

Creating a simple dynamic network

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Gephi workshops

I organize online workshops and personalized trainings for Gephi, for beginners and experts. To schedule one or to get more information: analysis@exploreyourdata.com.

1. Goals of this tutorial

- We are going to create one very simple **non dynamic** network (network "A").
- then we will create a modified version of it (network "B").
- in both files, we need to modify a single line.
- finally, we will merge networks A and B, forming a new **dynamic** network evolving from version A to B.



The creation of the 2 networks is not a mandatory step: you can use your own

network files, as long as they are in gexf file format. In this case, [skip to here](#).

We create the networks in this tutorial to provide the most simple and clear case.

2. Open a new project in Gephi

- open Gephi. On the Welcome screen that appears, click on **New Project**

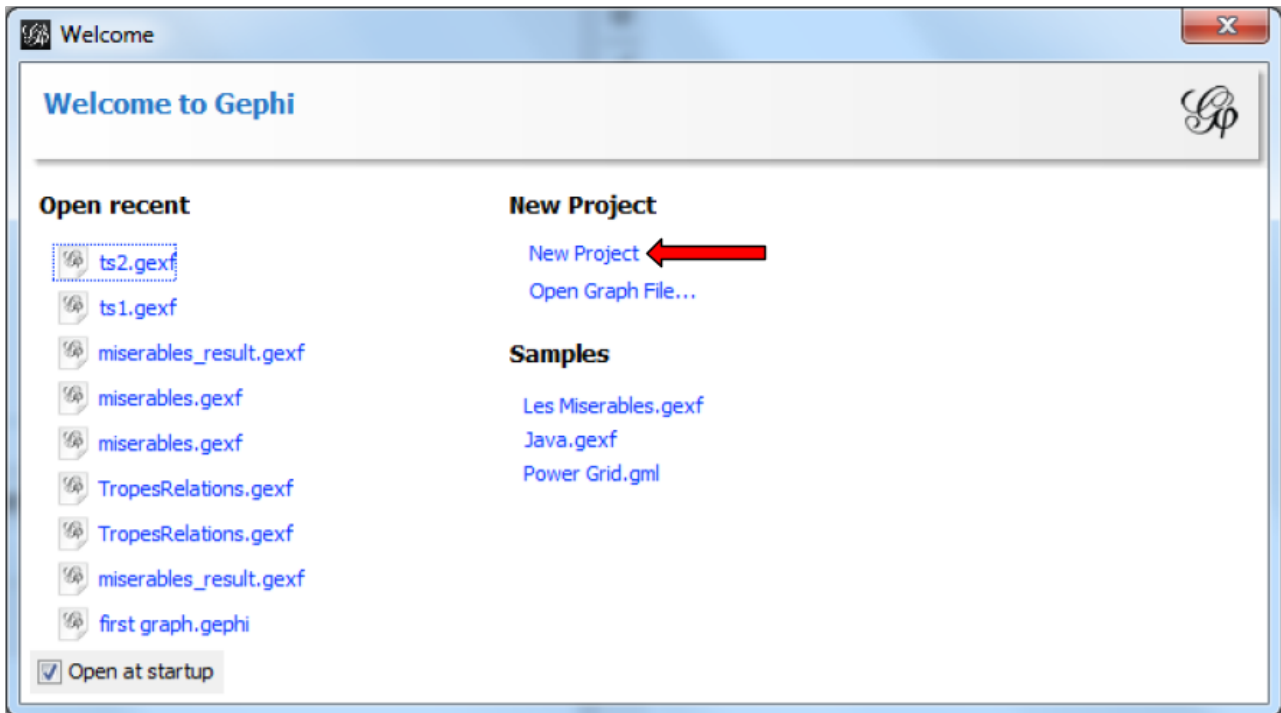


Figure 1. Open a new project

3. creating network "A"

Our project is empty. We can use a simple click-and-point tool to create a network:

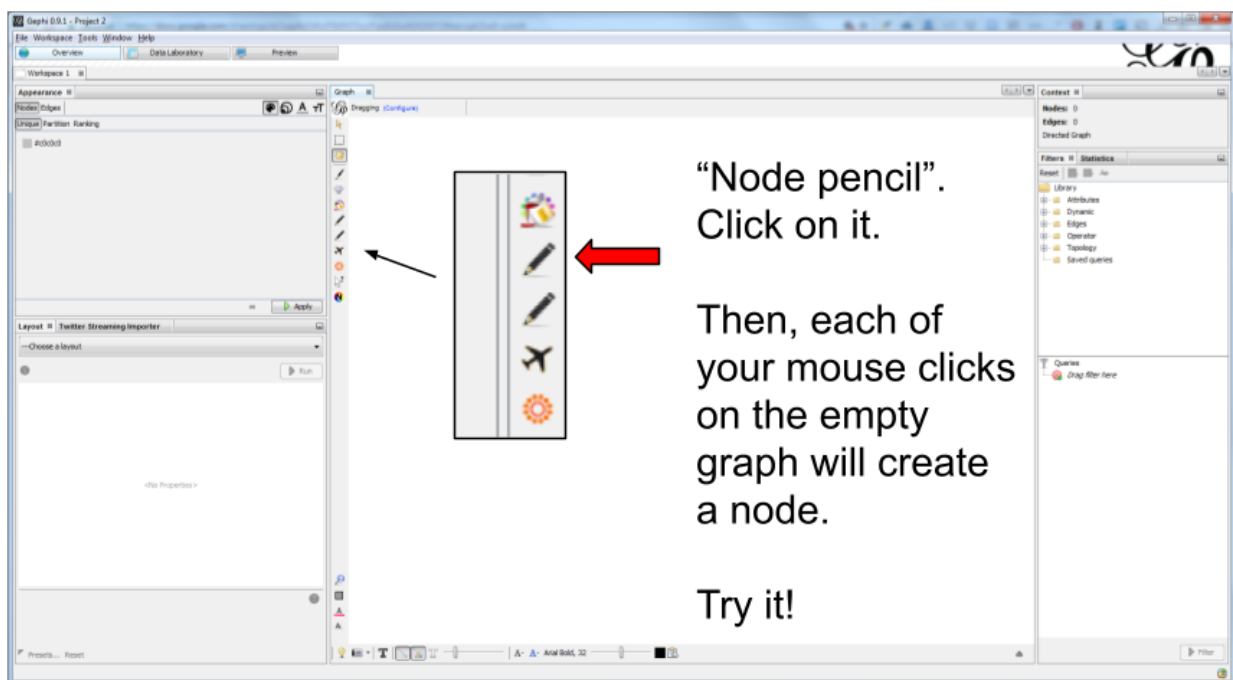


Figure 2. Icon for node creation

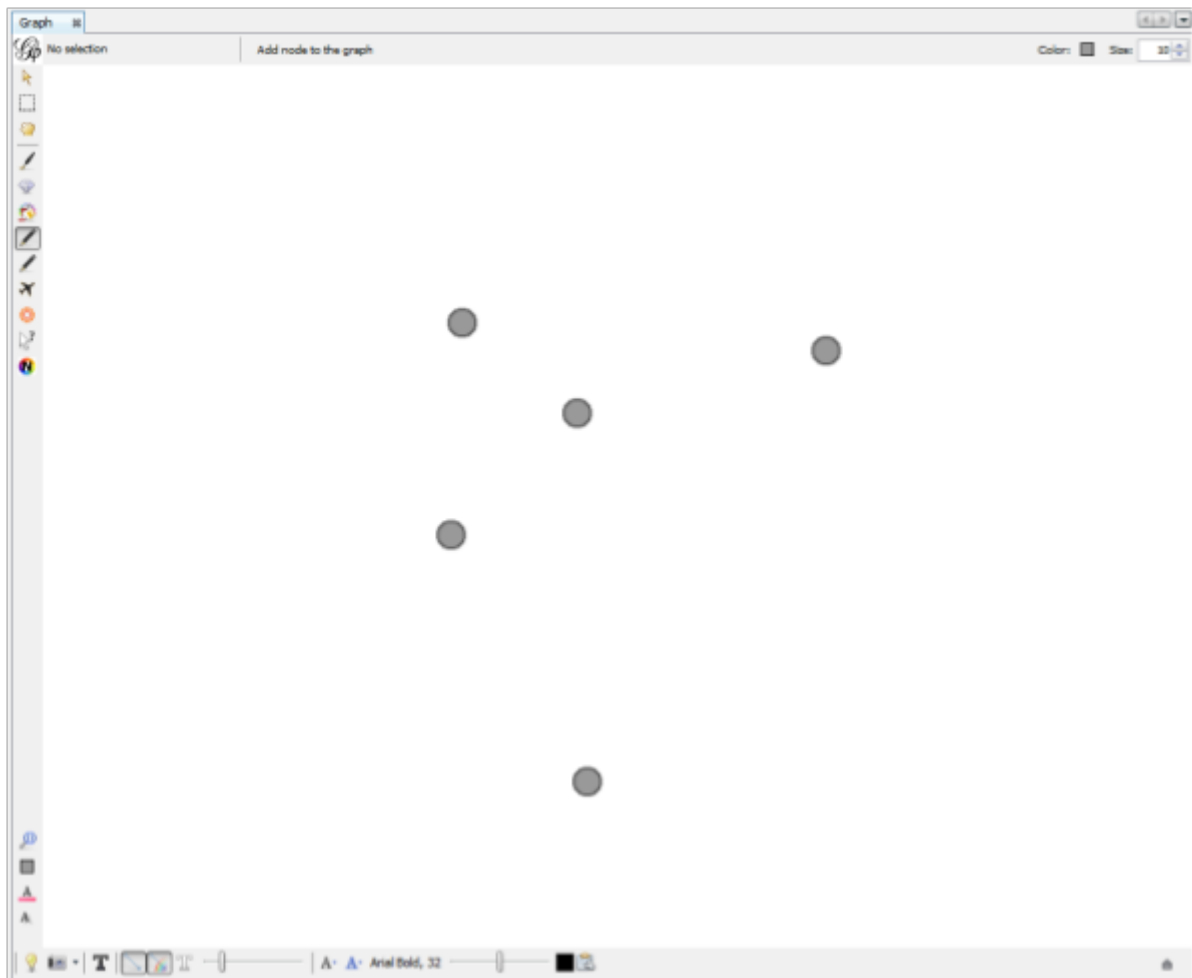
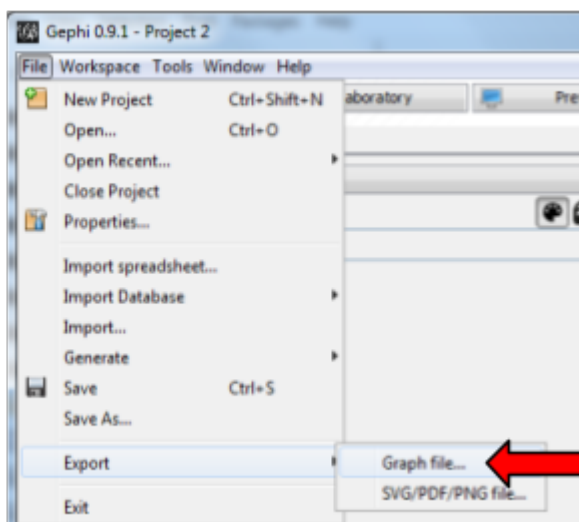


Figure 3. A few nodes have been created

When you have created a couple of nodes, click again on the pencil icon to stop the node creation.

Export the network as a file and call it "network A":



Choose "Graph file..."

