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World Development Analysis Application

Information Visualization, MEI, DETI, 2019/20

Universidade de Aveiro

DATASET

- Title: "World Development Indicators"
- Subject: Country development indicators from 1960 to 2019
- Source: World Bank (Kaggle)
- Data:
  - Health/Death-related indicators
  - All normalized to ratio per 100 000 people
  - Downloaded in CSV format
  - Preprocessed using 'dataPreprocessing.py' script
  - Locally accessed in JSON format with D3

WHAT THE WEB APPLICATION OFFERS

- Meant for non-specialized user, no background knowledge required

- Features:
  - Worldwide comparison of a single indicator for any year
  - Intuitive indicator evolution analysis throughout time
  - Detailed comparison of 1 or + indicators between 1 or + countries

- Characteristics:
  - Simplistic and straightforward page design
  - High level of user freedom in both visualization tools
  - Balanced number of filters for each tool
  - Color-Blindness support (through map's color schema)

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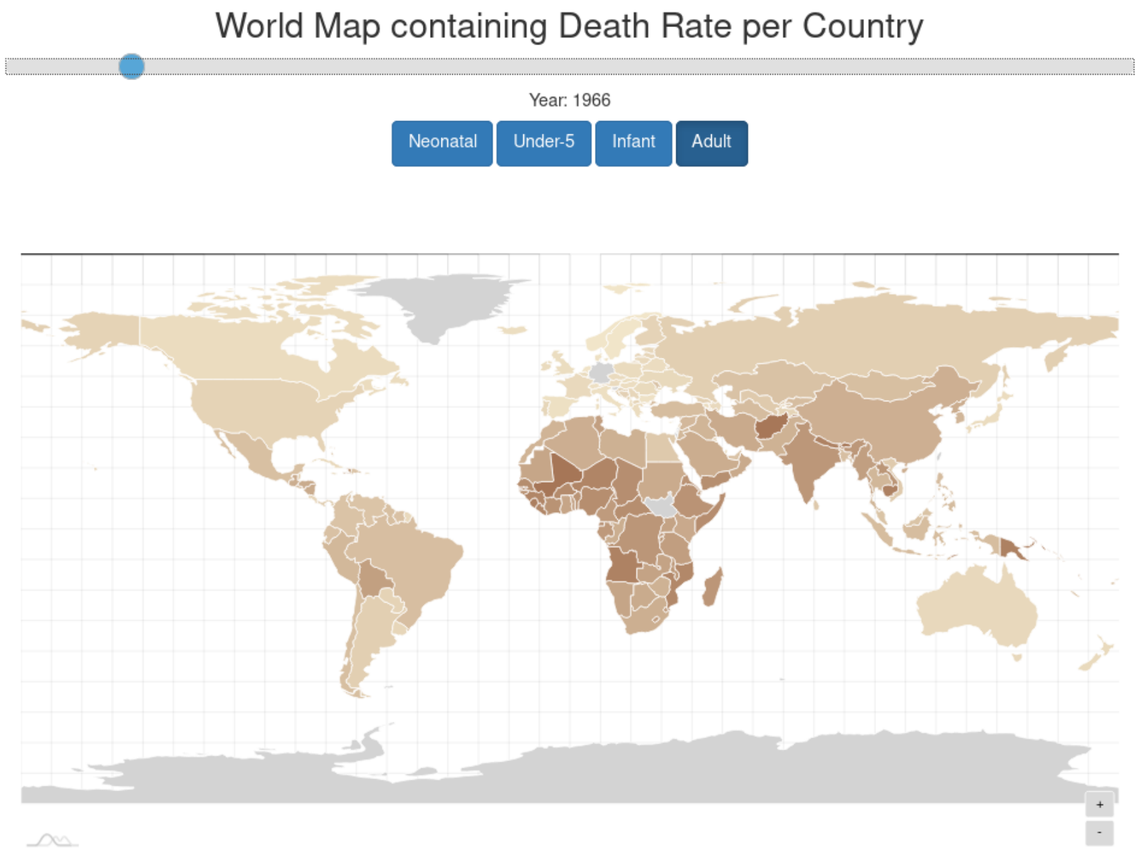
VISUALIZATION TECHNIQUES



- How are countries related regarding death rates?

