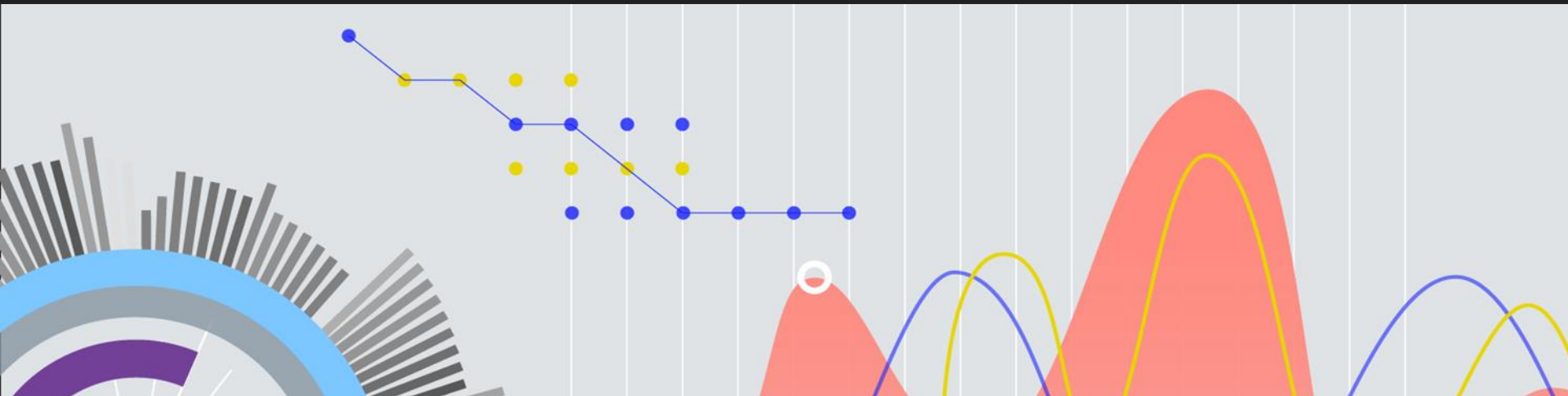
Welcome to INF8808E!

TP1



Important stuff first!

- TPs in groups of 3
- Find your group on the discord channel #tp-group-formation
- You need to pick between JS+D3 ***or*** Python+Plotly. No switching after!
- Let us know your decision for the group and language before next lab
  - **Olivia will share a Google Sheet where you can write your decision**
- If you don’t fill the Google Sheet we will assign you a group

TA’s

Here to explain the TPs and answer questions!

Hellen

Every Tuesday and Wednesday:

- 14:45 - 17:45 (Lab 1)
- 17:45 - 20:45 (Lab 2)

Introduction

Plotly

- Python
- Open source
- Allows you to create many types of graphics
- Can be integrated on the web with *Dash*
- Declarative, high level

D3

- JS
- Open source
- Allows you to directly manipulate the DOM
- Data driven programming thanks to data binding paradigm

Plotly

Advantages :

- Many visualisations and features are available “out of the box”
- Responsive
- Quick to learn
- Available in many programming languages

Disadvantages :

- Does not support every type of data visualization
- Less flexible and customizable than D3
- Performance can be slow, especially on larger data sets

D3

Advantages :

- Can be used to create any type of data visualization
- Very flexible and customizable
- Can be used for other tasks than data visualization (ex : data processing)
- Large online community

Disadvantages :

- Harder to learn than Plotly (at least at first)
- May take longer to write the code, for certain visualizations

Recommendations

Pick Plotly if...

- You don’t have much programming experience
- You are in biomedical or industrial engineering
- You want to do data visualizations for research projects or prototyping

Pick D3 if...

- You have some programming experience
- You are in computer or software engineering
- You want to do data visualizations on the web with interactivity

