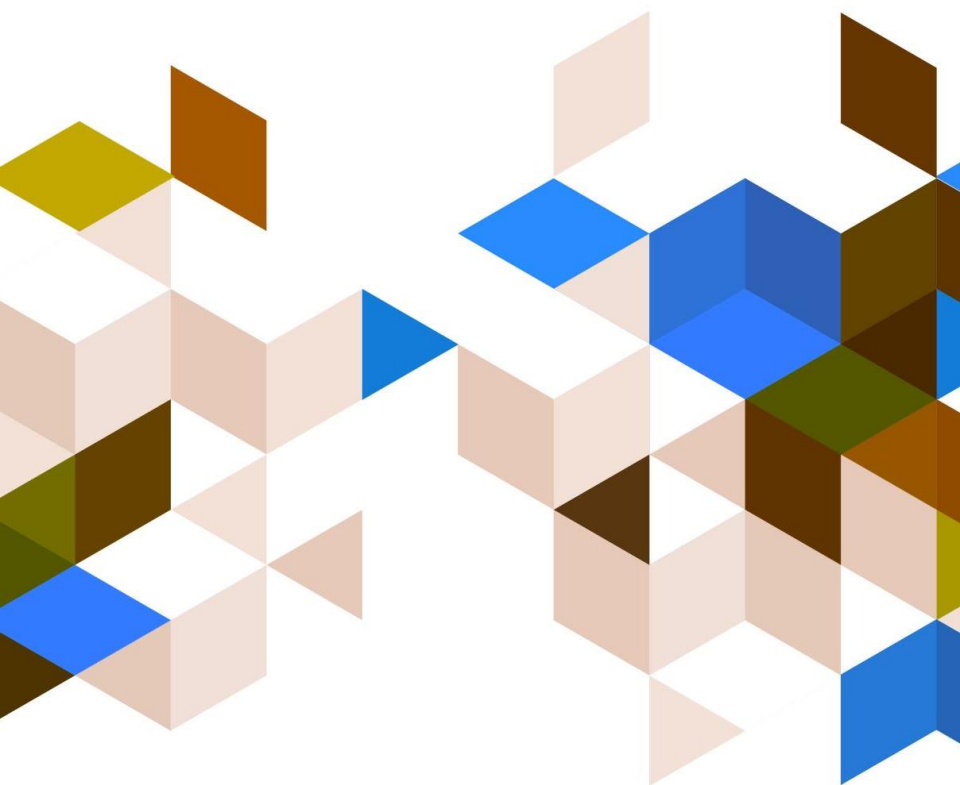




GeoVisualization

By NTUA



GEO-ACADEMY
GEO-Hub for teachers in Europe



Co-funded by
the European Union

Project Ref: 101104693 — GEO-ACADEMY — ERASMUS-EDU-2022-
PEX-TEACH-ACA

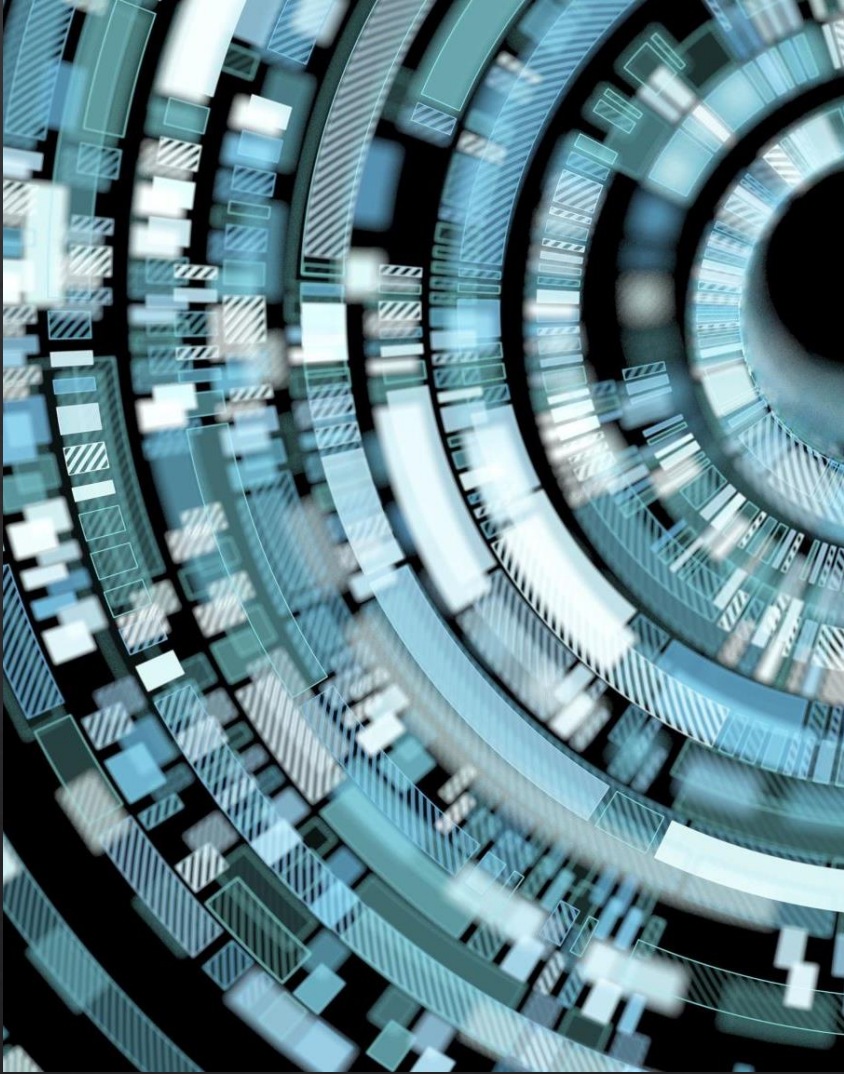




Definition

Visualization: application of visual representation techniques of any type of information, with the aim of better information understanding

- Lots of complex data
- Visual information is processed and assimilated by the human mind much more efficiently than that presented in alphanumeric or any other form.



Visualization Techniques

Scientific visualization: mainly concerns data from the natural world such as the human body, the Earth, the molecular structure of matter, etc.

Information visualization: focuses on abstract concepts, without physical substance, such as texts, statistical data, etc.

