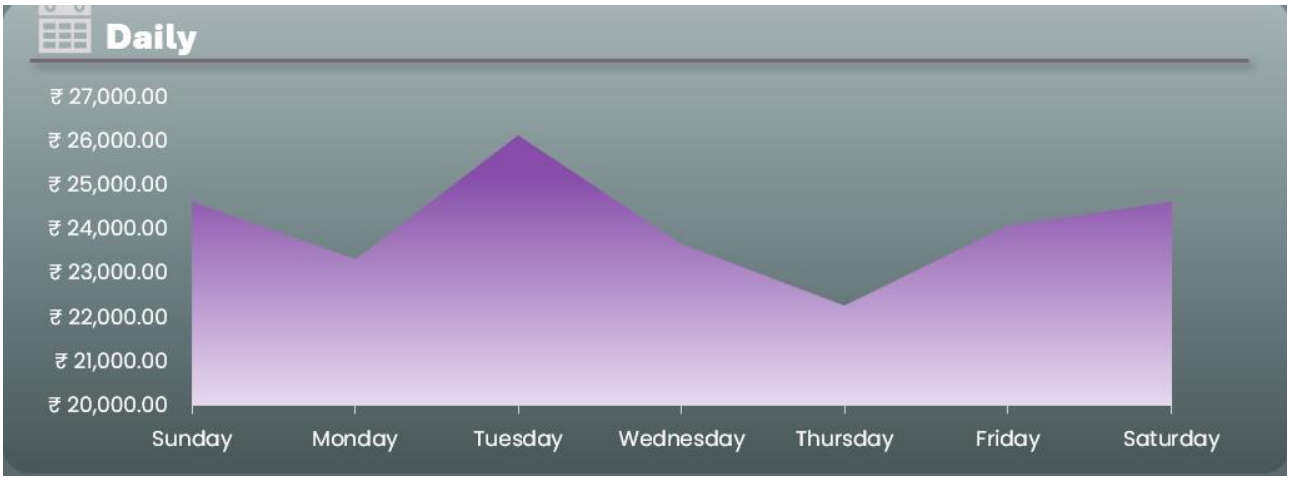
Objective 1: Track Daily Sales

i) General Description
Analyze daily pizza sales to monitor short-term performance, identify high-traffic days, and support daily operational planning.

ii) Specific Requirements
Create a pivot table with Order Date in rows and Sum of Total Price in values.

iii) Analysis Results
The dashboard highlights certain dates with high sales peaks, possibly indicating promotions, weekends, or holidays.

iv) Visualization
Use a Line Chart or Vertical Bar Chart to show daily sales trends, with slicers for filtering by pizza category or size.