Plotly examples

https://dash-gallery.plotly.host/dash-world-cell-towers/

https://chart-studio.plotly.com/~zhaozhi0505/22/oex-vol-surface-by-call-options-on-04102015/#/

https://traffic-accidents-uk.herokuapp.com/

Also see :

https://project-awesome.org/ucg8j/awesome-dash#galleries

D3 examples

https://www.ledevoir.com/documents/special/2020-05-08-femmes-plus-a-risque-coronavirus/index.html

http://bl.ocks.org/sxywu/raw/d612c6c653fb8b4d7ff3d422be164a5d/

https://observablehq.com/@d3/bar-chart-race

Also see:

https://observablehq.com/@d3

Plan for each TP

1. Before the TP : do the recommended readings + exercices

1. During the TP :
    - Presentation video, sources and files on Moodle
    - Question period on discord

1. After the TP :
    - Submit the TP on Moodle
    - You will also receive your grade on Moodle after a delay

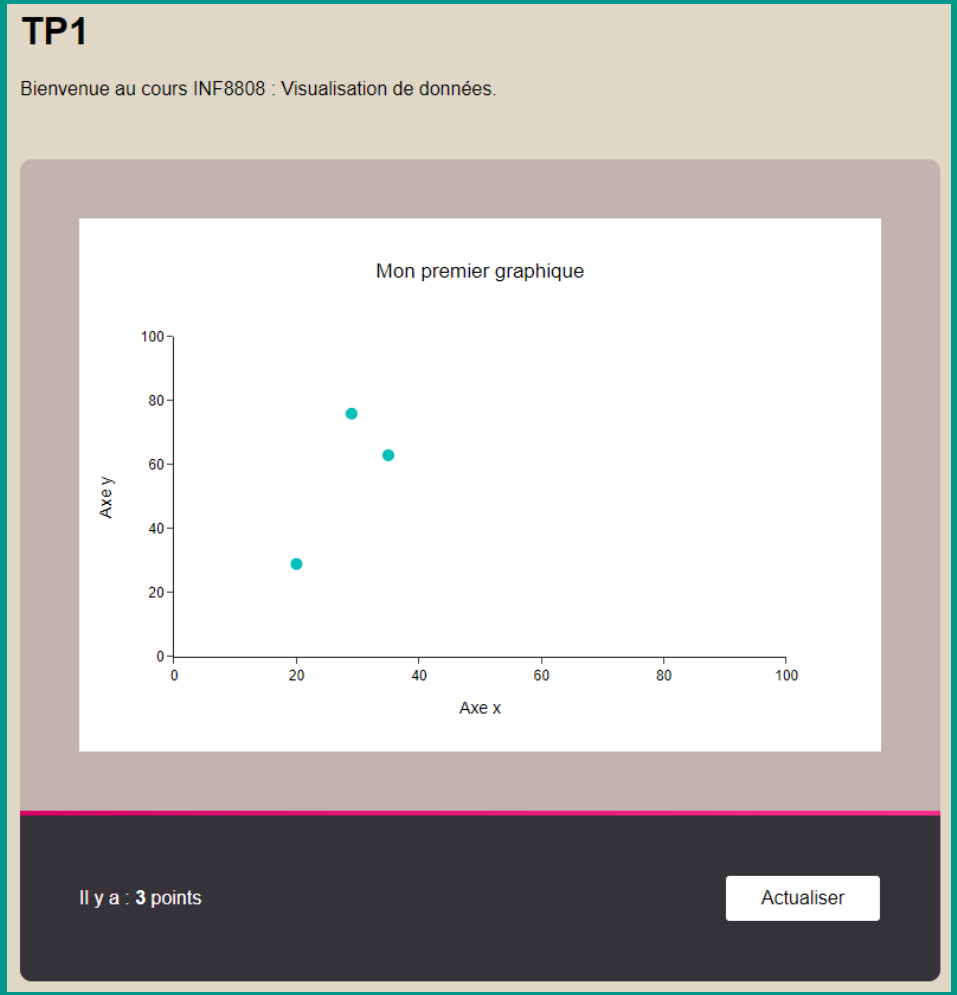
Discord

- Use the channel “**tp_questions**” to ask questions over text any time.

- For voice questions:
  1. Go in the channel “**tp_questions**” during the Lab times and write: ‘Question Plotly’ or ‘Question D3’.
  2. Go in the voice channel “**waiting-room**” and wait until I move you to my voice channel and answer your question.
  3. I will answer according with the order called on “**tp_questions**” channel.

TP1

- Warm up
- **NOT GRADED**
- Use it to help choose between Plotly and D3



TP1 goal

- Create a scatter plot with randomly generated data
- Update the random data each time the button is clicked at the bottom of the page
- Also update the text showing how many points are displayed

For Plotly: Modify the “`TODO`” sections in the file “`app.py`”

For D3: Modify the “`TODO`” sections in the file “`viz-helper.js`”