

What is a case study?

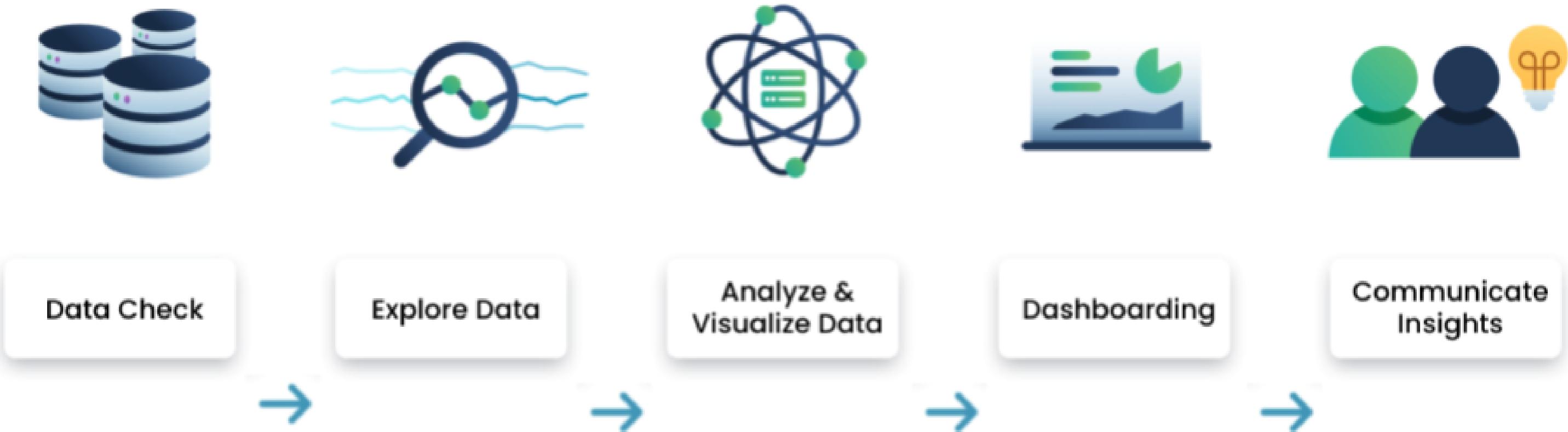
- Apply Power BI skills
- Combine previously learned concepts
- Solve an example real-world problem

Prerequisite courses:

- Introduction to Power BI
- Data Visualization in Power BI
- Introduction to Calculations with DAX in Power BI



Data analytics pipeline with Power BI



Data analytics pipeline - checking and exploring data



- Perform an integrity check of the dataset
- Exploratory data analysis (EDA)
- Apply business questions to start investigating the problem

Data analytics pipeline - analyze & visualize



- Build overview tables and visualizations
- Perform more in-depth analytics

Data analytics pipeline - dashboarding



- Combine visualizations into a few dashboards
- Design with the problem and audience in mind

