



Data Visualization

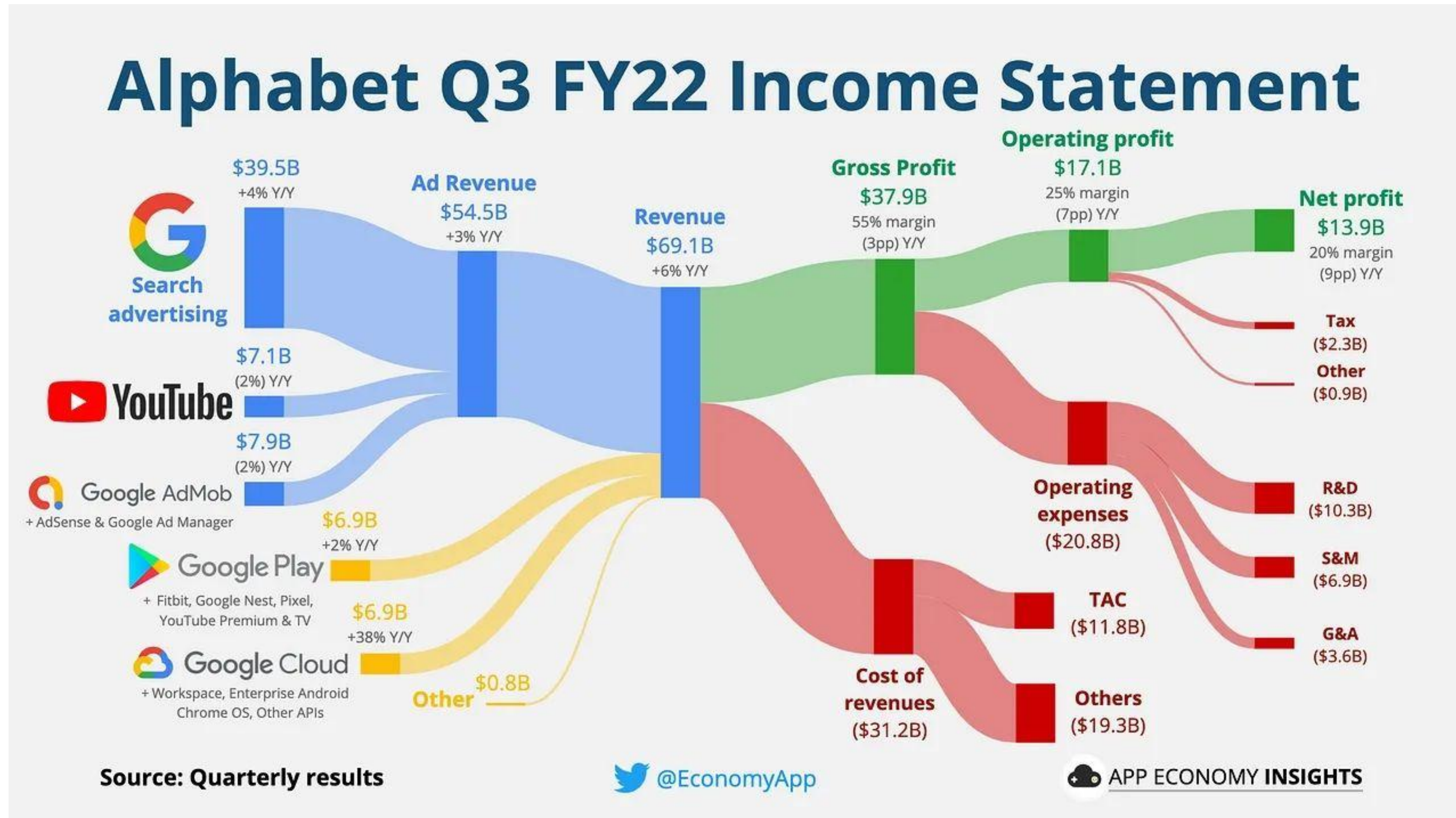
Agenda

1. Data Visualization Examples
2. Data Science Intro
3. Data Science Jobs
4. Analysts Jobs (Data vs Business vs BI)
5. Coursera - Two Courses
6. Questions



Data Visualization Examples

Data Visualization Example 1: Sankey Diagram



Data Visualization Example 2: Dashboard





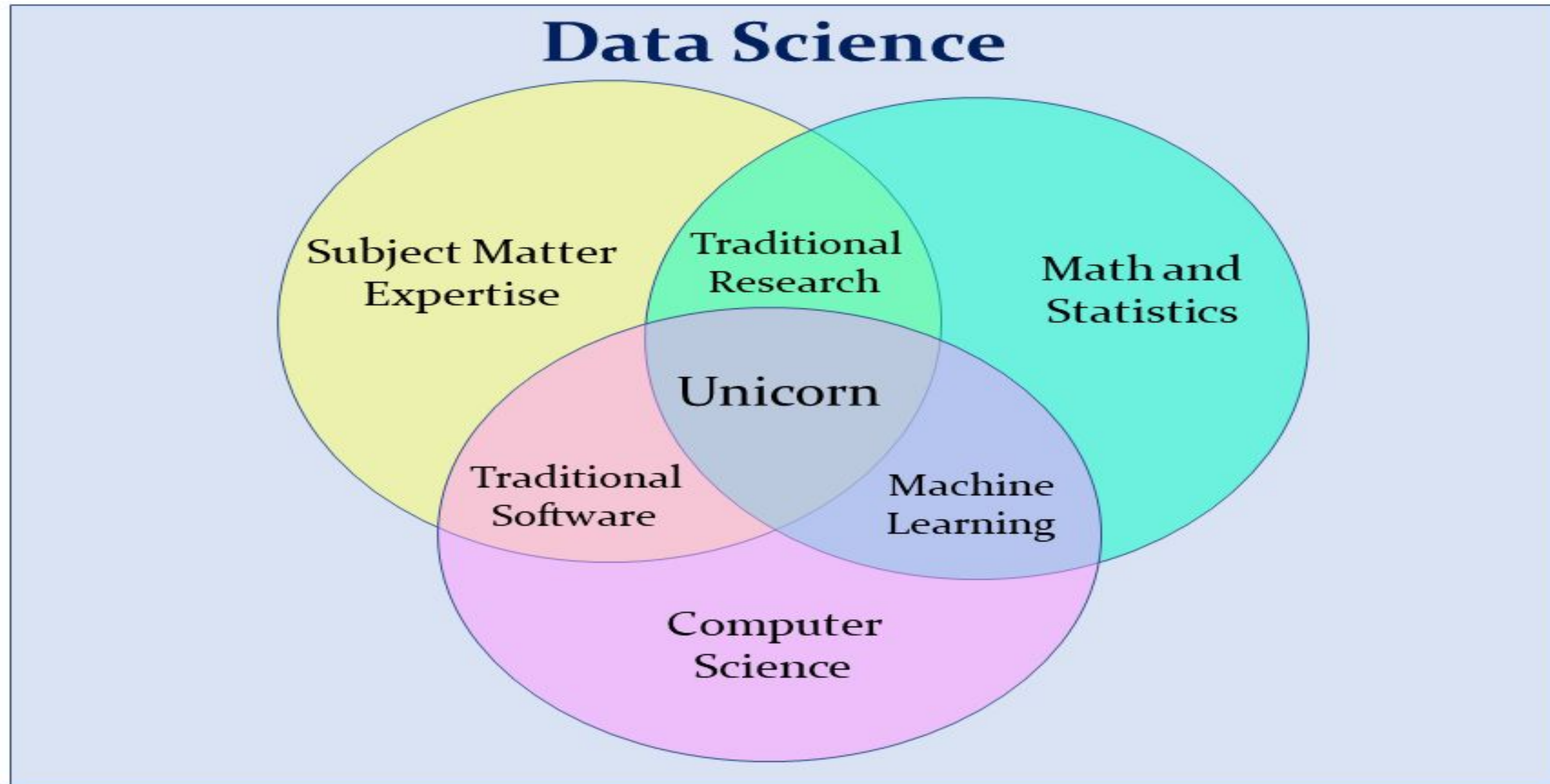
Data Science Intro

Data Science

- combines several disciplines including:
 - a. Math
 - b. statistics
 - c. computer science
- How to become a **Unicorn** in **Data Science**?