Figure 4. Exporting the network

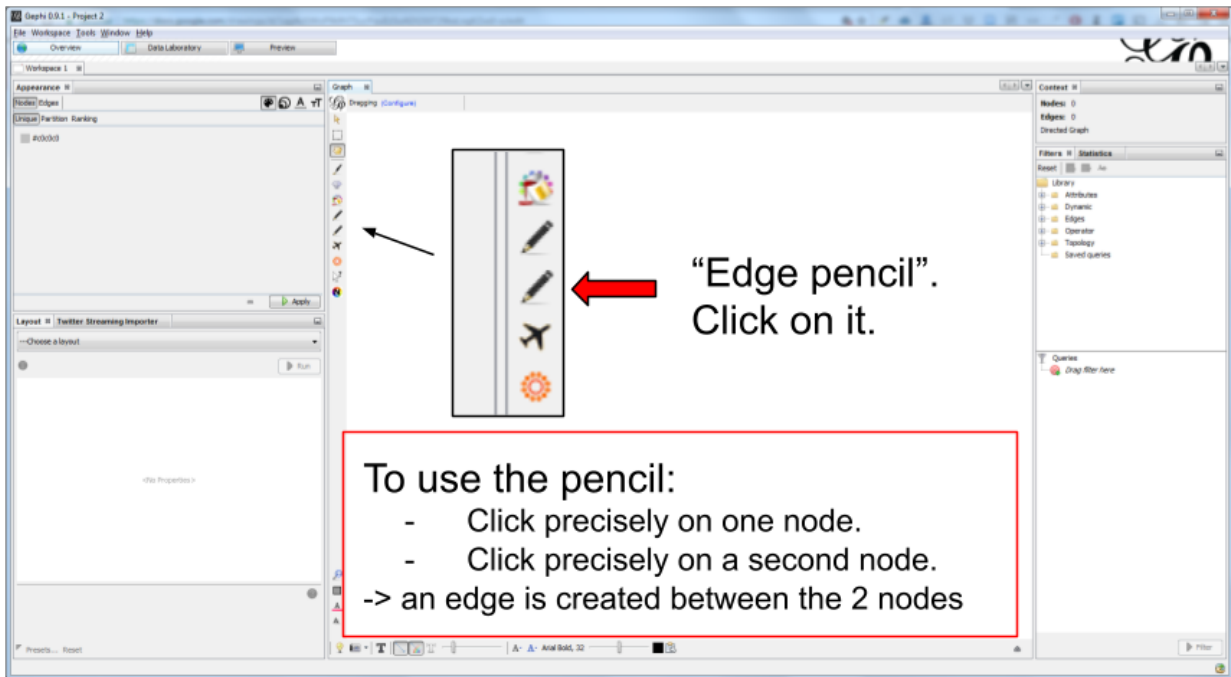


Figure 5. Choosing the gexf file format

Clicking on "Save" saves the file in the folder you chose. You are back to the view on your graph.

4. Creating network "B"

Now, click on the "Edge pencil", just below the "Node pencil we have used (careful, the icons are identical!)

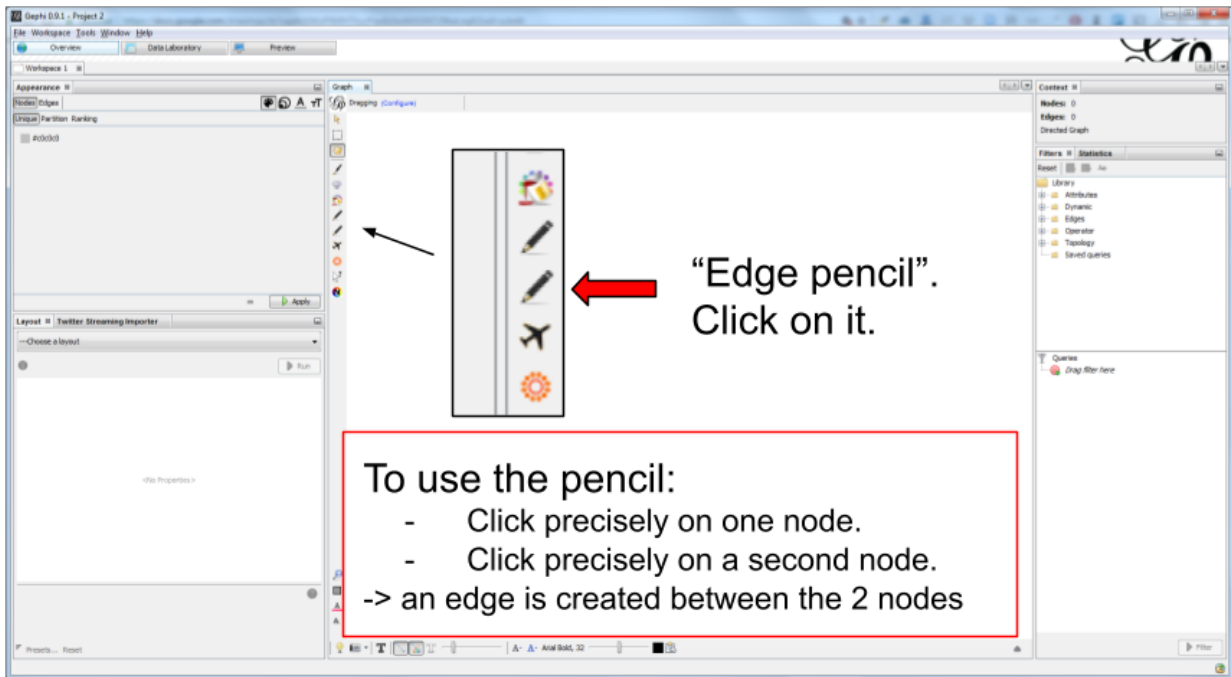


Figure 6. Choosing the gexf file format

Create one edge, or a couple of edges, in this way.

Clicking again on the pencil stops the edge creation by mouse clicks.

Then export the network **in the same folder** where we put the previous file (**File** → **Export** → **Graph File ...**)

This time, name the file 'network B.gexf' and remember to choose the **gexf** file format just like we did before.

