

The Interactive Isnalyser

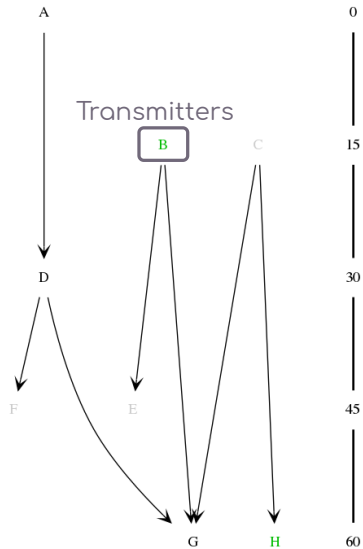
Automation of isnād trees drawing

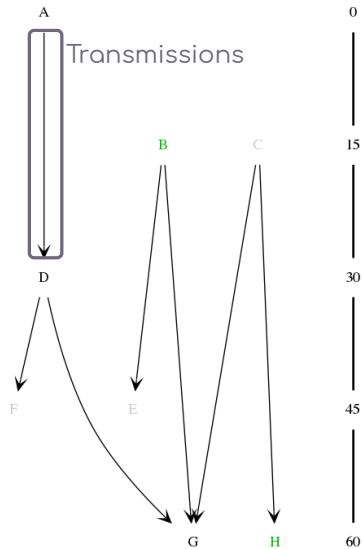
Maroussia Bednarkiewicz, Álvaro Tejero-Cantero, Stefan Wezel

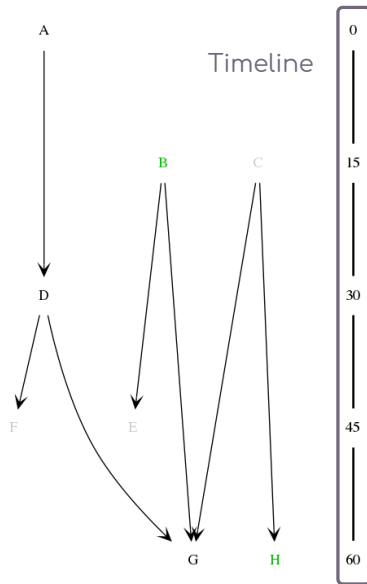
mlcolab @ Tübingen University Cluster of Excellence

January 26, 2021

- Scholars model Ḥadīth transmissions with isnād trees
- Drawing by hand can be tedious
- Automatization approaches
 - Automation of data processing
 - Automation of visualization (ours)
- Our focus:
 - Reproducibility
 - Open source spirit -> improvability
 - Colaborative platform
- Two steps
 - Software library (Python)
 - Web application (Javascript)







- Exploring different tools/languages
- Python as language of choice
 - Powerful and flexible
 - Great community and ecosystem
 - Graphviz as library for drawing graphs
- Graphviz
 - Open source tool
 - Draws graphs specified in DOT language
 - Available as Python library

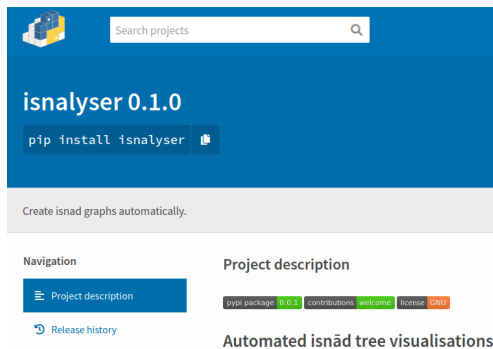
- Next step: create Open source Python library from code
 - Move everything to Github
 - PyPI as platform for Python libraries
 - Adjust folder/file structure according to PyPI standards
 - Register on Test PyPI and PyPI



- Upload on Test PyPI
 - See if it works
 - See that it does not work
 - Repeat 3-4 times until it works
- Upload to real PyPI and feel good!

Isanalyser

Publishing the library



The screenshot shows the PyPI project page for 'isanalyser 0.1.0'. At the top, there's a blue header with the project name and version. Below it, a search bar and a 'Search projects' button are visible. The main content area has a blue background with the project name and version. A button labeled 'pip install isanalyser' is prominent. Below this, a light gray box contains the text 'Create isnad graphs automatically.' The page is divided into two columns. The left column, titled 'Navigation', has a blue button for 'Project description' and a link for 'Release history'. The right column, titled 'Project description', shows a row of links: 'pypi package', '0.0.1', 'contributions', 'welcome', 'license', and 'GNU'. Below this, the text 'Automated isnād tree visualisations' is displayed.

Search projects

isanalyser 0.1.0

`pip install isanalyser`

Create isnad graphs automatically.