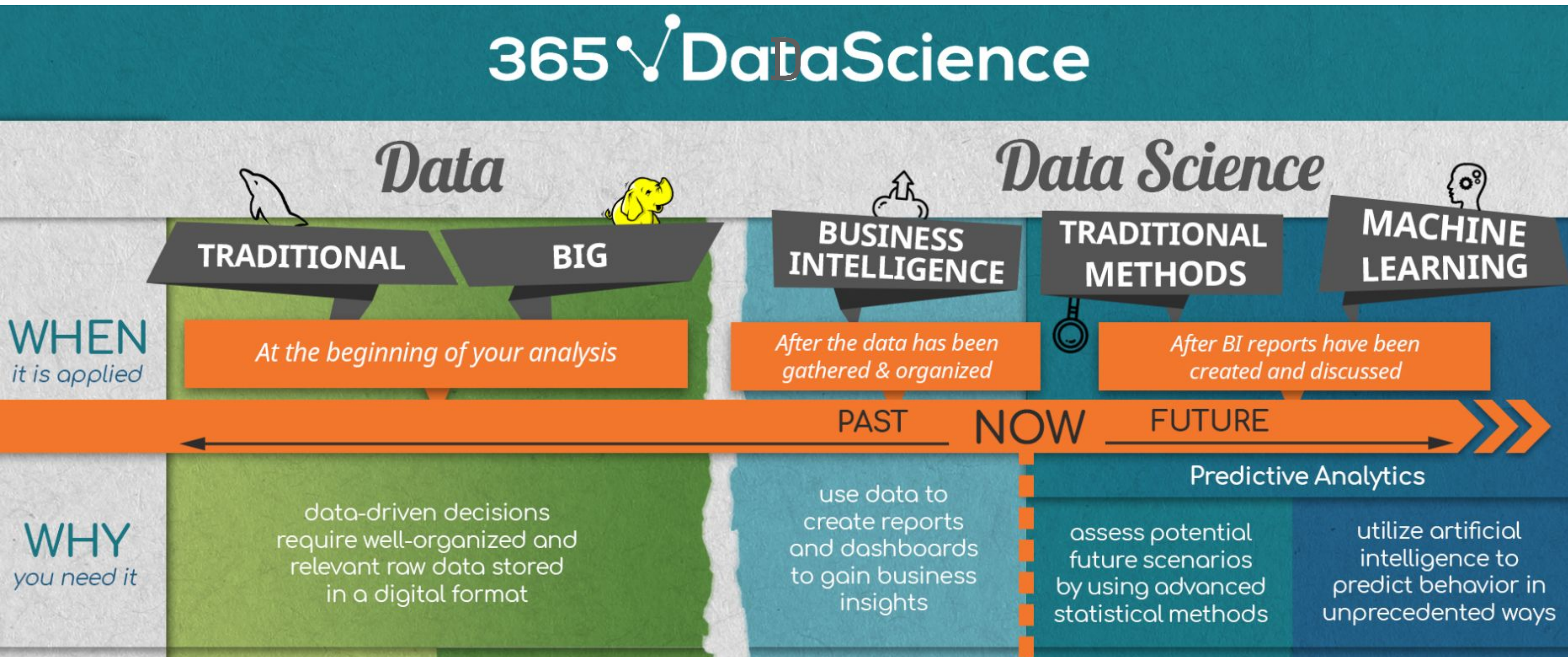
Data Science Venn Diagram 2.0



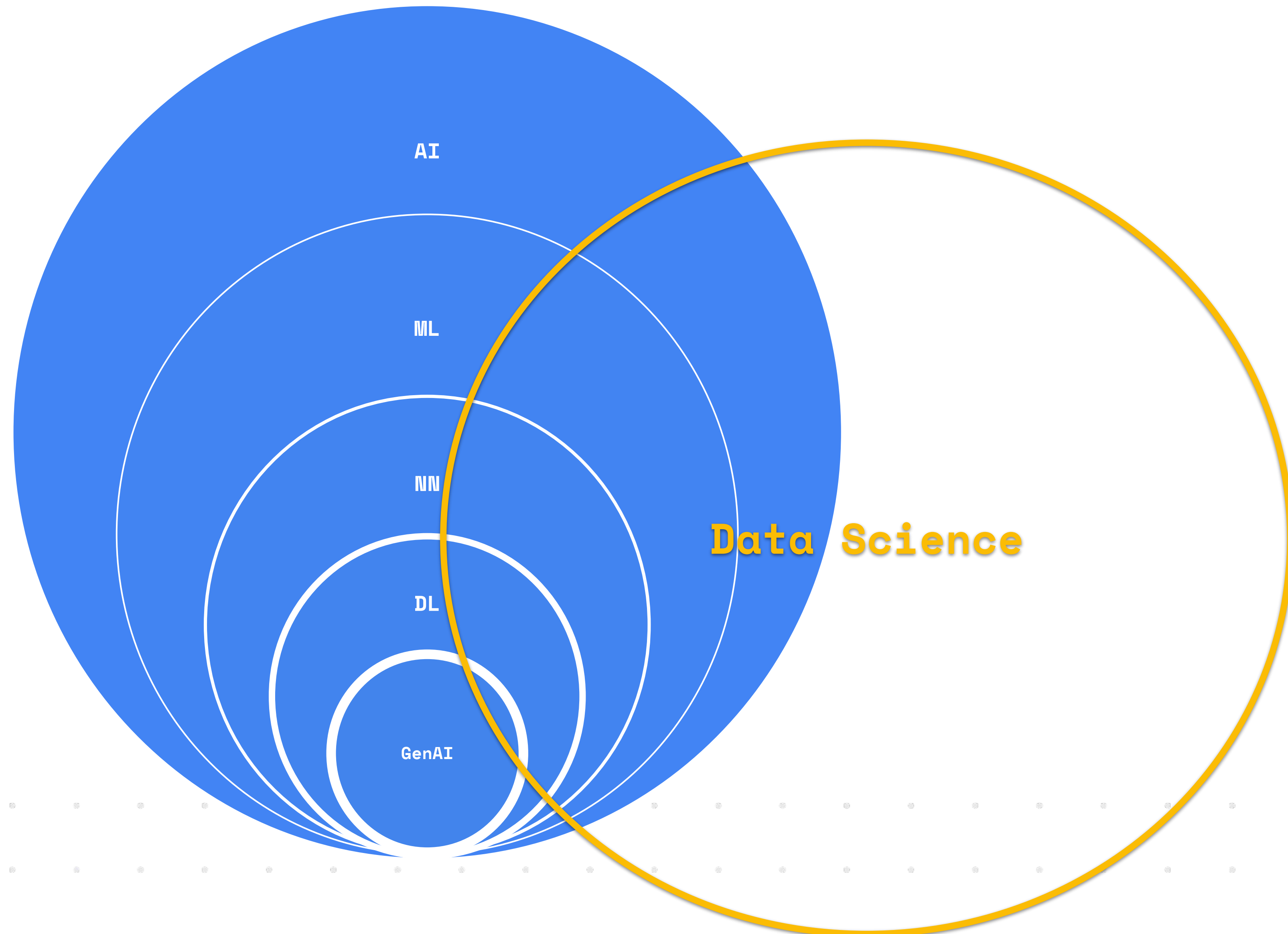
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365 DataScience Infographic (When & Why)