5. Modifying just one line in the files network A.gexf and network B.gexf

From your computer, open network A.gexf with a text editor (don't use Microsoft Word!):

(here is how to do it on a [Mac](#), and on [Windows](#)).

```

1  <?xml version="1.0" encoding="UTF-8"?>
2  <gexf xmlns="http://www.gexf.net/1.3" version="1.3" xmlns:viz="http://www.gexf.net/1.3/viz"
3  <meta lastmodifieddate="2017-02-16">
4    <creator>Gephi 0.9</creator>
5    <description></description>
6  </meta>
7  <graph defaultedgetype="directed" mode="static">
8    <nodes>
9      <node id="0">
10       <viz:size value="10.0"></viz:size>
11       <viz:position x="-104.447624" y="123.60604"></viz:position>
12       <viz:color r="153" g="153" b="153"></viz:color>
13     </node>
14     <node id="1">
15       <viz:size value="10.0"></viz:size>
16       <viz:position x="-27.051184" y="62.74228"></viz:position>

```

This is barbaric, but don't worry.
Try to locate in your file what you see in line 7

Figure 7. The network file opened

Delete and replace this line by this one:

```
<graph mode="slice" defaultedgetype="directed" timerepresentation="timestamp"
timestamp="1">
```

See `timestamp="1"` ? It means this will be the first "time slice" of your dynamic network.

Save the file.

Repeat the steps for network B.gexf:

- open the file in a text editor,
- find the line `<graph defaultedgetype="directed" mode="static">`
- replace it by:

```
<graph mode="slice" defaultedgetype="directed" timerepresentation="timestamp"
timestamp="2">
```

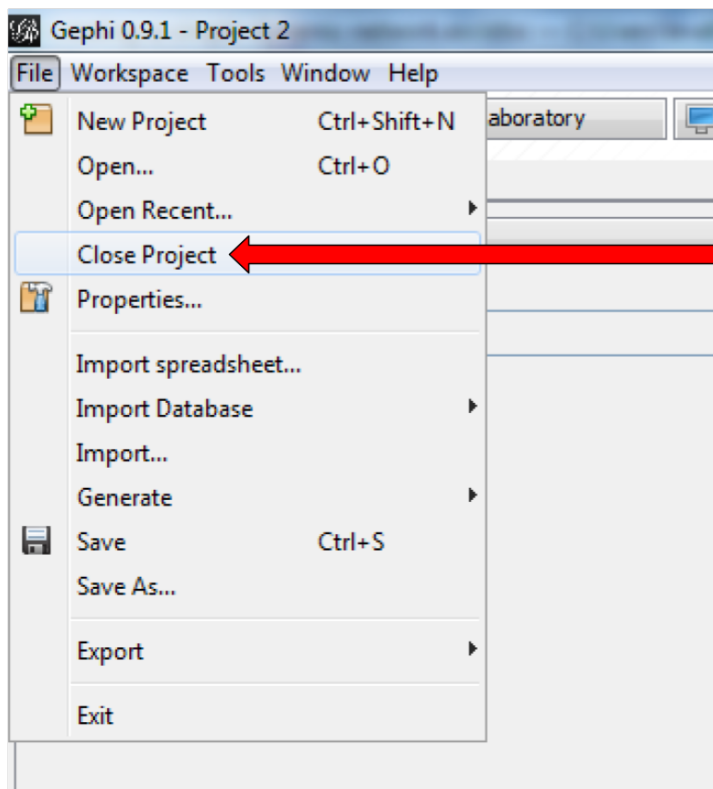
(see that we have `timestamp="2"` here: this is going to be the second time slice!)

- save the file.

6. Merging network "A" and "B" into a dynamic network

We will use the 2 files network A.gexf and network B.gexf that we have created.

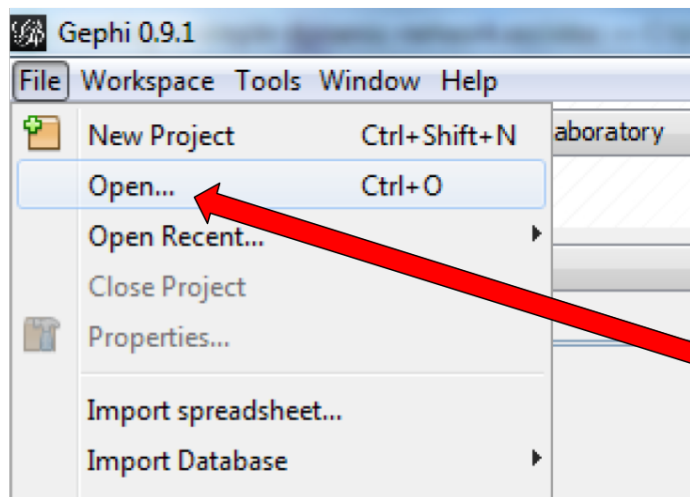
First, let's close the project we have in Gephi, without saving:



A popup window will ask to save the project. Choose 'No'

Figure 8. Closing the current project

Then click on **File** → **Open** and navigate to the folder where network A.gexf and network B.gexf are located:



“Open” and
navigate to
the folder
where you
saved
network A.gexf
And
network B.gexf

Figure 9. Opening files

Here, make sure you select the **2 files at once** (using the key `Ctrl` on pc or `{commandkey}` on mac).