- World Map
  - presents only 1 indicator at a time
    - color codification (darker = higher values)
    - offers filtering by age range
    - permits quickly going over different years
    - supports zoom, drag, tooltips, etc.

  -> most intuitive form of presenting geographic-related data

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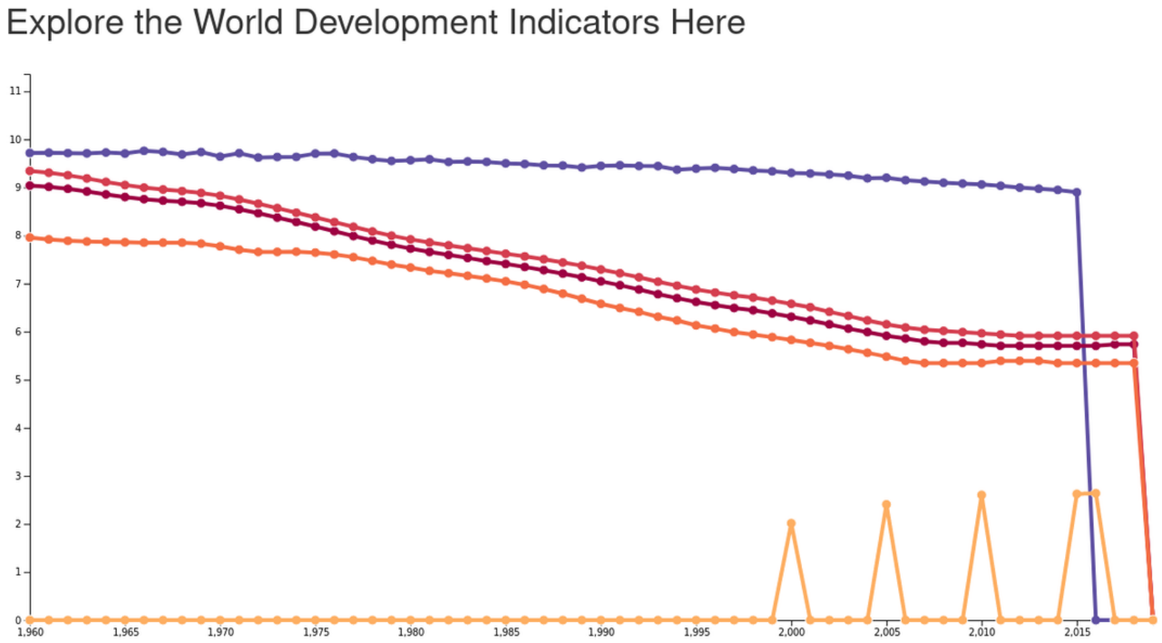
VISUALIZATION TECHNIQUES

- What indicators may affect number of deaths?

- Connected Scatter-Plot
  - presents 1 or + indicators simultaneously
  - presents data from 1 or + countries
  - shows indicator evolution throughout time
  - allows filtering by indicator or country
  - facilitates comparison between countries

  -> straightforward form of studying evolution



WEBSITE DEVELOPMENT

- Technologies:
  - Python for preprocessing
  - HTML & CSS for website structure
  - Javascript for website interactions
  - D3.js library for graphical analysis tools

- External Sources:
  - Javascript library AMCharts (integrates D3)
  - HTML and Bootstrap templates
  - Coblis online tool (color-blindness simulator)

- GitHub Repository
  - Link: https://github.com/joao-alegria/VI
  - Code Style Guide: https://github.com/tiagodavi70/ua_infovis/blob/c50422815f49b0a4747c6f727042b4da95dd7af2/D3/Code_Style.md

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PHASE 2
PRESENTATION

THANK YOU!

Any Questions?

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