Information Visualisation (M), 2022/23
Lab Session 1, Monday 16th January
Altair

For your Information Visualisation group project, you will be required to implement at least two visualisation systems. The focus of the assessment will be on your written report (and in particular the justification and evaluation of your designs), but you will still need to implement working code.

You can use Python and Altair to implement the systems. (An alternative choice that we are considering making possible is JavaScript/Observable/Vega-Lite, which are the subject of Lab 2.) The tutorials below will give you sufficient grounding in Altair for your project. They are provided by the University of Washington Interactive Data Lab (**uwdata**) by internationally well-known Information Visualisation researchers. There are also several tutorials and help resources on the Altair page (https://altair-viz.github.io/index.html), but the uwdata ones below are better suited for our purpose.

You are free to start working through these tutorials whenever you like, although you may want to devote the time allocated to the weekly scheduled lab sessions to doing them – in particular, Monday 16th January. The lab assistants can help if you have any problems. It will be assumed that all IV students have completed these tutorials.

The Data Visualisation Curriculum

Developed at the University of Washington by Jeffrey Heer, Dominik Moritz, Jake VanderPlas, and Brock Craft, this is a great resource for anyone wishing to learn more about the technical side of information visualisation: https://github.com/uwdata/visualization-curriculum

Installation: local installation is recommended

- Install Altair and a notebook environment: https://altair-viz.github.io/getting_started/installation.html.
- API information: https://altair-viz.github.io/
- Download the most recent version of the uwdata notebooks: https://github.com/uwdata/visualization-curriculum/releases

Alternatively, if you wish to use a different Python environment, consult the lab assistants who *may* be able to help you.

Once you have the basic software installed, work through its introductory tutorials, as follows:

Introduction:

- https://uwdata.github.io/visualization-curriculum/altair_introduction.html

Marks and encoding

- https://uwdata.github.io/visualization-curriculum/altair_marks_encoding.html

Data Transformation

- https://uwdata.github.io/visualization-curriculum/altair_data_transformation.html

Scales, axes and legends

- https://uwdata.github.io/visualization-curriculum/altair_scales_axes_legends.html

Multi-view composition

- https://uwdata.github.io/visualization-curriculum/altair_view_composition.html

Interaction

- https://uwdata.github.io/visualization-curriculum/altair_interaction.html

Python

If you are a novice Python user, there a whole range of resources that you can use to enhance your Python skills; we recommend online tutorials, e.g.:

https://www.learnpython.org/

https://www.w3schools.com/python/

http://do1.dr/-chuck.com/pythonlearn/EN_us/pythonlearn.pdf

Lab Assistants and Lab Sessions

The lab sessions are drop-in sessions where you can get technical advice on your project, and where you are expected to work through the tutorials. You are not required to attend any lab sessions, and attendance will not be taken.

Please do not ask the lab assistants to write any of your code for you – they are there to advise you on how you can do it yourself.

A lecturer will usually be available during these lab sessions to answer questions about the theoretical aspects of the project, either by online via Moodle or email, in the Boyd Orr lab (1028), or both.

Field Code Changed