



4_1. Settings





Our objective:
Using own data, to help companies to
impact society and business

The group project is an opportunity for students to demonstrate not just their **technical skills** but also their ability in **presenting results** and propose **business recommendations**.



Statistical Analysis for Business Insights



Track / Module / Course contents

Data Cleaning and Preprocessing Techniques:

In-depth exploration of methods to clean and preprocess datasets, addressing data quality issues and preparing data for meaningful analysis.

Statistical Analysis for Business Insights:

Application of statistical methods to extract actionable insights from data, with a focus on making informed business decisions.

Data Visualization Tools and Techniques:

Introduction to various data visualization tools and techniques, enabling students to create compelling visuals for effective communication of analytical findings.

One step back to get inertia

Hardware



Data

Software

JupyterLab	Google Colab	Zeppelin
JetBrains Datalore	Kaggle	Mode Notebooks
Observable	Databricks notebooks	Visual Studio Code
Amazon SageMaker	CoCalc	Hex
Nextjournal	DataCamp Workspace	Deepnote

Kaggle	Google Dataset Search	DrivenData
UC Irvine Machine Learn...	Dataworld	Data.gov
Topcoder	GitHub	FiveThirtyEight
InnoCentive	Awesome-public datasets	Zindi
Data hub	KDnuggets	Tianchi
World Bank	Open data portal	Dataportals
HackerEarth	HackerRank	CodaLab



Day 1. Collect Data

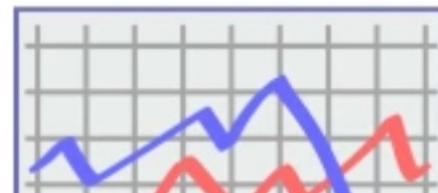


Day 2. Explore Data

The Essence of Exploratory Data Analysis

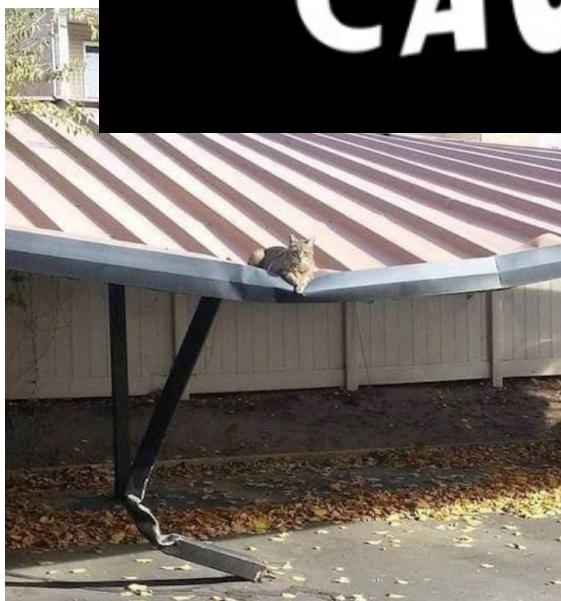
GARBAGE IN,
GARBAGE OUT.

YOU ARE ONLY AS GOOD
AS YOUR DATA



Day 3. Identify trends, develop insights

**CORRELATION
IS NOT
CAUSATION**



Day 4. Visualize to explain

WHEN DATA IS IN TABLE FORM

ID	NAME	CLASS	MARK	SEX
1	John Doe	Four	75	female
2	Mia Rose	Three	85	male
3	Arnold	Five	95	male
4	Krish Star	Four	80	female
5	John Miles	Four	60	female
6	Alex John	Four	55	male
7	Milly John Rob	Five	78	male
8	Aarud	Five	85	male
9	Tes City	Six	78	male
10	Big John	Four	95	female

WHEN DATA IS IN PLOT

Total Cash Income and Outflows

Month	Total Income (Blue)	Total Outflows (Green)
1	1,000,000	900,000
2	1,200,000	800,000
3	1,100,000	950,000
4	1,300,000	850,000
5	1,400,000	900,000
6	1,500,000	800,000
7	1,600,000	950,000
8	1,700,000	850,000
9	1,800,000	900,000
10	1,900,000	800,000
11	1,800,000	950,000

imgflip.com



Day 4. Visualize to explain

Two Goals in Data Visualization

In a business context, the two main goals that visualizations have are to:

Explore the data to **discover** a story (E.D.A., insights)

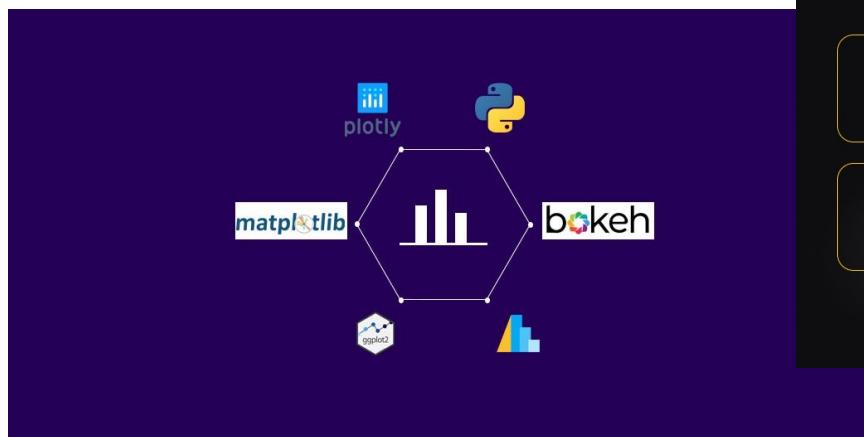
Explain the data to **tell** a story (marketing)

