

Project Overview

You've recently joined the consulting firm **DataSpace** as a junior data analyst. DataSpace helps customers worldwide turn their raw data into valuable insights to help them make better business decisions. They get involved in all data lifecycle stages, from data acquisition right through to data maintenance!



Your company logo

Having completed your initial training, you are ready for your first client assignment.

DataSpace has a potential client, **AusEnergy**, a supplier of domestic and industrial energy in Australia. The company has approached DataSpace for assistance. They are concerned about their ability to efficiently manage the supply of electricity as the demand can vary greatly from day to day.



Your potential client's logo

Ultimately, they would like to be able to predict the demand, but that's another project for the future. The immediate need is to prove to AusEnergy that DataSpace is the right team for the job!

You receive the following email from Amara, your line manager:

Subject: Energy demand data analysis

We've got a great new client we are trying to impress, and I think you are the person to do it!

The big concern this client has is that they need to manage the supply of energy efficiently. You can't just flip a switch to turn on a power station! They can only manage supply if they know when demand is likely to go up and down.

1. What does demand look like over time?
2. What does extreme demand look like, and under what circumstances does this happen?
3. How do factors like the weather and holidays affect demand?

You should perform all of your work in a suitable spreadsheet program such as Excel, Google Sheets, or Numbers. In the spreadsheet, you will present your work to Simon Cave, the project manager from AusEnergy. He's a bit of a spreadsheet fan, and I know he will want to tinker with it after your presentation.

But don't worry: as this is your first project, we still consider you in training, and I'll be there to help you. I've prepared a detailed brief with all the steps to get the data ready. We'll be doing this as a team.

Cheers and good luck!

Attachments:

- [holidays.xlsx](#)
- [Energy_demand.csv](#)
- Project Brief



You got to the end of the brief and have completed all of your tasks. You made it!

You've even taken Amara through it to make sure she agrees with what you have done. So, now it's time to get ready to present your work to Simon Cave from AusEnergy.

While you were busy working on your spreadsheet, Amara also got some additional requests from AusEnergy. She sends you the following email, asking you to prepare to discuss a couple of additional items in the meeting with Simon.

From: Amara

Subject: AusEnergy trust building

Hi!

AusEnergy has sent me many questions, and I think that basic training on a few things and building their awareness of data management could help build their trust.

Could you create a PowerPoint presentation of the following additional **tools** that DataSpace uses, including:

- Tableau
- Databases and SQL
- Python

Also, create a slide for each explaining what the tool is, who uses it, and what it is for. You'll need to do some research to gain a high-level understanding of these tools. Here are some videos to get you going:

- [Tableau](#)
- [Python](#)
- [SQL and Databases](#)

Finally, please create one or two slides explaining the data lifecycle. Specifically, cover the following:

- An overview of what the data lifecycle is and its key phases.
- How the spreadsheet fits into the data lifecycle.
- What areas of the data lifecycle that you didn't analyse during this project, and how DataSpace may be able to help in those areas.

This will be really helpful in the next call!

Thanks!

Amara

With that, you get to work. Good luck!

Deliverables

1. A **workbook** in Excel, Google Sheets, or Numbers.
2. A short **slide deck** (using PowerPoint or an equivalent tool) addressing the tools and data lifecycle points Amara wanted you to cover.

To make it easier for your work to be reviewed by the jury, upload all the project deliverables to the platform in a zip folder called 'Project_title_LastName_FirstName'. Use the following naming convention for each of your deliverable: LastName_FirstName_number of deliverable_name of deliverable__your start date of project. This is how it should be named:

- LastName_FirstName_1_workbook_mmyyyy
- LastName_FirstName_1_slidedeck_mmyyyy

For example, the deliverable here would be named:
Smith_Mary_1_workbook_042022

Project Presentation

During the oral presentation, your assessor will play the role of Simon Cave. The assessor will challenge your decisions, so be prepared to defend your work. The session will last 30 minutes and will be structured as follows:

- **Introduction (5 minutes)**
 - Introduce yourself as a member of the DataSpace team.

- Provide an overview of the analysis approach undertaken in creating your spreadsheet (explain how you prepared the data and the main techniques you used).
- **Analysis (10 minutes)**
 - Using the spreadsheet, explain your findings regarding energy demand (use the Energy Demand, Top and Bottom 20 Demand, Demand over Time and Demand by Day of Week worksheets).
 - Using the spreadsheet, explain your findings regarding the impact of weather on demand (use the Effect of Weather and Effect of Temp and Hols worksheets).
 - Using the spreadsheet, explain your findings regarding the comparison of demand in different years (use the YoY Demand worksheet).
- **Further work (5 minutes)**
 - Explain the range of tools that could be used in addition to Excel to enhance the analysis further.
 - Explain how this exercise was just a small part of a larger data lifecycle and how DataSpace could assist in other areas of the data lifecycle.
- **Discussion (5 minutes)**
 - Playing the role of Simon Cave, the assessor will ask you questions about your methodology and your deliverables, e.g.:
 - If you had more time, what further analysis would you do?
 - Are the other tools suggested (Tableau, SQL, Python) better for this task? Or just different?
- **Debrief (5 minutes)**
 - At the end of the sessions, the assessor will stop playing the role of Simon Cave so that you can debrief together.

Your presentation should last 20 minutes (+/- 5 minutes). Respecting presentation time requirements is important in professional environments. In consequence, if your presentation is under 15 minutes or over 25 minutes, you may be asked to redo the assessment.

Skills

- Implement the stages of the data analysis lifecycle
- Describe approaches to organisational tools and methods for data analysis

- Describe the data life cycle and the steps involved in carrying out routine tasks