

Creating a simple dynamic network

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[gephi logo 2010 transparent] | *gephi-logo-2010-transparent.png*

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**

[Open a new project] | *Open-a-new-project.png*

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:

[Icon for node creation] | *Icon-for-node-creation.png*

Figure 2. Icon for node creation

[A few nodes have been created] | *A-few-nodes-have-been-created.png*

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":

[Exporting the network] | *Exporting-the-network.png*

Figure 4. Exporting the network

[Choosing the gexf file format] | *Choosing-the-gexf-file-format.png*

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!)

[Choosing the gexf file format] | *Choosing-the-gexf-file-format.png*

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](#)).

[The network file opened] | *The-network-file-opened.png*

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:

[Closing the current project] | *Closing-the-current-project.png*

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:

[Opening files] | *Opening-files.png*

Figure 9. Opening files

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

[Opening 2 files at once] | *Opening-2-files-at-once.png*

Figure 10. Opening 2 files at once

Opening the files display a report window:

[Import report window] | *Import-report-window.png*

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)

[Enable the timeline] | *Enable-the-timeline.png*

Figure 12. Enable the timeline

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

[Sliding the timeline] | *Sliding-the-timeline.png*

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](http://gephi.org/wiki/)

the end

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

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