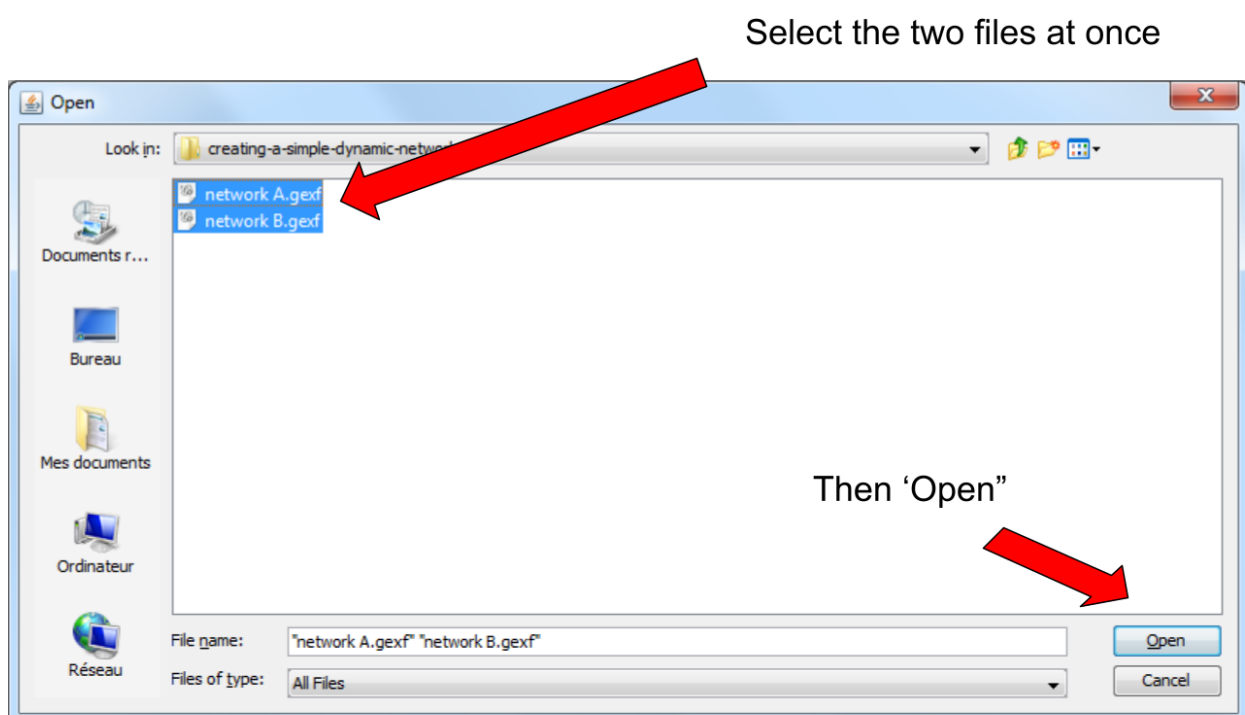


Figure 10. Opening 2 files at once

Opening the files display a report window:

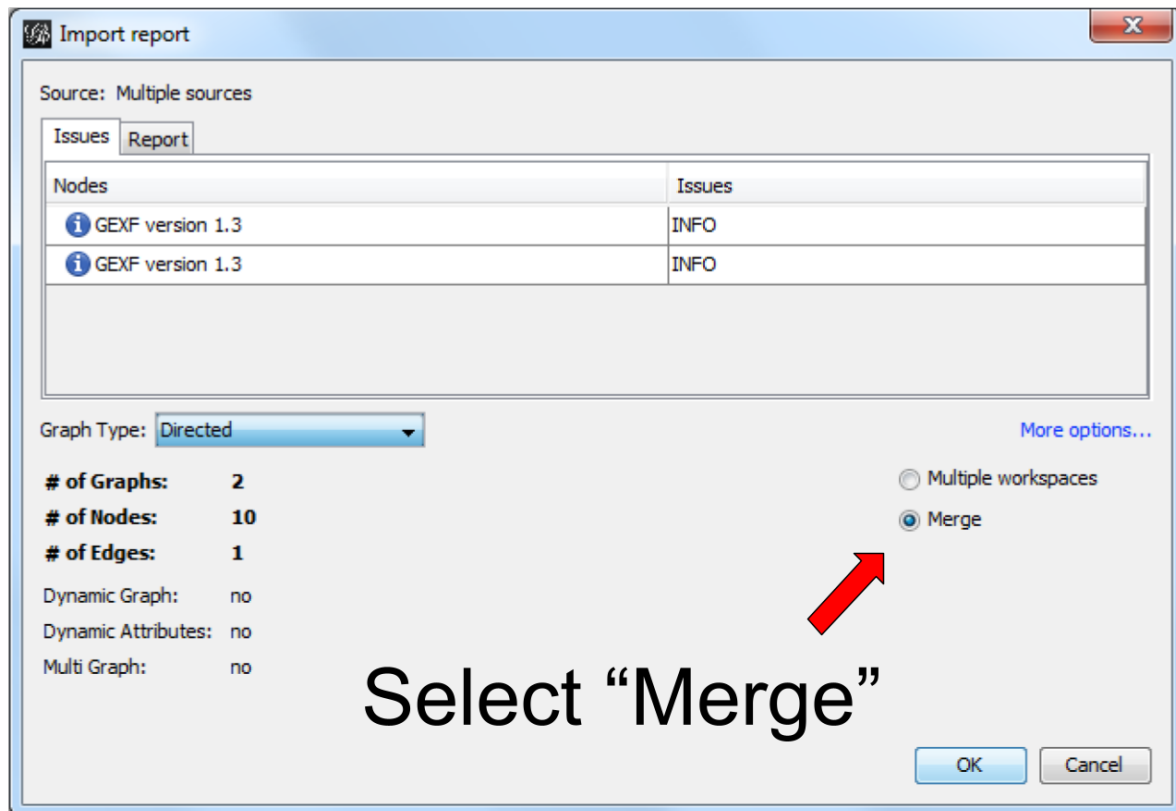


Figure 11. Import report window

7. Enabling the timeline

You should see this button, click on it (if not: something went wrong. Retrace your steps)