Problem to solve

Investigate market trends for data science roles

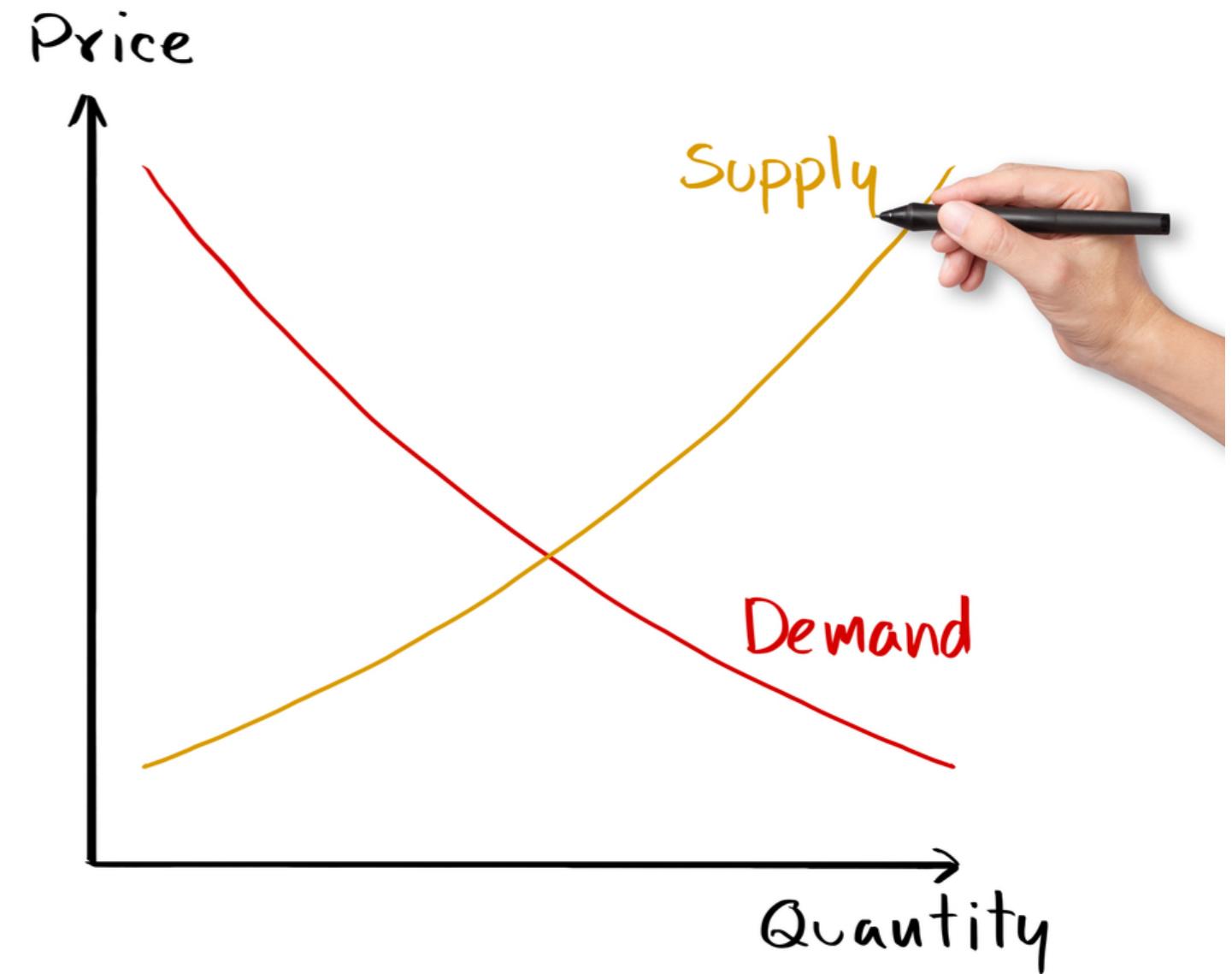
- **The context:** An employee recruiting firm, *DataSearch*, needs to uncover job trends
- **The task:** Discover trends in jobs and skills within the data science industry
- **The dataset:** A fictitious collection of key details from job postings



Market trends to watch

The job market is a classic supply and demand problem.

- **Quantity:** The number of job postings
- **Price:** Corresponds to salary
- **Supply:** Those looking for employment
- **Demand:** The amount of employment opportunities



The data

Key characteristics

- Key details from job postings from 2017 to 2021 for jobs in the data science industry
- Each row correlates to a specific job posting in time
- One table containing 19 columns