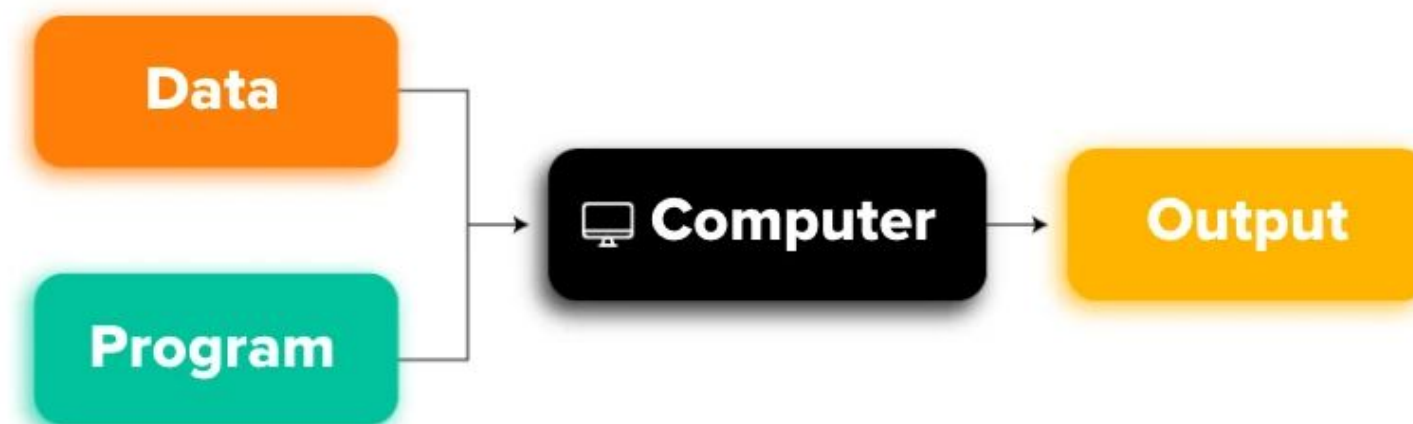


Data Science & AI from another Viewpoint

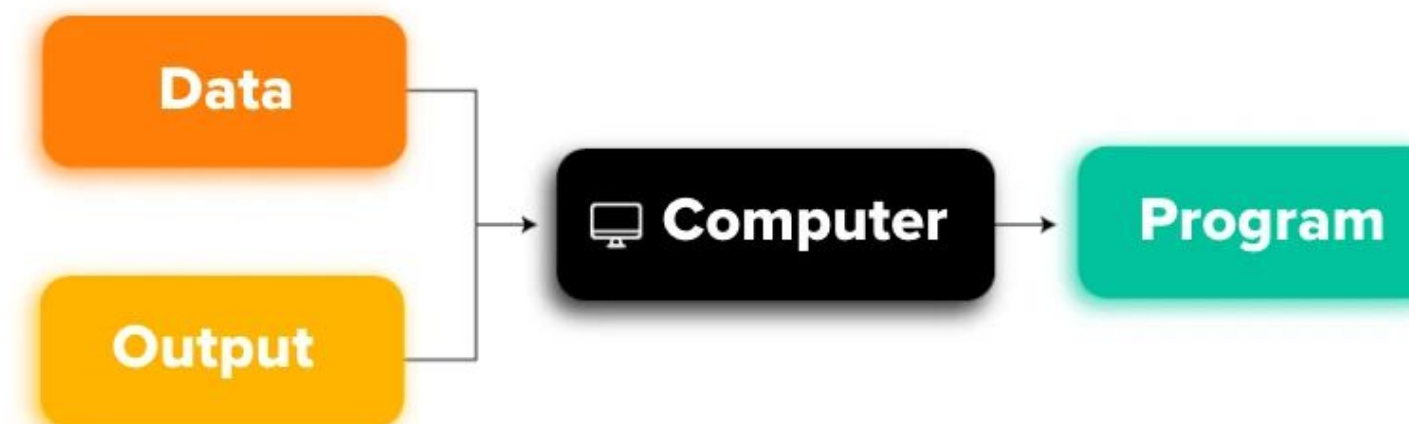


Data Science & AI/ML/DL

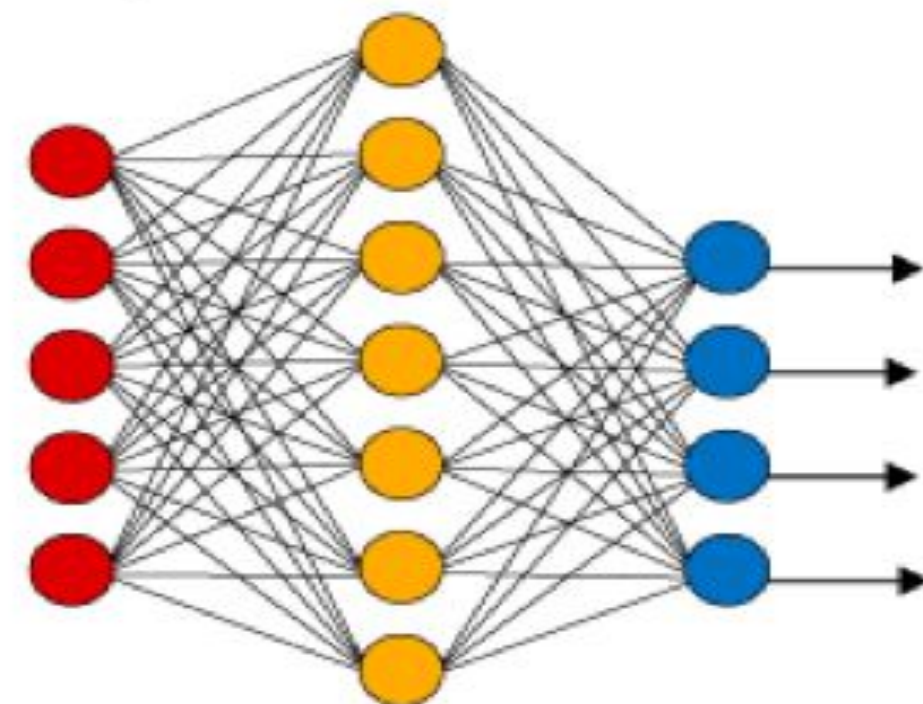
TRADITIONAL PROGRAMMING



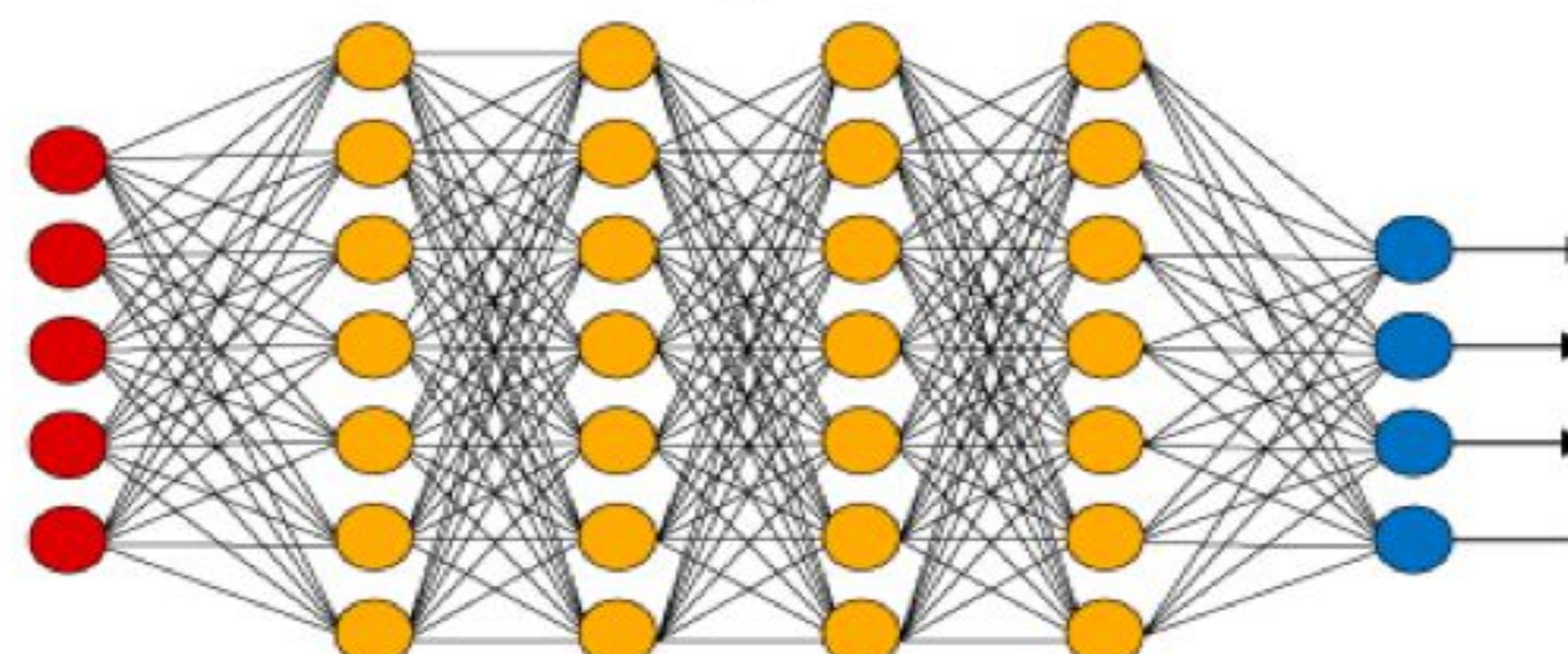
