

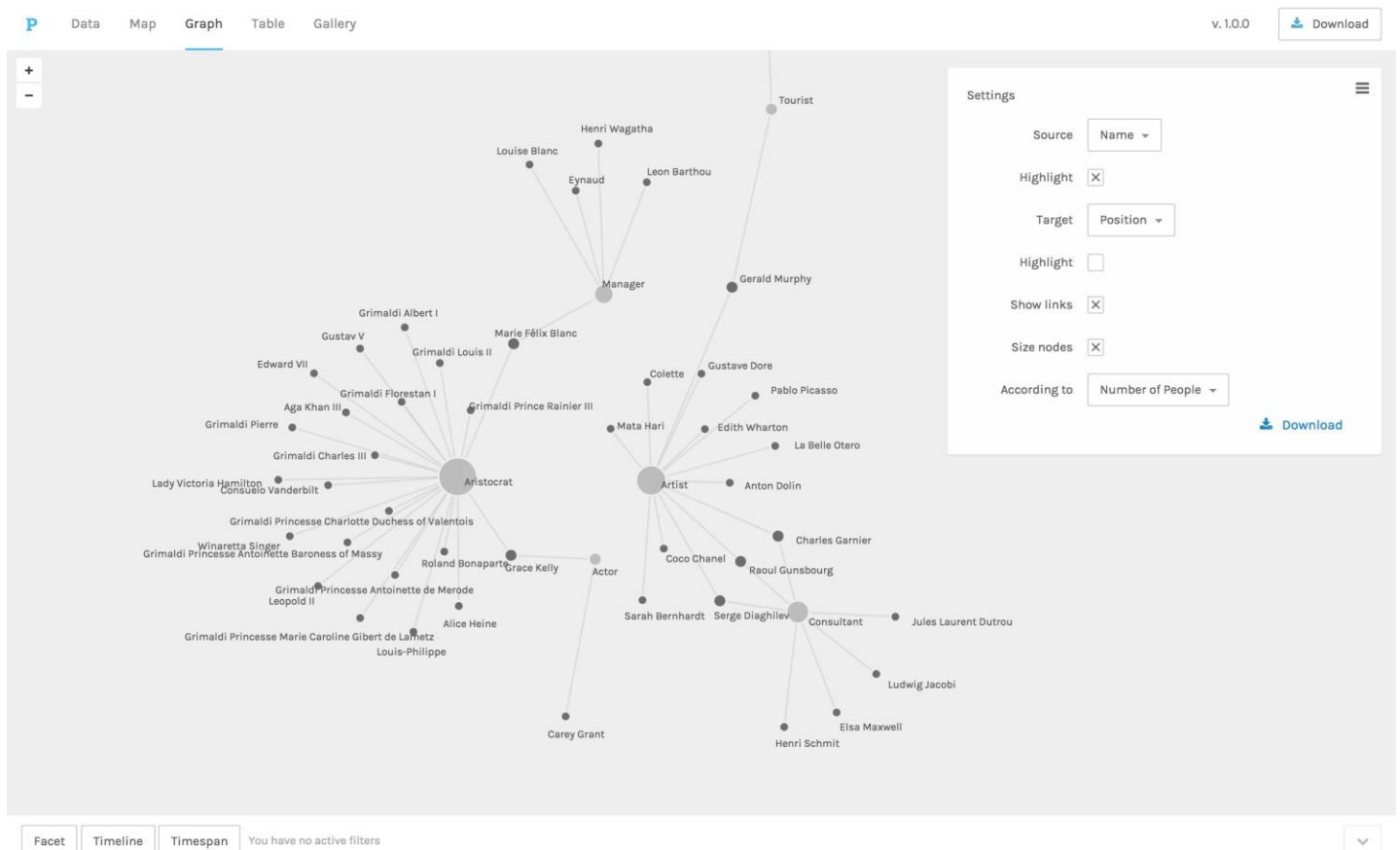
# Network Visualisation

Network visualisations are useful for exploring relationships in your data. Networks can be used to explore interactions between characters, common features of different texts, key (central) features in your data, and much more! <sup>1</sup>

This workshop will use the web-based visualisation tool *Palladio*, developed at Stanford University. <sup>2</sup>

**Palladio:** <http://hdlab.stanford.edu/palladio/>

The network is a visual representation of a graph, where data points (**nodes**) are connected by lines (**links**) that represent their relationship.



<sup>1</sup> For some interesting examples, check out <https://flowingdata.com/category/visualization/network-visualization/>

<sup>2</sup> Adapted from: Marten Düring, "From Hermeneutics to Data to Networks: Data Extraction and Network Visualization of Historical Sources," *The Programming Historian* 4 (2017), <https://programminghistorian.org/lessons/creating-network-diagrams-from-historical-sources>.

