

SNS_DATA_ANALYST_PROJECT_SARAVANAN.J

1. Understanding Data Visualization

Question: Explain the importance of data visualization in data analysis. What are the key principles of effective data visualization?

Data visualization is essential in data analysis because it simplifies complex data, reveals patterns and trends, and aids decision-making. Effective visualization should be clear, accurate, and consistent to ensure the data is easily understood and accurately represented.

Key Principles:

Uniformity - Use Uniform designs to maintain coherence across the visualization

Accuracy - Represent the data truthfully, avoiding any misleading elements.

Clarity - visualization needs to be straightforward and easy to understand.



- **Simplicity:** Keep visualizations clean and uncluttered. Avoid excessive detail or unnecessary elements that can distract from the main message.
- **Clarity:** Use clear labels, titles, and legends to explain what the visualization represents. Avoid jargon or technical terms that might confuse the audience.
- **Relevance:** Ensure that the visualization is relevant to the question being asked and that it effectively conveys the desired message.
- **Accuracy:** Verify that the data is accurate and that the visualization correctly represents the data.
- **Context:** Provide context for the visualization, including information about the data source, time period, and any relevant factors.
- **Accessibility:** Consider the needs of different audiences, including those with disabilities, and ensure that the visualization is accessible to all.

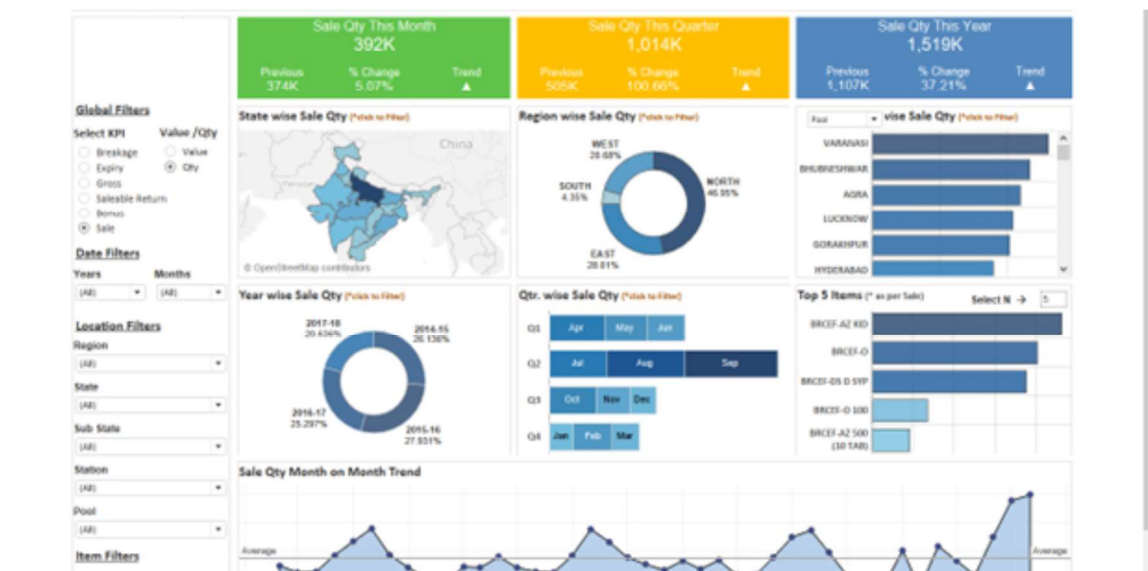
- **Interactivity:** If appropriate, use interactive elements to allow users to explore the data further and uncover additional insights.

2. Tableau Basics

Question: What are the main components of Tableau? Describe the process of creating a basic dashboard in Tableau.

Main Components of Tableau:

1. **Data Sources:** Connects to various data types like Excel, SQL, or cloud services.
2. **Sheets:** Individual workspaces where you create different visualizations.
3. **Dashboards:** A collection of sheets that provide a consolidated view of data.
4. **Stories:** A sequence of visualizations that convey a narrative.
5. **Filters:** Allow dynamic interaction with the data by focusing on specific subsets.



Creating a Basic Dashboard in Tableau:

1. **Connect to Data:** Import your data source (e.g., Excel, database).
2. **Create Sheets:** Build individual visualizations by dragging and dropping fields onto rows, columns, and marks.
3. **Design Dashboard:** Drag your created sheets onto a blank dashboard layout.
4. **Customize Layout:** Arrange the visualizations, add filters, and adjust sizes to create a cohesive view.

5. **Publish/Share:** Save and share the dashboard for others to interact with.

3.Power BI Fundamentals

Question: Discuss the main features of Power BI. How does Power BI differ from Tableau in terms of functionality and use cases?

? Tableau or Power BI		
	Tableau	Power BI
Data Visualization	Perfect capabilities	Easy to use
Deployment	Flexible	Only as SaaS model
Bulk data handling capacity	Better data handling	Little slow
Functionality	Efficient	Less efficient than tableau
Integration	Easy integration	Easy integration
Programming tools support	Support R language	Uses revolution analytics
User Interface	Efficient and smooth	Intuitive interface
Product support	Good	Latest tool
Cost	Cost-effective	Expensive

Main Features of Power BI:

1. **Data Connectivity:** Power BI offers a wide range of data connectors to various sources such as databases, online services, Excel, and more. It supports both direct query and import methods.
2. **Data Transformation:** With Power Query, users can clean, transform, and model data before creating visualizations. This includes merging, filtering, and shaping data.
3. **Data Modeling:** Users can create complex data models using relationships, calculated columns, measures, and hierarchies. DAX (Data Analysis Expressions) is used for advanced calculations.
4. **Interactive Dashboards and Reports:** Power BI enables the creation of interactive reports and dashboards with various visualization options like charts, maps, and KPIs.
5. **Publishing and Sharing:** Reports and dashboards can be published to the Power BI service, where users can share them with others, collaborate, and set up automatic data refreshes.
6. **Integration with Microsoft Ecosystem:** Seamless integration with other Microsoft tools like Excel, Azure, and Office 365 enhances its functionality and user experience.
7. **Natural Language Query:** Power BI's Q&A feature allows users to ask questions in natural language and get answers in the form of visualizations.
8. **Mobile Access:** Power BI provides mobile apps for accessing reports and dashboards on-the-go.