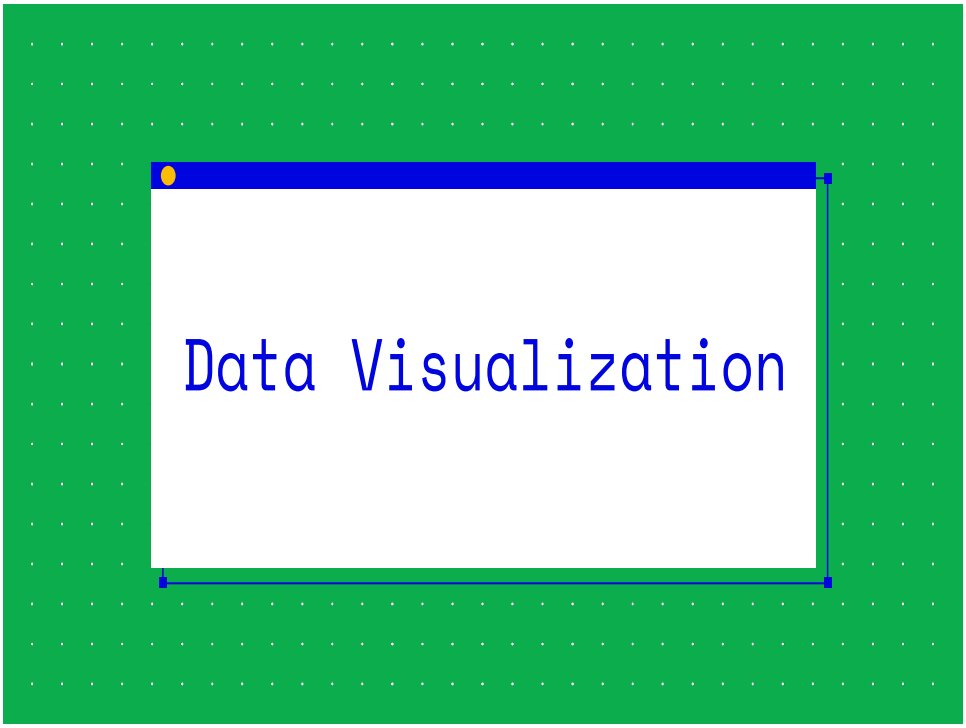
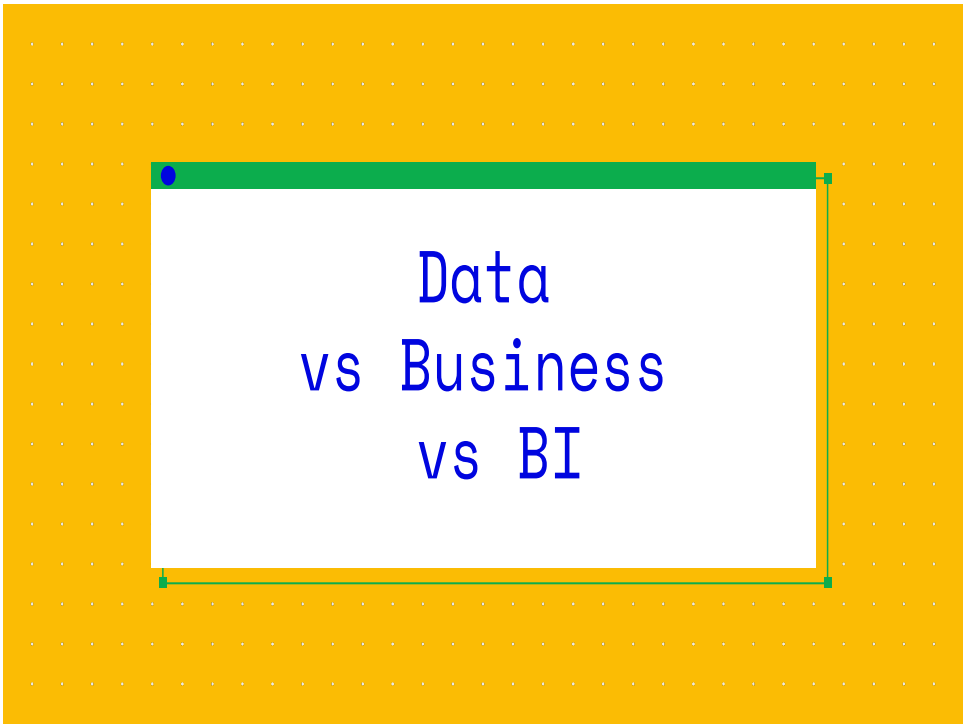

Data Visualization

Agenda:

1. Analysts Jobs (Data vs Business vs BI)
2. Why build visuals and stream?
3. Coursera Courses
4. Questions

Here is a quick overview of what we'll cover today.


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

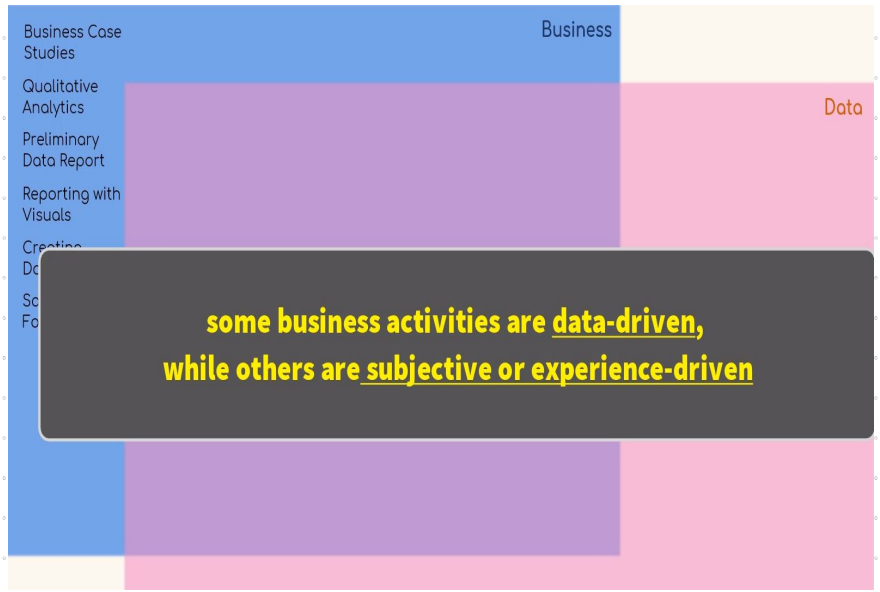
Ryanair: cost-friendly budget airline that sells tickets so cheap

