TABLEAU INTERVIEW QUESTIONS

DATA ANALYSIS

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VISIONARY DATA MINDS

BASIC QUESTIONS

1. What is Tableau?

Tableau is a powerful data visualization and business intelligence tool that helps users analyze data and create interactive dashboards. It allows users to connect to various data sources, perform data manipulation, and generate insights through visual representations like charts, graphs, and maps.

2. What are the different products of Tableau?

Tableau offers several products, including:
- Tableau Desktop – Used for creating reports and dashboards.
- Tableau Server – Allows sharing and collaboration of reports.
- Tableau Online – Cloud-based version of Tableau Server.
- Tableau Public – Free version for publishing data publicly.
- Tableau Prep – Used for data preparation and cleaning.
- Tableau Mobile – Access dashboards on mobile devices.

3. What is the difference between live and extract data connections in Tableau?

Live Connection: Connects directly to the data source, fetching real-time data.
Extract Connection: Creates a static snapshot of the data, improving performance and enabling offline analysis.

4. What are dimensions and measures in Tableau?

Dimensions: Categorical fields that define data granularity (e.g., names, dates, locations).
Measures: Numerical fields used for calculations (e.g., sales, profit, quantity).

5. What is a calculated field in Tableau?

A calculated field is a custom field created using formulas or functions to manipulate data.
Example:
IF [Sales] > 1000 THEN "High" ELSE "Low" END
This categorizes sales as "High" or "Low."

6. What is the difference between filters and parameters in Tableau?

Filters: Used to restrict data at the worksheet or dashboard level.
Parameters: Allow users to input values dynamically, affecting calculations and visualizations.

7. What is the difference between joins and blends in Tableau?

Joins: Combine data from multiple tables within the same data source.

Blends: Combine data from different sources using a common field (requires a primary and secondary data source).

8. What are different types of filters in Tableau?

 Tableau provides the following filters:

- Extract Filters – Used while creating a data extract.
- Data Source Filters – Applied at the data source level.
- Context Filters – Used to improve performance by creating a subset of data.
- Dimension Filters – Applied to categorical fields (e.g., Region, Product).
- Measure Filters – Applied to numerical fields (e.g., Sales > 5000).

9. What is a dashboard in Tableau?

A dashboard is a collection of multiple visualizations combined into a single view for better analysis and storytelling.

10. What is a story in Tableau?

A story is a sequence of dashboards or worksheets that provide a step-by-step analysis of data insights.

11. What is the difference between a heat map and a tree map?

Heat Map: Uses colors to represent data density.

Tree Map: Uses nested rectangles to show hierarchical data with size and color.

12. What is data densification in Tableau?

Answer: Data densification is the process of filling in missing data points, allowing Tableau to generate continuous visualizations even when data is incomplete.

13. What is a reference line in Tableau?

Answer: A reference line is a constant or calculated line added to a visualization to compare data against a specific value, such as an average or target.

14. What are sets and groups in Tableau?

Groups: Combine similar values into a single category.

Sets: Create custom subsets of data based on conditions.

ADVANCE QUESTIONS

1. What are Level of Detail (LOD) Expressions in Tableau? Explain their types. LOD Expressions in Tableau control calculation granularity independently of the visualization?

a. FIXED – Ignores filters (except context filters) and alculates at a specified level.
- { FIXED [Region] : SUM([Sales]) } → Total sales per region.

b. INCLUDE – Adds extra dimensions while respecting filters.
- { INCLUDE [Customer Name] : AVG([Sales]) } → Avg sales per customer, aggregating further as needed.

c. EXCLUDE – Removes dimensions from calculations while keeping others.
- { EXCLUDE [Category] : SUM([Sales]) } → Sales ignoring category effect.

2. How do you compare current month sales with the previous month's sales in Tableau?

Create a Calculated Field for Previous Month Sales:
- LOOKUP(SUM([Sales]), -1)

Create a Comparison Field:
- SUM([Sales]) - LOOKUP(SUM([Sales]), -1)

Use this in a KPI chart or bar chart to show month-over-month growth.

3. How do you create a moving average in Tableau?

Use a Table Calculation:
WINDOW_AVG(SUM([Sales]), -3, 0)
This gives a 3-month moving average of sales.
Set Compute Using → Order Date.