MACHINE LEARNING



Simple Neural Network



Deep Learning Neural Network



● Input Layer

● Hidden Layer

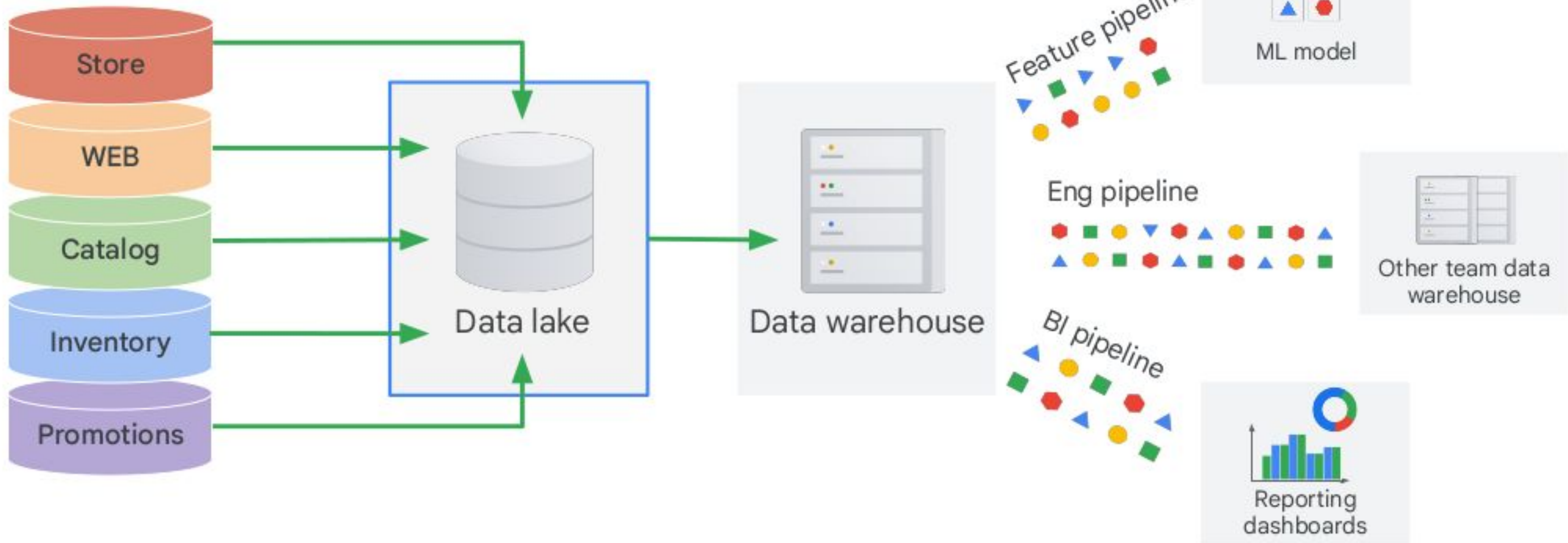
● Output Layer



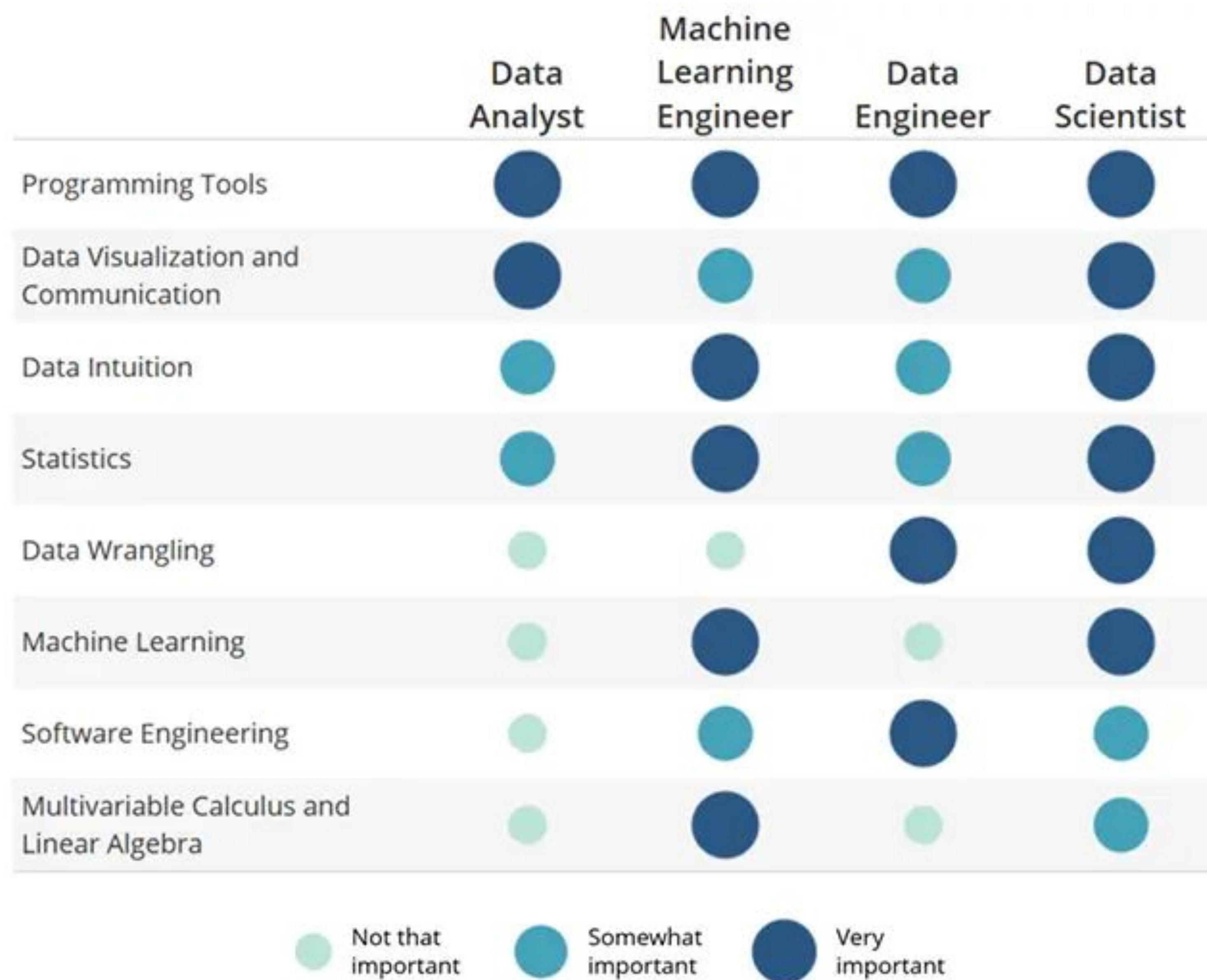
Data Science Jobs

Data Science Jobs: Where is the role of each?