- 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

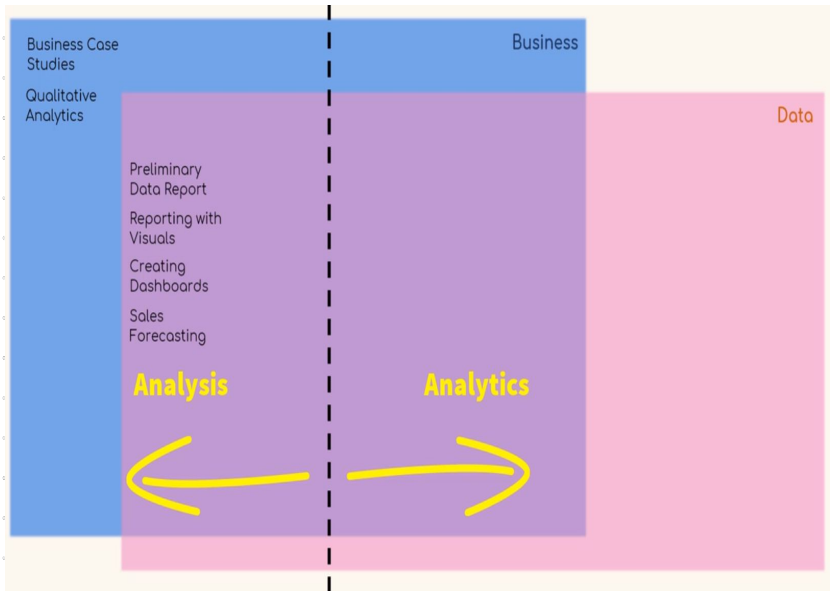
Data?


Business Case Studies
Business
Qualitative Analytics
Data
Preliminary Data Report
Reporting with Visuals
some business activities are data-driven,
while others are subjective or experience-driven

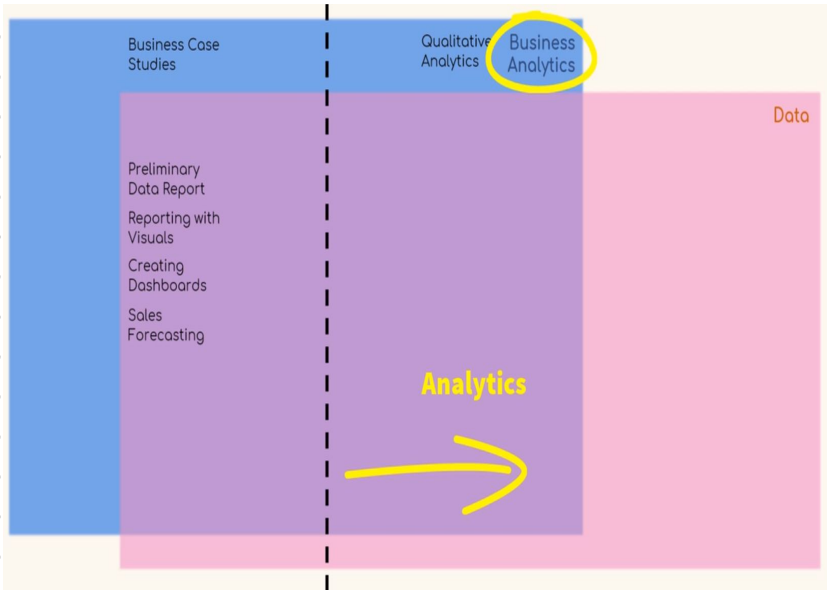
Data

Business Case Studies
Business
Qualitative Analytics
Data
Preliminary Data Report
Reporting with Visuals
Creating Dashboards
Sales Forecasting

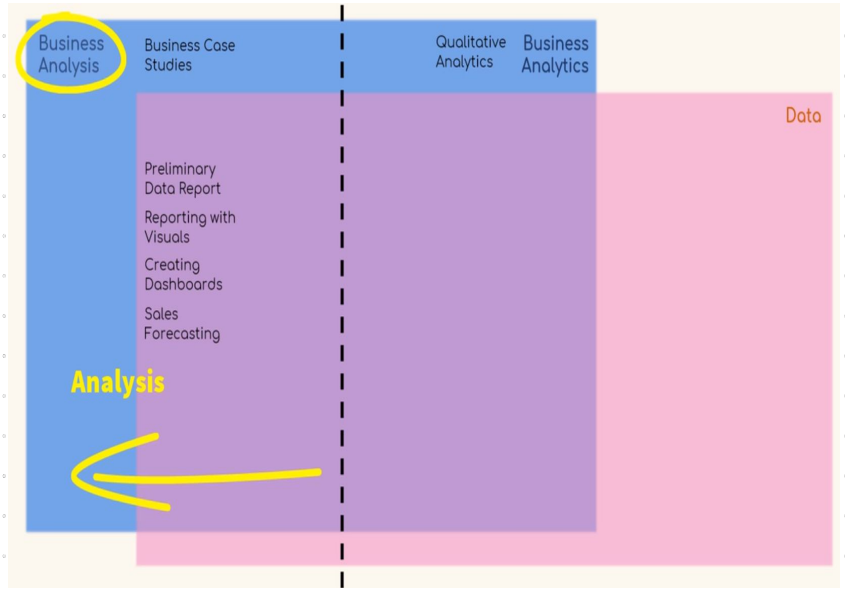
Past vs Future?