## Data as a network

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When you want to represent your data as a network, you have to identify the attributes you will include as **nodes** and the relationships you want to observe as **links** between your **nodes**.

For example, if you were looking to compare keywords in different texts, the **nodes** in your graph would likely be the **texts** and the **keywords**. If *word\_A* is key in *text\_A*, there will be a line connecting them. This is your **link**.

Your data table could look like this:

Text	Keyword
Text_A	Cat
Text_A	Bubble
Text_B	Cat

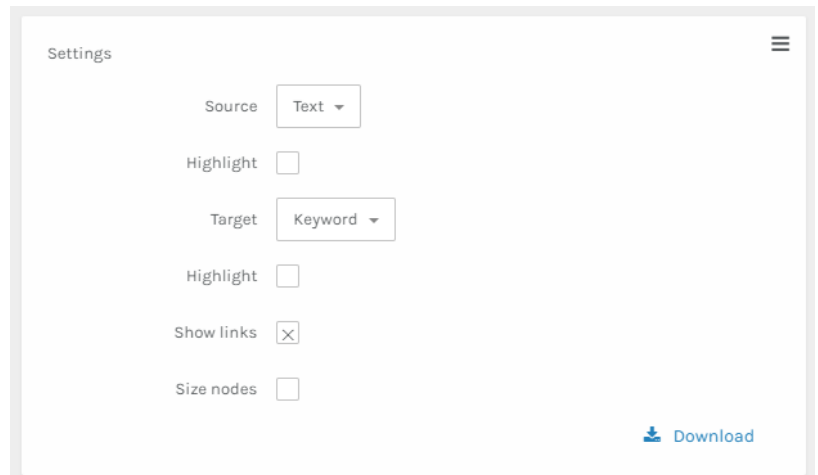
You can paste this table into Palladio, and the program will identify the fields from the table headings.

The screenshot shows the Palladio web interface. On the left, there are three options: 'Create a new project', 'Load an existing project', and 'Try with sample data'. The main area is titled 'Create a new Palladio project by uploading your data from a spreadsheet or flat-file, or load data from a SPARQL endpoint. Not sure how Palladio works?'. Below this, there is a section 'Load .csv or spreadsheet' with instructions: 'Copy and paste out of your spreadsheets, drag-and-drop to upload tabular data (e.g. .csv, .tab, .tsv), or link to a file in a public Dropbox folder to create a new Palladio project. Not sure how to structure your data?'. A text area contains the following data:

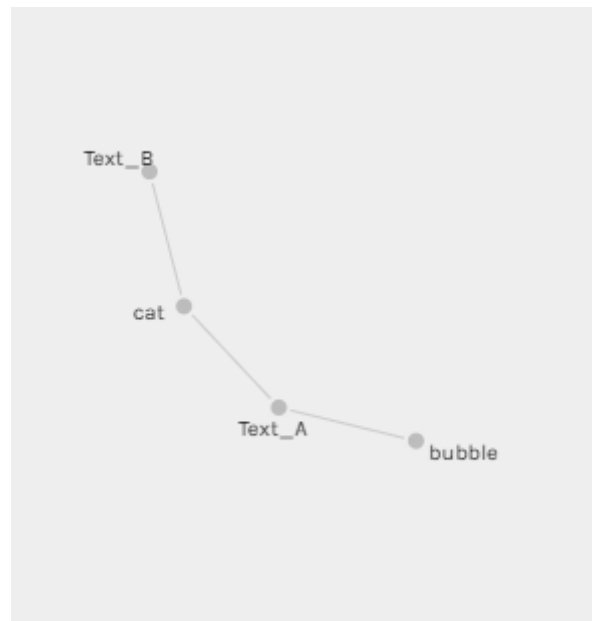
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1 Text Keyword
2 Text_A cat
3 Text_A bubble
4 Text_B cat
5
```

Below the text area is a 'Load' button. At the bottom, there is a note: 'More than one table? No problem! If you have more than one table, start by uploading your primary table. The primary table should contain the main entities you want to visualize. It could be a collection of objects, like persons or letters, or more abstract concepts, like relationships or flows. Once you have uploaded your primary table, you will be able to extend it with additional information from other tables.' At the very bottom, there is a link: 'Load data from a SPARQL endpoint (beta)'.

You will have the option of choosing your **source node** and your **target node** (graph tab).



With these options, your network would look like this:



## Sample data

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To try out a slightly more exciting network, head to the Palladio website and press 'Start'. You will be given the option to import your own data, load a project, or use sample data. Choose 'Try with sample data'.

Spend a bit of time exploring the dataset, and when you are ready, head over to the 'Graph' tab and choose any **source** and **target** from the options available. Experiment with different options.

In addition to the source and target, you can also 'size' the nodes based on a specific parameter. Try this out to see how the networks change.

The next step is visualising your own data as a network!