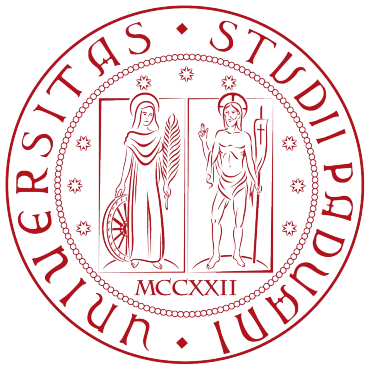

Gephi: a network visualisation tool

DIPARTIMENTO
DI INGEGNERIA
DELL'INFORMAZIONE

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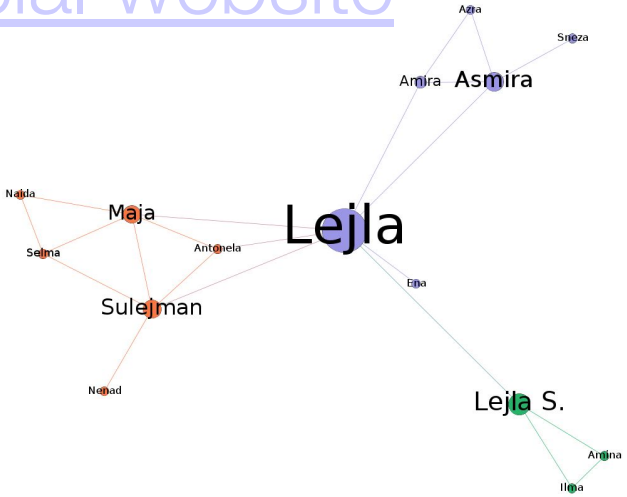
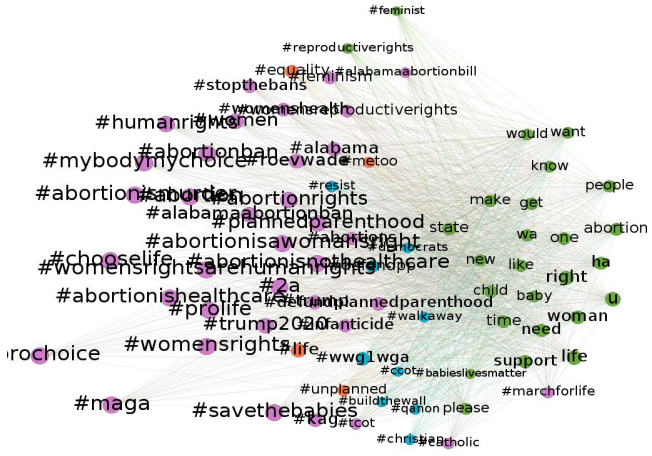
Overview

1. What is Gephi?
2. Gephi download and installation
3. Gephi network visualization demo
4. Dataset generation

What is Gephi?

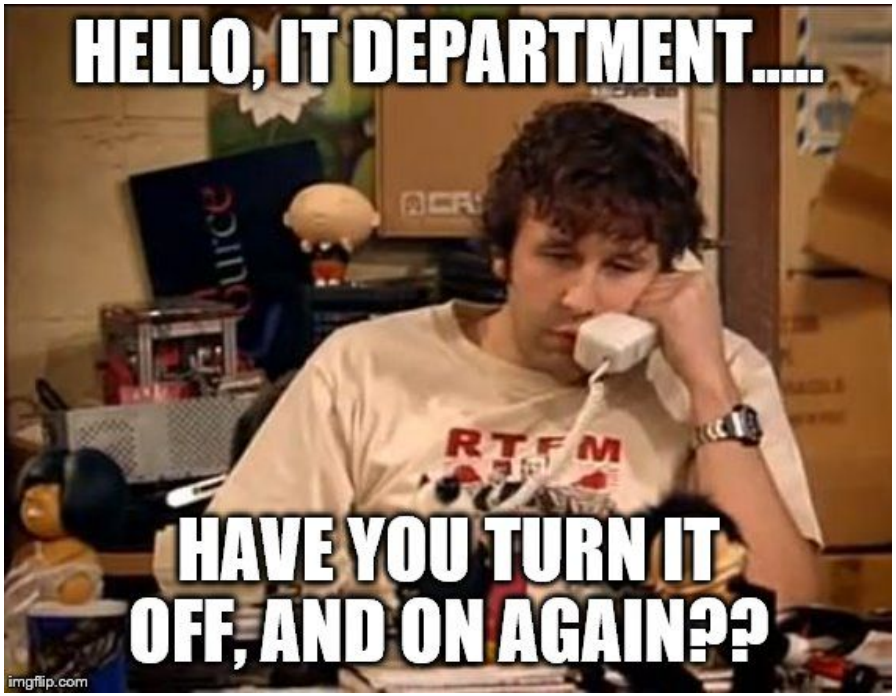
- Gephi is an open-source software for visualization of graphs and networks
- Offers built-in network analysis with few simple clicks
- For more information, examples and tutorials: official website





Gephi instalation

- pretty straightfoward
- if you run into issues contact me :)



The Open Graph Viz Platform

Gephi is the leading visualization and exploration software for all kinds of graphs and networks. Gephi is open-source and free.

Runs on Windows, Mac OS X and Linux.

Learn More on Gephi Platform »

Download FREE
Gephi 0.9.2

Release Notes | System Requirements

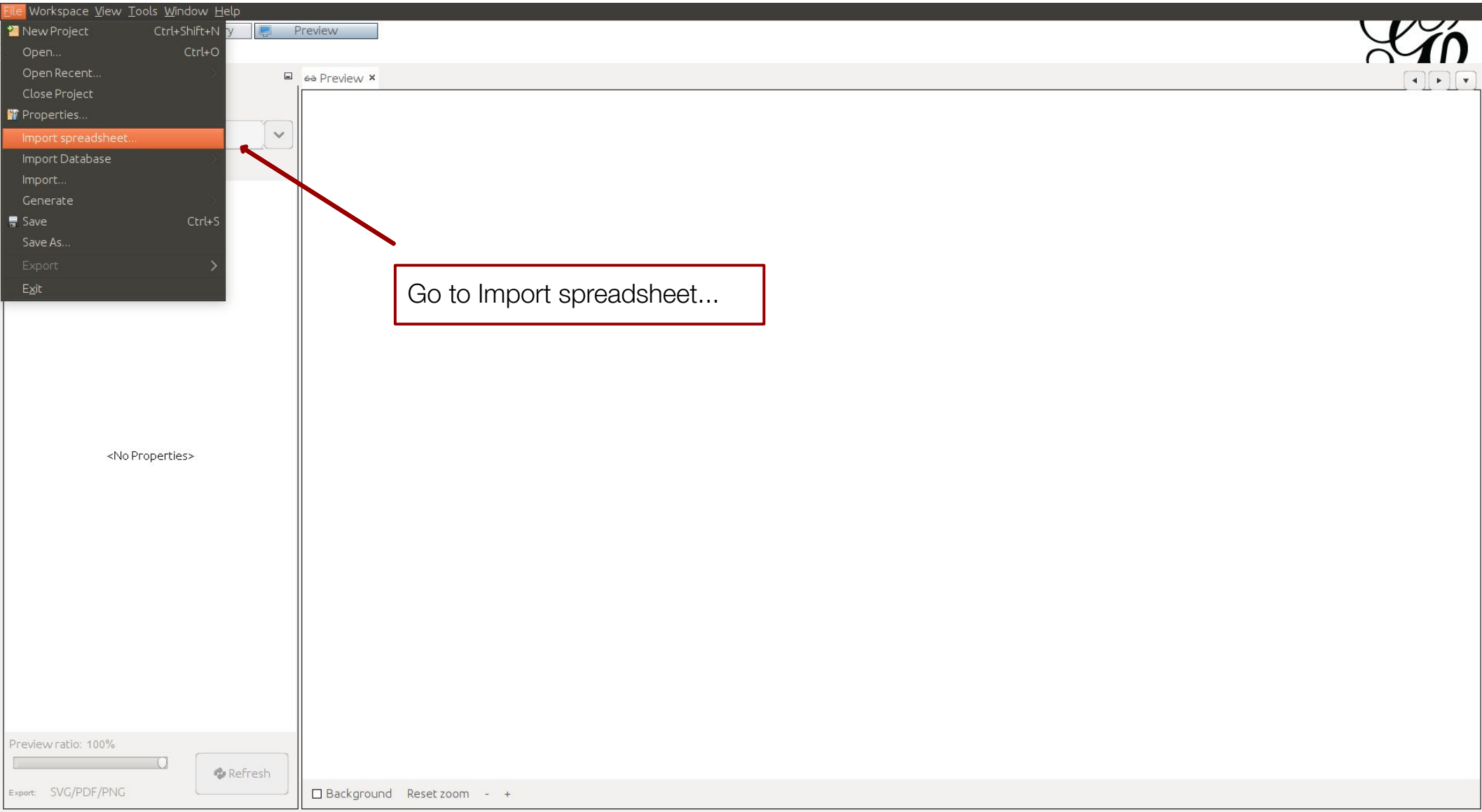
- Features
- Quick start
- Screenshots
- Videos

Gephi nw visualization demo

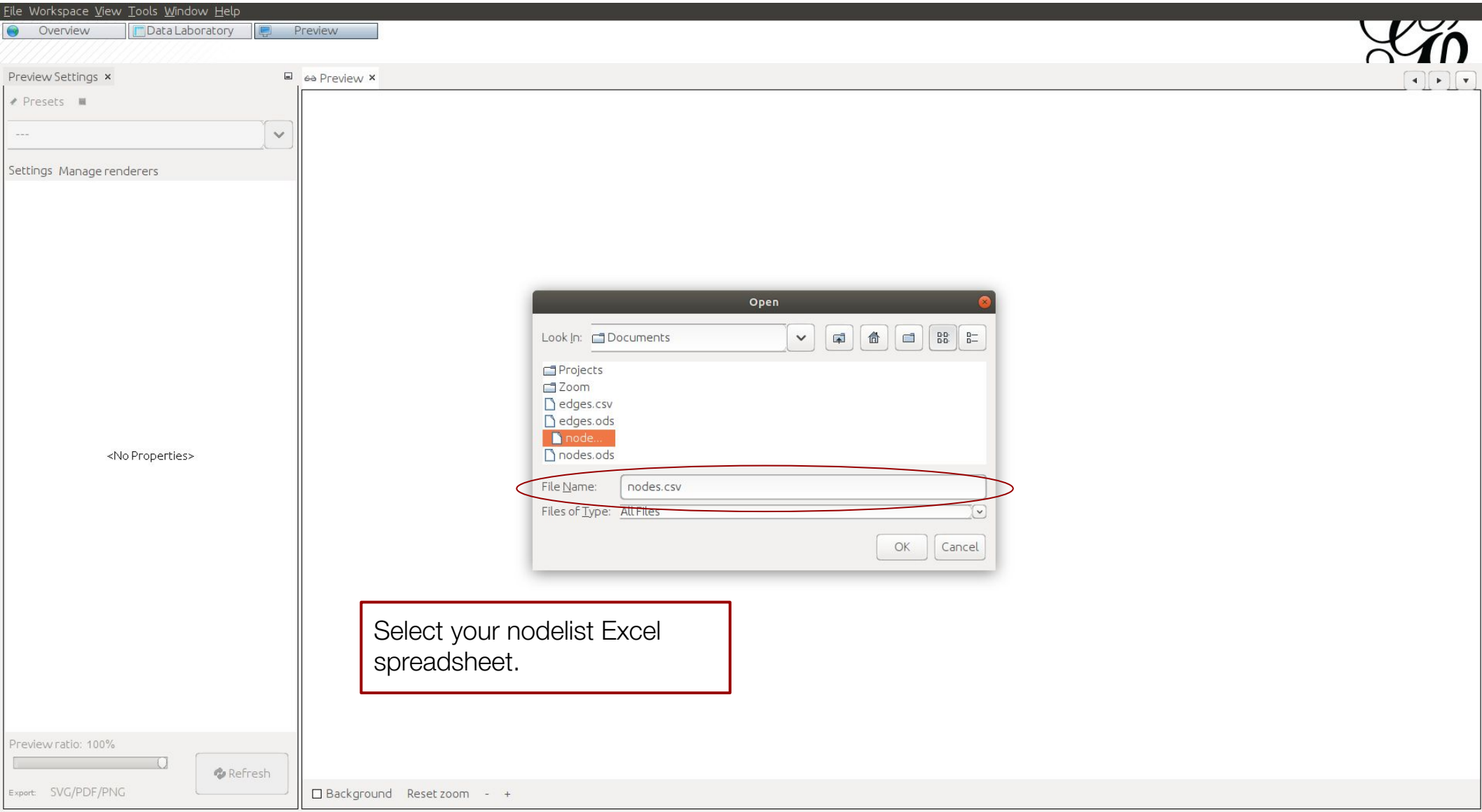
What we'll do:

- start from a (small) friendship network
- import nodes and edges
- adjust graph layout
- set node color according to degree
- set node size according to betweeness centrality
- detect communities
- set node color according to community
- export graph image