Navigation

- Project description
- Release history

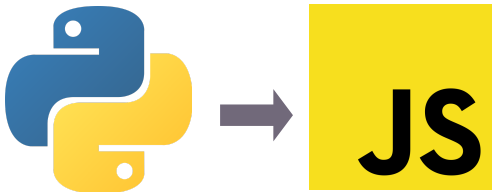
Project description

pypi package 0.0.1 contributions welcome license GNU

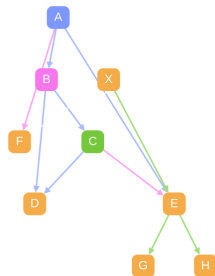
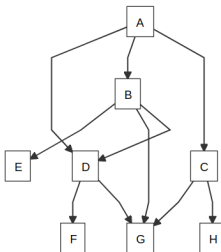
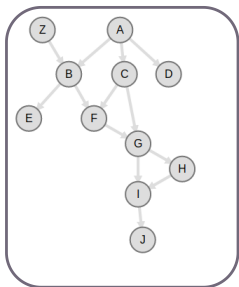
Automated isnād tree visualisations

- If you are interested: Just `pip install isanalyser`
- Documentation on Github

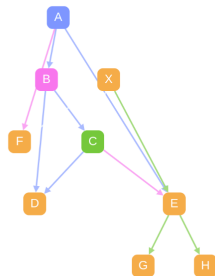
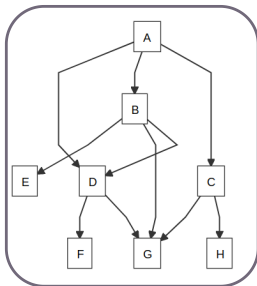
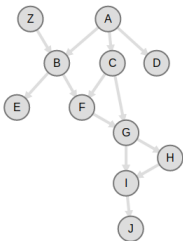
- Python is great but requires coding knowledge
- Limited audience/reproducibility?
- Idea: create a web application
- Users can upload table and explore their data
- Natural choice: Javascript



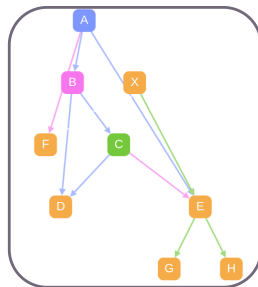
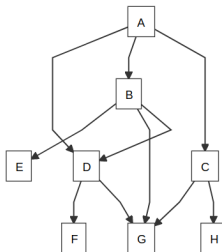
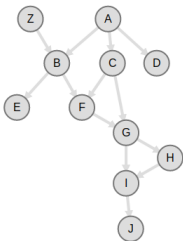
- But which extensions?
- Long phase of exploration
 - D3, Dagre, Cytoscape, ...



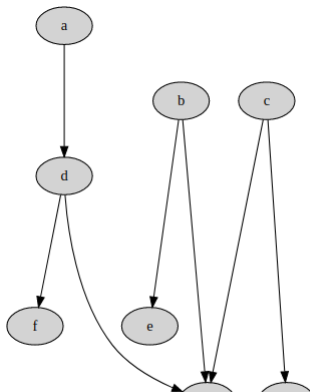
- But which extensions? Not just the same
- Long phase of exploration
 - D3, Dagre, Cytoscape, ...



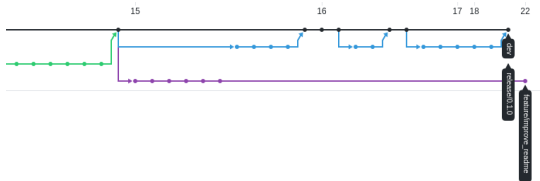
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- We want interactive Graphviz :(
 - Great layout
 - Precise constraints
- Solution: d3-graphviz
 - Direct translations of Graphviz to Javascript with d3-capabilities
 - Combine graphviz layout and d3 visualization/interaction
 - Interactive graph with nice layout

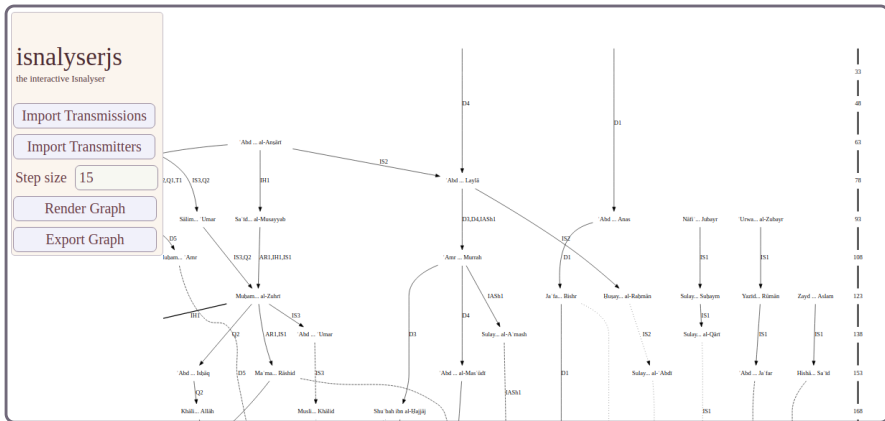


- Translate core functionalities
- Add features for interactive use
- Use Gitflow for feature management
 - Main branch
 - Each new feature as new branch
 - If feature is finished, merge into main branch



- Transparent development history
- Always one working version
- Now at version 0.1.0 - ready for first release

A small snippet



Future of the Isnalyser

What is next?

- Paper in the works for Journal of Open Source Software
- Eventually develop into a collaborative platform
 - Users can upload and share graphs
 - Edit, annotate other's
- Beyond isnād trees
 - I.e. citation graphs

Takeaways

What did we learn from this project?

- Creating a PyPI package is not that hard
- Git flow helps keeping track and maintaining transparency
- Most important part of the project are users
- Interaction happens on many levels
- If you interested in the isanalysers
 - Try them out
 - File github issues
 - Send us mails
 - Extent the code