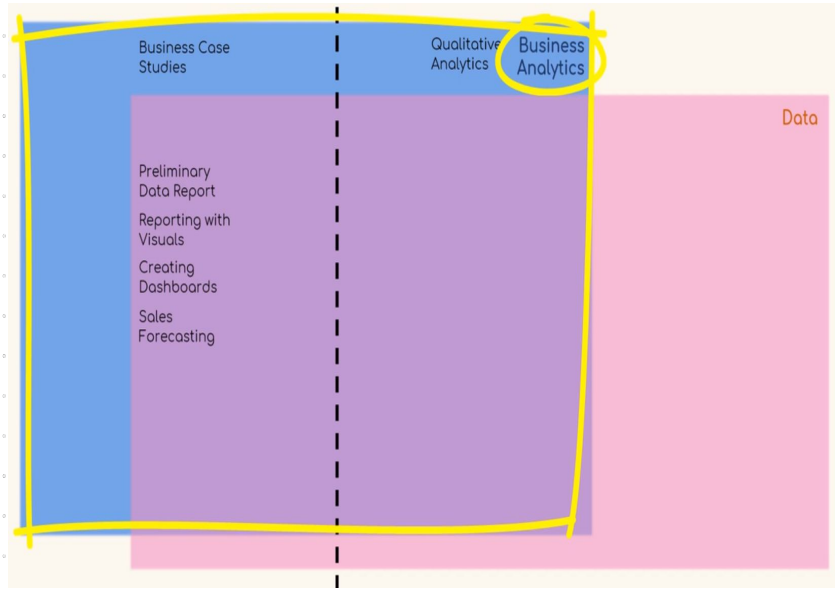
Business Analytics



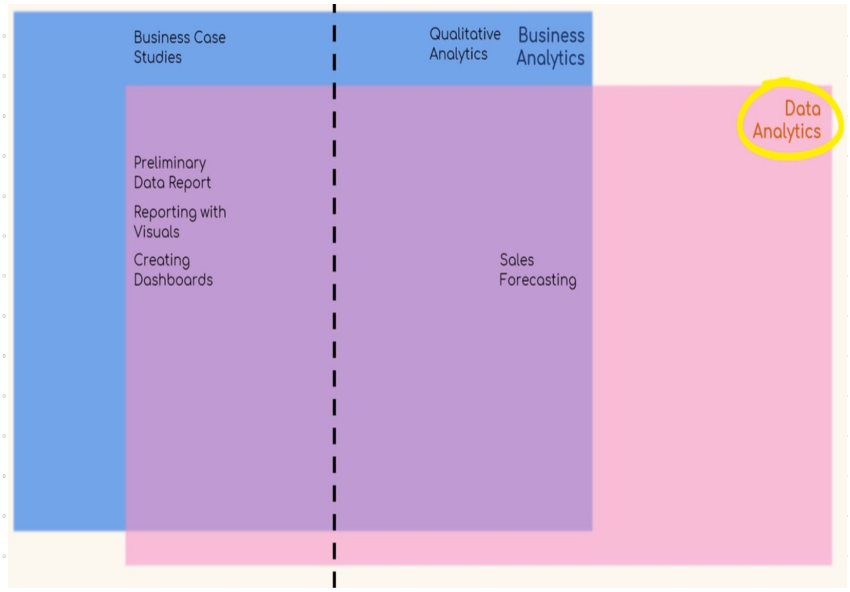
Business Analysis



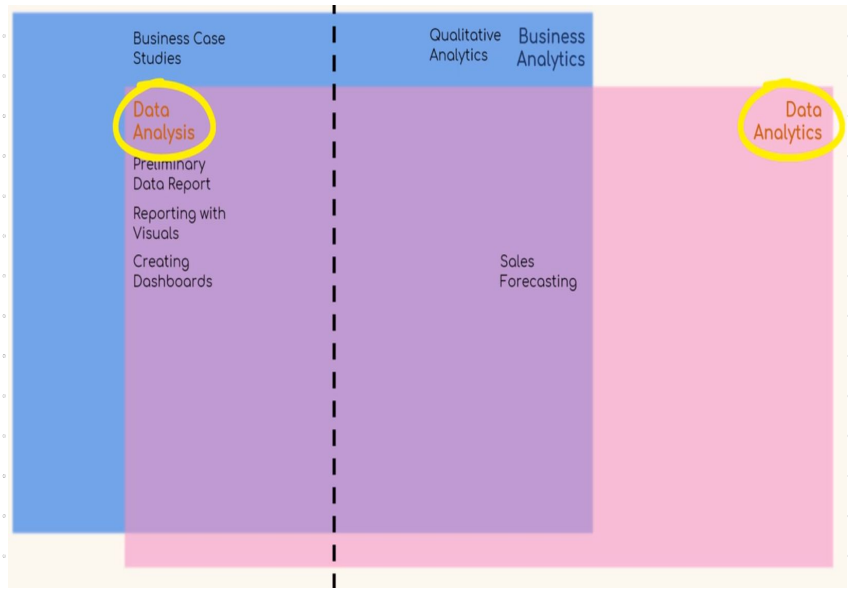
Business Analytics += Business Analysis



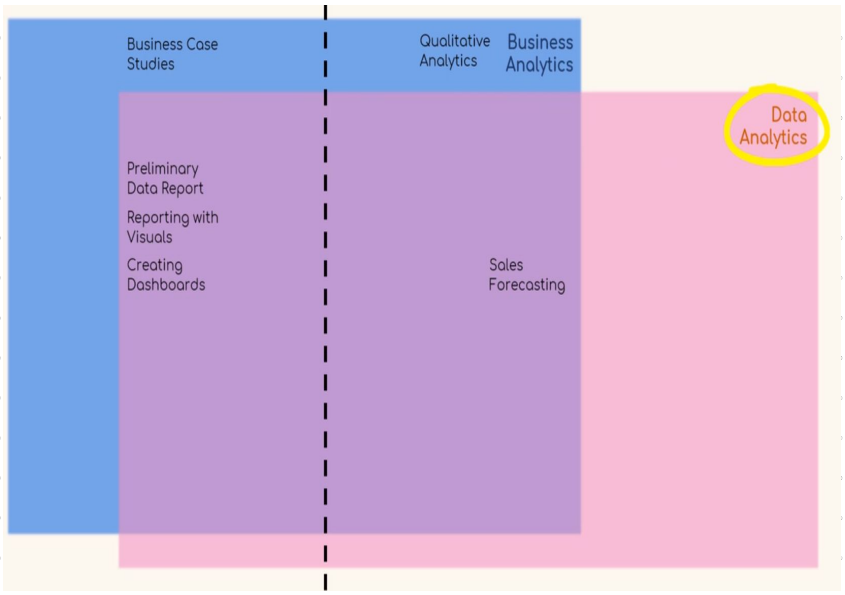
Data Analytics



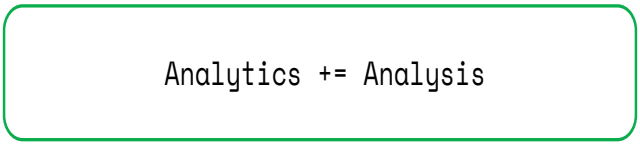
Data Analysis



Data Analytics += Data Analysis



Analytics has become a term comprising both:



- Analytics has become a term comprising both:
  - Analysis
  - Analytics
- which is something confusing in practice

Data Analysts vs Business Analysts vs BI Analysts

Data Analyst common tasks:

- Working with stakeholders to define a problem or business need
- 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

https://www.coursera.org/articles/data-analyst-vs-business-analyst

https://www.coursera.org/articles/business-intelligence-analysts-what-they-are-and-how-to-become-one

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