Gephi nw visualization demo

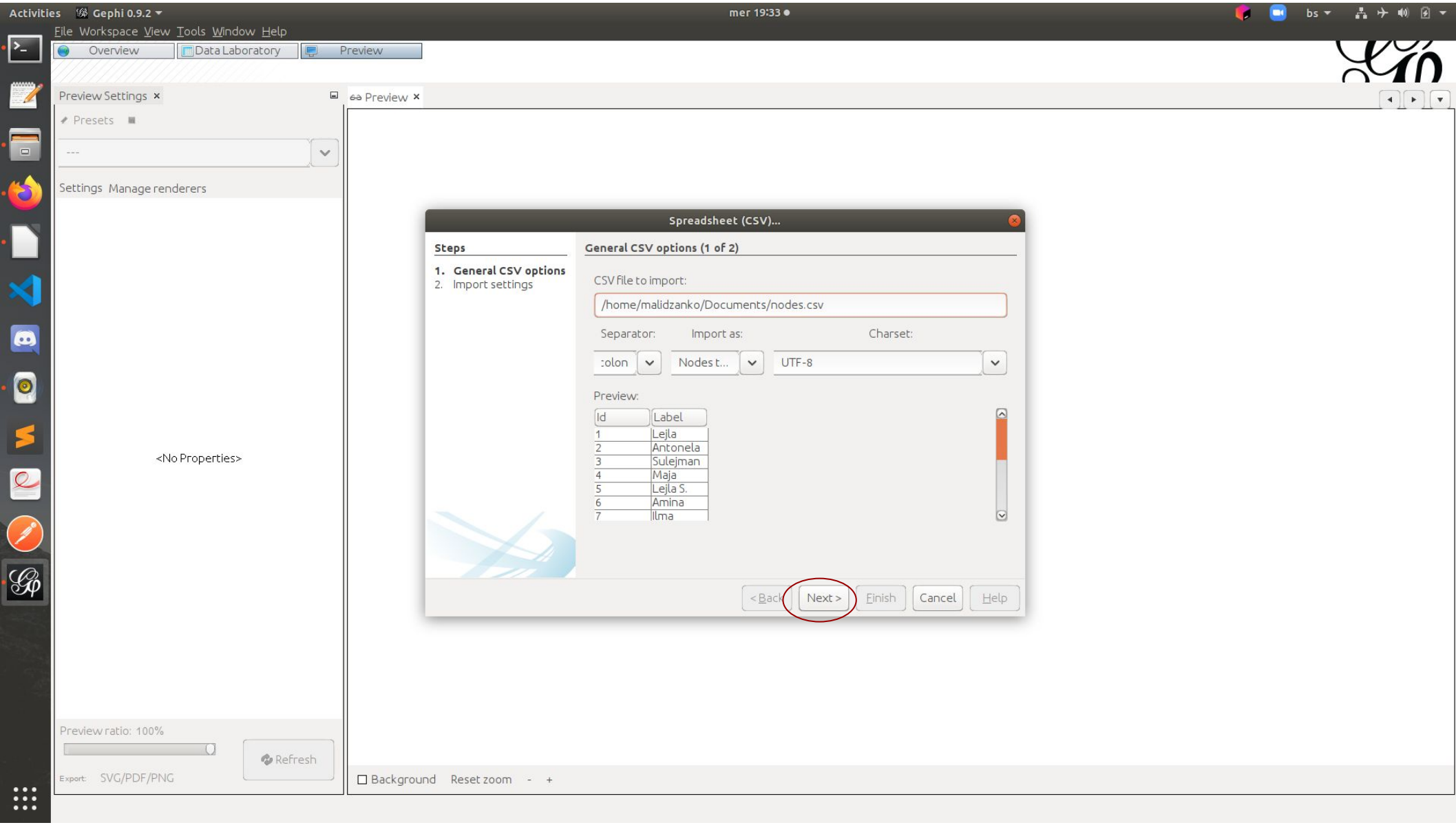


Gephi nw visualization demo

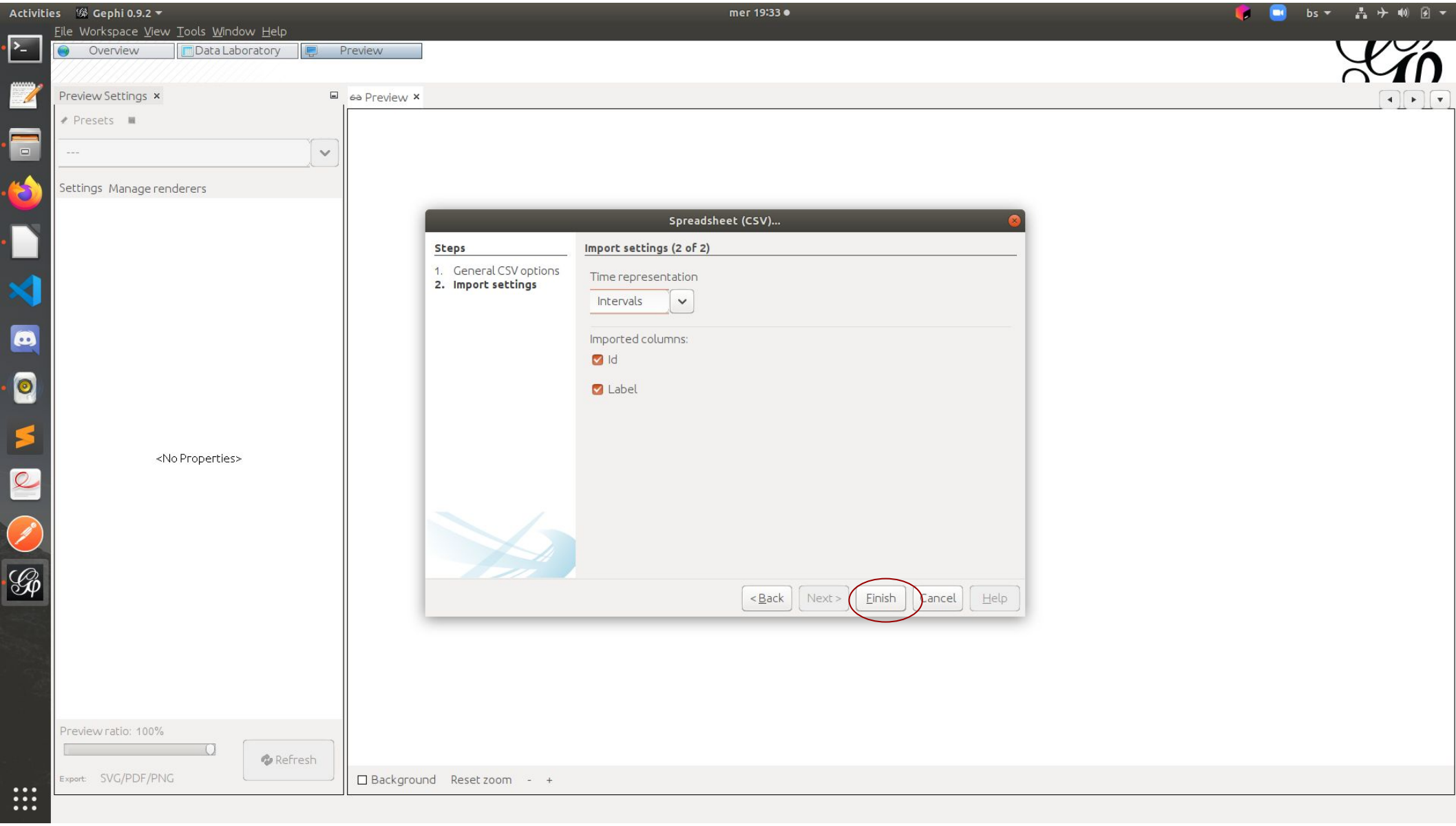


Select your nodelist Excel spreadsheet.