Day 4. Visualize to explain

Two Approaches in Visualization Tools

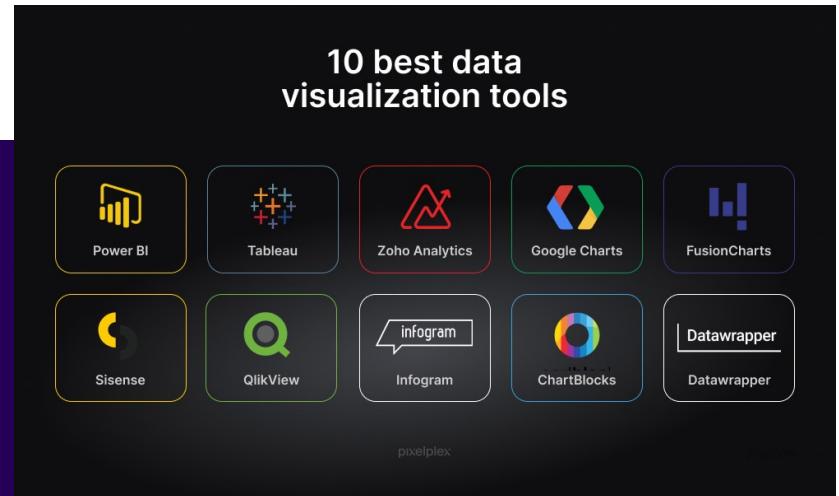
In a business context, the two main approaches that visualizations tools have are to:

Commercial

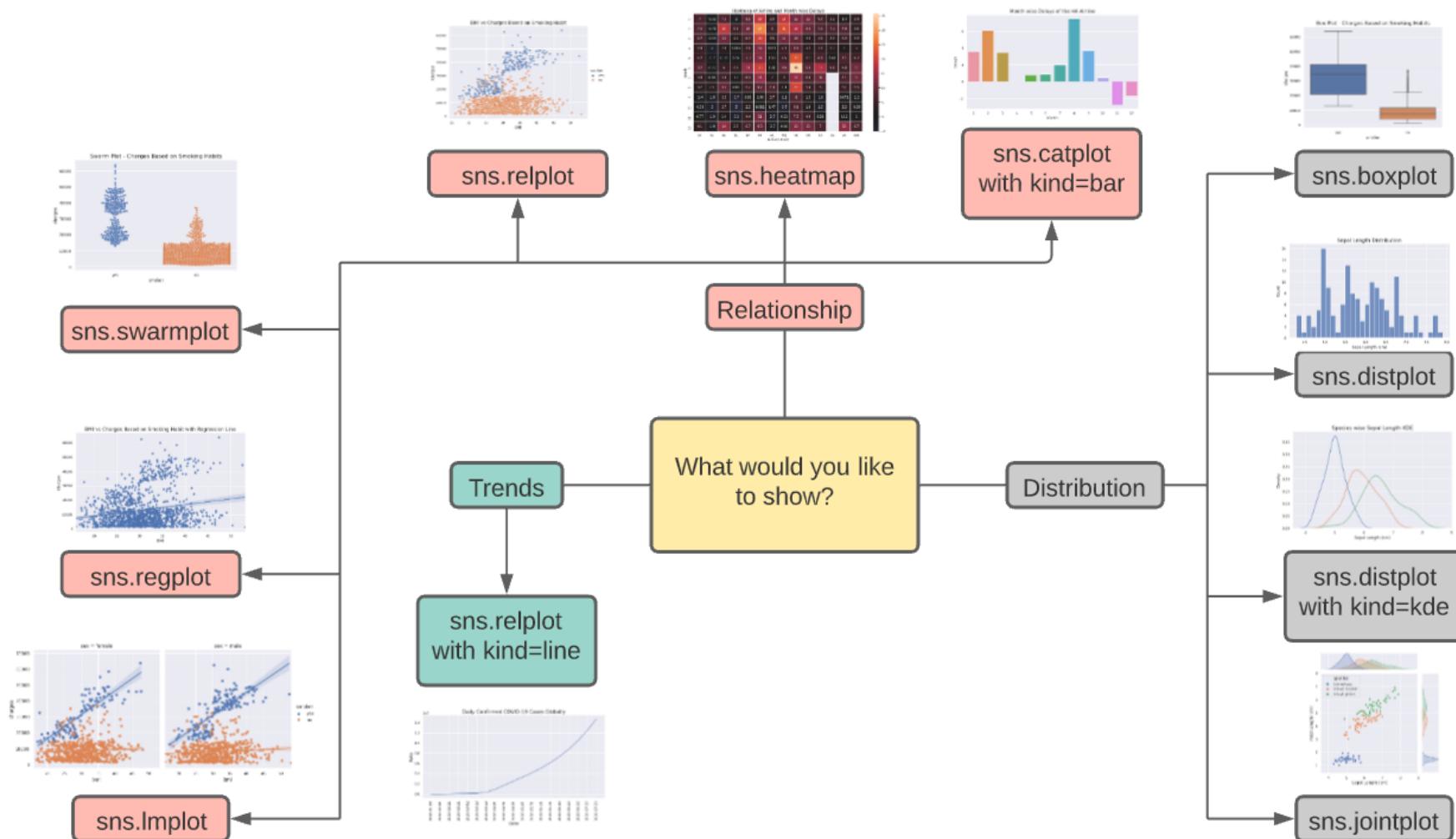


Open

10 best data
visualization tools



Data Visualization. How?



Data Visualization. How?

Easy Plot Types:

- Bar Chart
- Histograms
- Scatter plots
- Pie Charts
- Box Plot
- Heatmap
- Stack Plot

Hands on. In-class Groups!

Benefits of Statistical Analysis for Business

Hardware

Software

Data





INSPIRING EDUCATION INSPIRING LIFE

TOULOUSE • PARIS • BARCELONA • CASABLANCA • LONDON