https://www.coursera.org/articles/data-analyst-vs-business-analyst

https://www.coursera.org/articles/business-intelligence-analysts-what-they-are-and-how-to-become-one

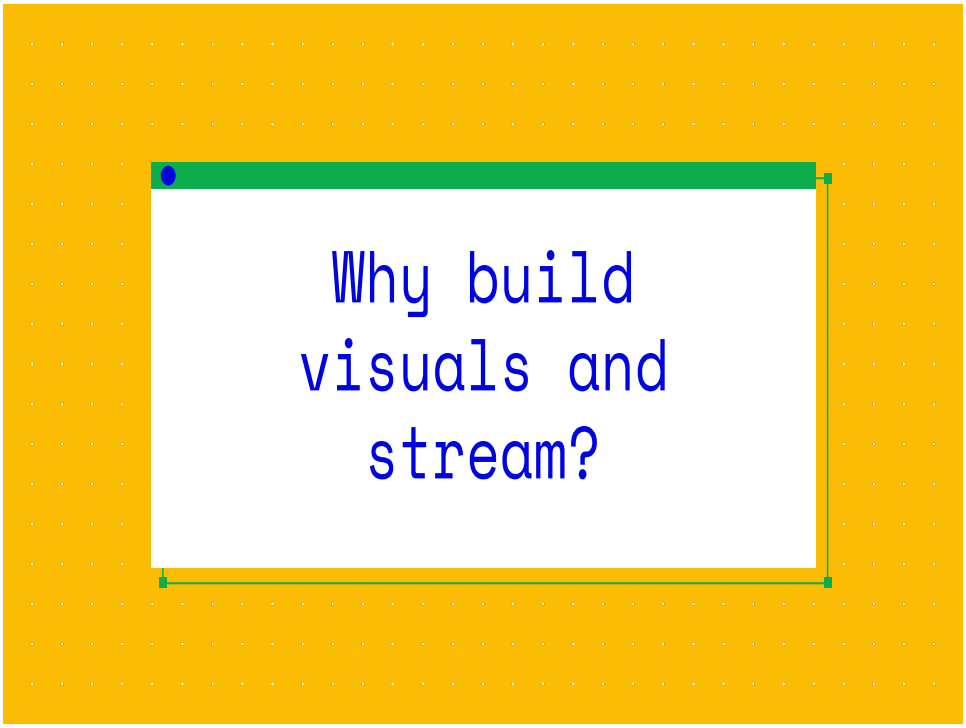
Data Analysts vs Business Analysts vs BI Analysts

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

https://www.coursera.org/articles/data-analyst-vs-business-analyst

https://www.coursera.org/articles/business-intelligence-analysts-what-they-are-and-how-to-become-one


Why build
visuals and
stream?

Why build visuals?

- A picture is worth a thousand words
- For Exploratory Data Analysis (EDA)
- Communicate data clearly
- Support recommendations to different stakeholders
- Share unbiased representation of data
  - Do all who build visuals create an unbiased representation of data?
-

Why do we stream data?

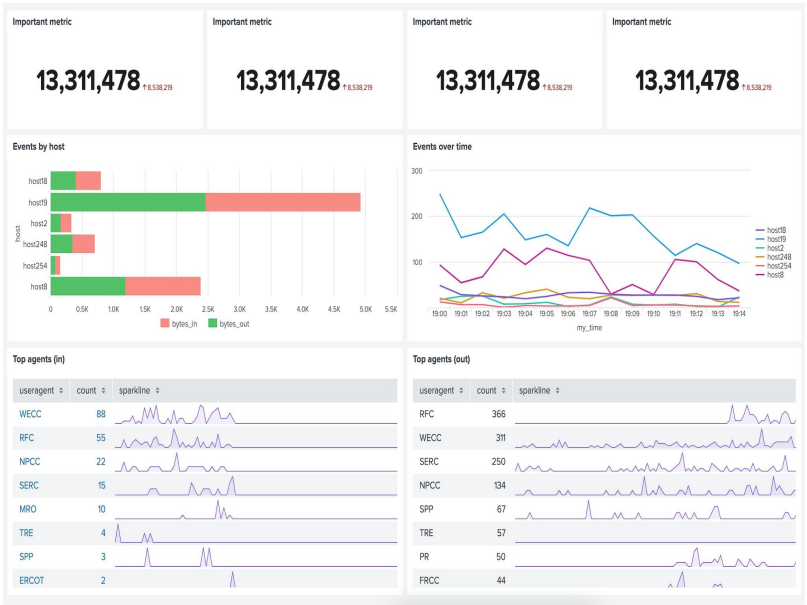
- Get real-time info in a dashboard or another means
- Make decisions in real-time