Operational systems



Data Science Jobs: Long-lasting Career



Data Science Jobs: 1) Data Analyst

- Job might consist of tasks like:
 - pulling data out of **SQL** databases
 - becoming an **Excel** or **Tableau** master
 - producing basic **Data Visualizations** and **Reporting Dashboards**
 - On occasion:
 - analyze the results of an **A/B Test**
 - take the lead on company's **Google Analytics** account
- Some companies: **Data Scientist** is synonymous to **Data Analyst**

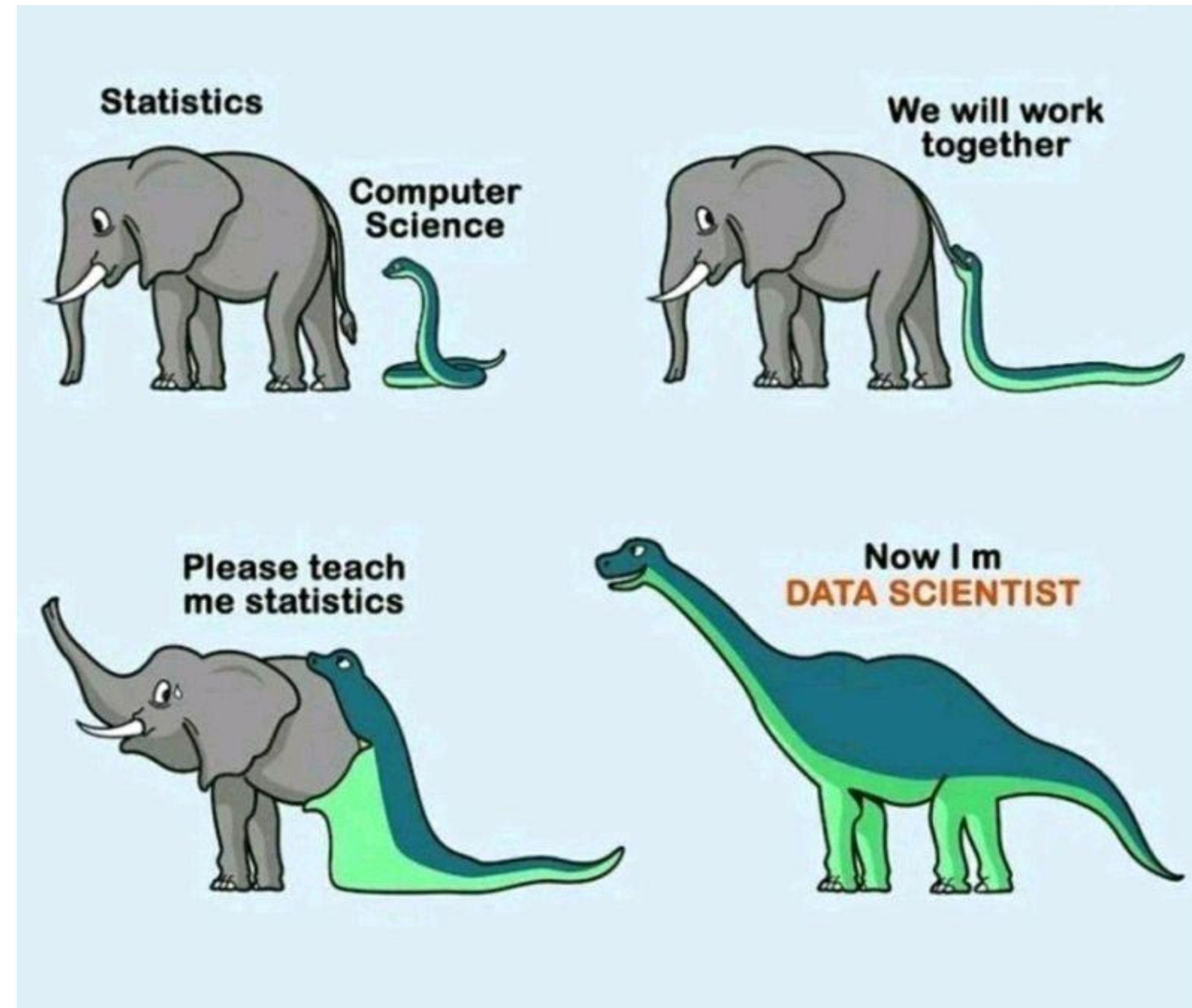
Data Science Jobs: 2) ML Engineer

- Some companies: **data** or **data analysis platform** is the product
 - so, **Data Analysis** or **ML** can be pretty intense
 - so, there is a need for someone who:
 - has a formal mathematics or statistics background
 - is hoping to continue down a more academic path
- **ML Engineers**
 - often focus more on producing great **data-driven products**

Data Science Jobs: 3) Data Engineer

- Some companies: have **lot of traffic** and **large amount of data**
 - so, there is a need for someone who:
 - set up lot of **data infrastructure** that the company will need
- Job postings listed under **Data Scientist** and **Data Engineer**
 - strong software engineering skills are more important
 - heavy statistics and ML expertise are less important