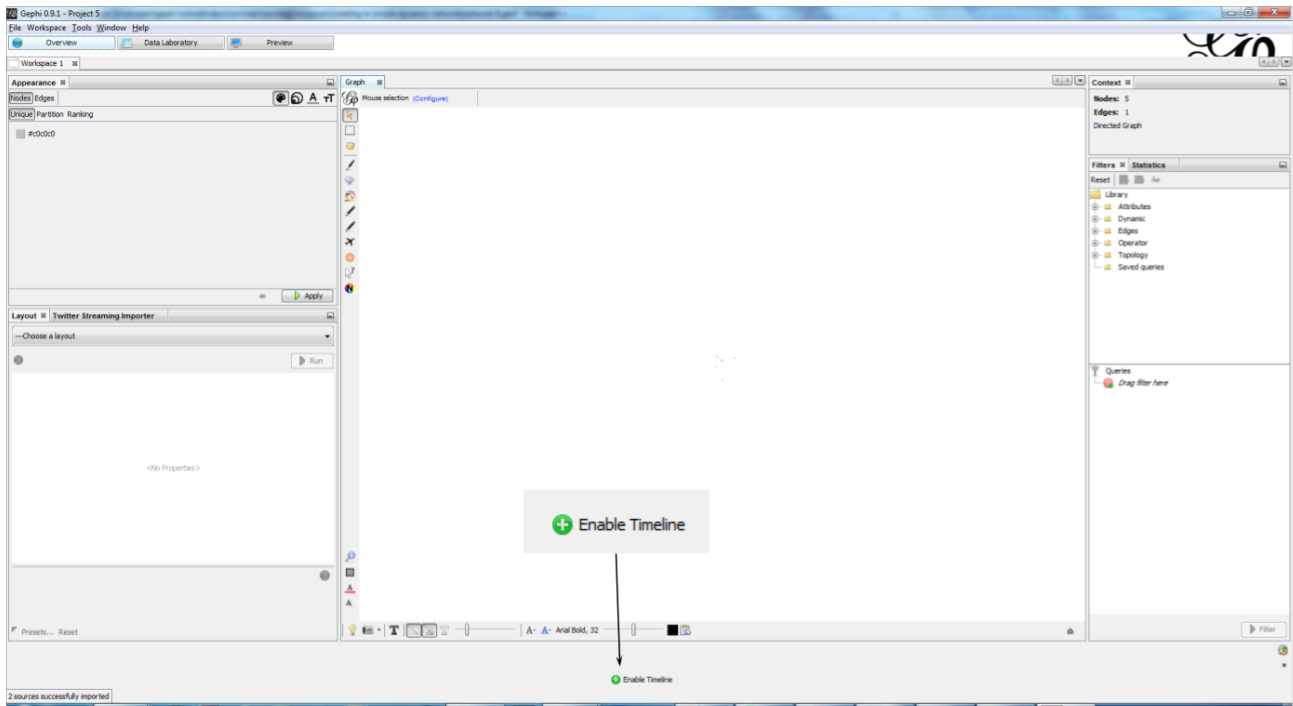


Figure 12. Enable the timeline

Click and slide the right side border of the timeline **to the left**. You should see the edge disappear:

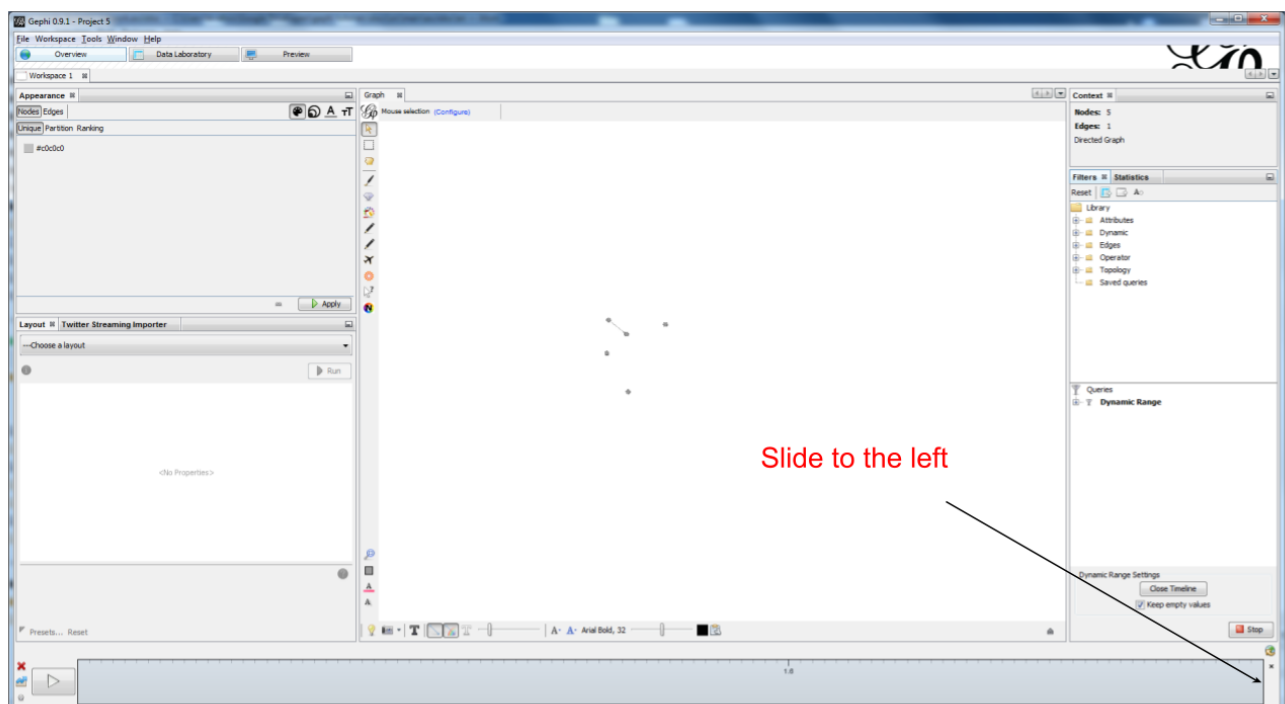


Figure 13. Sliding the timeline

We created a dynamic network. It needs to be animated precisely with the timeline, dynamic attributes should be explored, as well as dynamic layouts.

These features will be explained in the coming tutorials on dynamic networks with Gephi.

8. More tutorials on dynamic networks with Gephi

- [The wiki on gephi.org](#)

to go further

Visit [the Gephi group on Facebook](#) to get help,

or visit [the website for more tutorials](#)

Give a try to [nocodefunctions.com](#), the web application I develop to create networks for Gephi. Click-and-point, free, no registration needed.