- If data comes in late, it's no longer valuable
  - especially during an emergency

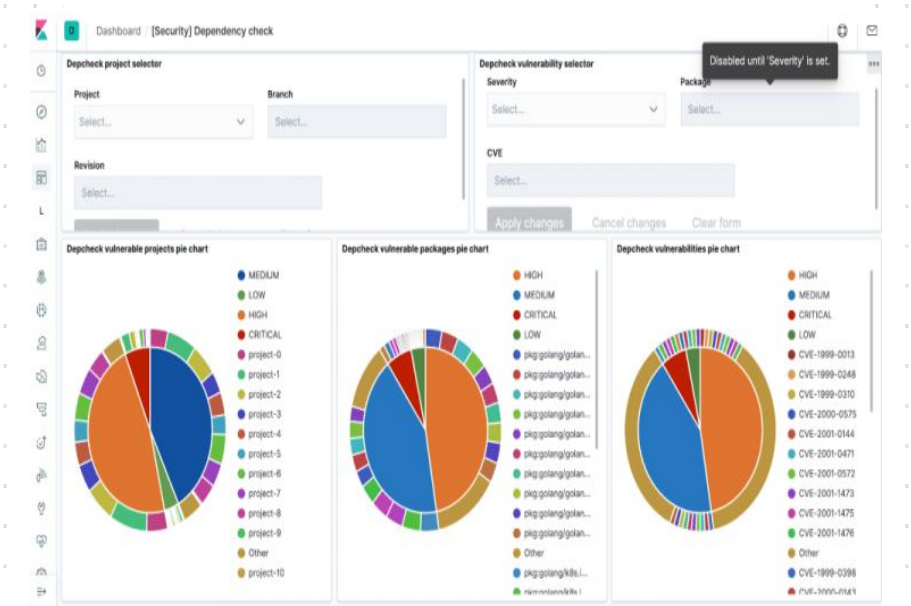
- **Example** in cybersecurity: New York City Cyber Command
  - 5 or 6 TB on weekdays & 2 or 3 TB on weekends
  - **Security Analysts** can access the data in several ways:
    - run queries in the data warehouse
    - use other tools that will provide **visualizations** of the data
    - Check for example: **Splunk Certified Cybersecurity Defense Analyst**

- https://www.splunk.com/en_us/training/certification-track/splunk-certified-cybersecurity-defense-analyst.html

Cybersecurity Dashboard Example 1: Splunk



Cybersecurity Dashboard Example 2: ELK



The **ELK** stack is an acronym for **Elasticsearch**, **Logstash**, and **Kibana**.

1. Elasticsearch: The Search and Analytics Engine

- Elasticsearch is a highly scalable, open-source search and analytics engine.
- It's the core of the stack, and its job is to store and index all of data.

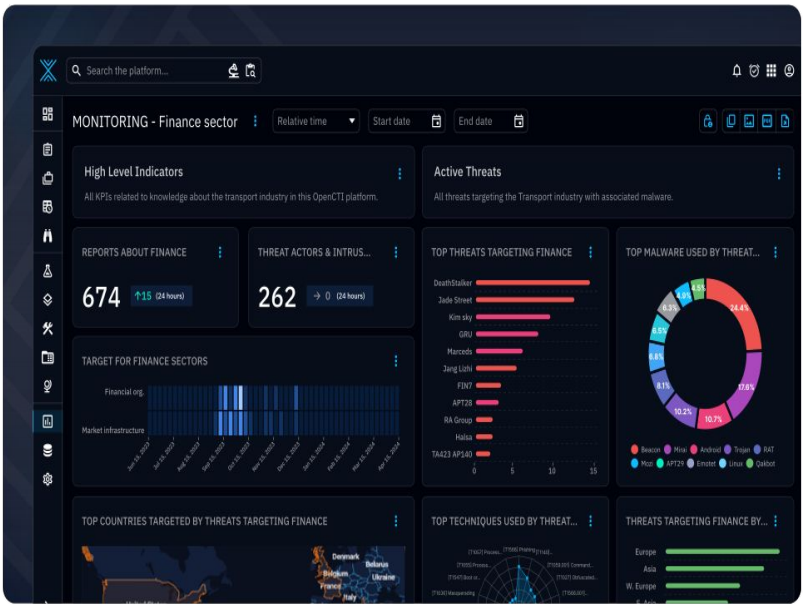
2. Logstash: The Data Processing Pipeline

- Logstash is an open-source data collection pipeline that has three main stages: input, filters, and output.
- Logstash ingests data from various sources and transforms it into a structured format that Elasticsearch can understand.