Scientific Visualization

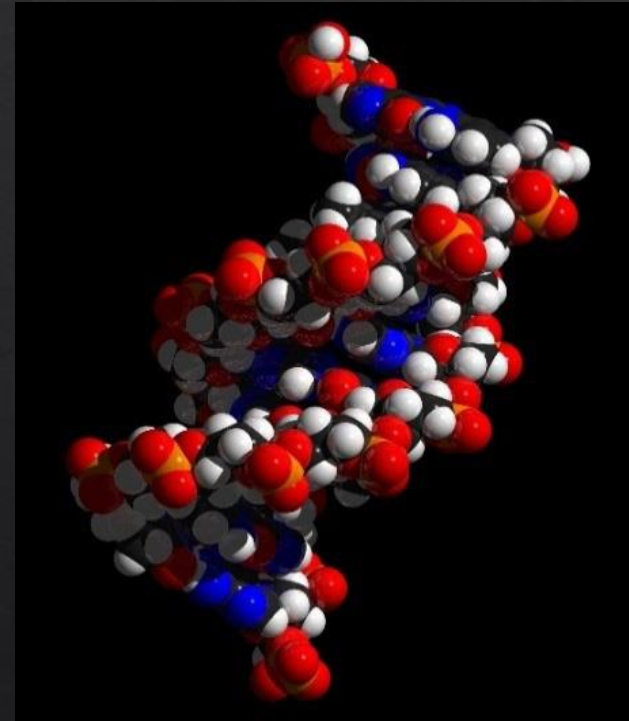


Waves on the water surface

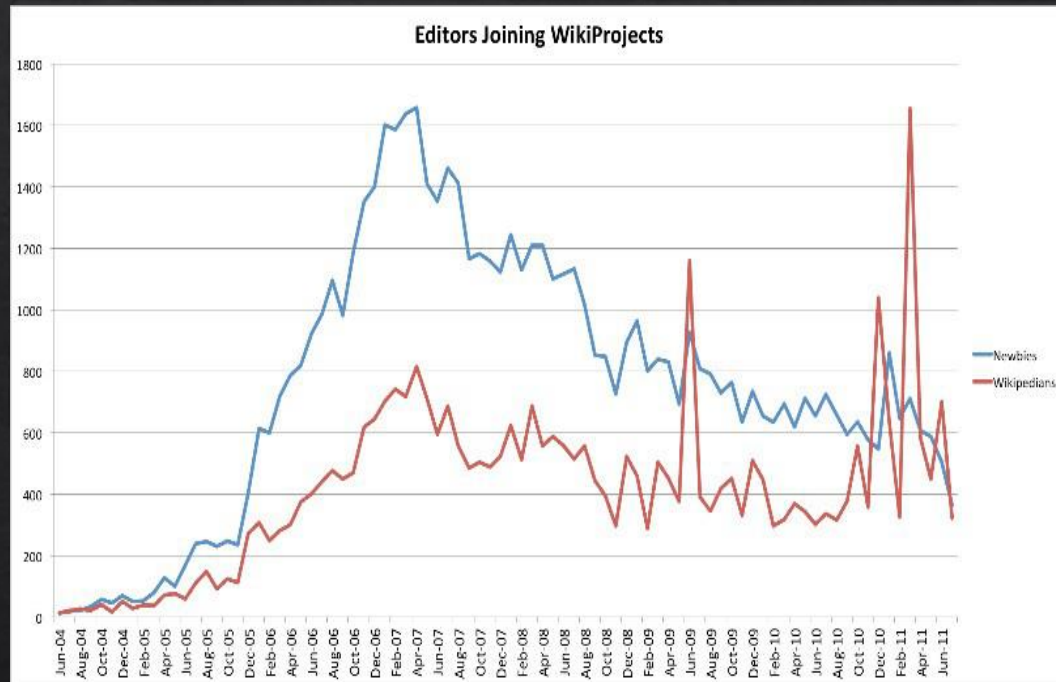
https://commons.wikimedia.org/wiki/Wave#/media/File:2006-01-14_Surface_waves.jpg

