I

## Gephi

- 1. Open Gephi and select New Project
- 2. You should see three tabs across the top:

🅼 Gephi 0.9.1 - Projec	t 4
File Workspace Tools	Window Help
Overview	Data Laboratory Preview
Workspace 1 ×	
Preview Settings $ imes$	- 60 Preview X
🕐 Presets	
a.	Overview: allows you to adjust your nodes
b.	Data Laboratory: allows you to import/format data (.csv)
с.	<b>Preview</b> : lets you see what your visualization will look like
a. File Workspace Tools	Click on the Nodes tab
Overview	Data Laboratory Preview
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## b. Click on Import Spreadsheet

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File Workspace Tools Window Help	
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## c. Upload your file and select Nodes Table from the As Table drop-down menu.

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- d. Click on Next and Finish.
- e. At the bottom of the page, select **Copy data to other column** and select **Character.**

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Gephi will automatically assume that you want to copy the character column to the **Label** column. Select **Ok** to copy the label.

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	23	Kinghamlet		33	KingHamlet	M	Member of the Court	Denmark	0	0	

**f.** Now your Nodes file should look like this:

## **g.** Now click on the **Edges** tab



**ii.** Upload your file and select **Edges Table** from the **As Table** drop-down menu.

M Import spreadsheet				×
Steps	General options			
<ol> <li>General options</li> <li>Import settings</li> </ol>	Choose a CSV file to	) import:		
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	< Back	Next > Finish	Cancel	Help

iii. Click Next and Finish.

4. Now you've got your data loaded, click on the **Overview** tab at the top of the page.

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- a. On the right side of the page, under the **Statistics** tab, select the following:
  - i. Modularity  $\rightarrow$  Run  $\rightarrow$  Ok  $\rightarrow$  Close
    - 1. Community detection algorithm
  - ii. Eigenvector Centrality  $\rightarrow$  Run  $\rightarrow$  Ok  $\rightarrow$  Close
  - iii. Avg. Path Length  $\rightarrow$  Run  $\rightarrow$  Ok  $\rightarrow$  Close

Context ×		-
Nodes: 36		
Edges: 125		
Directed Graph		
Filters Statistics ×		-
Settings		
Network Overview		
Average Degree	Run	۲
Avg. Weighted Degree	Run	۲
Network Diameter	Run	۲
Graph Density	Run	۲
HITS	Run	
Modularity	Run	
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Connected Components	Run	۲
Node Overview		
Avg. Clustering Coefficient	Run	•
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Edge Overview		
Avg. Path Length	Run	9
Dynamic		
# Nodes	Run	۲
# Edges	Run	۲
Degree	Run	۲
Clustering Coefficient	Run	•

- b. On the left side of the page, under the Nodes tab, select Partition.
  - i. From the **Choose an attribute** drop-down menu, select which attribute (modularity class to identify clusters, class, gender, entrances/exits) you want to color code.



c. Still under the **Nodes** tab, select **Size**.



- **d.** Select **Ranking**, and from the **Choose an attribute** drop-down menu select how you want to rank your nodes
  - **i.** Eigenvector centrality: a measure of node importance in a network based on a node's connections.
  - **ii. Betweenness centrality**: measures how often a node appears on shortest paths between nodes in the network
  - **iii.** Closeness centrality: the average distance from a given starting node to all other nodes in the network
  - **iv.** Eccentricity: the distance from a given starting node to the farthest node from it in the network

Gephi 0.9.1 - Project 1	
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Closeness Centrality	
Eccentricity	
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e. Once you select the ranking, set your **min** and **max** size to 20 and 50, and click **apply**.

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Unique Ranking		

- **f.** On the left side of the page, under the **Layout** tab, click on the **Choose a layout** drop-down menu. Select one of the following layouts, and click **Run**.
  - **i.** Force Atlas: made to spacialize small-world netowrks. It is focused on quality to allow a rigorous interpretation of the graph with the fewest biases possible, and a good readability.
    - \*\* if you choose Force Atlas, be sure to select the Attraction Distrib. and Adjust by Sizes boxes.

Layout ×		
Force Atlas		~
0		👂 Run
Force Atlas		
Inertia	0.1	
Repulsion strength	200.0	
Attraction strength	10.0	
Maximum displacement	10.0	
Auto stabilize function	$\checkmark$	
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Autostab sensibility	0.2	
Gravity	30.0	
Attraction Distrib.		
Adjust by Sizes		
Speed	1.0	

- **ii. Fruchterman Reingold:** simulates the graph as a system of mass particles.
- **iii. OpenOrd**: expects undirected weighted graphs and aims to better distinguish clusters. Long edges are cut to allow clusters to separate.

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5. Now select the **Preview Tab** at the top of the page.

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- a. Under Node Labels, change the following:
  - i. Select Show Labels
  - ii. Unselect Proportional Size
  - iii. Change the **Font** to 8 point
- b. Under **Edges**, change the thickness to **.1**.
- c. Hit **Refresh**. You can now see your network graph.

File Workspace Tools Wi	indow Help				
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Thickness	0.1				
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Color	mixed				
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Export: SVG/PDF/PNG	L				

6. If you want to tweak your graph (change the ranking or attribute), go back to the **Overview** menu. You can manipulate the nodes by holding and dragging a node with the right-click button on your mouse.



- 7. To export your network graph, click on File  $\rightarrow$  Export.
  - a. If you want to save a static image, select SVG/PDF/PNG file...
  - b. If you want to save an interactive image, go to Tools → Plugins→Available
     Plugins
    - i. Select SigmaExporter and install
    - When you're ready to export your file, go to File → Export → Sigma.js template
    - iii. Sigma.JS template
    - iv. Fill out the legend and save.