Tableau Project Report

Created by:

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Projects:

[Worldwide Pizza Sales Data Visualization Report]

Table of Content : List of my projects

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Python Machine Learning	***Power Consumption Projectn Time Series Forecasting) -*** https://github.com/Somnath342000/Python-ML-project-of-Power-Consumption-Forecasting-state-wise-in-India.git
	Healthcare Research Project (Unsupervised ML Project for categorical target variable) - https://github.com/Somnath342000/Python-Unsupervised-ML-Classification-project-on-Healthcare-Research.git
	Stock Market fundamental Analysis (Unsupervised ML Project for continuous target variable) - https://github.com/Somnath342000/Python-Unsupervised-ML-Regression-project-on-Fundamental-Analysis.git
Power BI	***American Coffee Taste Analysis Project -*** https://github.com/Somnath342000/Power-BI-American-Coffee-Taste-Analysis-Project.git
SQL	***Dairy Management Information Project for Market Research Survey -*** https://github.com/Somnath342000/Dairy-Information-System-Management-Project-SQL_Python-.git
	Loan Database Analysis System project- https://github.com/Somnath342000/SQL-Python-Financial-Health-Tracker.git
Tableau	***Pizza Sales Tableau Analysis project - Tableau Community*** https://public.tableau.com/views/PIZZASALES_17376436150760/Dashboard1?:language=en-GB&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link ***Github Link -*** https://github.com/Somnath342000/Tableau-pizza-Sales-Analysis.git
Excel & VBA	***Super store Sales MIS Dashboard Report-*** https://github.com/Somnath342000/Excel-SuperStore-Sales-Report-Dashboard.git
	Automatic Grade Checker – https://github.com/Somnath342000/Excel-VBA-Automatic-Grade-Checker.git

Project Report: Worldwide Pizza Sales Dashboard - Data Visualization

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Link - https://public.tableau.com/views/PIZZASALES_17376436150760/Dashboard1?:language=en-GB&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Github Link - https://github.com/Somnath342000/Tableau-pizza-Sales-Analysis.git

Tableau is a powerful and versatile data visualization tool that enables organizations to gain valuable insights from their data. It simplifies the process of creating interactive and insightful dashboards that help businesses make data-driven decisions. By leveraging Tableau's features, businesses can enhance performance tracking, improve operational efficiency, and create strategies based on real-time data. Its importance in the data analytics ecosystem cannot be overstated, as it not only enhances understanding but also empowers organizations to turn data into actionable business intelligence.

Brief Overview of Tableau Features

1. **Data Connectivity**: Connects to various data sources like SQL databases, Excel, cloud services, and more. Supports live and extract connections.
2. **Drag-and-Drop Interface**: Intuitive interface for building visualizations quickly by dragging and dropping data fields.
3. **Visualizations**: Includes bar charts, line charts, scatter plots, maps, pie charts, and more, for creating interactive and informative visuals.
4. **Calculated Fields**: Allows the creation of custom metrics and calculations directly within the tool.
5. **Dashboards**: Combines multiple visualizations into interactive dashboards, with options for filtering and drilling down.
6. **Advanced Analytics**: Features like trend lines, forecasting, clustering, and reference lines for deeper data insights.
7. **Data Sharing and Collaboration**: Publish and share dashboards securely through Tableau Server, Tableau Online, or Tableau Public for broader access.
8. **Mobile Compatibility**: Access dashboards on mobile devices, with auto-optimized views for tablets and smartphones.
9. **Security**: Provides user authentication, role-based access, and row-level security to protect sensitive data.
10. **Extensions & Customization**: Customize integrate visualizations and third-party tools or scripts (e.g., R, Python) for advanced analytics.
11. **Natural Language Processing (Ask Data)**: Ask questions in natural language to generate visualizations automatically.
12. **Storytelling**: Create data-driven stories by combining visualizations into a sequence to guide users through insights.

