Math Graph Results

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CONTENTS:

PREREQUISITE

install Pandoc : https://pandoc.org/installing.html

TWO

WINDOWS

Select the latest release on https://github.com/augustin-chevallier/MathResultsGraph/releases and download the win64-MathGraphResult.zip file. Extract files to the folder of your choice. No extra steps are required, to launch the software, open the file TexToResultGraph.exe.

LINUX & MACOS

You will need a valid python install. First, install all the required dependencies beside pandoc, which must be installed beforehand.

```
pip install pypandoc js2py PyQt6 packaging bs4 PyQt6-WebEngine
```

Select the latest release on https://github.com/augustin-chevallier/MathResultsGraph/releases and download the source code. To launch the software, decompress the file and go inside the folder, and launch the python script:

```
python TexToResultGraph.py
```

FOUR

QUICKSTART: ANNOTATING A TEX FILE

4.1 Preparing your tex file

Add the following on your .tex file:

```
\newcommand{\rank}[1]{}
\newcommand{\depends}[1]{}
\newcommand{\weakdepends}[1]{}
\newcommand{\summary}[1]{}
\newcommand{\mainText}[1]{#1}
```

4.2 Adding a node

Supported nodes:

- theorem

- definition

- proposition

- lemma

- remark

- corollary

Nodes annotations:

- label: required. If there is no label, the node is not added.

- depends: optional. A list of labels separated by commas, for example:

- weakdepends: optional. A list of labels separated by commas. The weak dependencies will only be displayed when the use clicks on the node.

- title: optional. Using the usual latex notation [title].

- summary: optional. A summary to be displayed in the node.

- mainText: the main text of the node.

Example (assuming def1 and def2 labels refers to other nodes):

```
\begin{proposition}[title of the proposition]
    \label{prop}
    \depends{def1,def2}
    \summary{summary of proposition}
    \mainText{main text of proposition}
\end{proposition}
```

4.3 Adding section and subsections

Sections and subsections will be displayed in the graph, and nodes will automatically be added to them.

Warning: section and subsections need to have labels!

Remark 2: it is possible to create a dependency on a whole section / subsection using its label.

Example: Creation of Section 1 with two subsections 1 and 2.

```
\section{Section 1}
\label{sec:sec1}

    \subsection{Subsection 1}
    \label{subsec:sub1}

    \subsection{Subsection 2}
    \label{subsec:sub2}
```

BUILD THE GRAPH FROM THE TEX FILE

5.1 First start

Launch TexToResultGraph. The following screen should appear.

1. Click on button "Open .tex file" and select the tex file you want to display as a graph. The selected file should appear/update under the button.

2. Click on button "select build directory" and select the folder where you want the graph to be saved. The selected folder should appear/update under the button.

3. Click on button "Build/update graph from tex", a graph corresponding to the tex file is ploted. This might take a few seconds.

5.2 Move nodes

You can now move nodes to your liking by dragging them. When nodes are in a suitable position, hit the "save positions" button on the top right corner.

On the first start, all your nodes will be in the same place, making it hard to move them. To help you start, you can select the "dagre" layout instead of the "preset" layout in the layout option. This will place nodes according to a tree structure. Note however that this layout do not use saved node positions, and is hence only suitable for the first start.

5.3 Add nodes & update your tex

If you have updated your tex and want to update the graph, simply hit the "Build/update graph from tex" button. Saved node positions will be kept.

SIX

DISPLAY THE GRAPH

To display the graph, simply open the graph_split.html file that was created in your build folder. Note that it works best with Firefox.