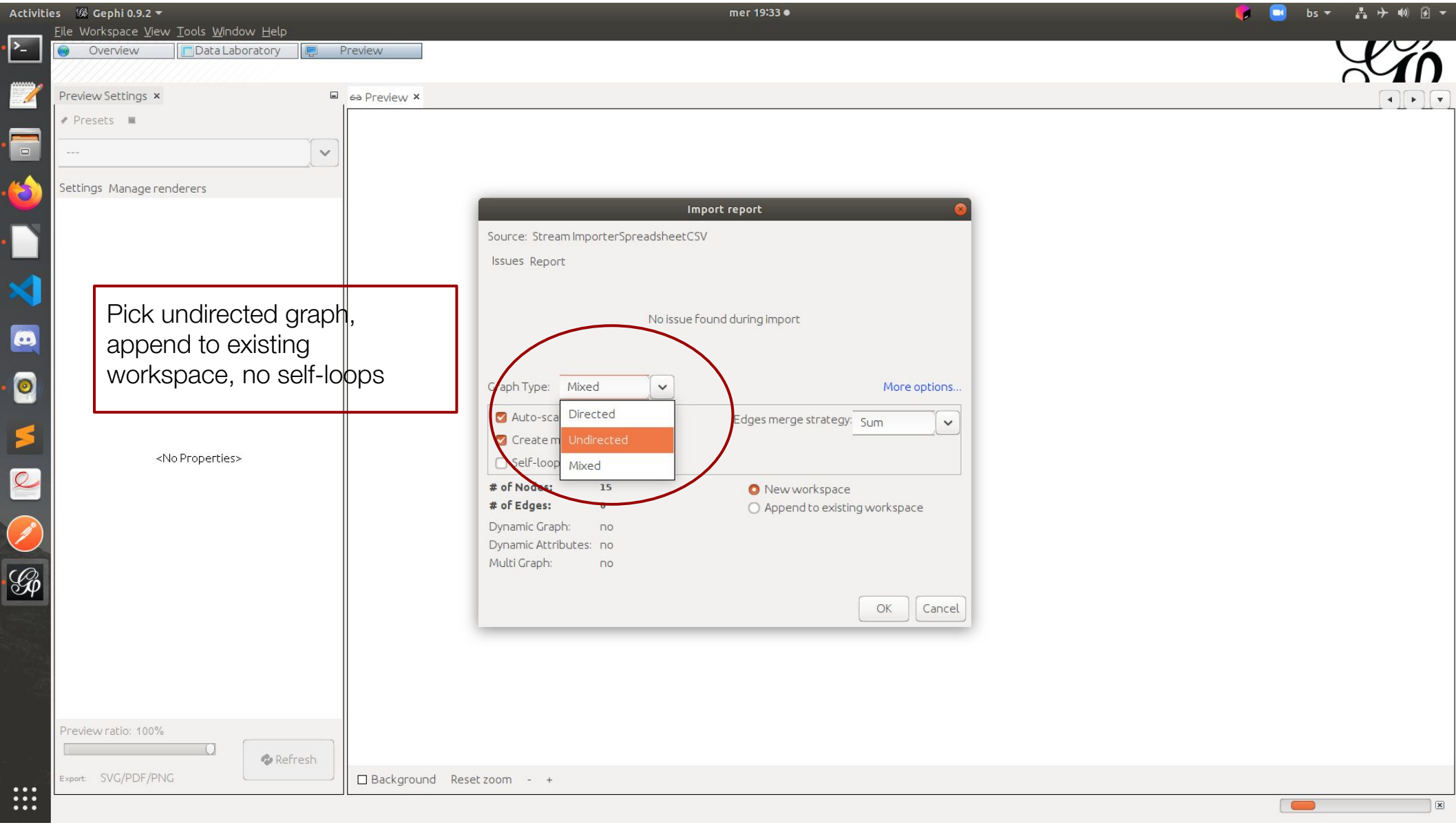
Gephi nw visualization demo



Gephi nw visualization demo

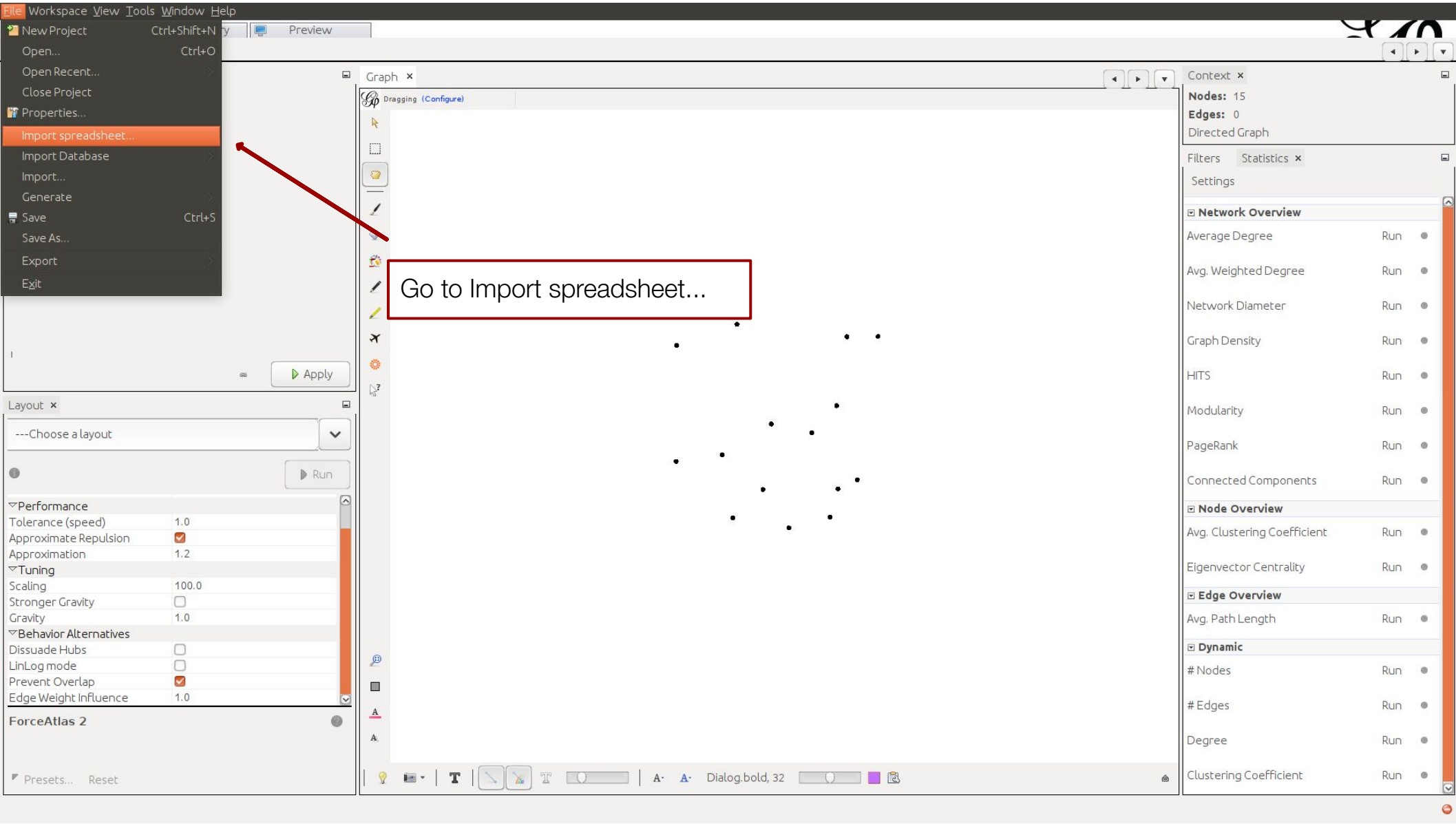


Gephi nw visualization demo

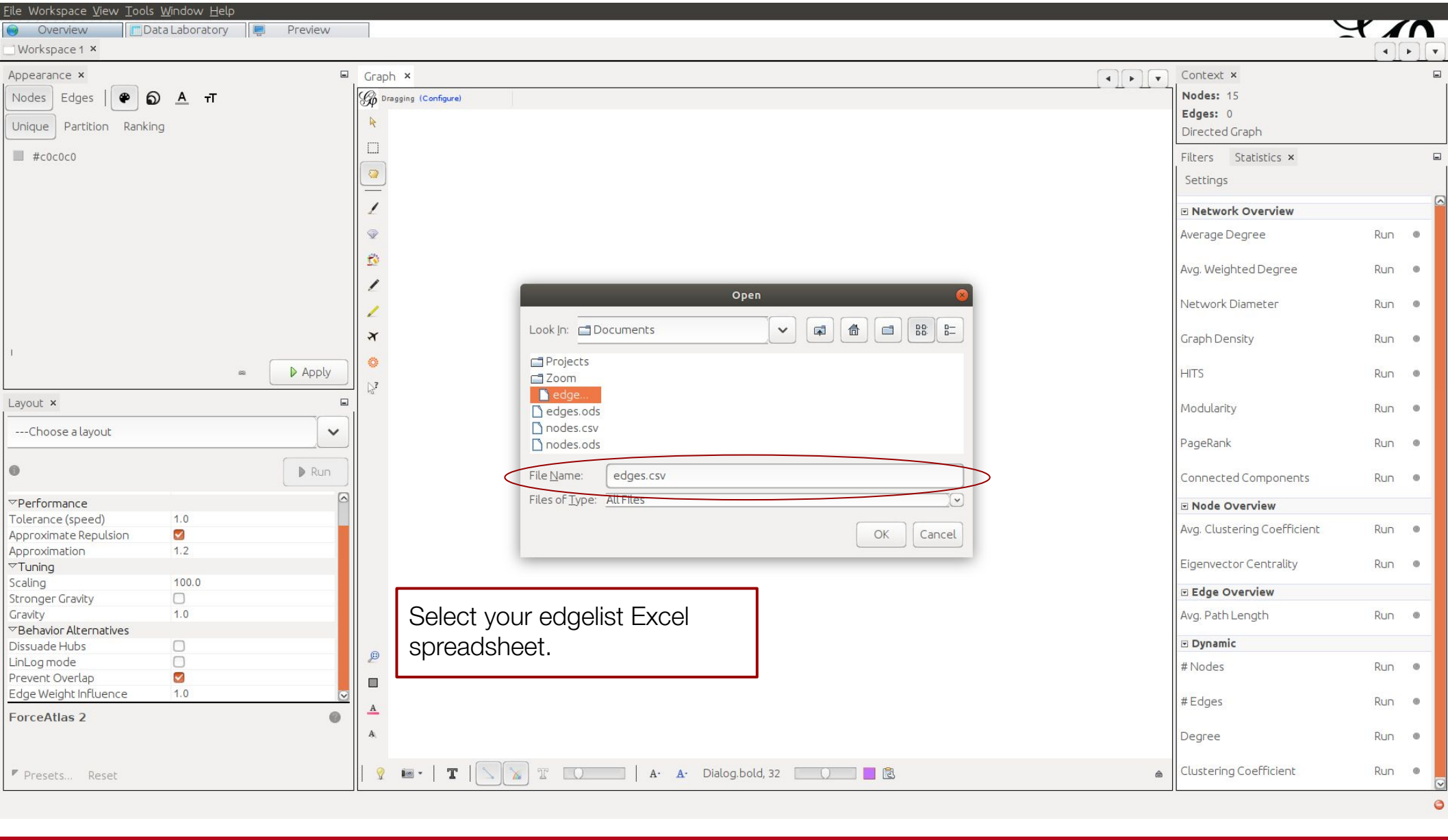


Pick undirected graph, append to existing workspace, no self-loops

Gephi nw visualization demo

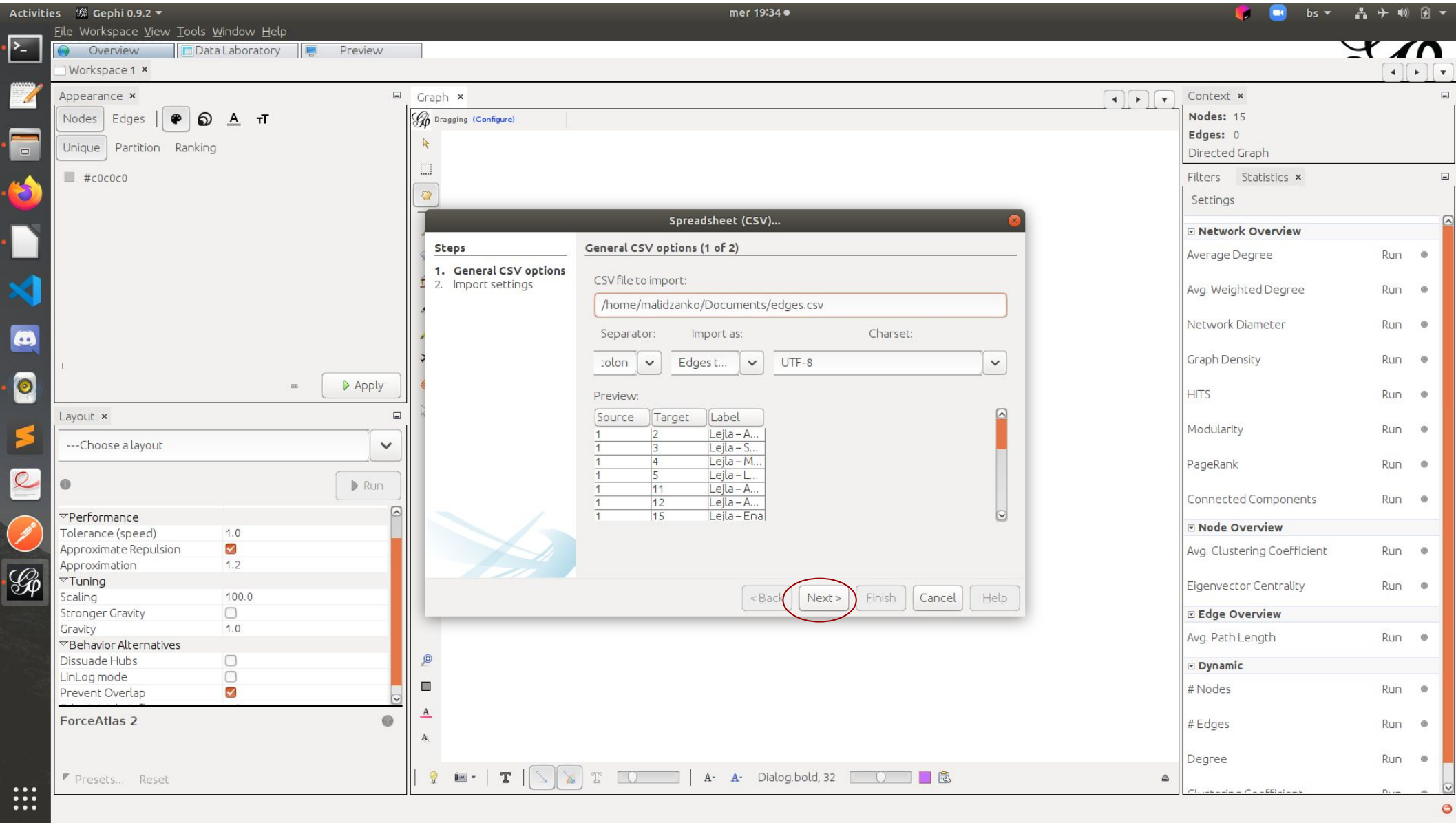


Gephi nw visualization demo

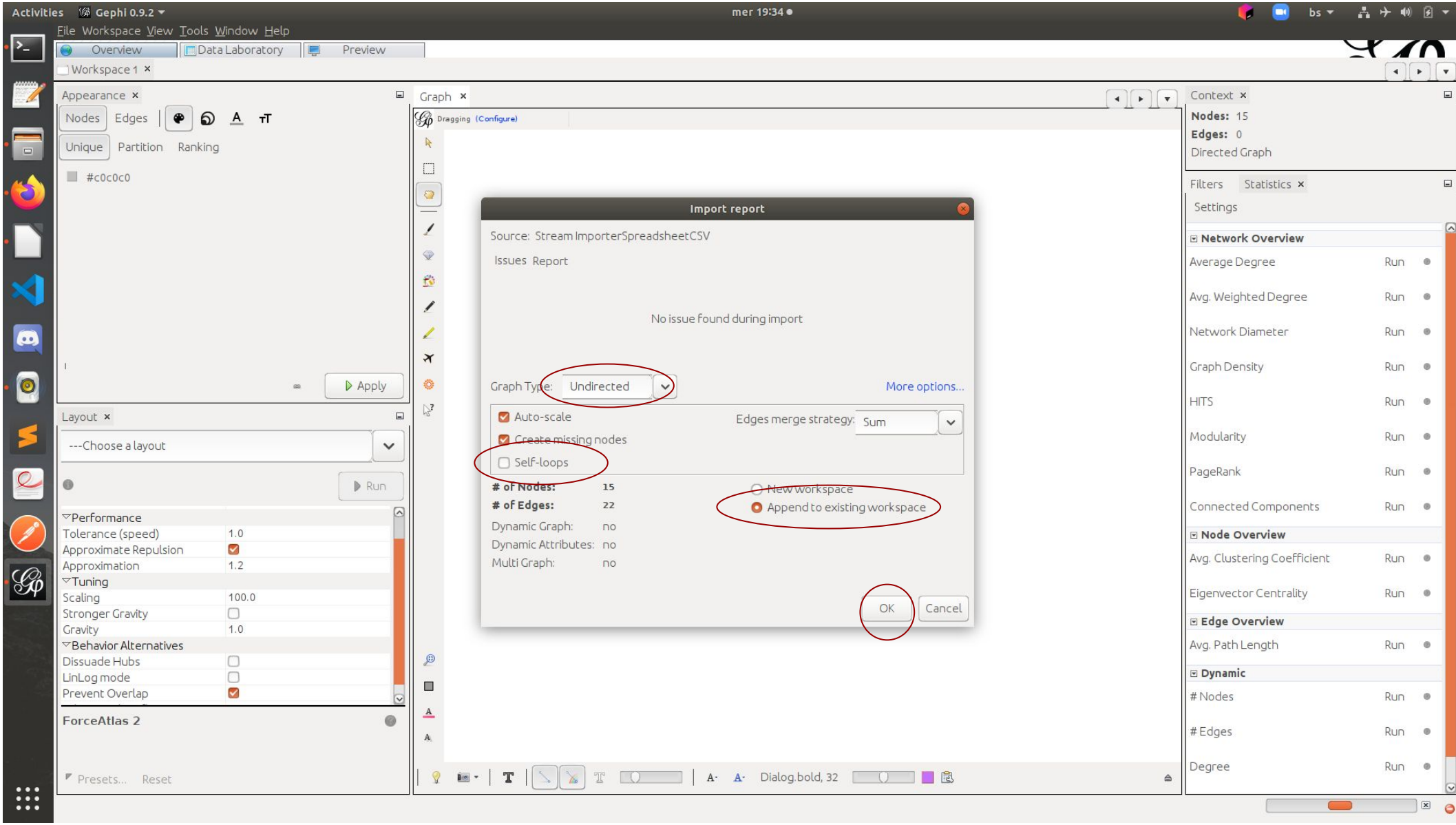


Select your edgelist Excel spreadsheet.