4. What are the best ways to optimize a slow Tableau dashboard?
- Use Extracts Instead of Live Connections for large datasets.
- Reduce the number of filters and use Context Filters when needed.
- Aggregate data at the source using SQL instead of heavy calculations in Tableau.
- Minimize the number of marks in visualizations.
- Use Fixed LOD calculations instead of table calculations when possible.
- Reduce number of sheets and avoid unnecessary complex layouts.

5. How do you implement dynamic sorting in Tableau?
Create a Parameter:
Name: Sort By
Values: "Sales", "Profit", "Quantity"
Create a Calculated Field:
CASE [Sort By]
  WHEN "Sales" THEN SUM([Sales])
  WHEN "Profit" THEN SUM([Profit])
  WHEN "Quantity" THEN SUM([Quantity])
END
Drag this field to Sort the visualization dynamically.

6. How do you dynamically switch between different charts in a Tableau dashboard?
Create a Parameter to select chart type (e.g., "Bar Chart", "Line Chart").
Use Sheet Swapping:
Create separate worksheets for each chart.
Place them in a dashboard container.
Use a calculated field to filter sheets based on the parameter selection.

7. What is the difference between Table Calculations and LOD Expressions?
- Table Calculations are computed after aggregation and are dependent on the table's structure. They work only within the visualization.
- LOD Expressions are computed before aggregation, allowing calculations at different levels of granularity, independent of the view.

8. How do you handle NULL values in Tableau?
Replace NULLs with Zeros:
IFNULL([Sales], 0)
Filter NULL Values:
Drag the field to Filters and exclude NULLs.
Use ZN Function for Measures:
ZN([Profit])
Converts NULLs to zero to prevent errors.

9. How do you implement Row-Level Security (RLS) in Tableau?
Create a User Filter using USERNAME():
IF USERNAME() = "manager@company.com" THEN [Region] ELSE "Restricted"
Apply this calculated field to a Data Source Filter.
Publish the workbook with access control.

10. How do you create a waterfall chart in Tableau?
Drag Dimension (e.g., Product Category) to Columns.
Drag Measure (e.g., Profit) to Rows.
Convert to Gantt Bar Chart.
Create a Calculated Field for Running Total:
RUNNING_SUM(SUM([Profit]))
Add Profit to Size for correct bar representation.

11. How do you find the second-highest sales in Tableau?
Create a Rank Calculation:
RANK(SUM([Sales]), "desc")
Filter for RANK = 2 to get the second-highest sales.

12. How do you display only the last 7 days of data dynamically?
Use a Calculated Field for Filtering:
IF [Order Date] >= TODAY() – 7 THEN "Show" ELSE "Hide"
Apply this filter to keep only "Show" values.

13. How do you calculate the percentage of total in Tableau?
Use a Table Calculation:
SUM([Sales]) / TOTAL(SUM([Sales]))
Format as percentage.

14. What is the difference between Data Blending and Joins in Tableau?
- Joins combine data from multiple tables within the same data source at the row level before aggregation.
- Data Blending merges data from different data sources after aggregation, linking them via a common field.

15. How do you calculate YoY (Year-over-Year) growth in Tableau?
Create a Calculated Field:
(SUM([Sales]) – LOOKUP(SUM([Sales]), -1)) / LOOKUP(SUM([Sales]), -1)
Compute using Order Date → Year.

16. How do you filter data dynamically using a parameter?
Create a Parameter (e.g., Select Year).
Create a Calculated Field:
YEAR([Order Date]) = [Select Year]
Use this field in the Filters section.

SCENARIO-BASED

1. You have a dataset with daily sales data. The manager asks you to show only the last three months of data in a report. How will you do this?

Use a Relative Date Filter:

Drag the Order Date field to Filters.

Select Relative Date and choose Last 3 Months.

Alternatively, use a Calculated Field:

IF DATEDIFF('month', [Order Date], TODAY()) <= 3 THEN "Show" ELSE "Hide"

Add this to the filter and select Show only.

2. Your dashboard takes too long to load. How do you optimize its performance?

Use Extracts Instead of Live Connection

Reduce Data Size: Apply necessary filters at the source.