The data

Qualitative Columns

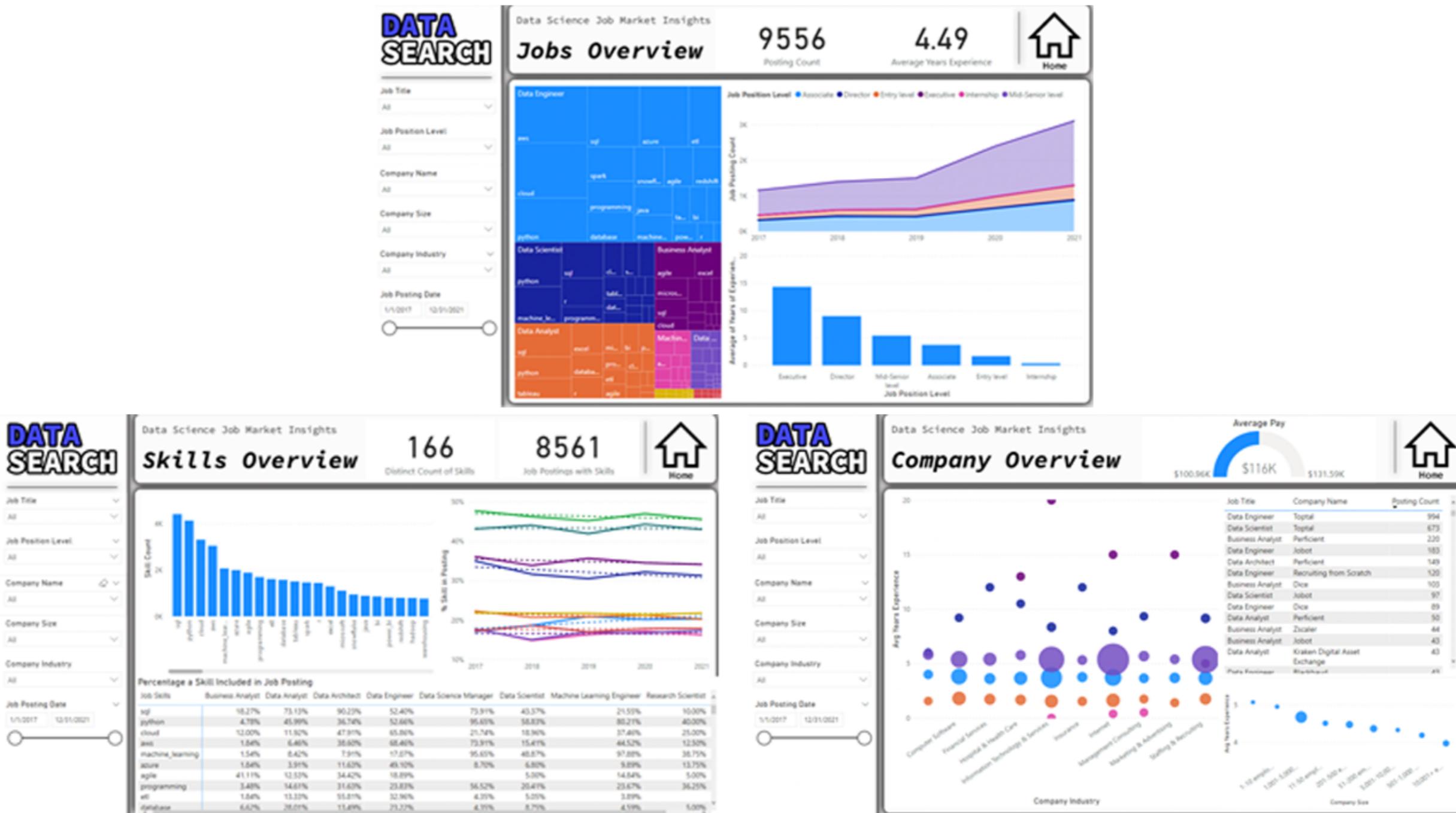
Column name	Description
Job Posting Id	The unique ID that identifies a job
Job Title	Data Analyst, Data Scientist, ...
Job Position Type	Full-time, Contract
Job Position Level	Internship, Entry-level, Executive, ...
Job Skills	['powerbi', 'excel', 'sql'], ['python', 'databases'], ...
...	...

The data

Quantitative Columns

Column name	Description
Job Posting Date	The date of the job posting
Years of Experience	Number of years minimum experience
Minimum Pay	Minimum expected salary
Maximum Pay	Maximum expected salary
Number of Applicants	Number of applicants in first 24 hours of job posting
...	...