Part of the DNA double helix

https://commons.wikimedia.org/wiki/DNA#/media/File:Bdna_cropped.gif



Information Visualization

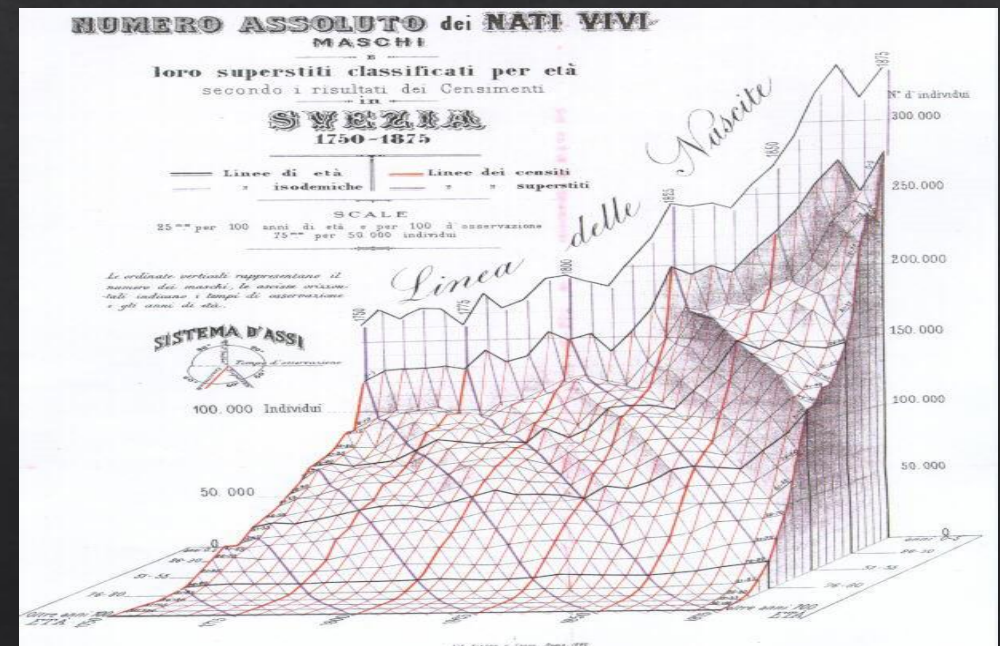


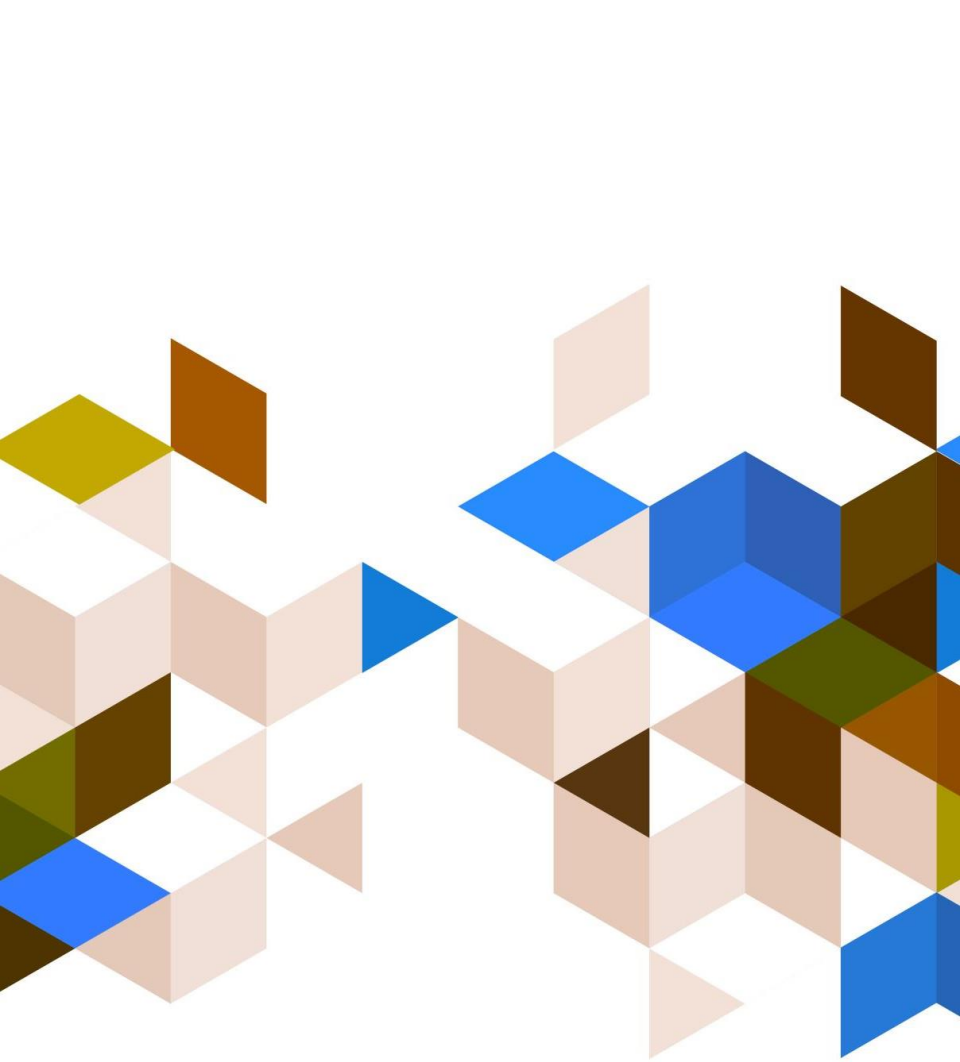
Evolution of the number of Wikipedia contributors

https://upload.wikimedia.org/wikipedia/commons/2/2e/Editors_joining_wikiprojects.png