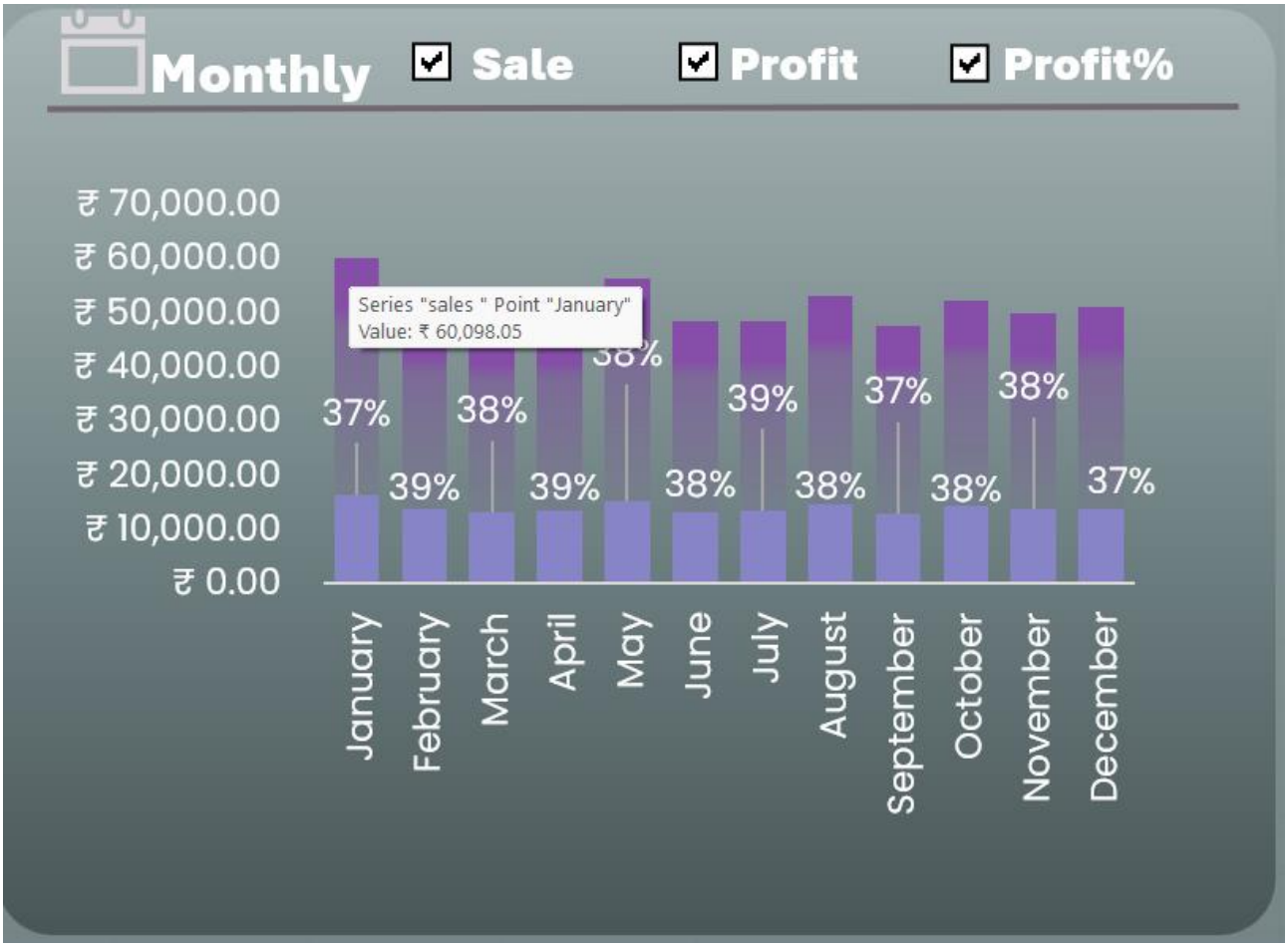
Objective 2: Analyze Monthly Sales Trends

i) General Description
Evaluate monthly sales to identify seasonal patterns and understand long-term business growth.

ii) Specific Requirements
Create a pivot table with Month (extracted from Order Date) in rows and Sum of Total Price in values.

iii) Analysis Results
Certain months show increased sales volumes, indicating periods of higher customer demand and potential for targeted marketing.

iv) Visualization
Use a Line Graph or Clustered Column Chart to display monthly sales, with optional slicers for category or customer type.