Data Science Jobs: 4) Data Scientist

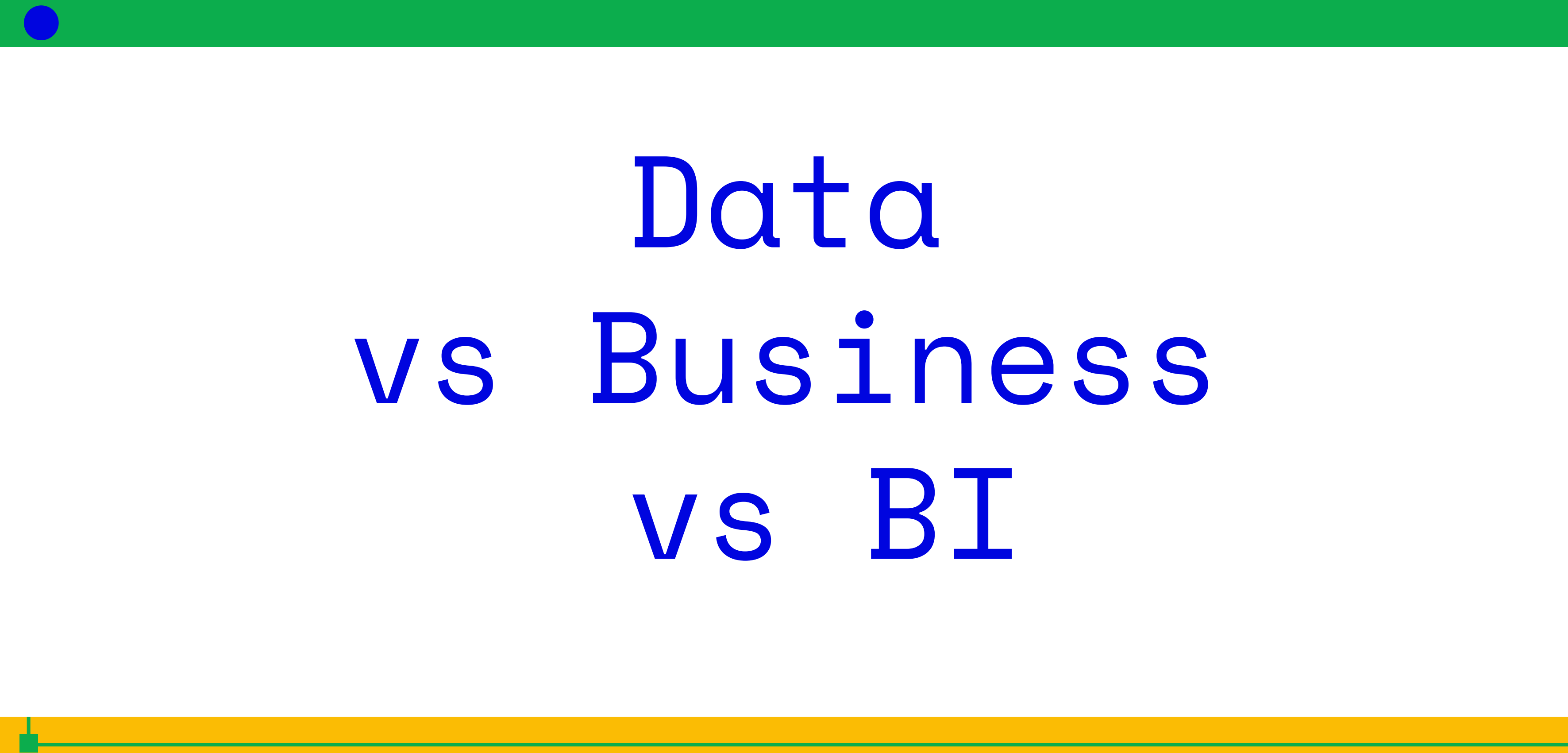


Often used as a blanket title

- to describe jobs that are drastically different

Data Science Jobs: 5) Data Generalist

- Some companies: look 4 **Generalist** to join data scientists team
 - these companies cares about data but probably isn't a data company
- **Data Generalist** most important skills:
 - familiarity with tools designed for **Big Data**
 - experience with messy, real-life datasets
- **Data Generalist** can:
 - perform analysis
 - touch production code
 - **Visualize Data**



Data vs Business vs BI

Business Case Studies

- are real-world experiences of how business people and companies succeed or fail
- examine events that have already happened
- We do not need a dataset to learn from **business cases**
- We could learn from them and attempt to prevent making a similar mistake in future



Business Case Studies: Example

Ryanair: cost-friendly budget airline that sells tickets so cheap

- travel to less busy airports
 - far from the city center
 - outside business hours
- charges for almost every small addition
- tries to keep planes for small times on airfields to save on rent
- operates only one type of aircraft to speed out ground crew processes