Limit Number of Marks in Visualizations

Avoid Complex Calculations on Large Datasets

Use Fixed LOD Expressions Instead of Table Calculations

Optimize Dashboard Layout: Reduce unnecessary sheets.

3. You need to create a dynamic Top 10 Customers dashboard. How would you do this?

Create a Rank Calculation:

RANK(SUM([Sales]))

Add this to the Filters shelf and set it to <= 10.

For a dynamic selection, use a Parameter:

Create a parameter Top N (e.g., 5, 10, 20).

Modify the filter: RANK(SUM([Sales])) <= [Top N].

4. You have sales data for multiple regions. How would you compare current year vs. previous year sales in a single view?

Create Calculated Fields:

Current Year Sales:

IF YEAR([Order Date]) = YEAR(TODAY()) THEN [Sales] ELSE 0

Previous Year Sales:

IF YEAR([Order Date]) = YEAR(TODAY()) – 1 THEN [Sales] ELSE 0

Drag these fields into a line chart or bar chart for comparison.

Alternatively, use Table Calculations with LOOKUP(SUM([Sales]), -1).

5. The manager wants a dashboard where users can switch between different KPIs (Sales, Profit, Quantity). How do you implement this?

Create a Parameter:

Name: Select KPI

Values: "Sales", "Profit", "Quantity"

Create a Calculated Field:

CASE [Select KPI]

  WHEN "Sales" THEN SUM([Sales])

  WHEN "Profit" THEN SUM([Profit])

  WHEN "Quantity" THEN SUM([Quantity])

END

Use this field in the visualization.

Add the parameter to the dashboard for user selection.

6. Your dataset contains missing dates in a time series. How do you fill the gaps?

Show Missing Values:

Right-click on the Date field and select Show Missing Values.

Use Data Densification:

Convert Date field to Continuous.

Use Data Preparation Tools (Tableau Prep, SQL, or Excel) to add missing dates.

7. You need to create a YoY (Year-over-Year) growth percentage. How do you calculate it?

Create a Calculated Field:

(SUM([Sales]) - LOOKUP(SUM([Sales]), -1)) / LOOKUP(SUM([Sales]), -1)

This compares the current year's sales with the previous year's sales.

8. How do you highlight the highest and lowest sales in a table?

Create a Calculated Field for Highlighting:

IF SUM([Sales]) = WINDOW_MAX(SUM([Sales])) THEN "Highest"

ELSEIF SUM([Sales]) = WINDOW_MIN(SUM([Sales])) THEN "Lowest"

ELSE "Normal"

Apply this field to Color in the visualization.

9. Your company has different profit margins for different product categories. How do you create a custom profit margin calculation?

Create a Calculated Field for Profit Margin:

CASE [Category]
  WHEN "Technology" THEN SUM([Profit]) / SUM([Sales])
  WHEN "Furniture" THEN SUM([Profit]) / (SUM([Sales]) + 1000)
  WHEN "Office Supplies" THEN SUM([Profit]) / (SUM([Sales]) * 1.2)
END

Use this field in visualizations.

10. How would you implement a user-based filtering system where different users see different data?

Row-Level Security (RLS) in Tableau Server
Create a User Filter based on USERNAME().
Apply a calculated field:
IF USERNAME() = "manager@company.com" THEN [Region] ELSE "Restricted"
Publish the dashboard with the user filter applied.

11. You need to create a running total of sales. How do you do it?

Use a Table Calculation:
Create a calculated field:
RUNNING_SUM(SUM([Sales]))
Drag this to the view and set compute using Order Date.

12. Your manager wants to compare sales before and after a specific event (e.g., a new product launch). How do you do it?

Create a Parameter for the event date.
Create a Calculated Field:
IF [Order Date] < [Event Date] THEN "Before" ELSE "After"
Use this field to segment the data in a bar chart or line graph.

15. Your manager wants to drill down from Year → Quarter → Month using a single click. How do you do this?

Create a Hierarchy:
Drag Order Date to the Dimensions pane.
Right-click and create a hierarchy with Year, Quarter, and Month.
Use this hierarchy in the visualization to allow drill-down.

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