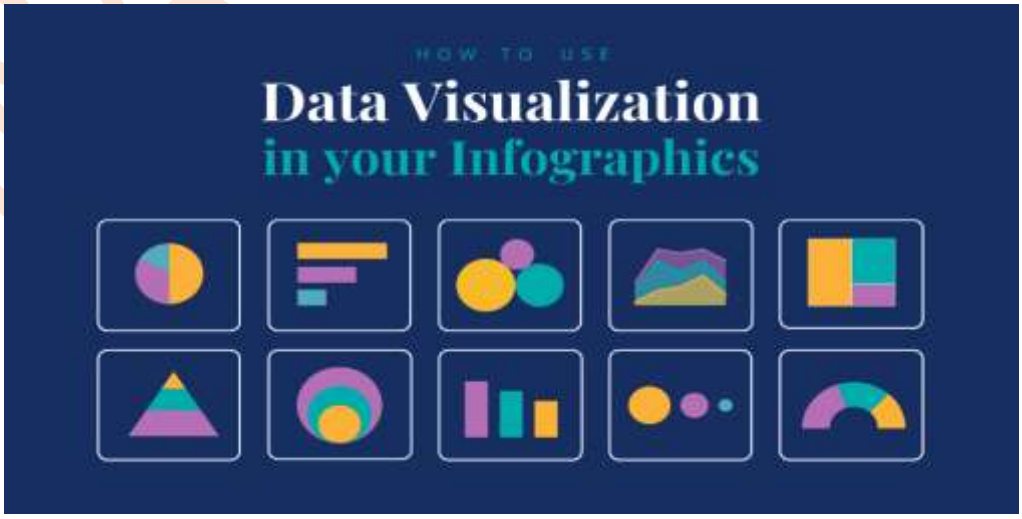

Tableau is a powerful, easy-to-use tool for data visualization and business intelligence, helping organizations turn data into actionable insights.

1. Introduction

This project focuses on creating a **Data Visualization Dashboard** for a worldwide pizza-selling company. The objective of this dashboard is to provide stakeholders with real-time insights into the sales performance of the company across various regions, product categories, and customer demographics. By leveraging modern data visualization tools and techniques, the project offers a comprehensive overview of the company's operations, making it easier for decision-makers to analyze trends, identify areas of improvement, and optimize business strategies.

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2. Project Objectives

The key objectives of this project are:

- **Real-time Sales Monitoring**: To provide a clear and real-time visualization of the sales data, including revenue, number of pizzas sold, and other key performance indicators (KPIs).
- **Geographical Insights**: To visualize sales data by geographic regions (countries, states, cities), helping to identify high-performing and underperforming markets.
- **Product Performance**: To assess the performance of different pizza products, including popular varieties, toppings, and sales volumes, and to gain insights into customer preferences.
- **Customer Demographics**: To analyze customer demographic data such as age, gender, and purchasing patterns to guide marketing and product development strategies.
- **Trend Analysis**: To identify seasonal trends, peak sales periods, and other patterns that can aid in inventory and marketing planning.

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3. Tools and Technologies Used

- **Data Visualization Tools**:
  - **Power BI**: Used to create interactive, dynamic, and shareable reports and dashboards.
  - **Tableau**: Used for creating detailed and advanced visualizations, including geographic heat maps and time-series analysis.
- **Data Analysis Libraries**:
  - **Pandas (Python)**: Used for data manipulation and preprocessing.
  - **Matplotlib and Seaborn (Python)**: For creating basic charts and graphs for exploratory data analysis.
- **Database**:
  - **SQL**: For querying and retrieving relevant data from the company’s sales database.
- **Data Processing**:
  - **Excel**: For initial data cleaning, processing, and validation before importing it into the visualization tool.

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4. Data Sources

The sales dashboard is based on data from the company's sales records, which include:

- **Sales Data**: Transaction records, including product name, quantity sold, unit price, customer information, date of purchase, and geographical location.
- **Product Information**: Details of various pizza products, their ingredients, pricing, and popularity.

- **Customer Data**: Demographic details of customers including location, age, and order frequency.

