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Data Analyst Case Study PDF

To solve a data analyst case study, restate the goal, define the metric, break it into parts, check data quality, compare segments, test one or two hypotheses and finish with a clear recommendation. This page walks through the method with a retail example and gives a one-page template for presenting results.

Key takeaways

- Start by restating the goal and the metric before touching any data.
- Break the metric into drivers, for example revenue equals orders times average order value.
- Check data quality first: missing values, duplicates and date ranges.
- Compare segments to locate the problem, then test a hypothesis.
- End with a recommendation, the expected impact and how you would measure it.

What is data analyst case study?

A data analyst case study is a business problem given as a dataset or a scenario, where you must find the cause or opportunity using data and explain your findings and recommendation clearly.

What is the method for any case?

Use seven steps. **1. Restate** the question in your own words. **2. Define** the metric and the time period. **3. Decompose** the metric into drivers. **4. Check** the data. **5. Segment** to find where the change sits. **6. Test** a hypothesis. **7. Recommend** and say how you will measure the result. The steps keep you calm and show structure, which is what interviewers score.

What is a worked example?

Case: an online store says revenue fell 12 percent last month compared with the month before. Find out why.

Step 1, restate. "Revenue fell by 12 percent month on month; I will find which part of the business caused it."

Step 2, define. Revenue is the sum of paid order value, excluding cancelled and refunded orders, for the two months.

Step 3, decompose. Revenue equals the number of orders times the average order value. The number of orders equals visitors times conversion rate. So the drop can come from fewer visitors, lower conversion, smaller baskets or a mix of these.

Step 4, check the data. Confirm that both months have the same number of days, that no days are missing, that duplicates are removed and that cancelled orders are handled the same way. A data gap can look like a business problem.

Step 5, segment. Compare the two months by channel, product category, region and new versus returning customers. Suppose the table shows this (made-up numbers for illustration):

Segment	Last month orders	This month orders	Change
Paid ads	4,000	3,100	-22%
Organic search	3,000	2,950	-2%
Email	1,500	1,480	-1%

The drop sits mainly in paid ads. Average order value is flat, so the issue is volume from one channel.

Step 6, test. Hypothesis: ad spend was cut or ad quality fell. Check spend, impressions, click-through rate and conversion for that channel. If spend fell by about the same share as orders, spend is the likely cause. If spend is flat but clicks fell, creative or targeting may be the cause.

Step 7, recommend. "Restore or reallocate ad spend if the return justifies it, review ad creatives and set an alert when daily orders from this channel fall by more than a set percentage. Measure the effect over the next four weeks."

How do I present the answer?

Use one page: the question, the key finding in one sentence, one supporting chart, two or three bullets of evidence, the recommendation and the risks or open questions. Lead with the answer, then show how you got there.

What mistakes should I avoid?

Diving into the data without a question, ignoring data quality, reporting many numbers with no message, claiming a cause from a correlation and giving no next step. Also avoid unnecessary jargon.

How do I practise?

Take any public dataset or a sample sheet. Write the seven steps for a question such as "which product category should we promote?". Then time yourself: 10 minutes to plan and 20 minutes to analyse. Present to a friend in three minutes.

Which tools should I use?

Use whatever the task allows: Excel PivotTables for quick segmenting, SQL for large data and Python for repeated analysis. The method matters more than the tool, so say why you picked it.

What if the data is messy or incomplete?

Say so early. List what is missing, what you can still conclude and what you would need to be sure. For example, if one region has no data for a week, report results with and without that region and mark the finding as less certain. Interviewers value an analyst who notices limits more than one who hides them.

How do I choose the right chart for a case?

Use a line for change over time, a bar for comparing segments and a table when exact values matter. Add one highlight, such as a coloured bar for the segment that explains the drop, and label the chart with the message, for example "Paid ads orders fell 22 percent". Keep the chart simple enough to read in five seconds.

Which follow-up questions should I expect?

Typical ones are: how would you know the cause is not seasonal, what other data would you want, what would you do if the hypothesis is wrong and how would you track the fix. Prepare short answers for these four before the interview.

Frequently asked questions

What is a data analyst case study?

It is a business problem given as data or a scenario, where you find the cause or opportunity and explain your recommendation.

How do I start a case study?

Restate the question, define the metric and period, and break the metric into its drivers before analysing any data.

Why check data quality first?

Missing days, duplicates or different cancellation rules can look like a business problem, so quality checks prevent wrong conclusions.

How long should a case presentation be?

Keep it to one page or about three minutes: the finding, one chart, short evidence, a recommendation and risks.

Are the numbers in the example real?

No. The figures are made up to show the method and should be replaced with your own data.

Sources and further reading

- Microsoft Excel support
- pandas documentation

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