Business

Business Case
Studies

Qualitative
Analytics

Preliminary
Data Report

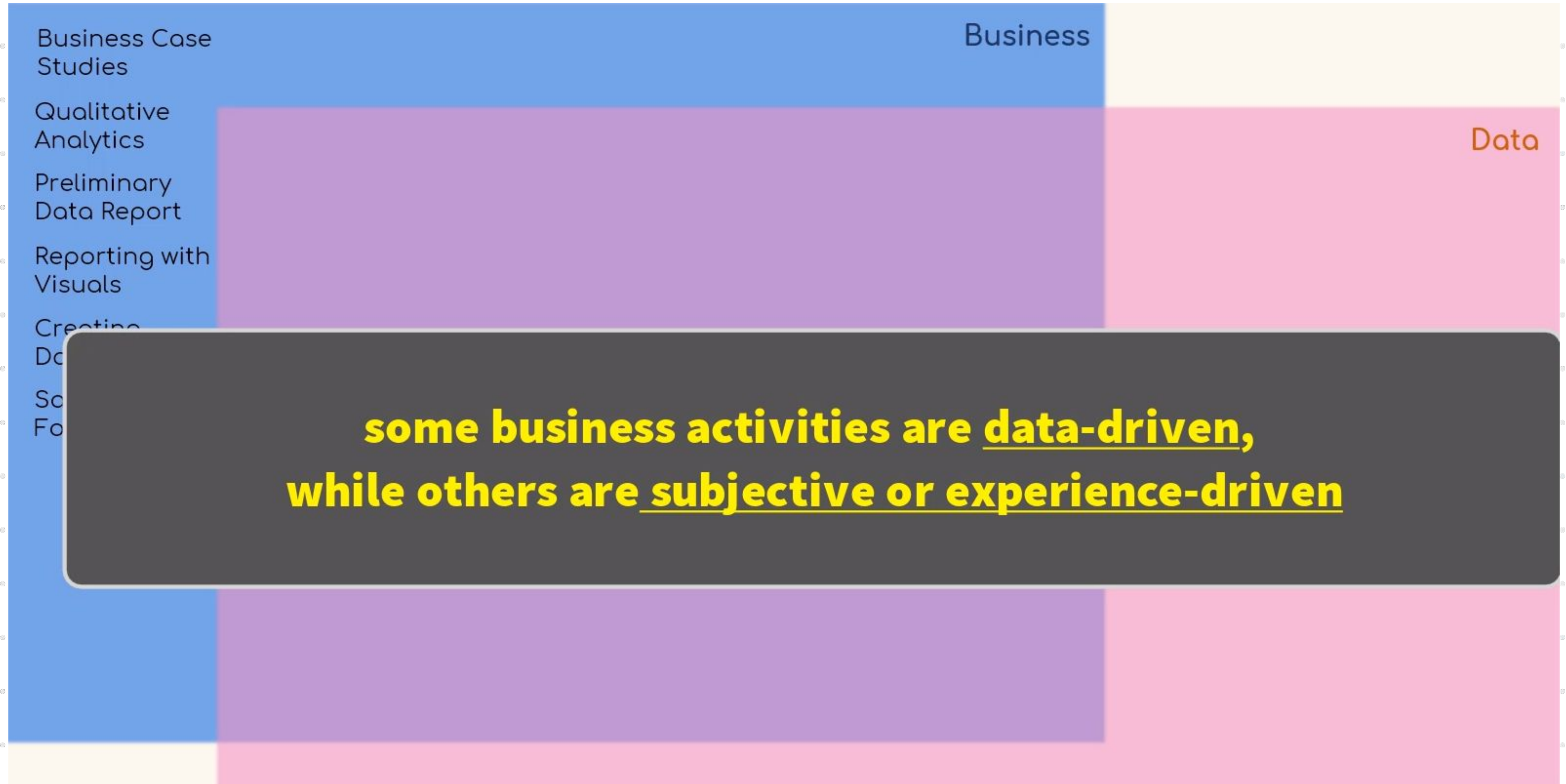
Reporting with
Visuals

Creating
Dashboards

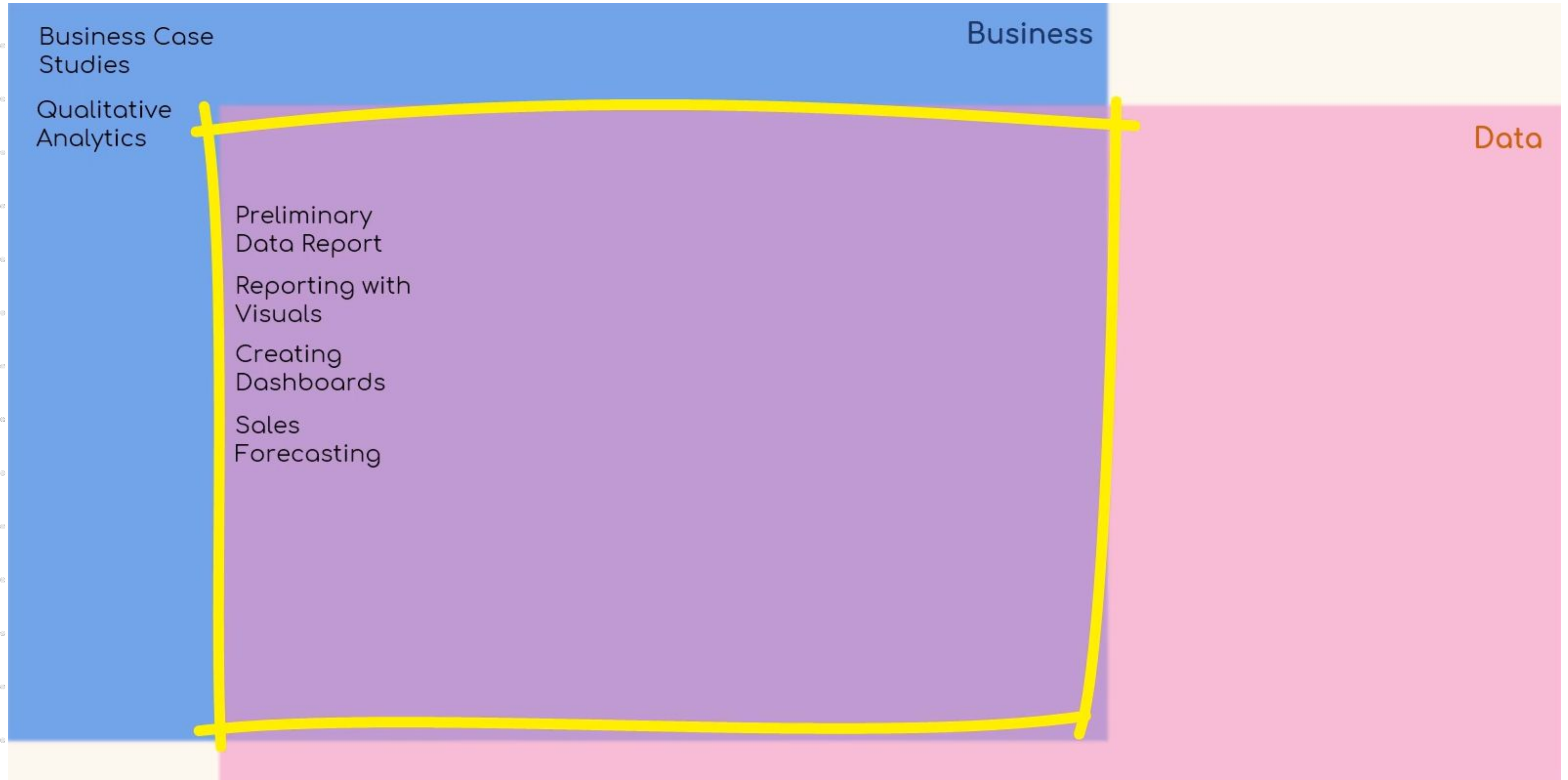
Sales
Forecasting

Business

Data?



Data



Data Analysts vs Business Analysts vs BI Analysts

Data Analyst common tasks:

- Working with stakeholders to define a problem or business need
- Identifying and sourcing data
- Cleaning and preparing data for analysis
- Analyzing data for patterns and trends
- **Visualizing data** to make it easier to understand
- Presenting data in such a way that it tells a compelling story

Data Analysts vs Business Analysts vs BI Analysts

Business Analyst common tasks:

- Evaluating a company's current functions and IT structures
- Reviewing processes to identify areas for improvement
- Interviewing team members to identify areas for improvement
- Presenting recommendations/findings to management and other key stakeholders
- **Creating visuals** and financial models to support business decisions
- Training and coaching staff in new systems

Data Analysts vs Business Analysts vs BI Analysts

BI Analyst:

- Somewhat of a hybrid between **Business Analyst** and **Data Analysts**
- They use analysis, modeling, and **visualization** of:
 1. industry trends
 2. competitive landscape
- to help businesses cut losses and increase profits

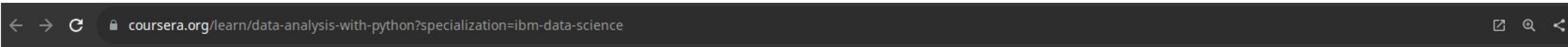


Coursera - Two Courses

Coursera Data Warehouse Course Link

<https://www.coursera.org/learn/python-for-data-visualization?specialization=ibm-data-science>

Enroll in Coursera Courses - 1



coursera



Online Degrees ▾

Find your New Career

For Enterprise

Browse > Data Science > Data Analysis

Data Analysis with Python

★★★★★ 4.7 16,233 ratings | 👍 93%



Joseph Santarcangelo

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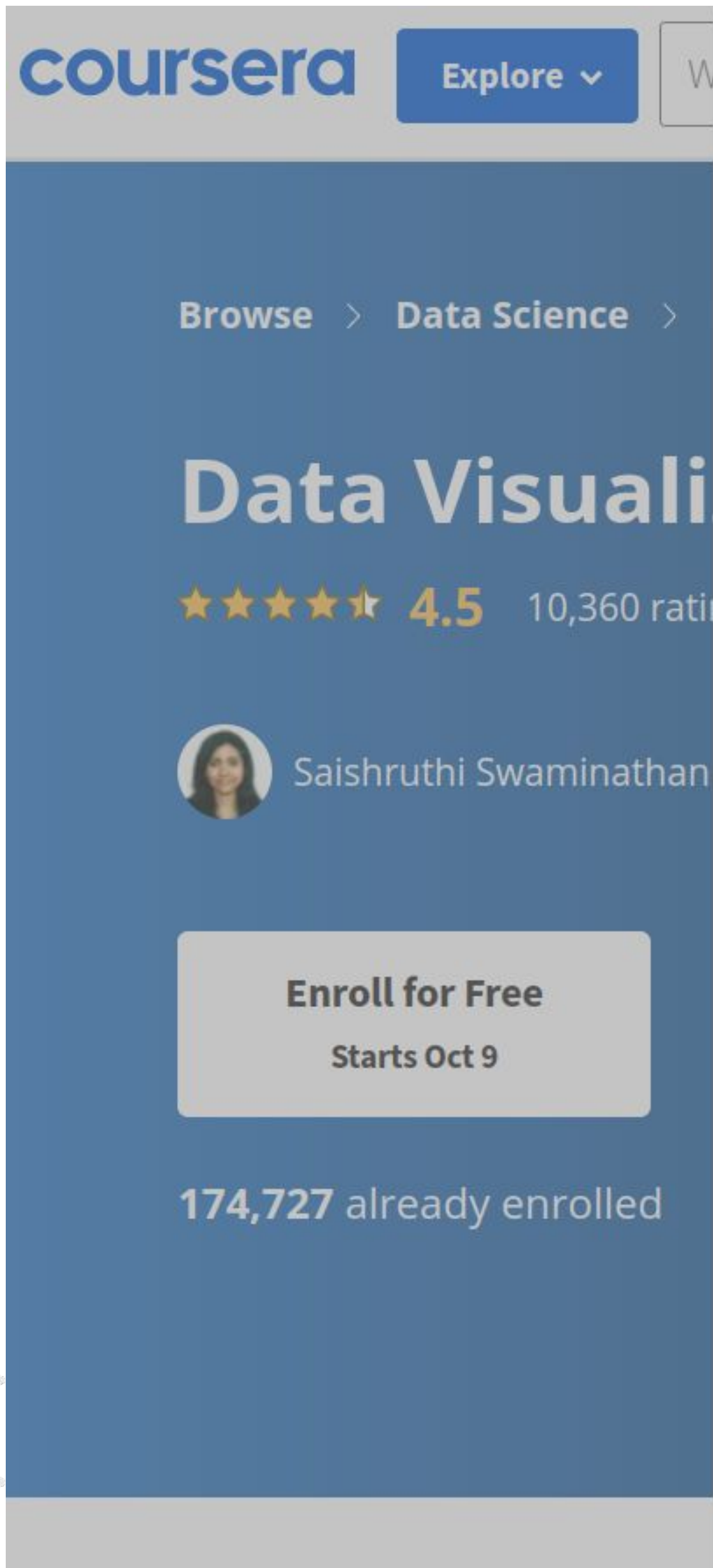
Enroll in Coursera Courses - 2