Final deliverable



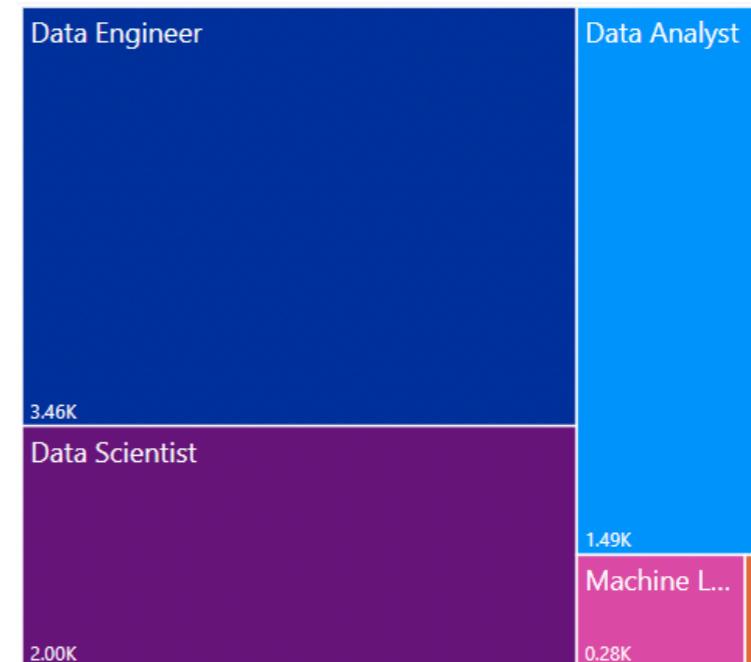
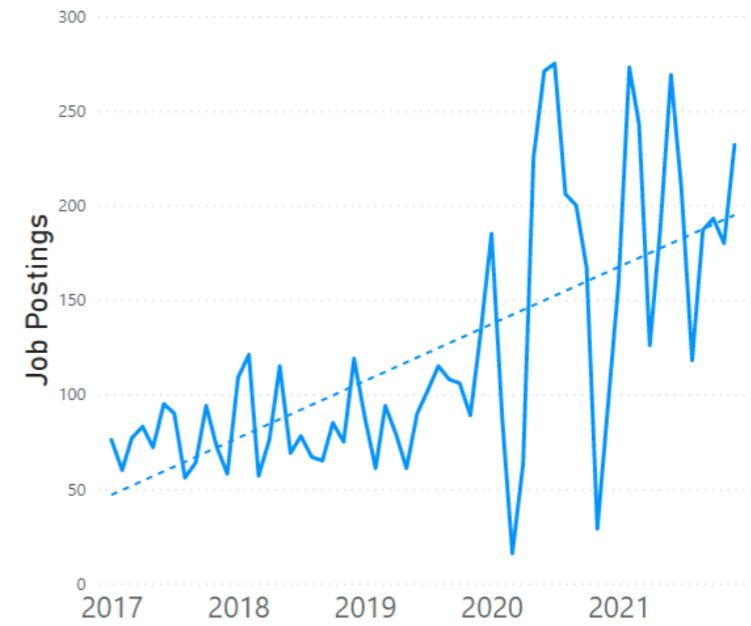
Let's practice!

CASE STUDY: ANALYZING JOB MARKET DATA IN POWER BI

Exploratory data analysis findings

Key Insights:

1. Job postings are increasing in number.
2. Data Engineers, Data Scientists, and Analysts are in demand!
3. Tech industries need data science roles the most.
4. Salaries are trending upward as expected.



Diving deeper into the dataset

Column name	Description
Job Title	Data Analyst, Data Scientist, ...
Job Skills	['powerbi', 'excel', 'sql'], ['python', 'databases'], ...
Years of Experience	Number of years minimum experience
Company Name	Amazon, Meta, Intel, ...
Company Industry	Healthcare, Internet, Software, ...

Investigate the following:

- Correlation between skills and job title
- Top industries and companies
- Potential recommendations

Goals of this data pipeline phase



Identify the following:

- Key findings to focus
- Visualizations to share
- Communication style

Let's practice!

CASE STUDY: ANALYZING JOB MARKET DATA IN POWER BI

Data analytics pipeline



Dashboard focus areas

Questions to ask:

1. Who is the audience?
2. What do they need?
3. How can a dashboard help?



Dashboard focus areas



Answers to questions:

1. Who?
DataSearch recruiters
2. What?
Identify optimal opportunities
3. How?
Dashboard design with goal in-mind

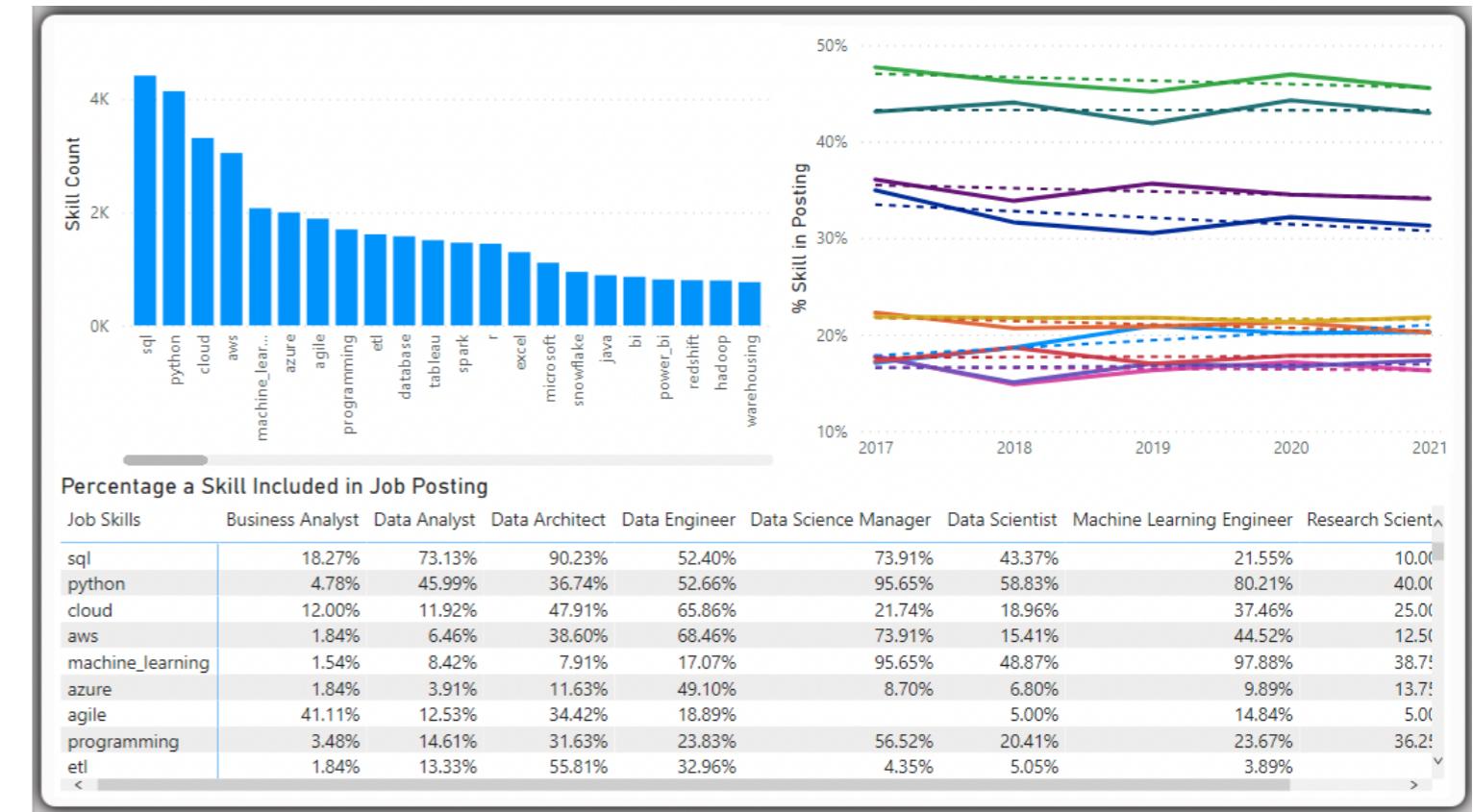
Dashboard components to include



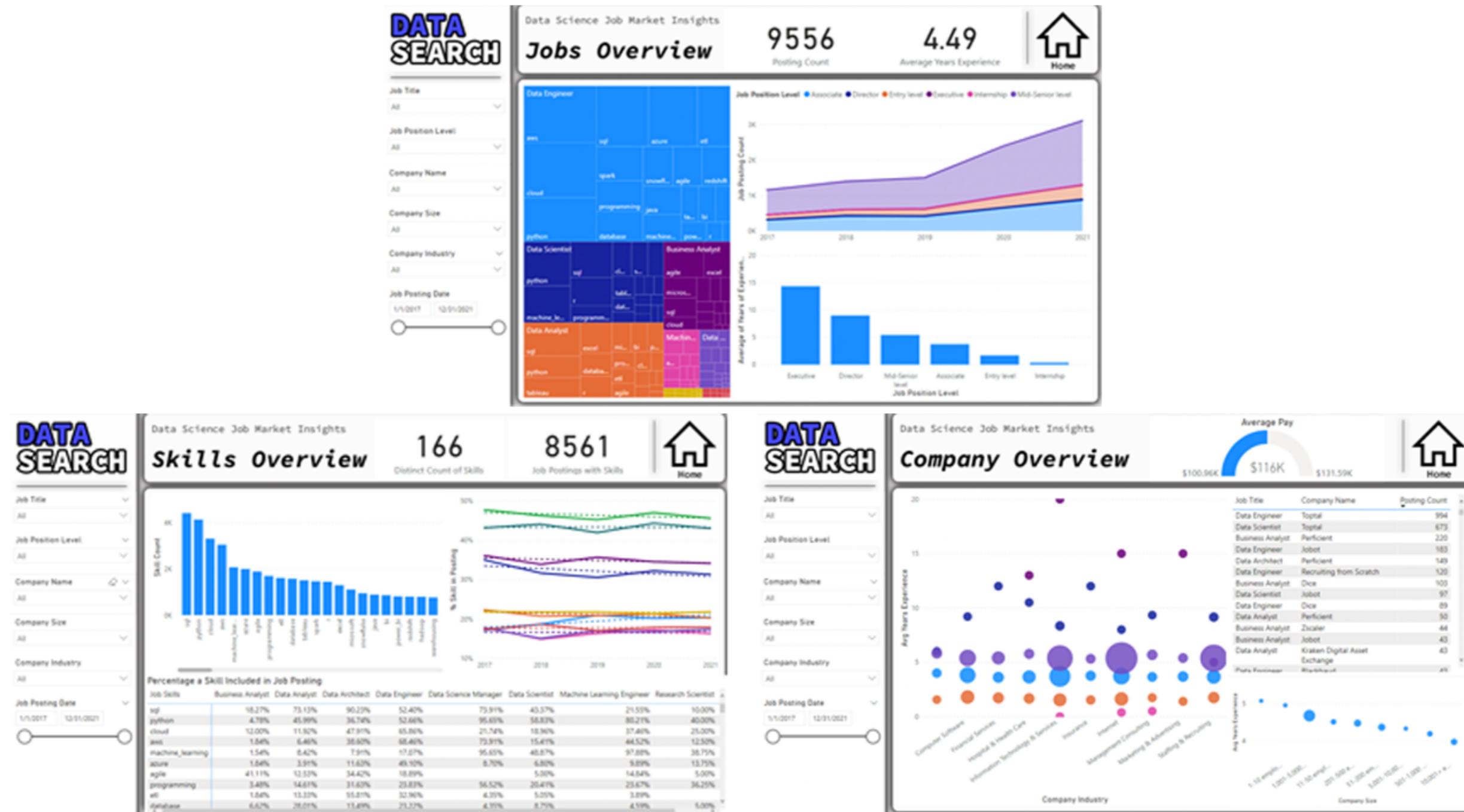
- What significant visualizations to include?
- Is the most intuitive visual being used?
- Are we sizing, positioning, & coloring visuals relative to their importance?

Designing a dashboard

- Less is more
- Give numbers context
- Label everything
- Make interactive



Our final deliverable



Our final deliverable

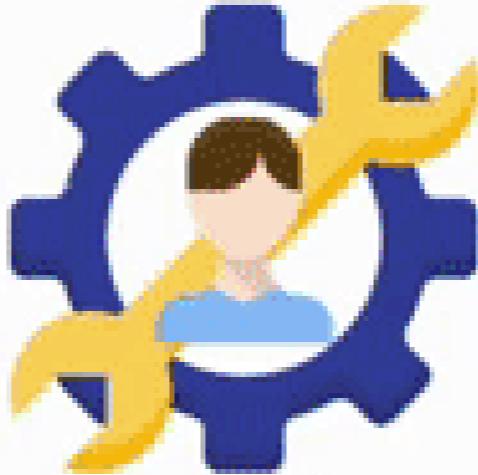
DATASEARCH

Data Science Job Market Insights

Select a dashboard to view



Jobs



Skills



Company

Let's practice!