Three-dimensional population pyramid

[https://commons.wikimedia.org/wiki/File:Stereogram_\(three-dimensional_population_pyramid\)_modeled_on_actual_data_\(Swedish_census,_1750-1875\).jpg](https://commons.wikimedia.org/wiki/File:Stereogram_(three-dimensional_population_pyramid)_modeled_on_actual_data_(Swedish_census,_1750-1875).jpg)

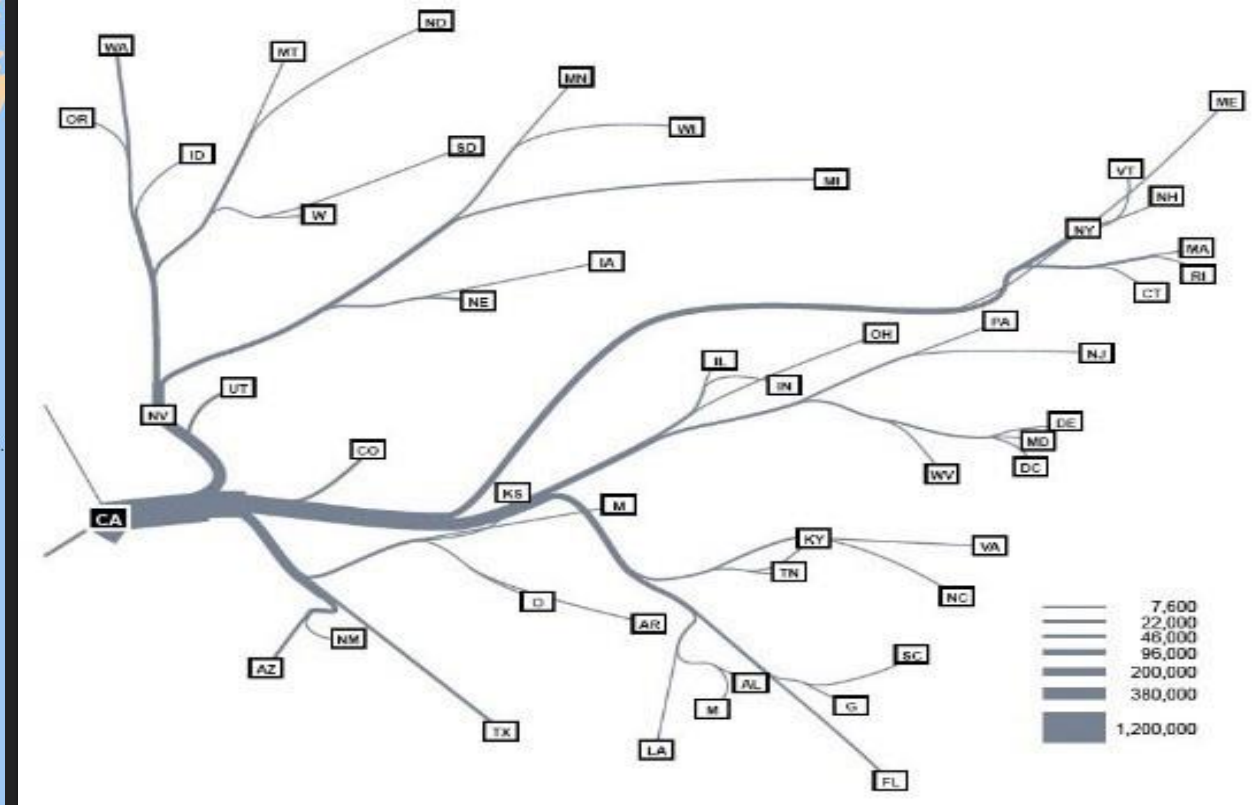