3. Kibana: The Visualization Layer

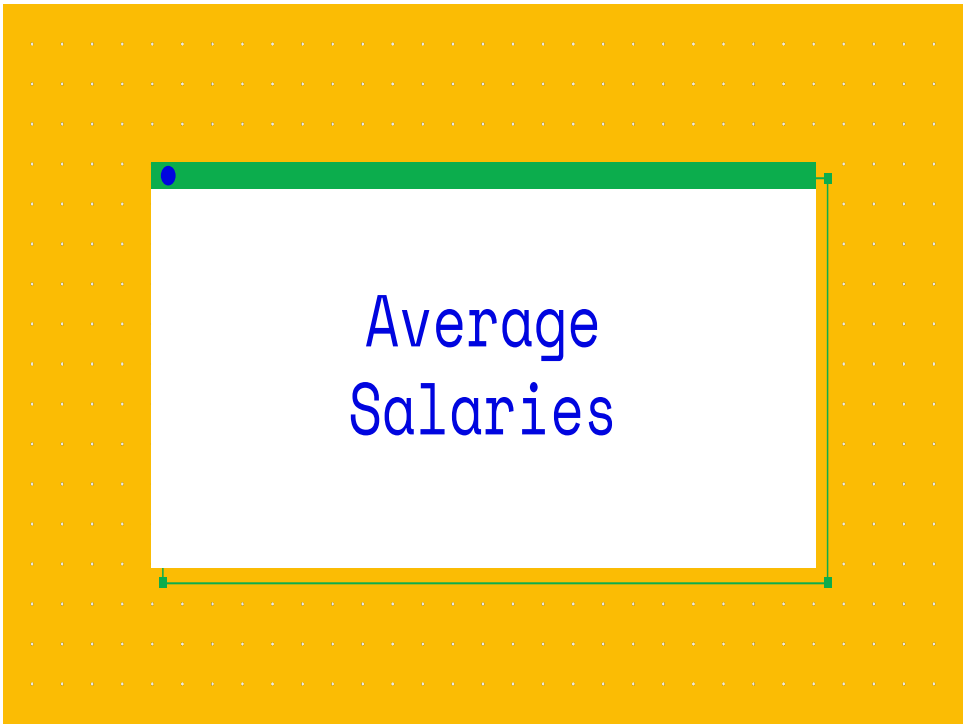
- Kibana is the visualization tool for the data in Elasticsearch.
- It allows to create **interactive dashboards**, charts, and graphs to explore, analyze, and visualize security data.

Cybersecurity Dashboard Example 3: OpenCTI

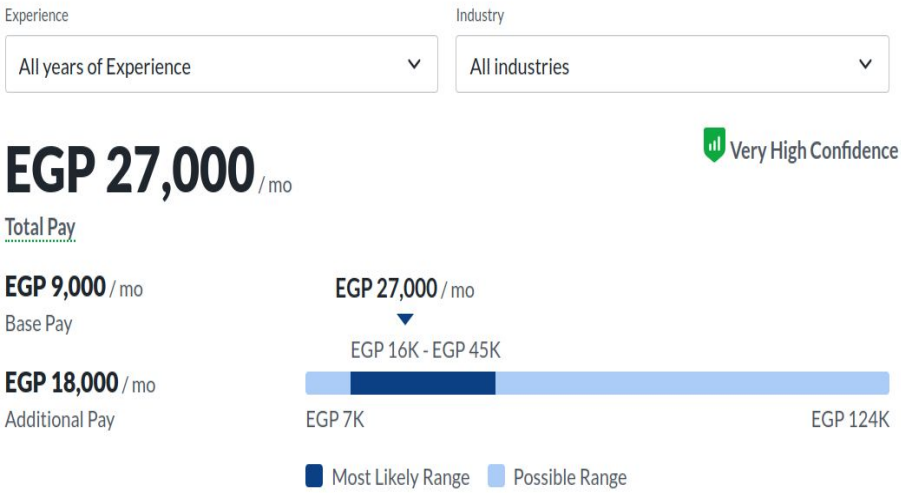


Open Cyber Threat Intelligence (OpenCTI)

It refers to an open-source platform designed for managing, organizing, and visualizing information about cyber threats.