The image shows a screenshot of the Coursera website. On the left, the main page for the course "Data Analysis with Python" is visible. It features the Coursera logo, a Google Assistant icon, and navigation links like "Browse > Data Science > Data Analysis". The course title "Data Analysis with Python" is prominently displayed, along with its rating of 4.7 stars from 16,233 ratings and a 93% thumbs-up rate. An instructor profile for Joseph Santarcangelo is shown. A button says "Enroll for Free" with the note "Starts Feb 16". To the right, it says "Try for Free: Enroll in a free trial" and "Financial aid available". At the bottom of this section, it states "301,511 already enrolled". Below this are tabs for "About", "Instructors", "Syllabus", "Reviews", and "Enrollment". The "About this Course" section at the very bottom mentions "738,343 recent views". Overlaid on the right side of the screen is a white modal window titled "Step 1 of 2 Choose a program". It contains the text: "You're enrolling in **Data Analysis with Python**, which is available as part of multiple learning programs. These programs are designed to help you become job ready or master a skill. Select the program that is right for you from the list below." Underneath, there's a section labeled "Learning program" with a dropdown menu currently displaying "IBM Data Science Professional Certificate". Below the dropdown, it says "There are 10 courses in this program" followed by a bulleted list:

- Course 1: What is Data Science?
- Course 2: Tools for Data Science
- Course 3: Data Science Methodology
- Course 4: Python for Data Science, AI & Development
- Course 5: Python Project for Data Science
- Course 6: Databases and SQL for Data Science with Python
- **Course 7: Data Analysis with Python**
- Course 8: Data Visualization with Python
- Course 9: Machine Learning with Python
- Course 10: Applied Data Science Capstone

At the bottom of the modal is a blue button labeled "Next".

Enroll in Coursera Courses - 3



The screenshot shows the Coursera interface for the 'Data Visualization with Python' course. At the top, the Coursera logo and an 'Explore' button are visible. Below the navigation bar, the course title 'Data Visualization with Python' is displayed, along with a 4.5-star rating and 10,360 ratings. The instructor's name, Saishruthi Swaminathan, is shown with a profile picture. A prominent 'Enroll for Free' button is present, with the text 'Starts Oct 9' below it. At the bottom, it states '174,727 already enrolled'.

Step 2 of 2

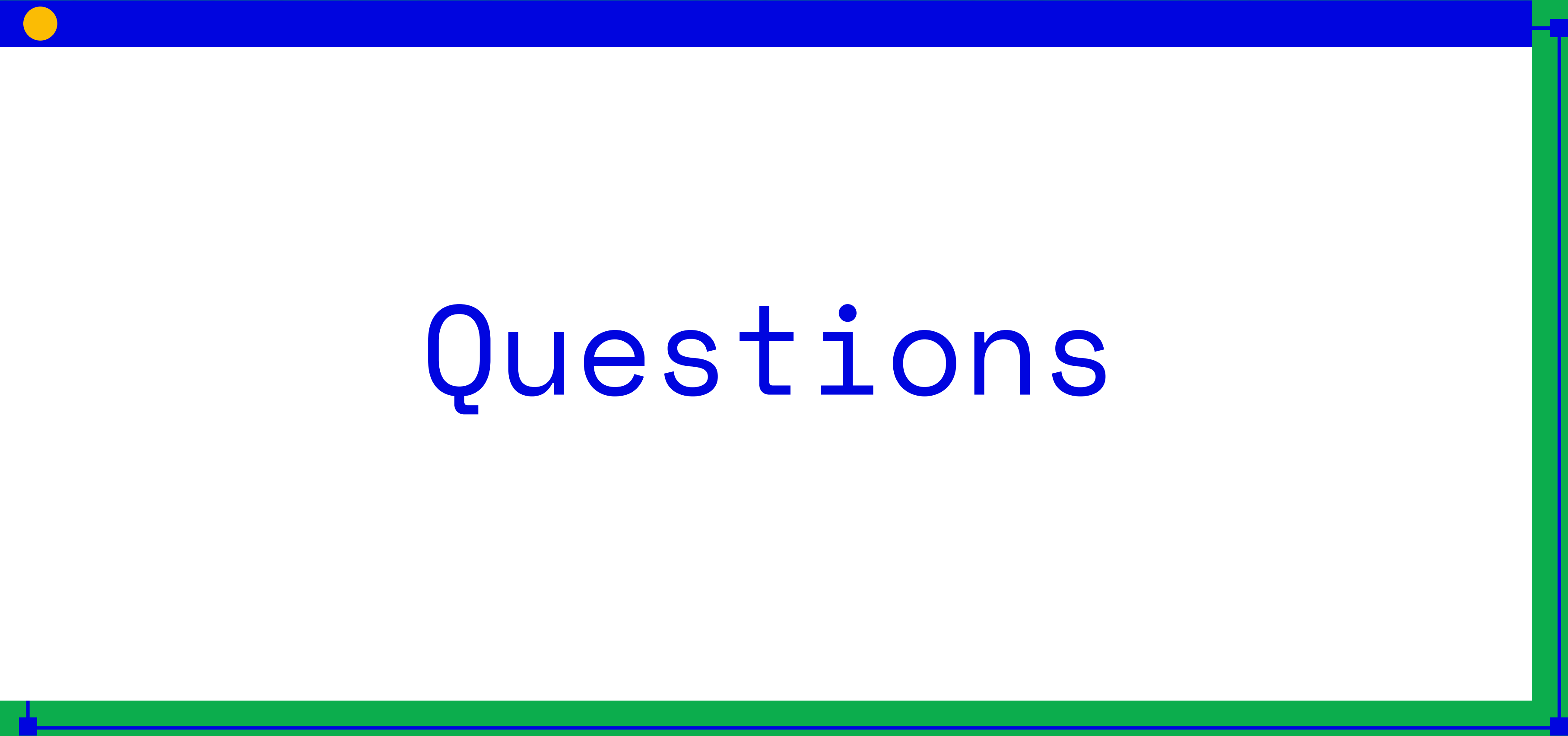
7-day Free Trial

Data Visualization with Python is part of the larger IBM Data Science Professional Certificate. Your 7-day free trial includes:

- ✓ **Unlimited access to all courses in the Certificate**
Watch lectures, try assignments, participate in discussion forums, and more.
- ✓ **Cancel anytime.**
No penalties - simply cancel before the trial ends if it's not right for you.
- ✓ **\$39 USD per month to continue learning after trial ends.**
Go as fast as you can - the faster you go, the more you save.
- ✓ **Certificate when you complete.**
Share on your resume, LinkedIn, and CV.

[Start Free Trial](#)

[Audit the course](#)



Questions

Links

<https://github.com/fcai-b/dv>

References

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 - 4 Types of Data Science Jobs
2. <https://www.coursera.org/articles/data-analyst-vs-business-analyst>
 - Data Analyst vs. Business Analyst
3. <https://learn.365datascience.com/courses/intro-to-data-and-data-science>
 - 365 Data Science - Introduction to Data and Data Science