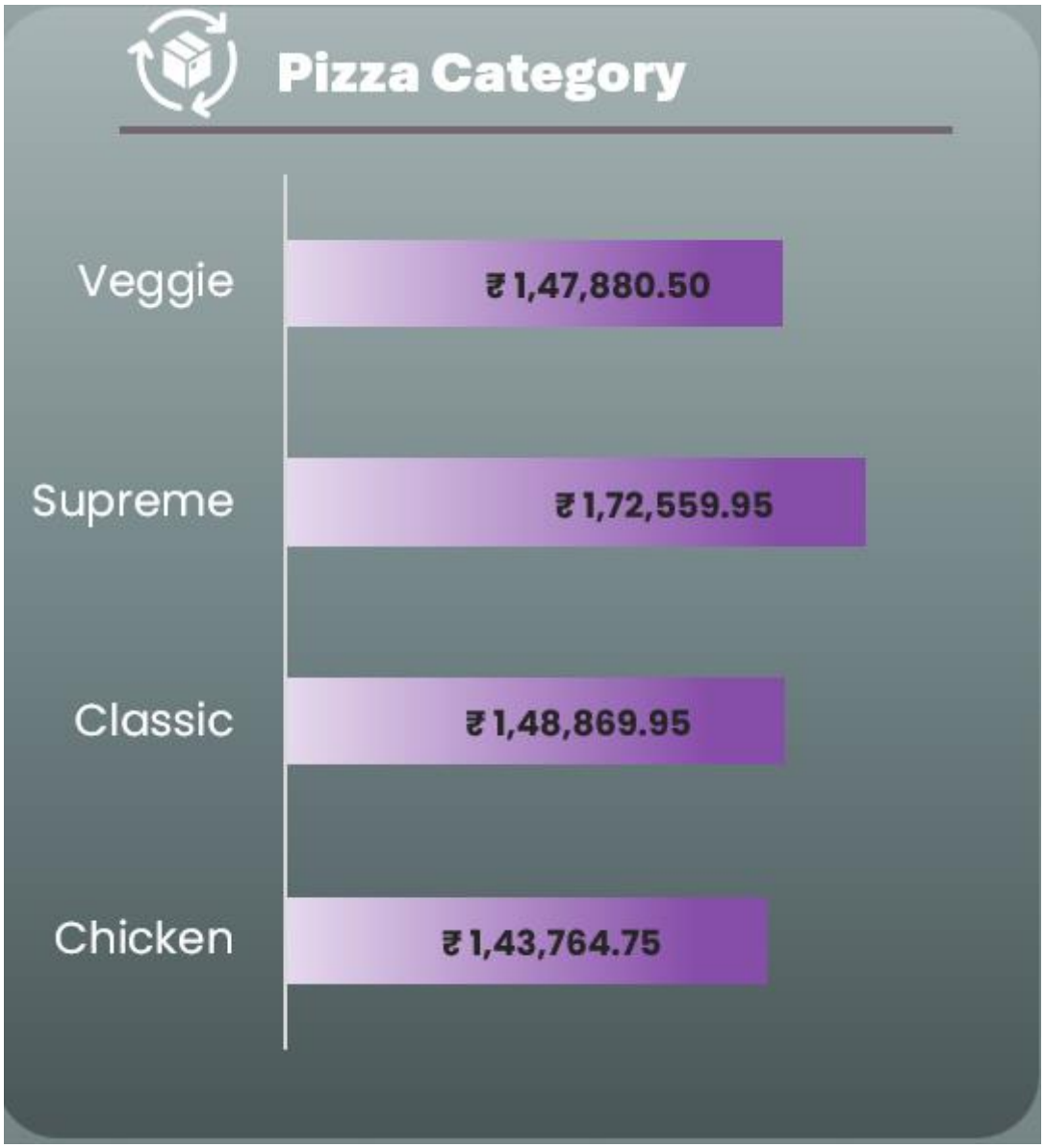
Objective 3: Identify Best-Selling Pizza Category

i) General Description
Determine which pizza category contributes most to overall sales performance in terms of revenue and popularity.

ii) Specific Requirements
Create a pivot table with Pizza Category in rows and Sum of Total Price or Quantity in values.

iii) Analysis Results
One or two categories dominate sales, indicating customer preferences and helping optimize menu offerings.

iv) Visualization
Use a Pie Chart or Bar Chart to visualize revenue contribution by category, with interactive slicers for date or size.



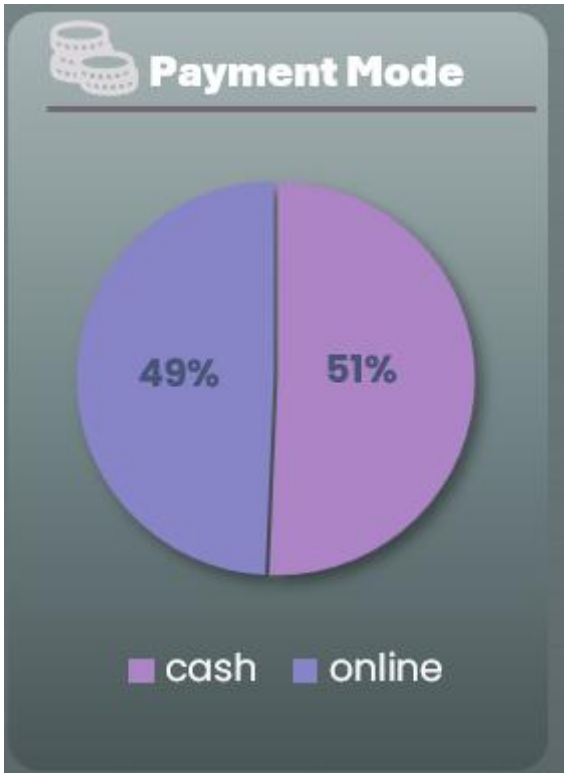
Objective 4: Analyze Payment Mode Preferences

i) General Description
Assess the popularity of various payment methods used by customers to streamline checkout processes and improve service.

ii) Specific Requirements
Create a pivot table with Payment Mode in rows and Count of Transactions or Sum of Total Price in values.

iii) Analysis Results
Digital payment methods show higher usage, reflecting evolving customer preferences and supporting investment in contactless options.

iv) Visualization
Use a Doughnut Chart or Stacked Bar Chart to display payment mode distribution.