Gephi nw visualization demo



Gephi nw visualization demo



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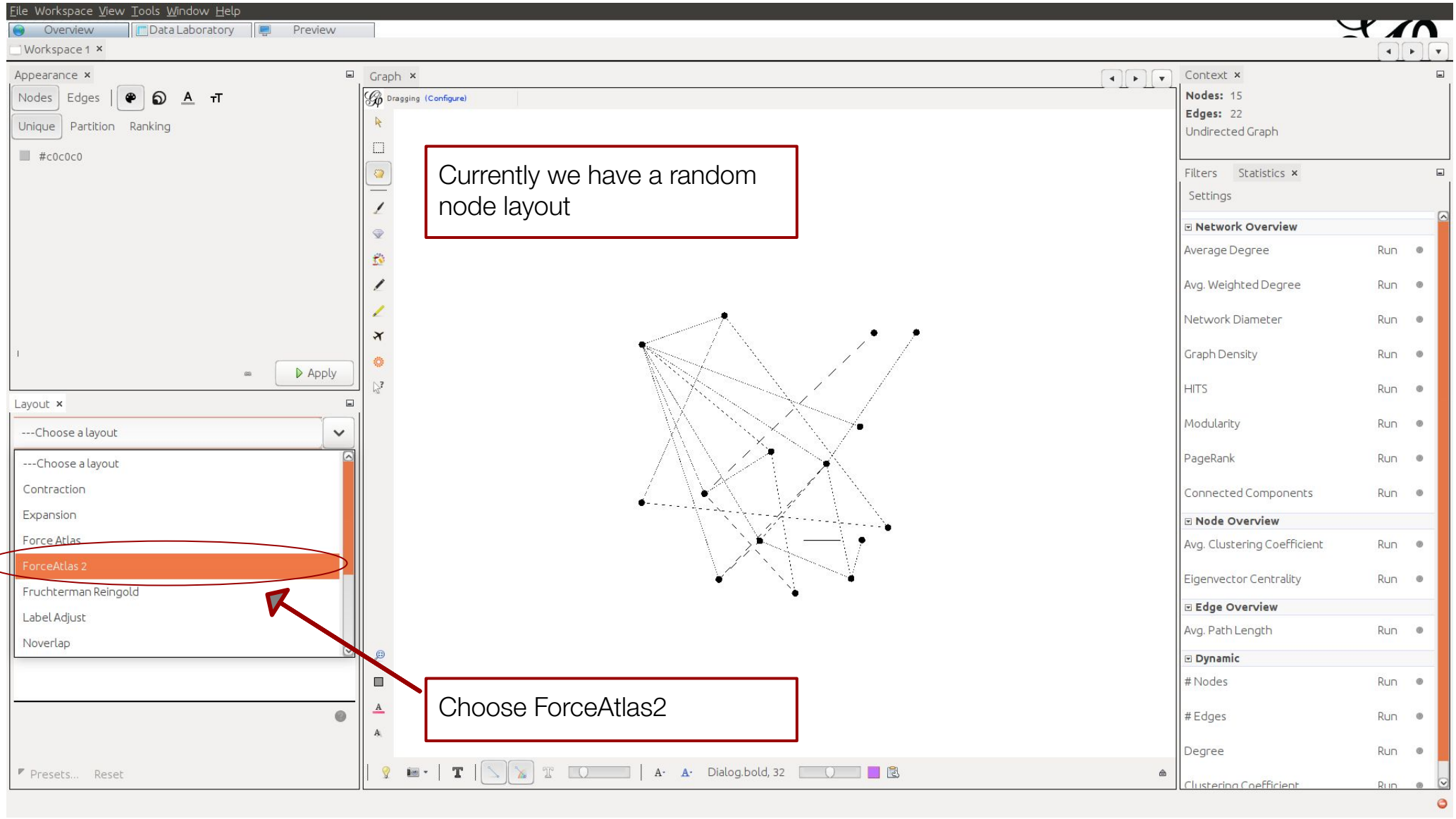
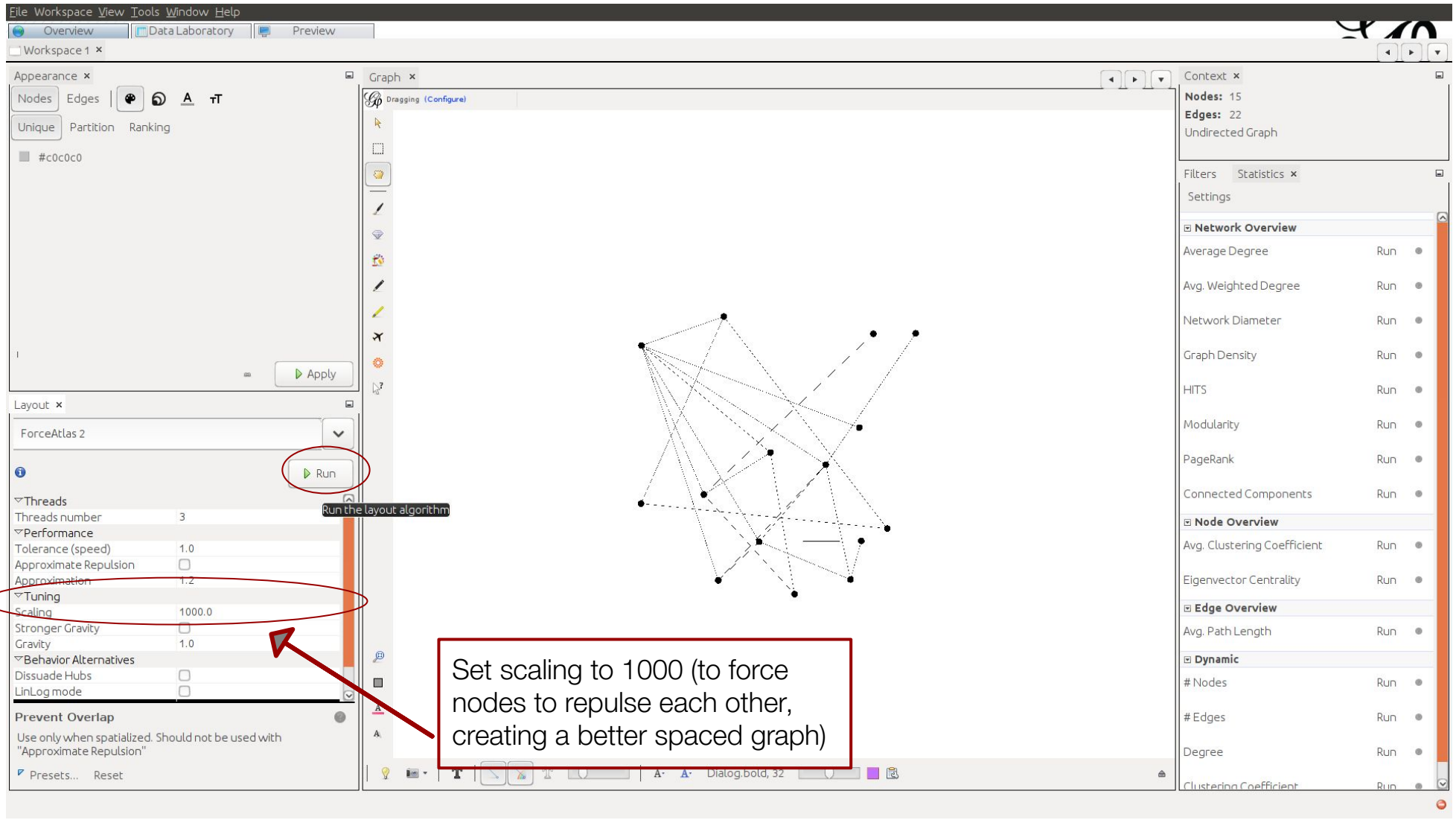
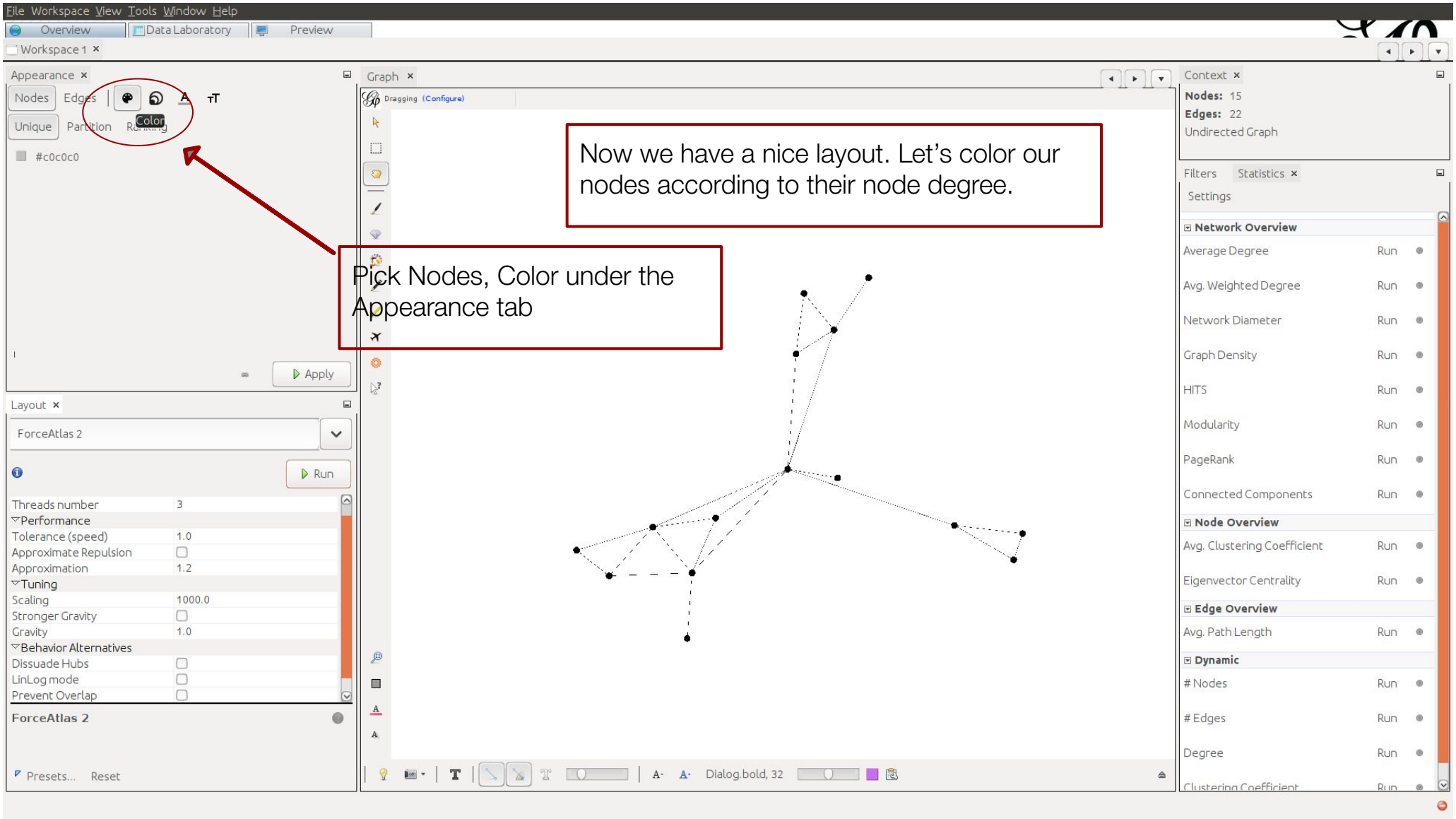