CASE STUDY: ANALYZING JOB MARKET DATA IN POWER BI

Data analytics pipeline with Power BI



Our final deliverable

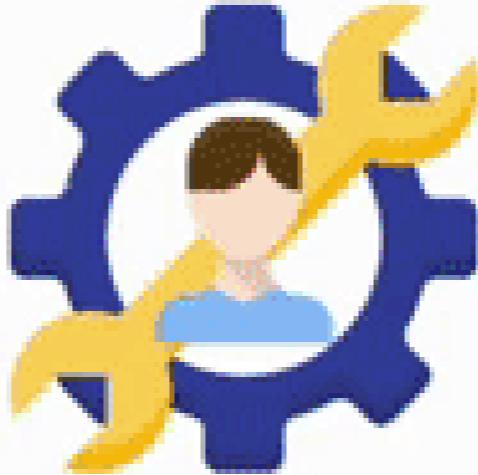
DATASEARCH

Data Science Job Market Insights

Select a dashboard to view



Jobs



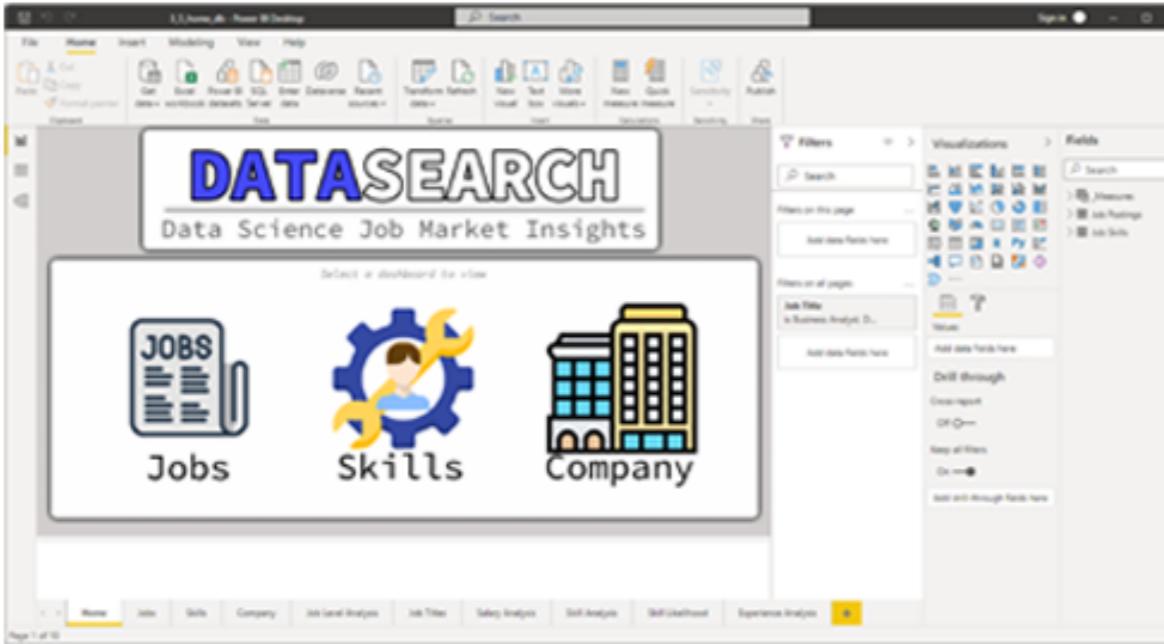
Skills



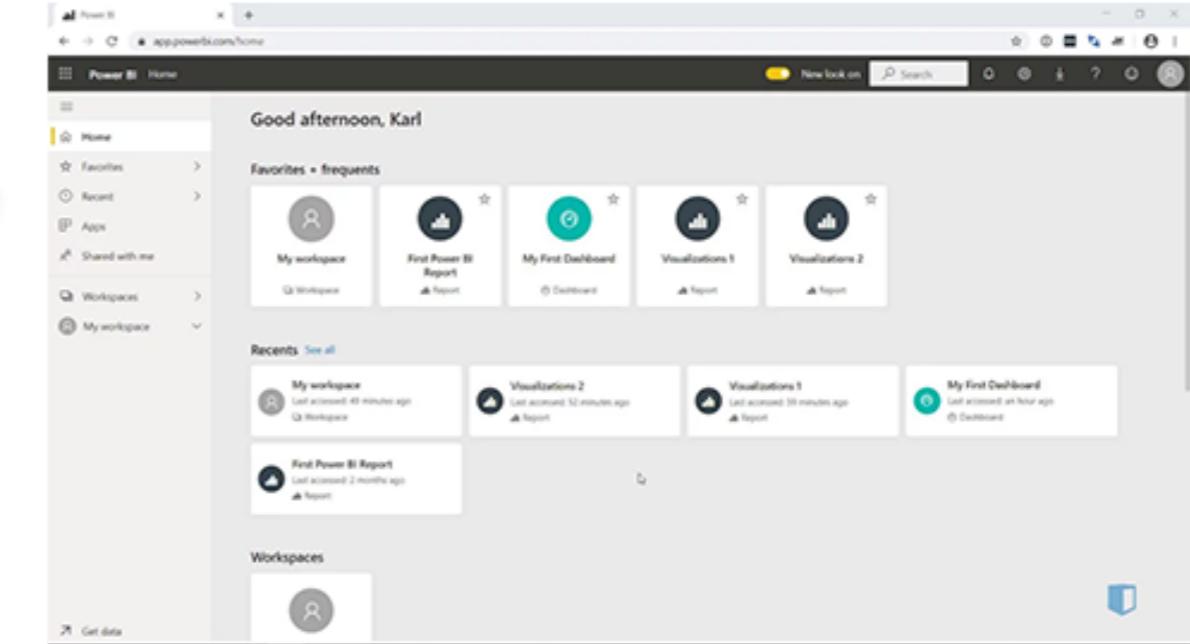
Company

Sharing dashboards with Power BI Service

Power BI Desktop



Power BI Service

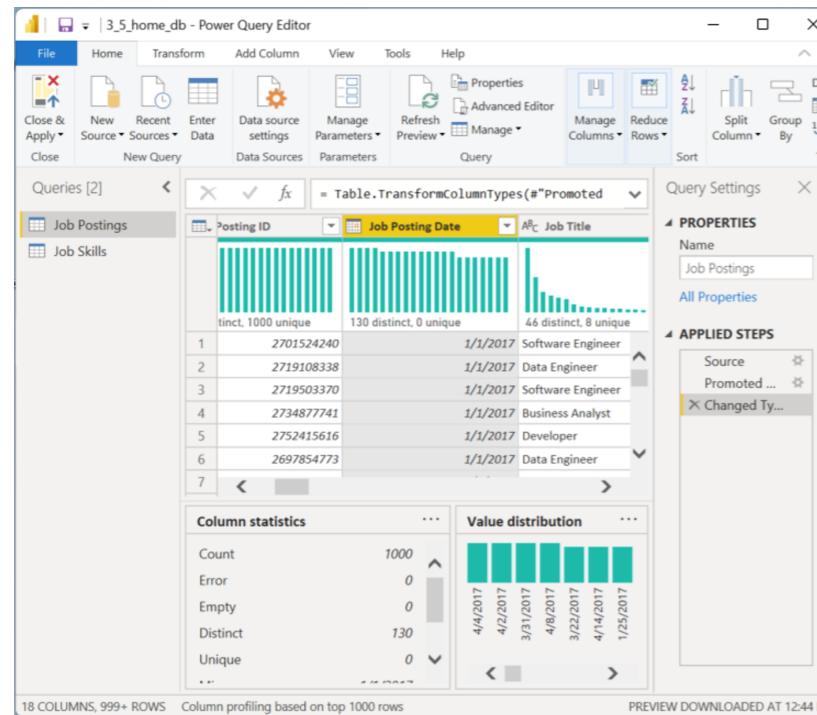


- Power BI Service is the SaaS part of the Power BI offering
- This service allows you to share dashboards within an organization

Power BI is a powerful tool

Power Query

- Data cleaning
 - Combining or splitting columns
 - ...



DAX

- Calculated columns
- Calculated tables
- Measures

```
1 Actual_Sales YoY% =  
2 VAR __PREV_YEAR =  
3 CALCULATE(  
4     [Actual_Sales],  
5     DATEADD('Dim_Date'[Datekey], -1, YEAR)  
6 )  
7 RETURN  
8 DIVIDE(  
9     [Actual_Sales] - __PREV_YEAR,  
10    __PREV_YEAR  
11 )
```