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5. Dashboard Features

The **Sales Dashboard** includes the following features:

a) Overview Section

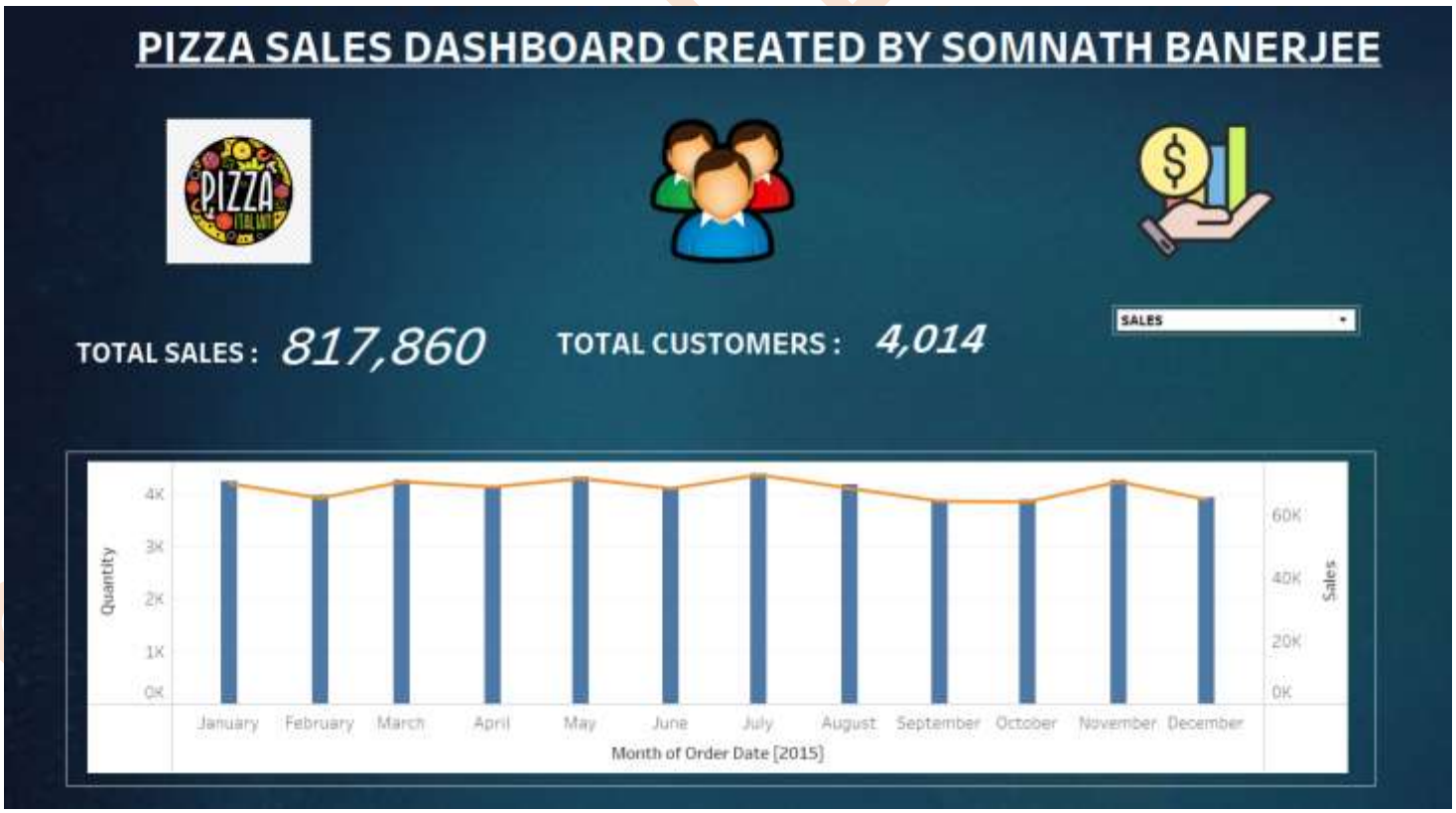
- **Total Revenue**: Displays total revenue over a defined period, such as daily, weekly, or monthly.
- **Total Units Sold**: Displays the total number of pizzas sold across different regions and product categories.
- **Sales Growth**: Shows the percentage change in sales over different periods, identifying whether sales are increasing or decreasing.