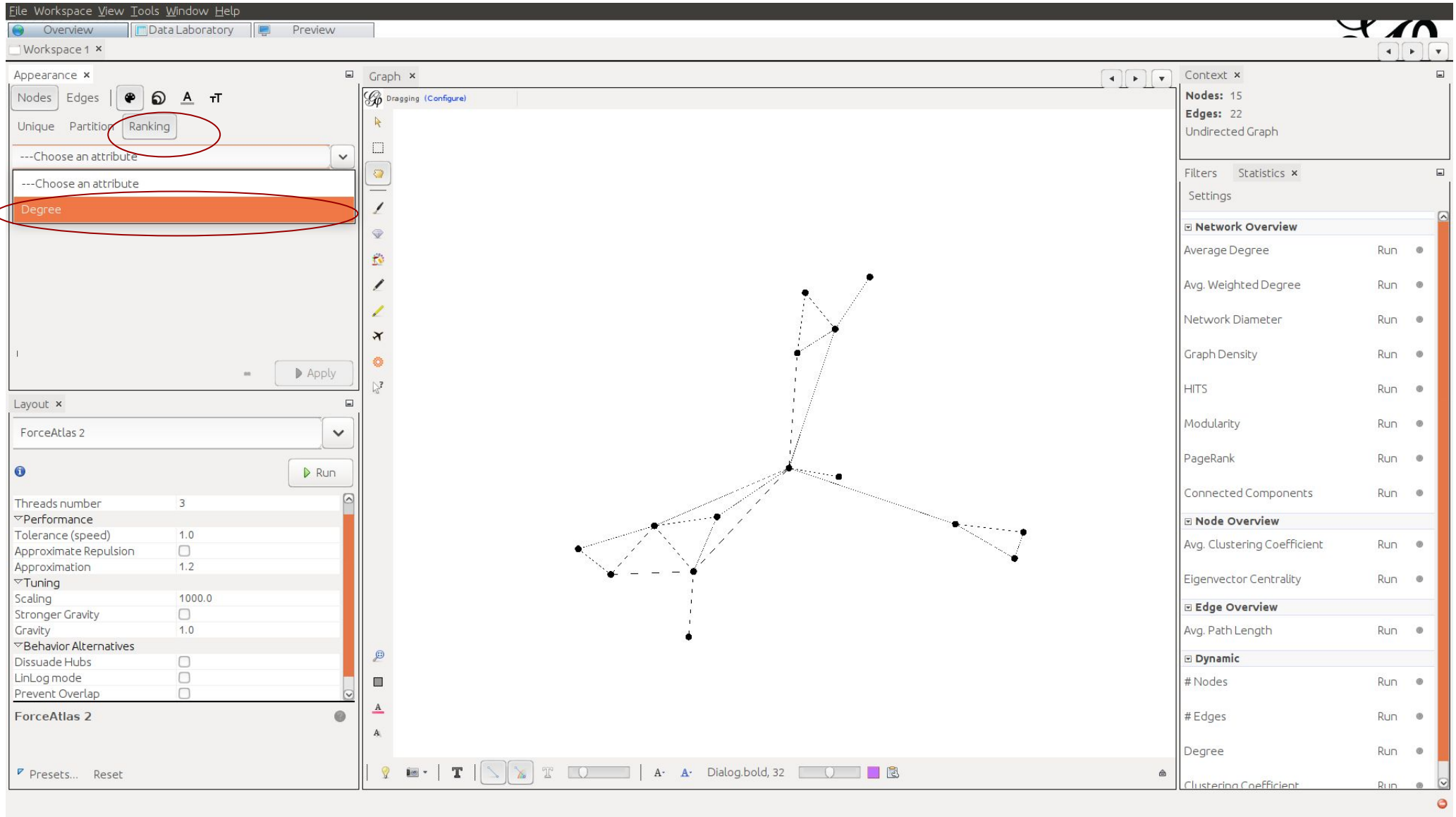
Gephi nw visualization demo



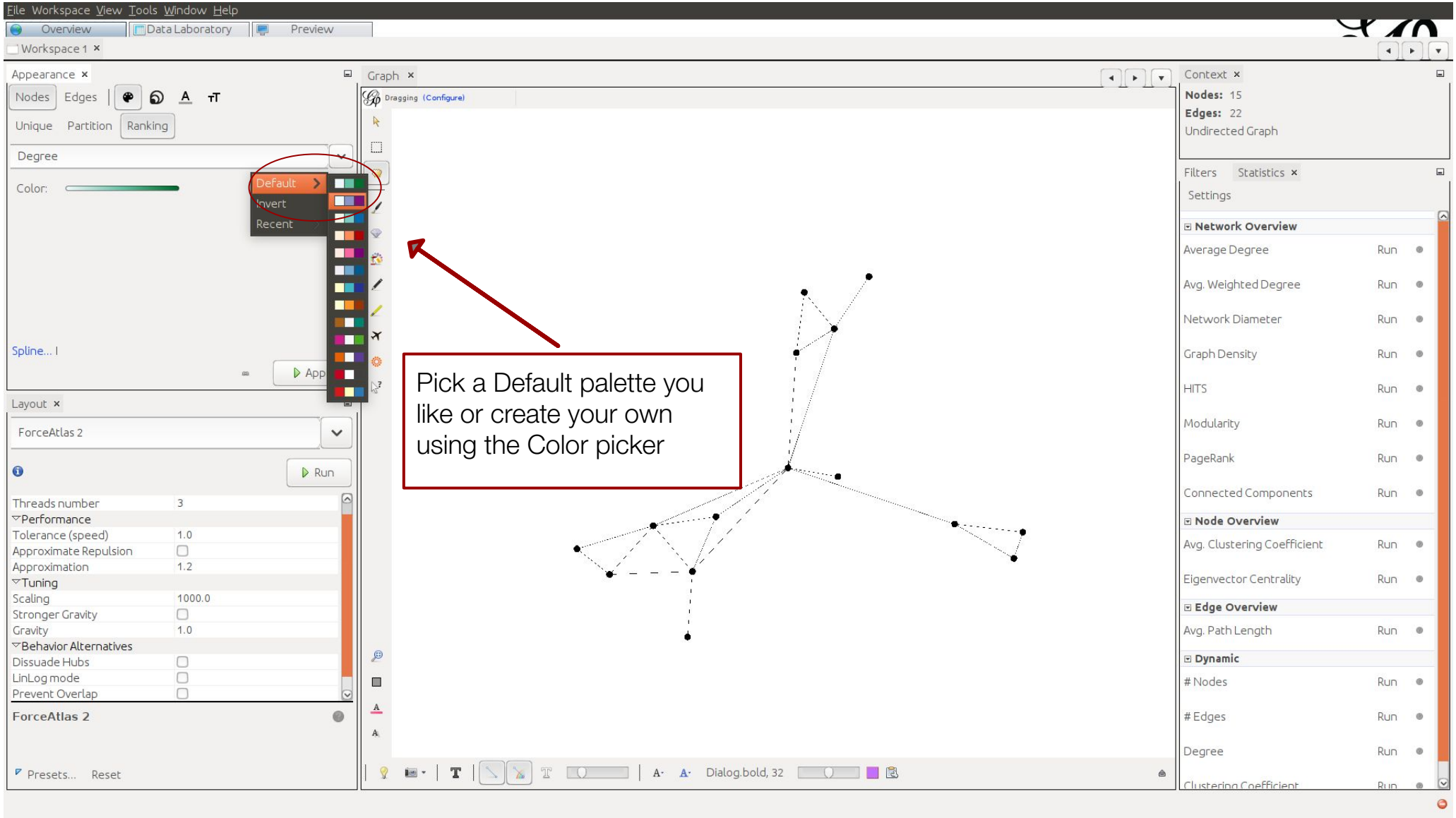
Gephi nw visualization demo



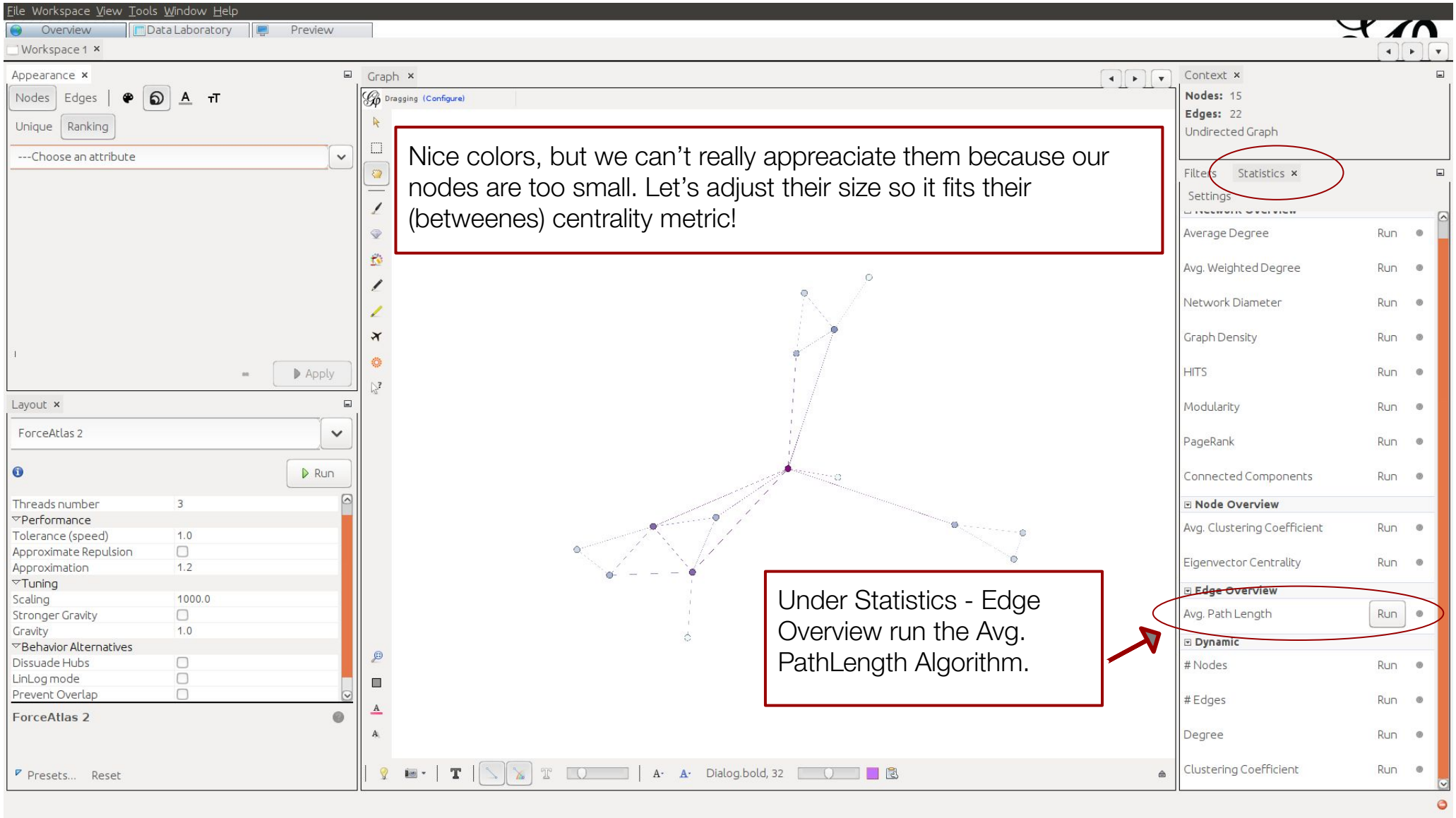
Gephi nw visualization demo



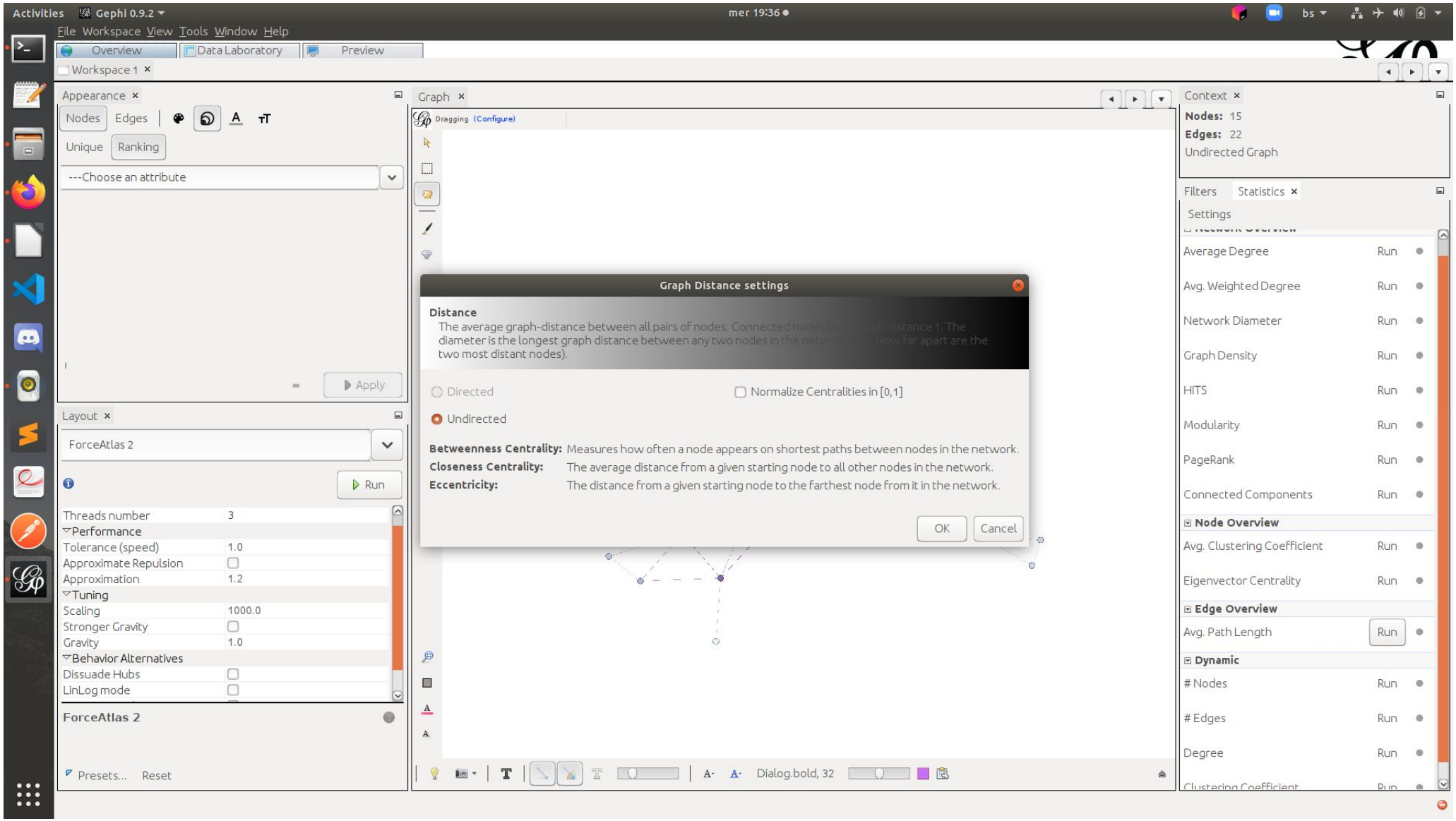
Gephi nw visualization demo



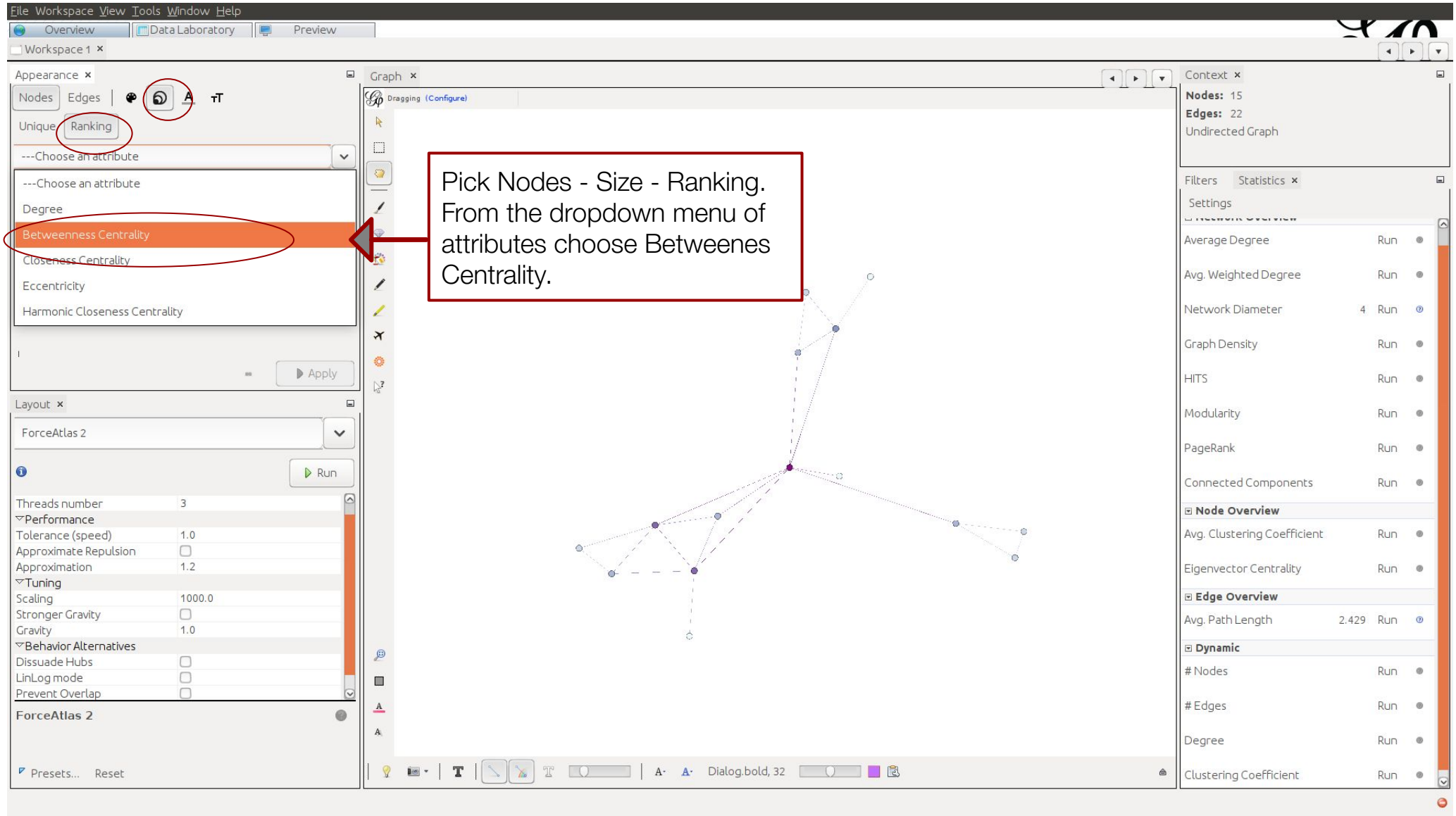
Gephi nw visualization demo



Gephi nw visualization demo

