

1. Name three types of visuals you can create in Power BI.

There are many types of visual in Power BI. The most common ones include charts, maps, cards, KPIs. Each of these types also has subtypes inside them.

Charts:

Line – used to show trends over time

Bar – used to compare different categories of data

Area – displays the area between the line and the axis. Commonly used to show accumulated values

Pie – used to represent part of the whole

Scatter – used to represent the relationship between two variables

Maps – used to visualize data geographically, including filled maps, shape maps and more

Cards – used to display a single value

KPIs – used to present a single measure and its progress towards a target

Slicers – interactive control for filtering data

2. How do you add a slicer to a report?

From the visualization pane Slicer icon is chosen and in the Data pane the required field is dragged and dropped to the Field in Visualization pane.

3. What is the difference between a bar chart and a column chart?

The main difference between bar chart and column chart is that former one displays data vertically while the latter one displays data horizontally. The usage depends on the readability and complexity of data.

Column charts have limited space in the category axis. When category labels are long, category axis may look cluttered. In this case using bar chart significantly increases readability. Column chart is a good fit for a maximum of 10-12 data sets. In the bar chart, fields are placed on top of each other making them more compact and fit in the space.

When dealing with negative values and fields, however column charts are more preferable since fields are represented as upside or downside depending on their sign. This way is more understandable rather than displaying them on right and left sides.

4. How do you change the colour of a visual background?

Visual is selected → Visualizations pane → Format visual → General → Effects → Background → Color

5. What does "drill-down" mean in a visual?

It is a feature that allows the user to view data at a more granular level. This provides more detailed insights. Additionally, enables the user to identify patterns and trends which might not be visible at higher levels of data granularity.

6. Create a bar chart showing SalesAmount by Region. ☒
7. Add a slicer for Quarter to filter all visuals on the page. ☒
8. Format the bar chart to show data labels. ☒
9. Use a line chart to show SalesAmount trends over Quarter. ☒
10. Add a tooltip to display Product details when hovering over bars. ☒
11. Sync slicers across multiple report pages. ☒
12. Create a custom visual with dynamic measure selection (e.g., Sales vs. Profit). ☒
13. Implement a hierarchy for Region > Product > Quarter drill-down. ☒
14. Use bookmarks to toggle between two visuals in the same space. ☒
15. Optimize a slow-rendering report with 10+ visuals.

Data Model Optimization:

- Data Modeling: Ensure your data model is well-structured with optimized relationships, avoiding unnecessary tables and relationships that aren't needed.
- Data Types: Use appropriate data types to reduce memory consumption.
- Calculated Columns vs. Measures: Prefer measures over calculated columns for aggregations and calculations to improve performance.

Query Optimization:

- Query Folding: Ensure Power BI can fold queries to the data source to minimize data imported into memory.
- Data Load: Limit the data loaded to what's necessary for the report to reduce memory usage.
- Remove Unnecessary Columns: Only load columns needed for analysis to reduce data size.

Visuals Optimization:

- Reduce Visuals: Limit the number of visuals on a single page. Consider splitting into multiple pages or using drillthroughs to manage complexity.
- Slicers and Filters: Use slicers and filters to reduce the data shown in visuals dynamically.
- Summary Tables: Pre-aggregate data where possible and use summary tables to reduce the complexity of visuals.

Performance Monitoring and Testing:

- **Performance Analyzer:** Use Power BI's Performance Analyzer to identify which visuals or DAX measures are slowing down the report.
- **Testing:** Regularly test the report with different data sizes and user scenarios to ensure performance remains acceptable.

DAX Optimization:

- **DAX Best Practices:** Follow best practices for writing DAX measures, such as avoiding nested iterators and using CALCULATE sparingly.
- **Optimize DAX Calculations:** Simplify complex DAX expressions and use variables to improve readability and performance.