

What is the importance of data visualization?

Data visualization helps in:

- Simplifying complex data into an understandable format.
- Identifying patterns, trends, and outliers quickly.
- Communicating insights clearly to stakeholders or non-technical audiences.
- Supporting data-driven decision making.
- Saving time and enhancing storytelling through visual impact.

Example: Instead of sharing a spreadsheet with thousands of rows, a line chart showing monthly sales trend is far easier to interpret.

When do you use a pie chart vs bar chart?

Pie Chart:

- Use when you want to show parts of a whole (100%).
- Best with few categories (3–6 slices).
- Avoid when differences between segments are small.

Bar Chart:

- Use when comparing quantities across categories.
- Can handle many categories or even time series.
- Better when accurate comparisons are needed.

Example: Pie chart for market share; Bar chart for sales by region.

How do you make visualizations more engaging?

- Choose the right chart for the data.
- Use color wisely – highlight key data, avoid overwhelming users.
- Add context – titles, axis labels, tooltips, and legends.
- Use interactive elements – slicers, filters, drill-downs.
- Keep it clean and clutter-free – remove unnecessary elements.

What is data storytelling?

Data storytelling is the art of combining:

- Data (facts) – charts and graphs
- Narrative (context) – what the data means
- Visuals (design) – to make the insight intuitive

It turns raw data into a compelling narrative that drives action.

Example: Instead of just showing “sales dropped,” explain why – maybe due to seasonality or a competitor launch.

How do you avoid misleading visualizations?

- Always start y-axis at zero for bar charts.
- Avoid cherry-picking data ranges that distort the trend.
- Don't use 3D charts – they distort perception.
- Ensure proportions are respected (e.g., pie charts must add to 100%).
- Provide labels, sources, and context.

Misleading Example: A bar chart starting from y=50 instead of 0 exaggerates small differences.

What are best practices in dashboard design?

- Start with the user's goal.
- Apply the "top-left insight" rule.
- Keep it clean and consistent – use grids, alignments.
- Use filters to make dashboards interactive.
- Show KPIs clearly with numbers and trend indicators.
- Limit use of colors – use it to highlight, not decorate.
- Make it mobile-friendly if required.

What tools have you used for visualization?

"I've worked with Power BI extensively for dashboards and reports, using DAX for calculations. I also use Excel for quick visuals and pivot charts, and I've explored Tableau for interactive storytelling. For presentations, I use Canva or Google Data Studio for lightweight reporting.