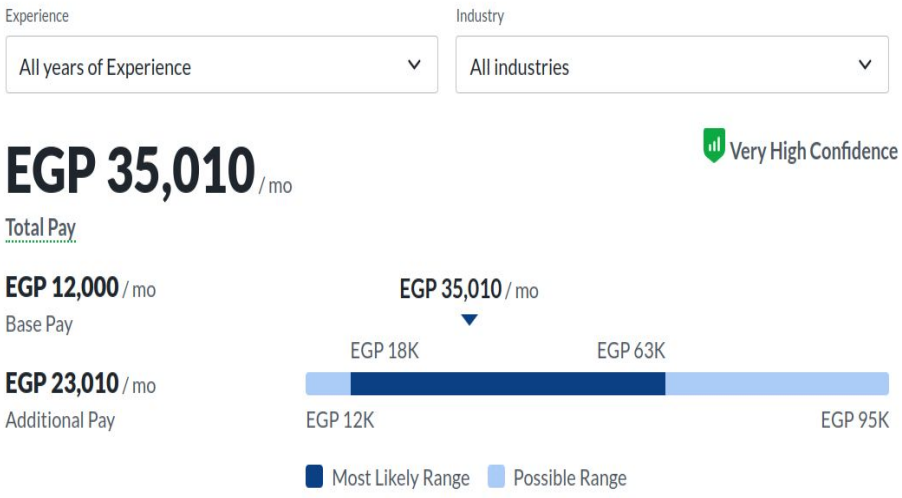

Average
Salaries

Data Analyst Average Salaries: Egypt 26/09/23



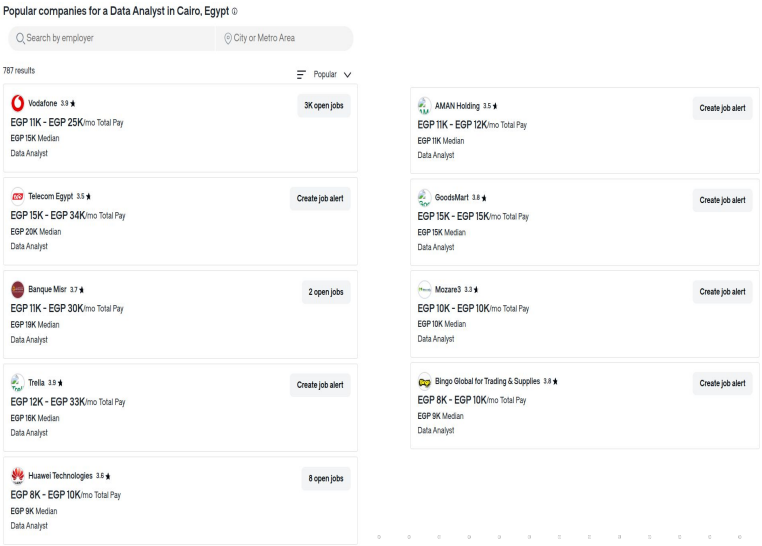
According to https://www.glassdoor.com

Data Scientist Average Salaries: Egypt 24/09/2023

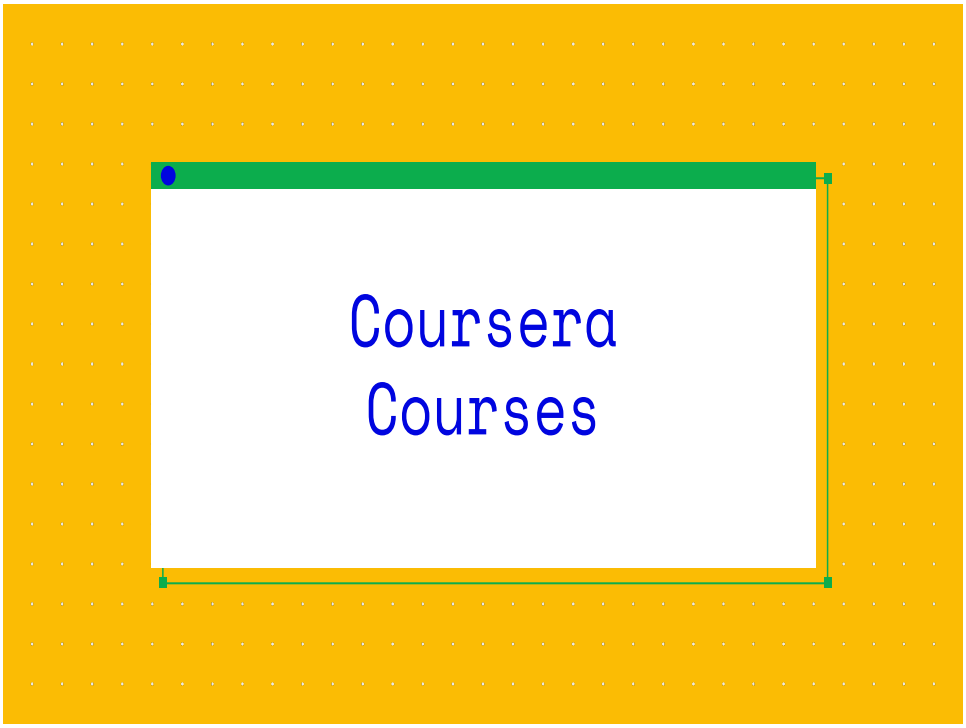


According to https://www.glassdoor.com

Some Jobs for Data Analysts in Egypt: 19/10/2024



Data Scientist Hiring: Egypt 23/09/2025


Coursera
Courses

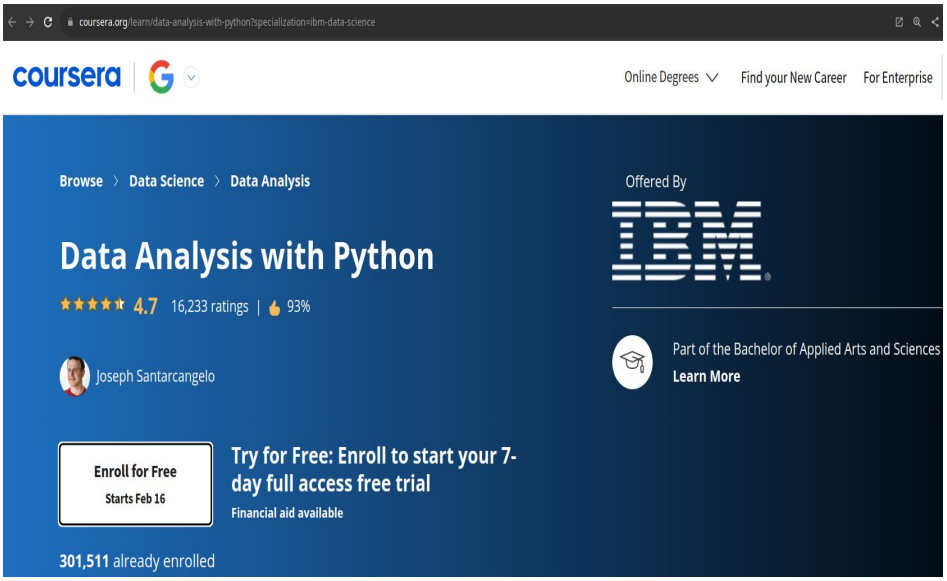
Coursera Course Link 1: Python for Data Science

https://www.coursera.org/learn/python-for-applied-data-science-ai?specialization=ibm-data-science

Coursera Course Link 2: Data Analysis w/ Python

https://www.coursera.org/learn/data-analysis-with-python?specialization=ibm-data-science

Enroll in Coursera Courses - 1



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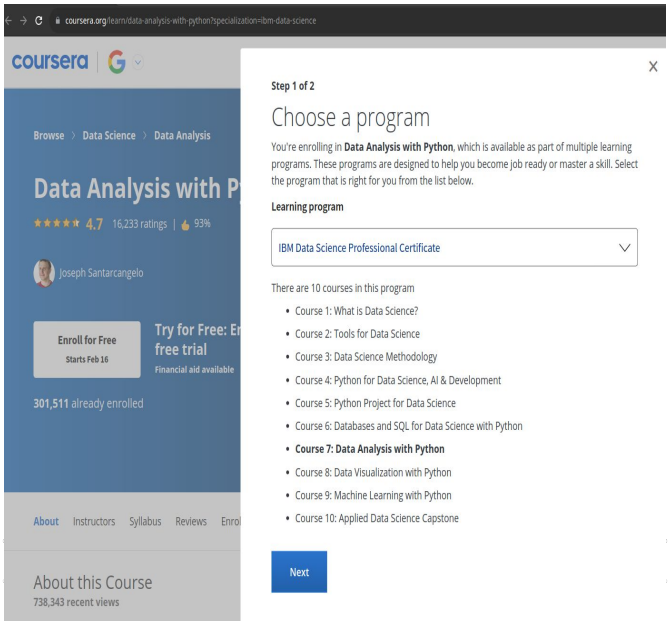
Enroll in Coursera Courses - 2



