

Data Analysis Interview Questions & Answers

◆ 1. What is Data Analysis?

Answer:

Data analysis is the process of inspecting, cleaning, transforming, and modeling data to discover useful information, draw conclusions, and support decision-making.

◆ 2. What are the steps in the data analysis process?

Answer:

1. Data Collection
 2. Data Cleaning
 3. Data Exploration
 4. Data Analysis/Modeling
 5. Interpretation
 6. Data Visualization
 7. Reporting
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◆ 3. Which tools do you use for data analysis?

Answer:

- Excel: for quick analysis and pivot tables

- SQL: for querying databases
 - Python (Pandas, NumPy, Matplotlib, Seaborn)
 - Power BI/Tableau: for data visualization
 - R (less common, but for statistics-heavy tasks)
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◆ **4. How do you handle missing or null values in a dataset?**

Answer:

- Remove rows/columns
 - Replace with mean/median/mode
 - Forward/backward fill
 - Use interpolation
 - Use predictive modeling (if necessary)
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◆ **5. What is the difference between inner join, left join, and right join?**

Answer:

- Inner Join: Returns only matching records
 - Left Join: All from left table + matched from right
 - Right Join: All from right table + matched from left
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◆ **6. How do you ensure data quality?**

Answer:

- Check for duplicates

- Handle missing values
 - Validate data types
 - Perform sanity checks
 - Use data profiling tools
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◆ **7. How do you explain a complex data insight to a non-technical stakeholder?**

Answer:

- Use visuals (charts/graphs)
 - Avoid jargon
 - Focus on impact and actionable insights
 - Use storytelling approach
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◆ **8. What's the difference between correlation and causation?**

Answer:

- Correlation: Relationship between two variables
- Causation: One variable directly affects another

"Correlation does not imply causation."

◆ **9. What is data normalization?**

Answer:

It's the process of organizing data to reduce redundancy and

improve integrity. In scaling, it means rescaling data to a standard range (e.g., 0 to 1).

- ◆ 10. Write a SQL query to find the second highest salary.

Answer:

```
SELECT MAX(salary)
```

```
FROM employees
```

```
WHERE salary < (SELECT MAX(salary) FROM employees);
```

- ◆ 11. What is a pivot table in Excel?

Answer:

A pivot table summarizes data with totals, averages, and counts using drag-and-drop. It helps in quick data exploration.

- ◆ 12. What is DAX in Power BI?

Answer:

DAX (Data Analysis Expressions) is a formula language used in Power BI for creating calculated columns, measures, and custom calculations.

- ◆ 13. Explain the difference between a clustered bar chart and a stacked bar chart.

Answer:

- Clustered: Side-by-side bars for each category

- Stacked: Bars stacked on top of each other to show total
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- ◆ 14. How do you identify outliers in data?

Answer:

- Statistical methods: IQR, Z-score
 - Visualization: Boxplot, scatterplot
 - Domain knowledge
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- ◆ 15. Describe a data analysis project you've worked on.

Answer:

Explain:

- The problem
 - The data sources
 - Tools used (Excel, SQL, Power BI, Python)
 - Your process (cleaning, modeling, visualization)
 - Insights and business impact
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- ◆ 16. What are KPIs, and why are they important?

Answer:

KPIs (Key Performance Indicators) are metrics that measure business performance. Examples: Sales Growth %, Profit Margin, Conversion Rate.

- ◆ 17. What is the difference between long and wide format data?

Answer:

- Wide: More columns (each variable as column)
 - Long: More rows (each observation per row)
 - Preferred format depends on the analysis or visualization tool.
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- ◆ 18. What is the use of GROUP BY in SQL?

Answer:

GROUP BY is used to group rows that have the same values in specified columns, often used with aggregate functions like COUNT, SUM, AVG.

- ◆ 19. How do you calculate YoY Growth?

Answer:

Formula:

YoY Growth = ((Current Year Value - Previous Year Value) / Previous Year Value) * 100

- ◆ 20. What are common charts used for visualization?

Answer:

- Bar/Column Chart
- Line Chart

- Pie Chart (use cautiously)
 - Box Plot
 - Histogram
 - Heatmap
 - Donut Chart
 - Scatter Plot
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Pro Tips for Interview:

- Always explain with real examples or your projects.
 - Show understanding of both technical and business side.
 - Communicate clearly and confidently.
 - Prepare 2–3 solid data analysis project stories using STAR method (Situation, Task, Action, Result).
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Would you like a PDF version of this guide or want me to add Power BI, Python, or case-study questions also?

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