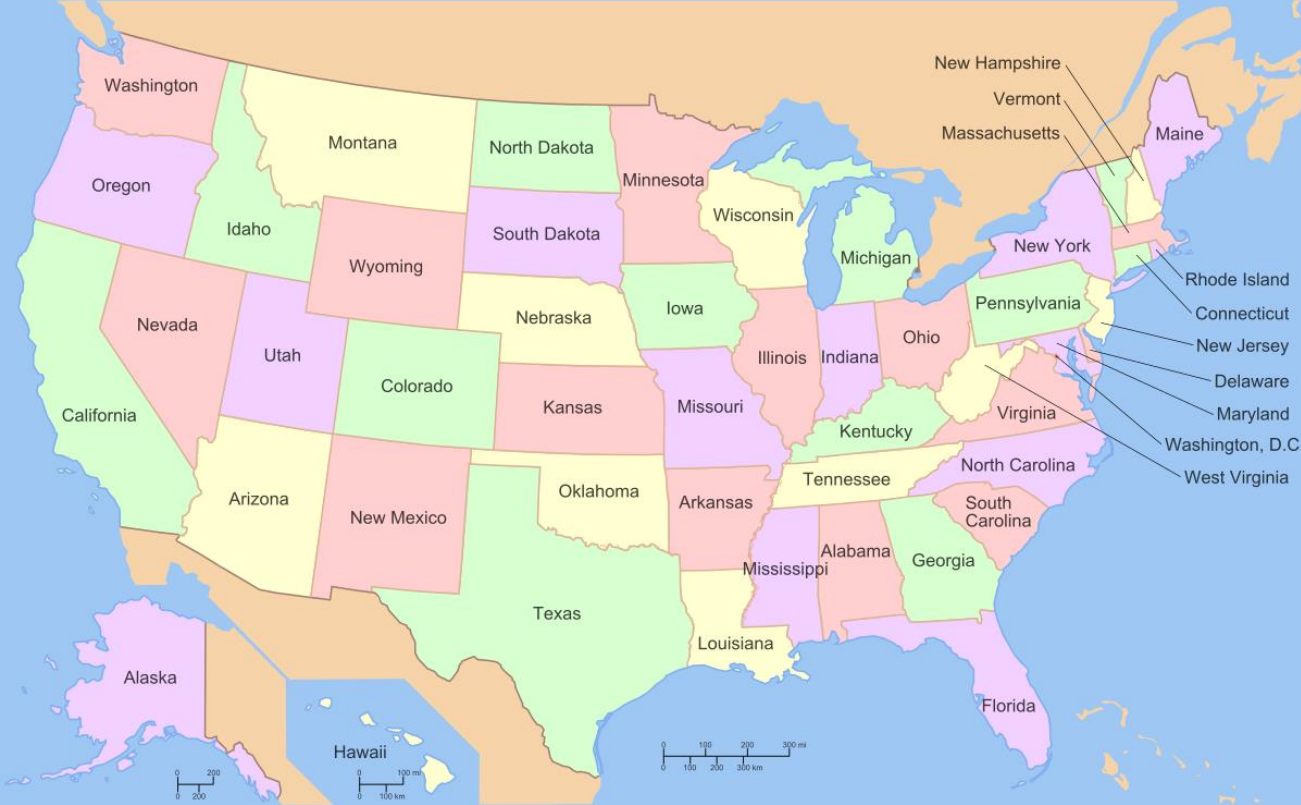




GeoVisualization

The visualization of geographic information or **geovisualization** does not fully fall into either category.

- The accurate representation of the Earth's surface is scientific.
- The visualization of abstract data with geographic reference falls into the second category.