b) Geographical Analysis

- **Heatmap**: A geographical heatmap showing sales performance across different countries or regions.
- **Top Performing Countries/Regions**: Lists top-performing regions with the highest sales, helping managers focus on the best-performing markets.

c) Product Performance

- **Product Breakdown**: A chart that displays the sales volume for different pizza types (e.g., pepperoni, margherita, veggie) and their individual revenue contribution.
- **Sales by Topping**: A pie chart that shows customer preferences based on pizza toppings.



d) Customer Demographics

- **Age Distribution**: A bar chart that displays the age group distribution of customers who make pizza purchases.
- **Gender Breakdown**: Pie chart displaying the ratio of male to female customers.

e) Trend Analysis

- **Sales by Day/Month**: A line graph or bar chart showing how sales fluctuate on different days of the week or during specific months of the year, helping the company identify peak times and plan accordingly.

f) Interactive Filters

- **Date Filter**: Allows users to select specific time periods for analysis (e.g., week, month, year).
- **Region Filter**: Allows users to filter data based on a specific country or region.
- **Product Filter**: Users can select specific product categories to analyze sales for.

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6. Utility of the Project for the Business

a) Sales Insights and Performance Monitoring

b) Informed Decision-Making

c) Targeted Marketing

d) Product Optimization

e) Improved Operational Efficiency

f) Global Strategy Alignment

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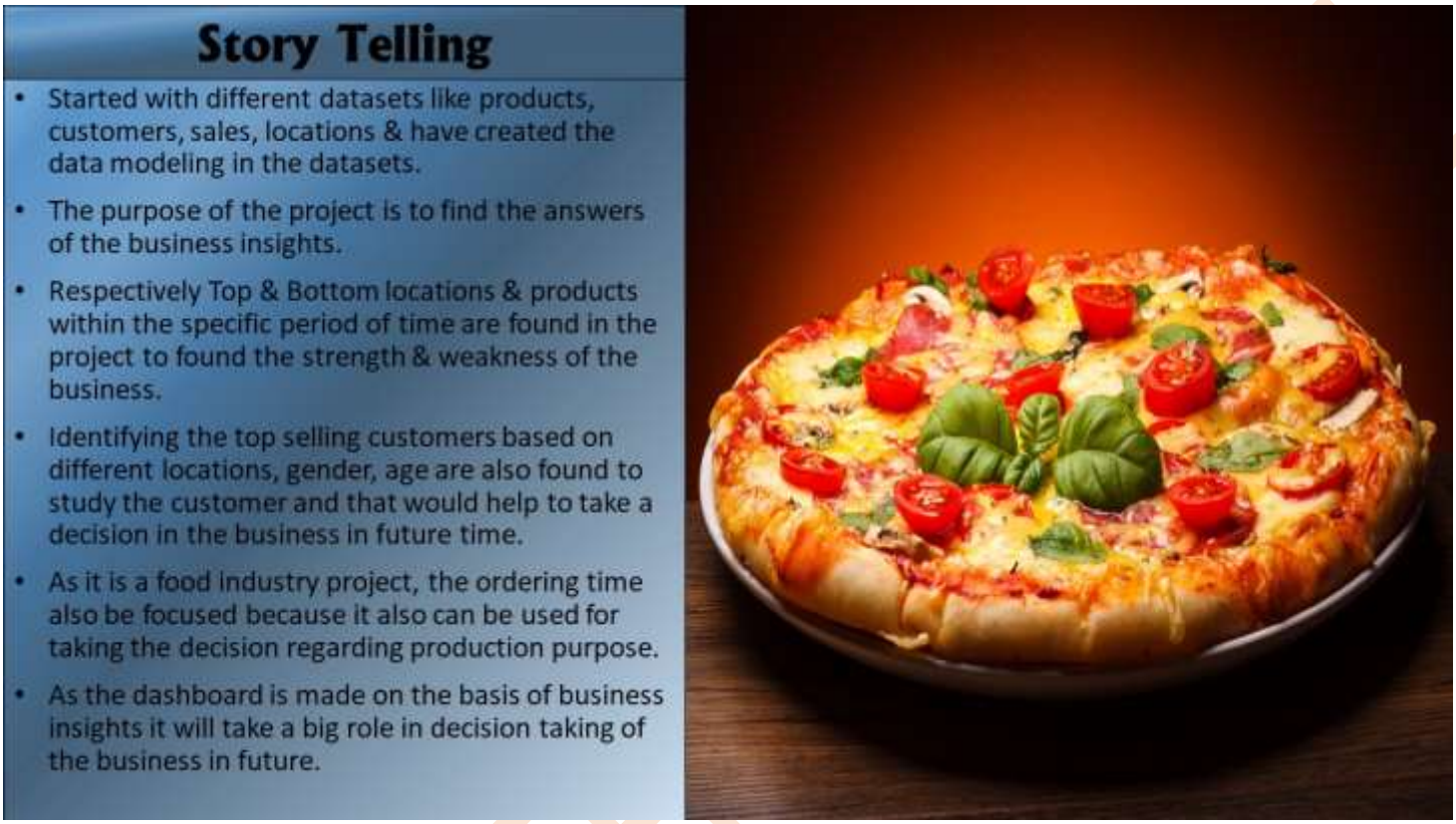
7. The Importance of Data Visualization in Data Analytics