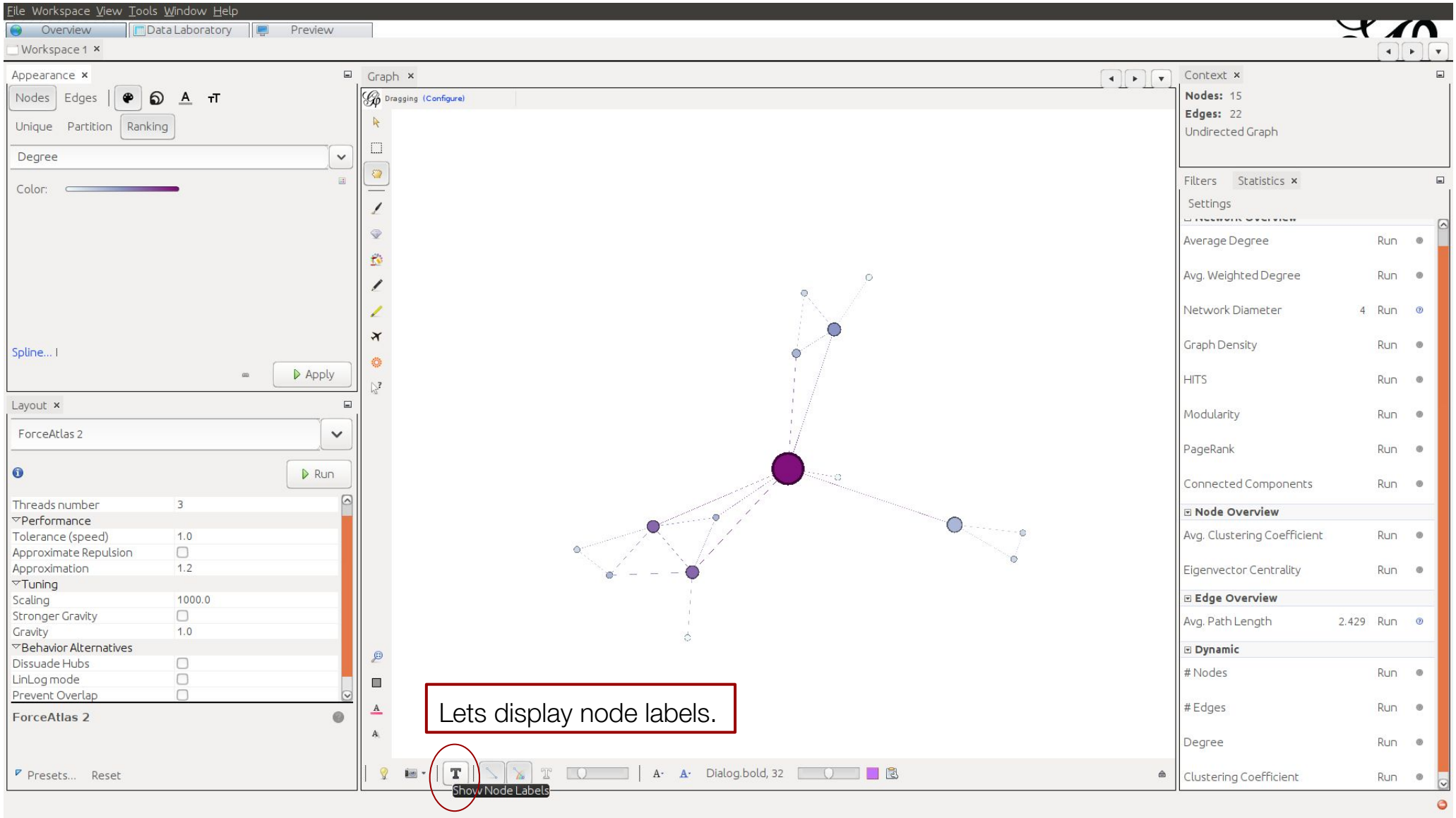


Gephi nw visualization demo

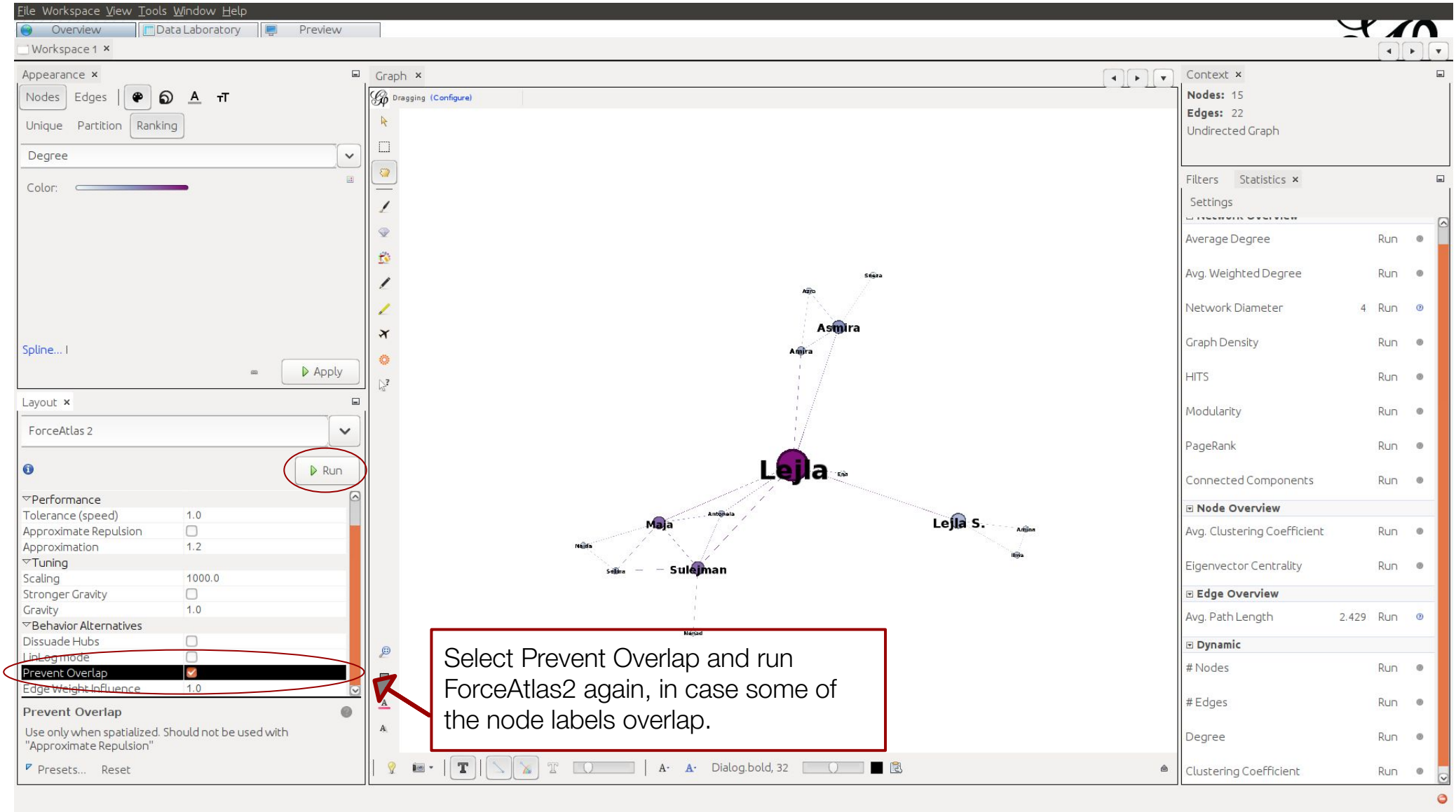


Pick Nodes - Size - Ranking. From the dropdown menu of attributes choose Betweenes Centrality.

Gephi nw visualization demo



Gephi nw visualization demo



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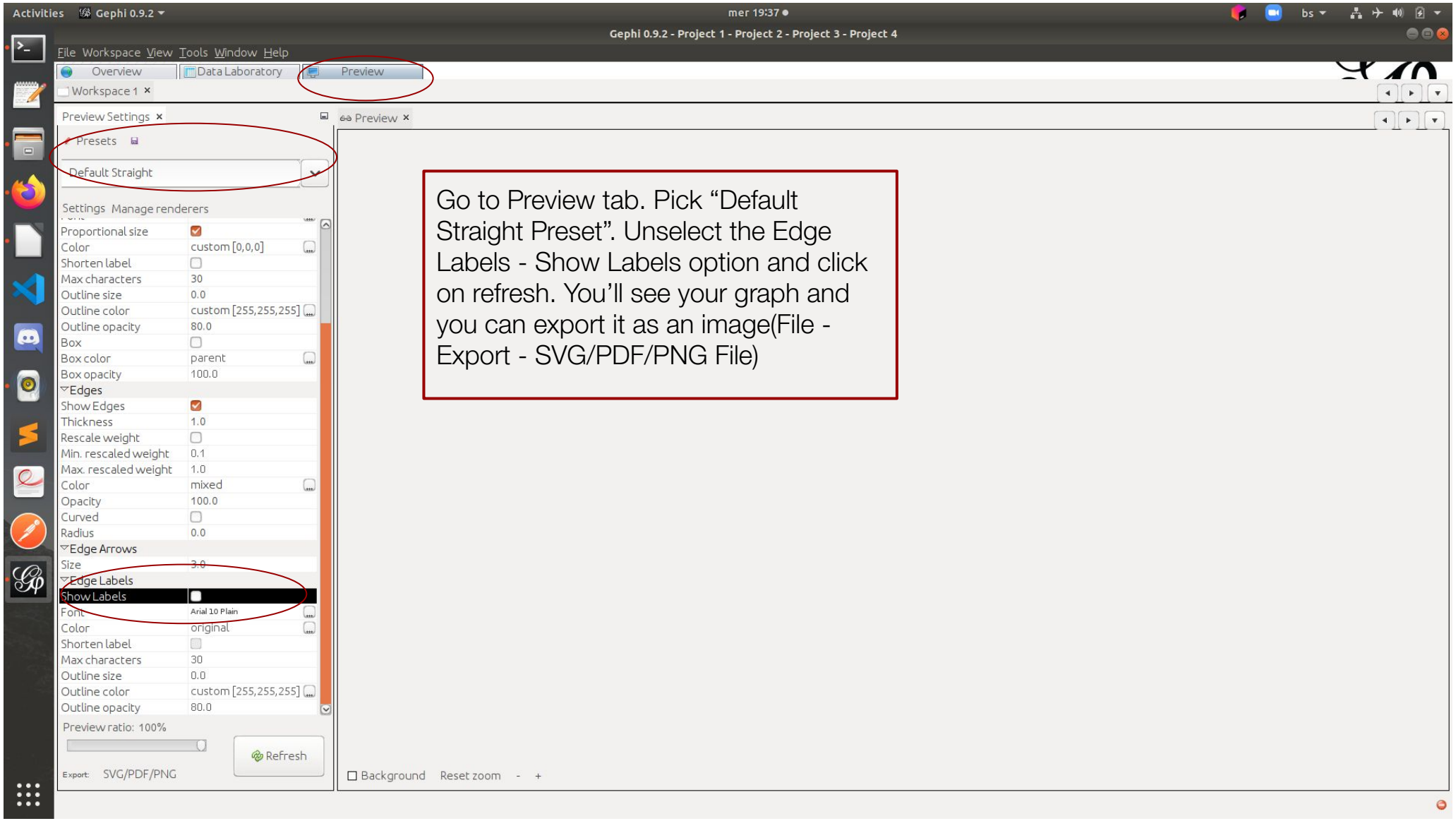
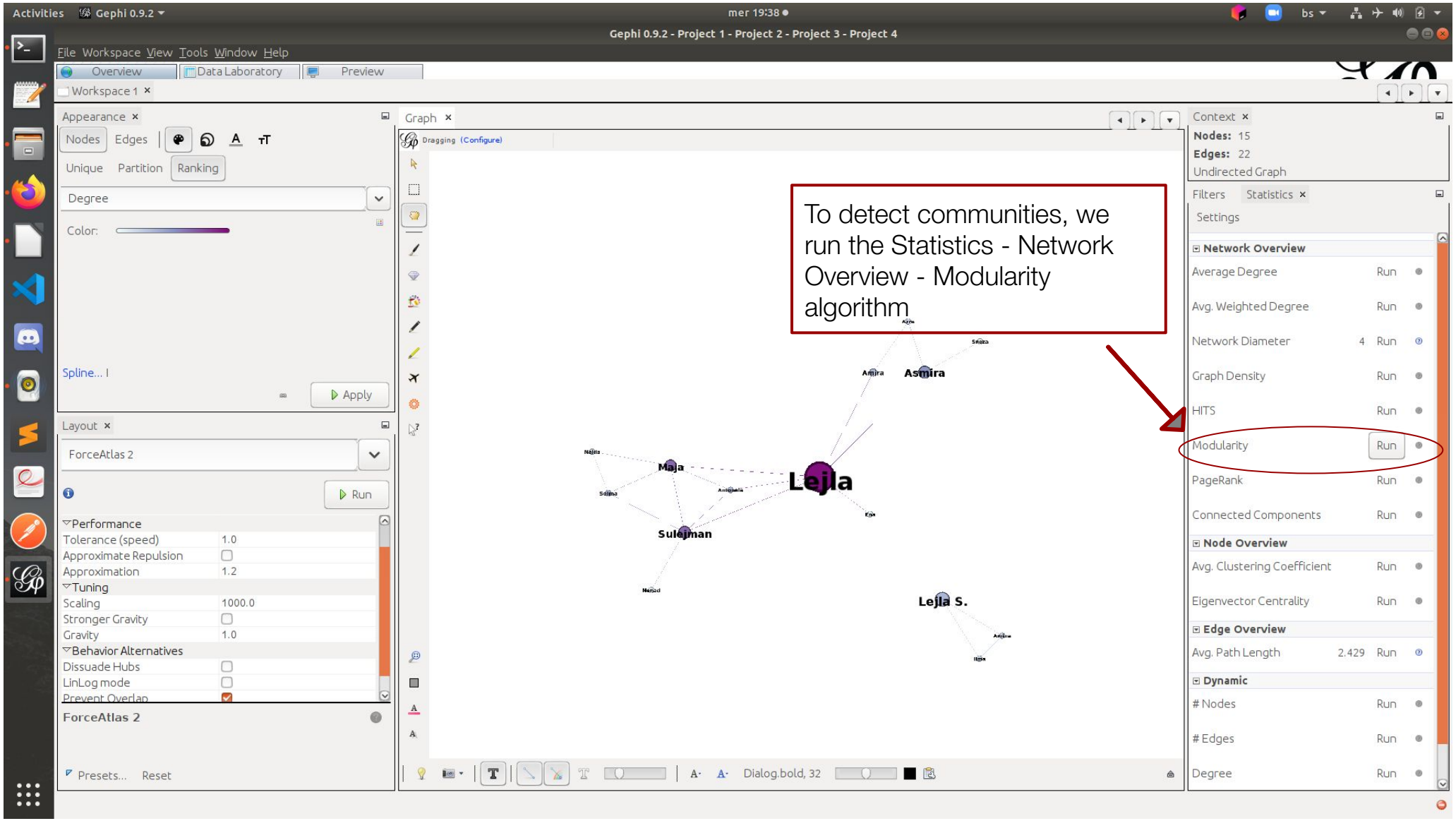