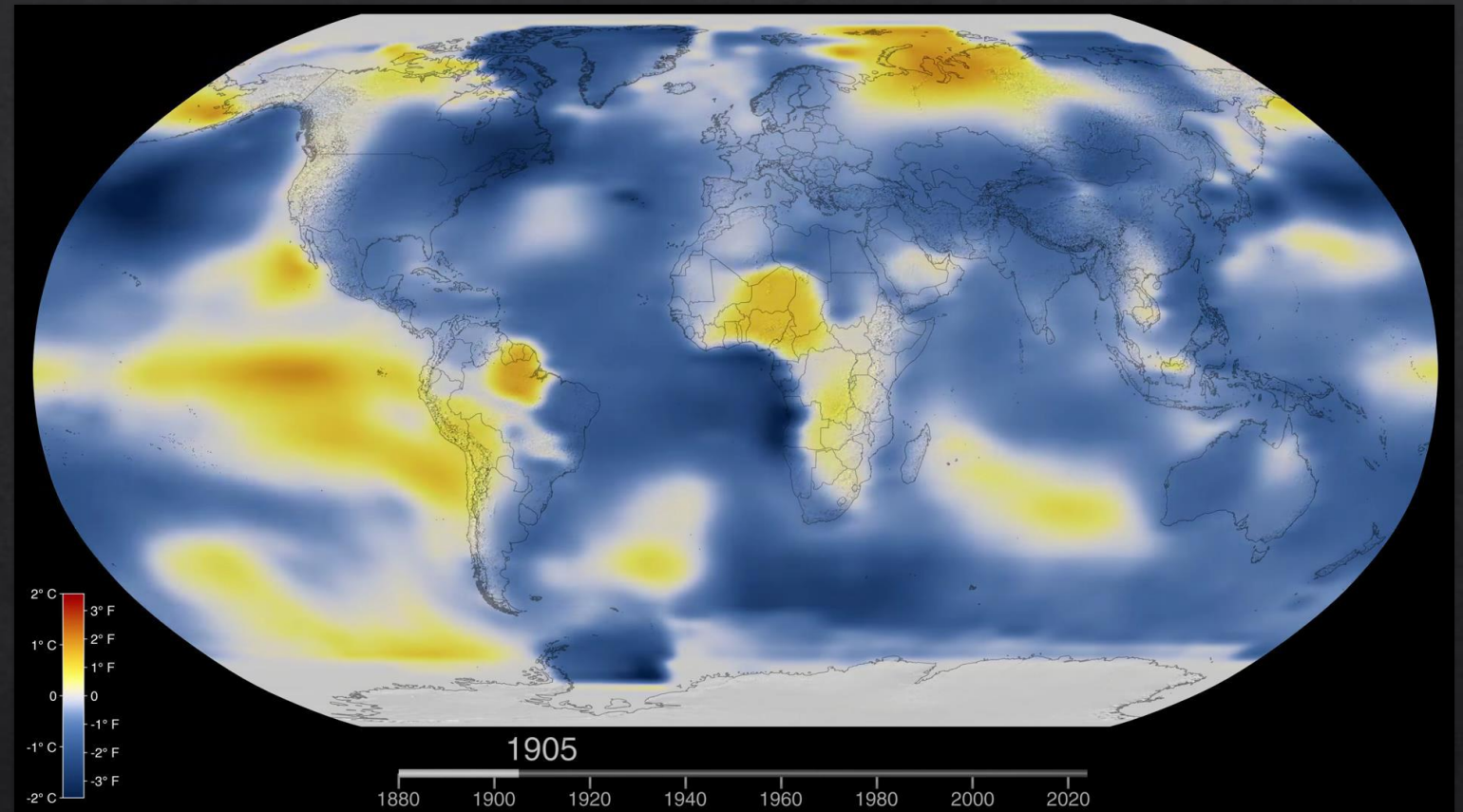


https://upload.wikimedia.org/wikipedia/commons/b/b6/Automating_Flow_Map_Layout.jpg

Geovisualization; an example

Migration flow map from California to other US states

Geovisualization;
another example



Global surface temperature heat map animation for 1880-2023. Produced by NASA's Scientific Visualization Studio (SVS) from data from NASA's Goddard Institute for Space Studies.