Data visualization plays a crucial role in data analytics by providing a clear, concise, and easy-to-understand representation of complex data. It helps to:

Simplify Complex Data: Transform raw data into understandable visual formats such as charts, graphs, and maps,

making it easier to interpret.

- **Identify Trends and Patterns**: Helps in recognizing patterns, correlations, and trends in data that may not be immediately obvious in raw numbers.
- **Enhance Data Accessibility**: Visualizations make it easier for non-technical stakeholders, such as business managers or executives, to understand data and derive insights.



- **Speed Up Decision Making**: Data visualization aids in the quick identification of important information, which accelerates the decision-making process.
- **Tell a Story**: Visualizations can help tell the story behind the data, guiding stakeholders through insights and analysis in an engaging way.

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8. The Necessary Steps in the Data Visualization Process

The following steps are critical in creating effective data visualizations:

1. **Define Objectives**: Understand the business problem or question that needs to be answered through the dashboard.
2. **Data Collection and Preparation**: Collect relevant data from various sources (e.g., sales databases, customer information), clean it, and ensure its accuracy and completeness.
3. **Select the Right Tools**: Choose the appropriate data visualization tools (e.g., Power BI, Tableau) based on the business requirements and data volume.
4. **Choose Visualization Types**: Select suitable chart types (bar charts, pie charts, line graphs, etc.) based on the nature of the data.
5. **Design the Dashboard**: Create a user-friendly and interactive dashboard with appropriate filters and drill-down options for ease of use.
6. **Test and Refine**: Test the dashboard with actual users and refine the visualizations based on their feedback.
7. **Deploy and Monitor**: Deploy the dashboard for real-time use and monitor its effectiveness in supporting decision-making.

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9. Conclusion

The **Worldwide Pizza Sales Dashboard** is a powerful tool for the pizza-selling company to monitor its sales, track customer preferences, and optimize business strategies. By utilizing data visualization, the company can gain valuable insights into sales trends, product performance, and customer demographics, enabling more informed decision-making and better operational efficiency. This project not only highlights the importance of data visualization in data analytics but also demonstrates how such tools can be effectively used to improve business performance in the real world.

Thank You

Link - https://public.tableau.com/views/PIZZASALES_17376436150760/Dashboard1?:language=en-GB&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

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