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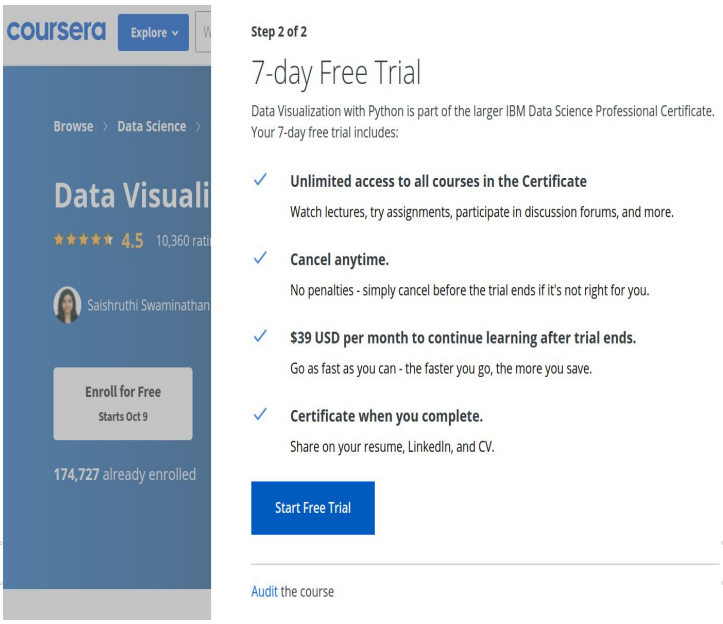
Enroll in Coursera Courses - 3



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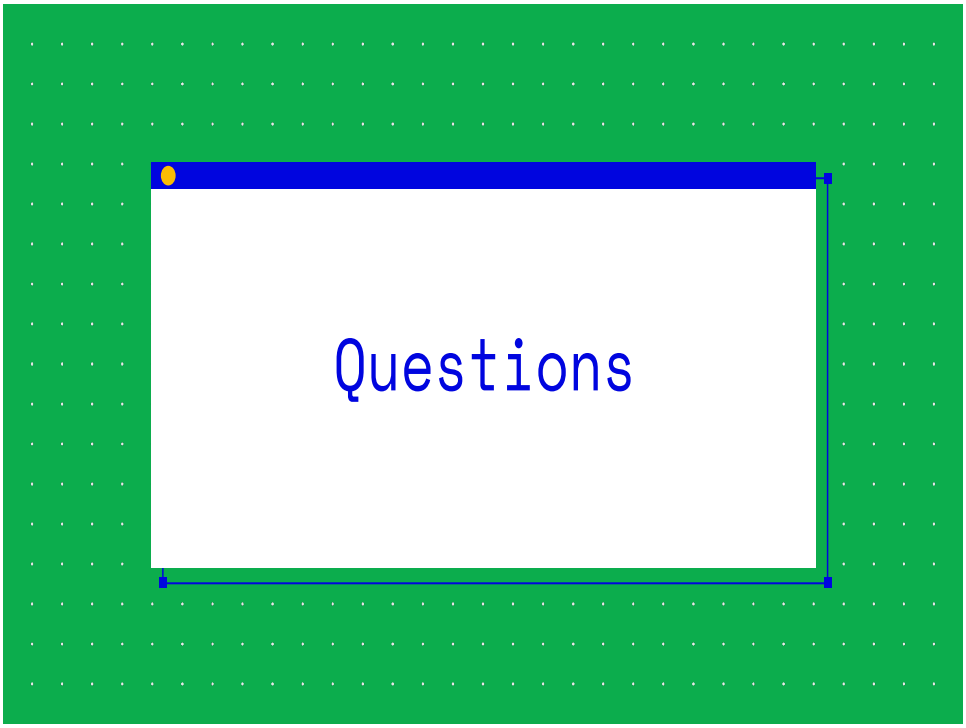
Coursera Course Link 3: Data Visualization

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

Coursera Course Link 4: ML w/ Python

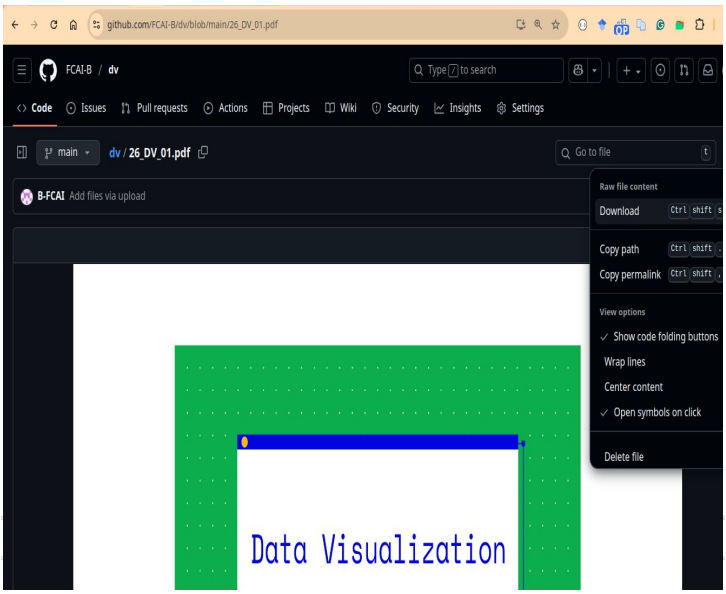
https://www.coursera.org/learn/machine-learning-with-python?specialization=ibm-data-science


Questions

Links

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

Download Course Materials: GUI



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Download Course Materials: CLI

```
git clone https://github.com/fcai-b/dv
```

References

1. https://www.udacity.com/blog/2018/01/4-types-data-science-jobs.html
    - 4 Types of Data Science Jobs
2. https://www.coursera.org/articles/data-analyst-vs-business-analyst
    - Data Analyst vs. Business Analyst
3. https://www.coursera.org/articles/business-intelligence-analysts-what-they-are-and-how-to-become-one
    - What Is a Business Intelligence Analyst?
4. https://learn.365datascience.com/courses/intro-to-data-and-data-science
    - 365 Data Science - Introduction to Data and Data Science