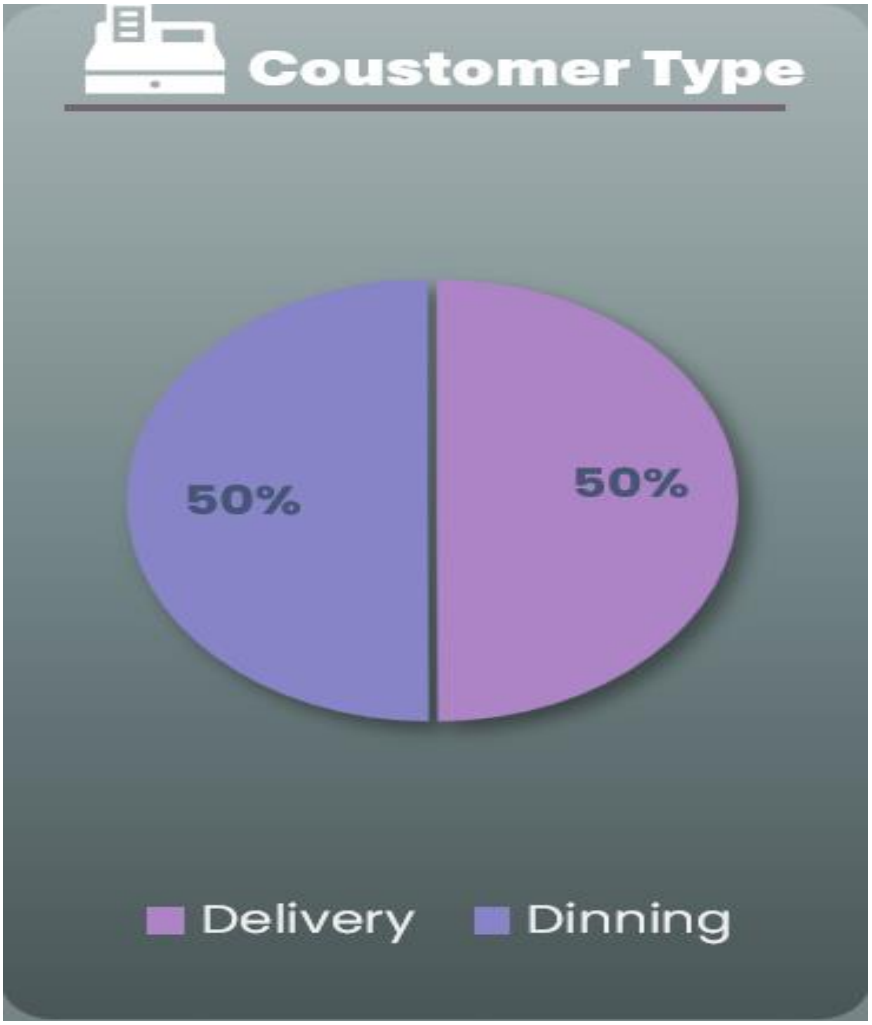
Objective 5: Understand Customer Types

i) General Description
Differentiate between new and returning customers to analyze loyalty trends and develop targeted marketing strategies.

ii) Specific Requirements
Create a pivot table with Customer Type in rows and Count of Orders or Sum of Total Price in values.

iii) Analysis Results
Returning customers make up a significant portion of total sales, emphasizing the importance of retention and customer satisfaction.

iv) Visualization
Use a Pie Chart or Bar Graph with slicers for time period and category to observe changes over time.



5. **Conclusion** :-

The analysis highlights uneven air quality monitoring across locations, with some areas showing high pollutant levels and frequent measurements, while others lack data. Visual insights reveal pollution hotspots and data gaps, supporting informed decisions for targeted environmental action and improved air quality management.

6. **Future Scope:-**

Future work can include integrating real-time air quality data, forecasting pollution levels using machine learning, and comparing seasonal or year-over-year trends. Expanding geographic coverage and correlating health impact data will enhance insights, enabling proactive policy-making and more effective environmental interventions.

7. **References :-**

8. **DATASET:-** https://catalog.data.gov/dataset/Pizza-sales

9. **Cleaning:- https://chatgpt.com/**

Research articles and journals related to air pollution and environmental monitoring.

LINKEDIN LINK:-

https://www.linkedin.com/posts/shubh-verma-94875a2b4_exceldashboard-dataanalytics-pizzasales-activity-7319931861663645697-N9vG?utm_source=share&utm_medium=member_desktop&rcm=ACoAAEuS8cgBQMd_8rwPYimCgCI5pcWQvHOhq1s