Gephi nw visualization demo



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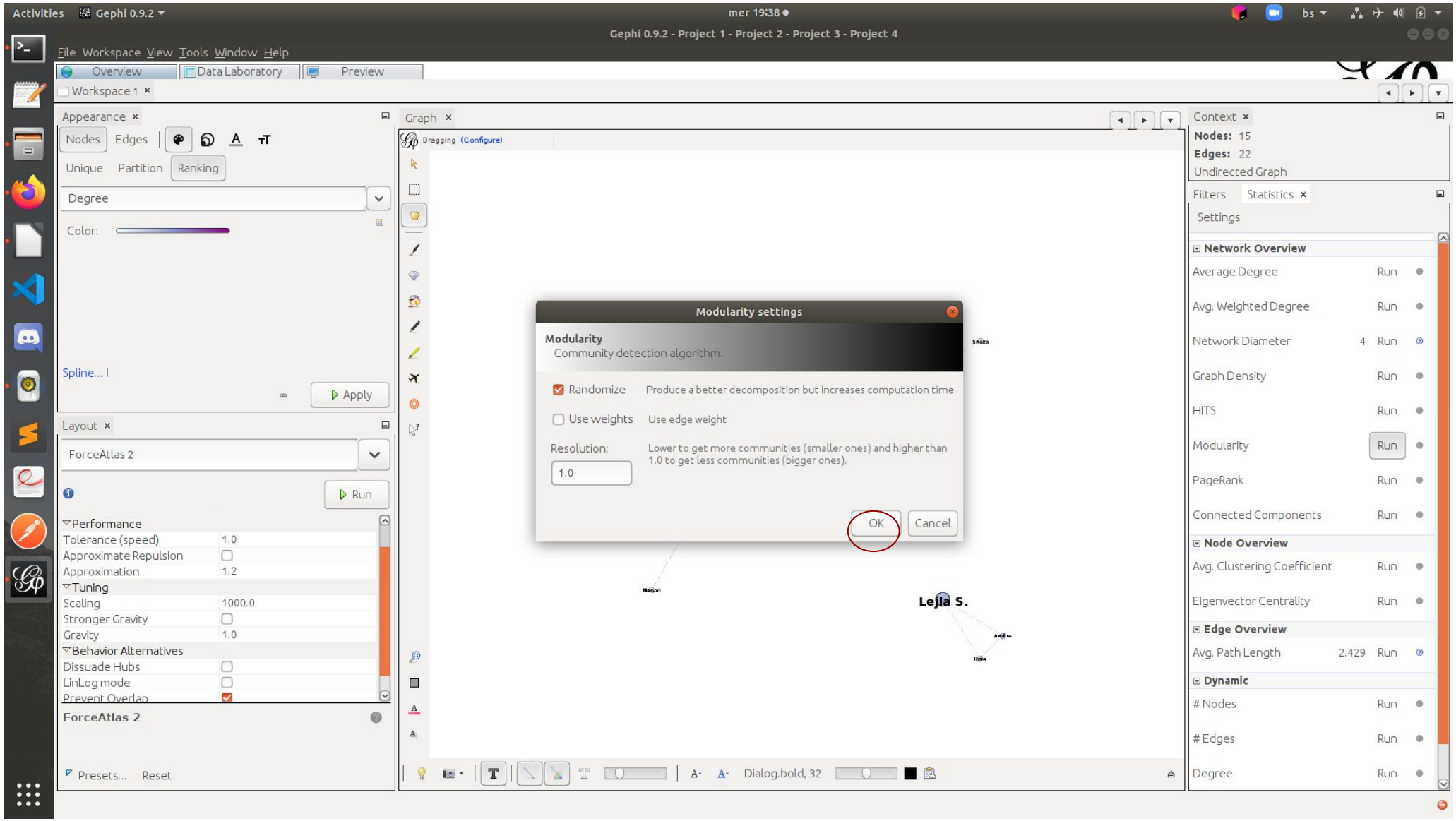
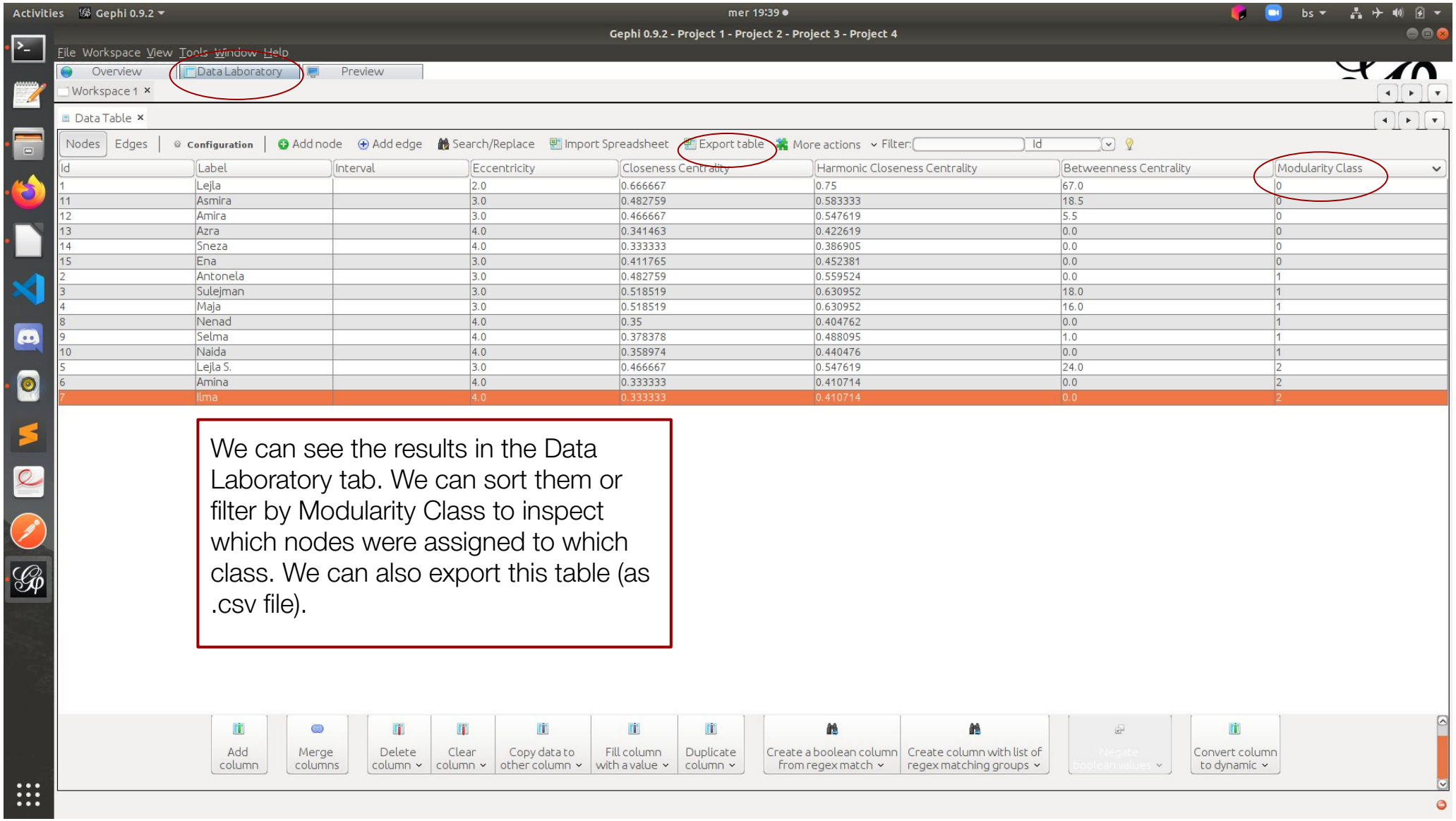


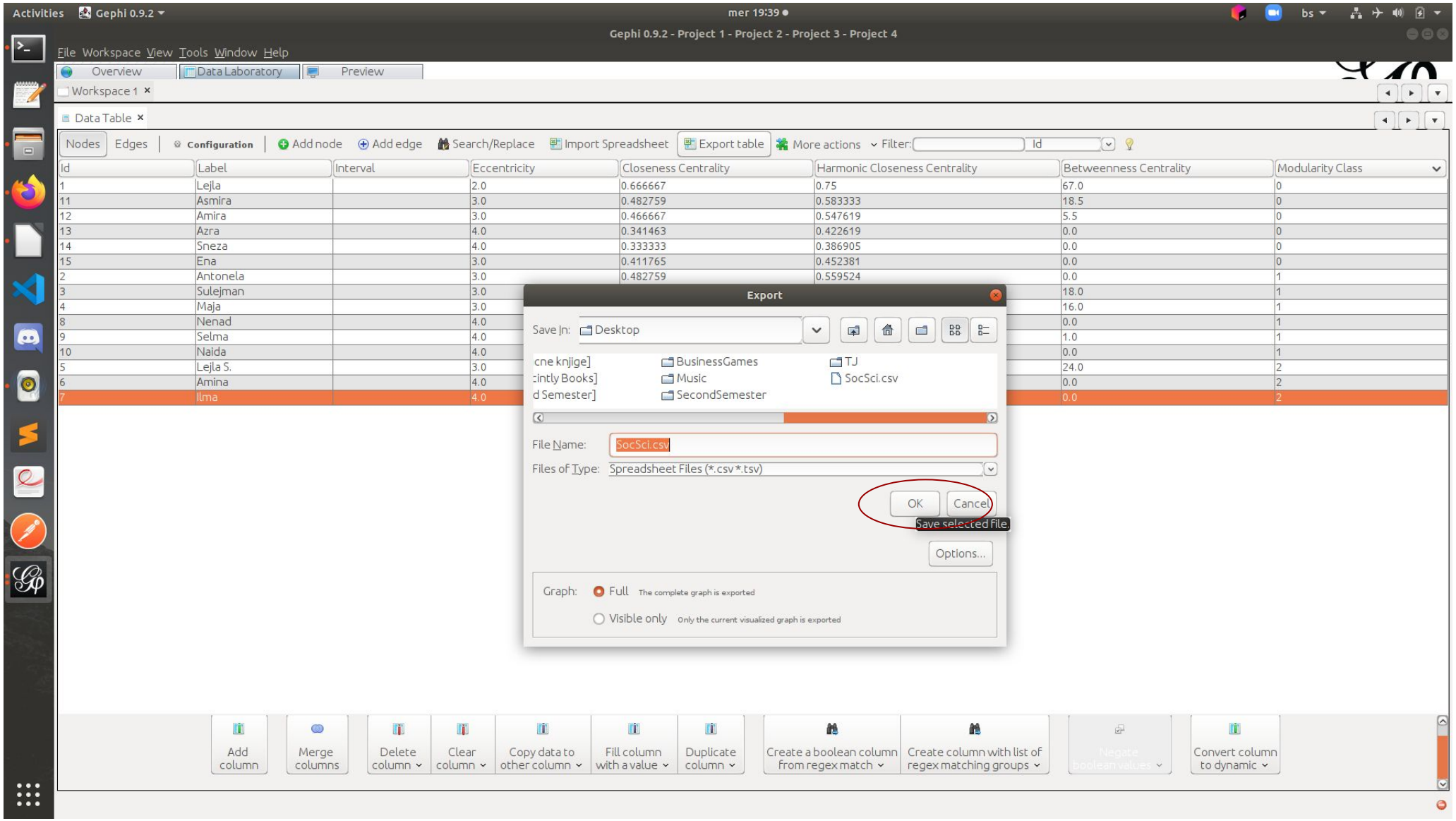
Gephi nw visualization demo



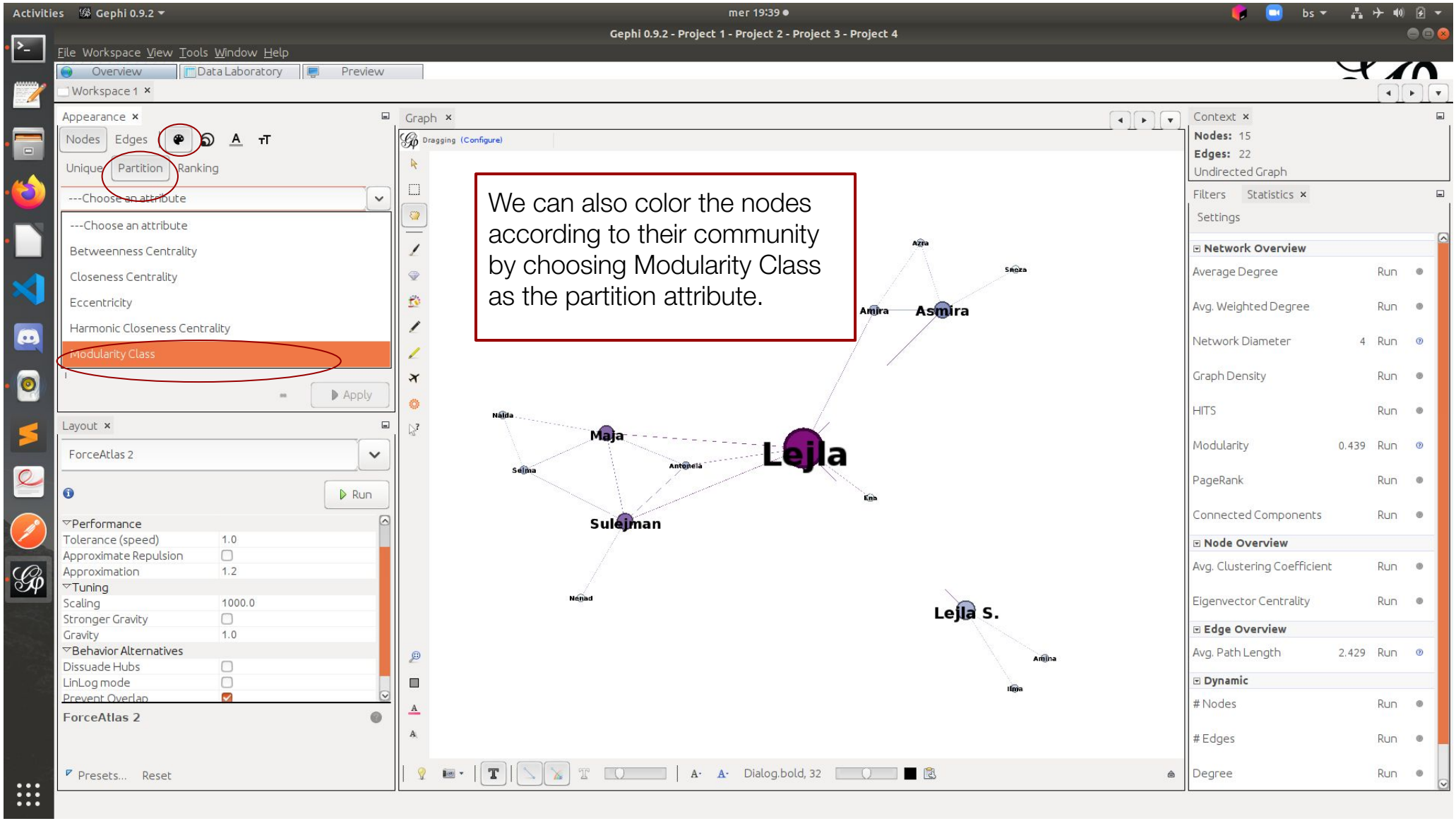
Id	Label	Interval	Eccentricity	Closeness Centrality	Harmonic Closeness Centrality	Betweenness Centrality	Modularity Class
1	Lejla		2.0	0.666667	0.75	67.0	0
11	Asmira		3.0	0.482759	0.583333	18.5	0
12	Amira		3.0	0.466667	0.547619	5.5	0
13	Azra		4.0	0.341463	0.422619	0.0	0
14	Sneza		4.0	0.333333	0.386905	0.0	0
15	Ena		3.0	0.411765	0.452381	0.0	0
2	Antonela		3.0	0.482759	0.559524	0.0	1
3	Sulejman		3.0	0.518519	0.630952	18.0	1
4	Maja		3.0	0.518519	0.630952	16.0	1
8	Nenad		4.0	0.35	0.404762	0.0	1
9	Selma		4.0	0.378378	0.488095	1.0	1
10	Naida		4.0	0.358974	0.440476	0.0	1
5	Lejla S.		3.0	0.466667	0.547619	24.0	2
6	Amina		4.0	0.333333	0.410714	0.0	2
7	Ilma		4.0	0.333333	0.410714	0.0	2

We can see the results in the Data Laboratory tab. We can sort them or filter by Modularity Class to inspect which nodes were assigned to which class. We can also export this table (as .csv file).

Gephi nw visualization demo



Gephi nw visualization demo



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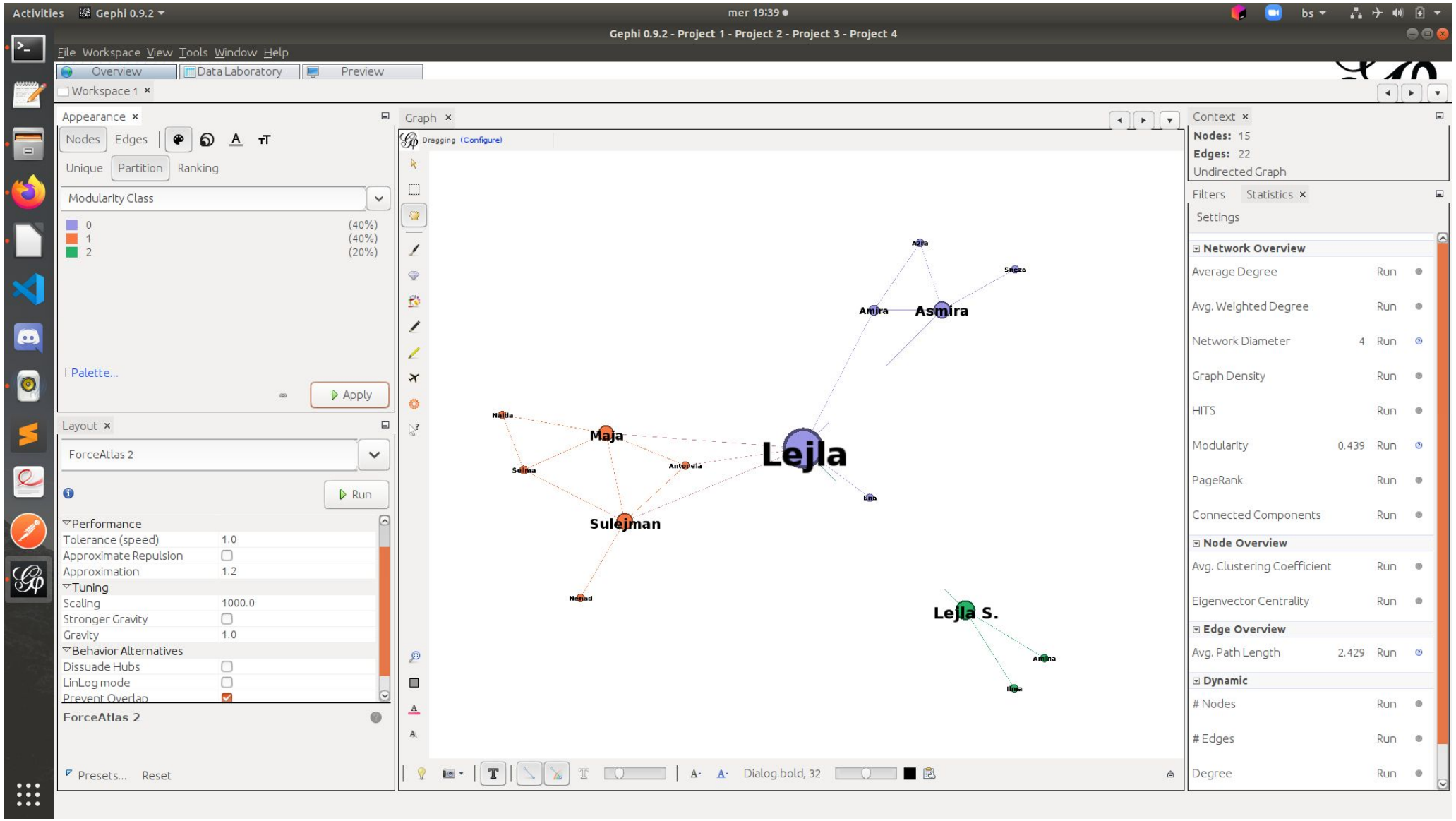
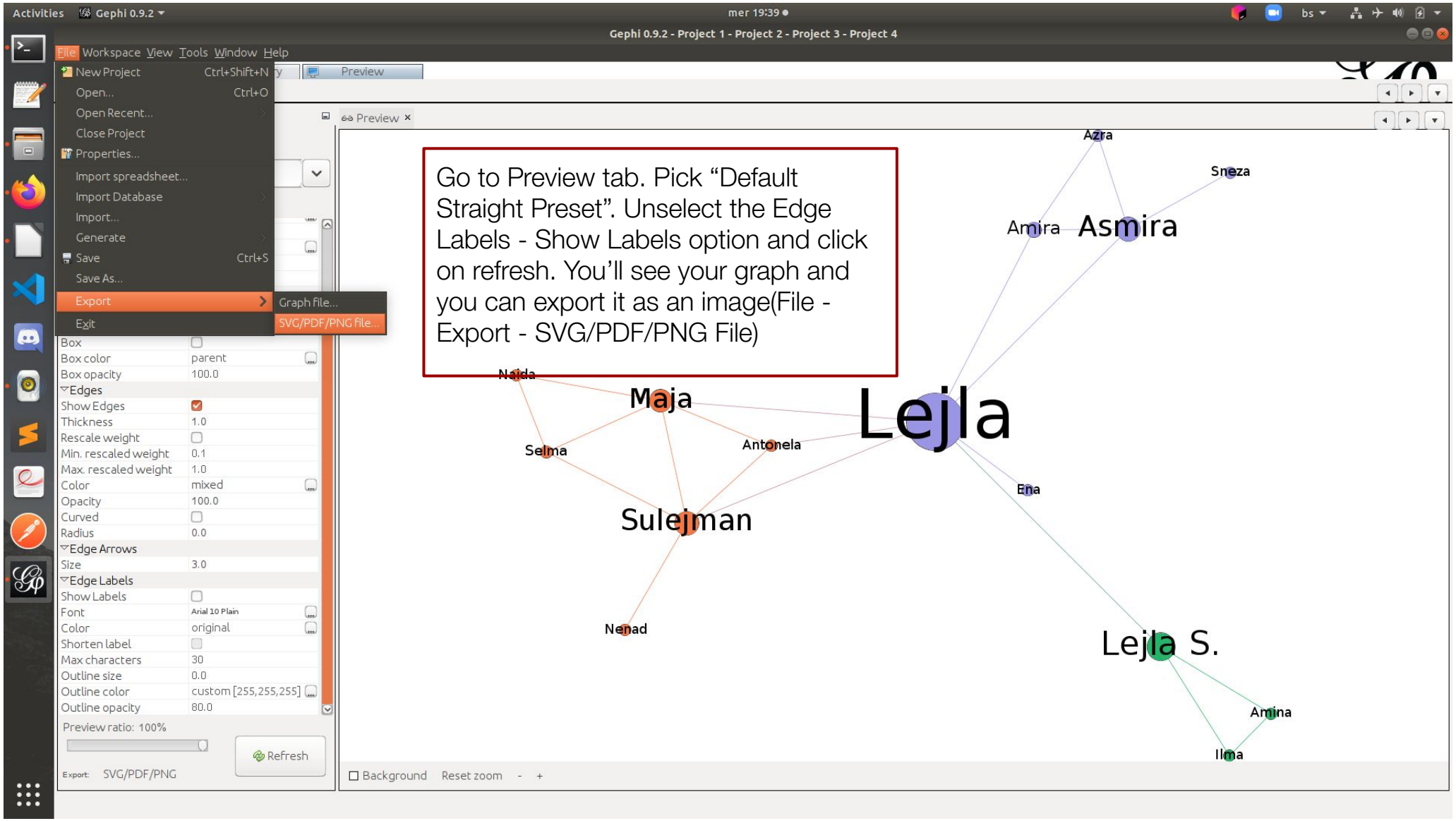


Gephi nw visualization demo



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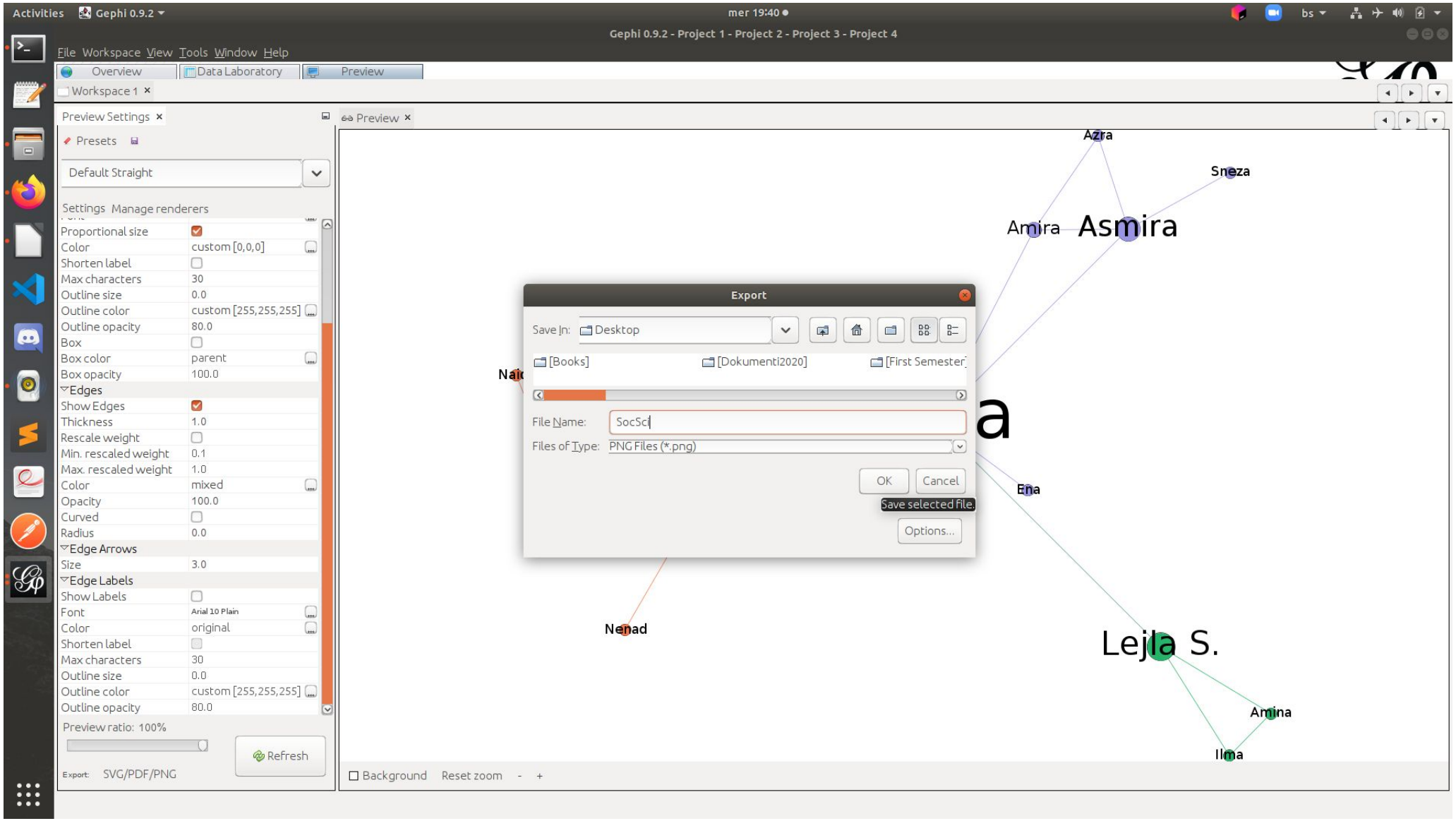
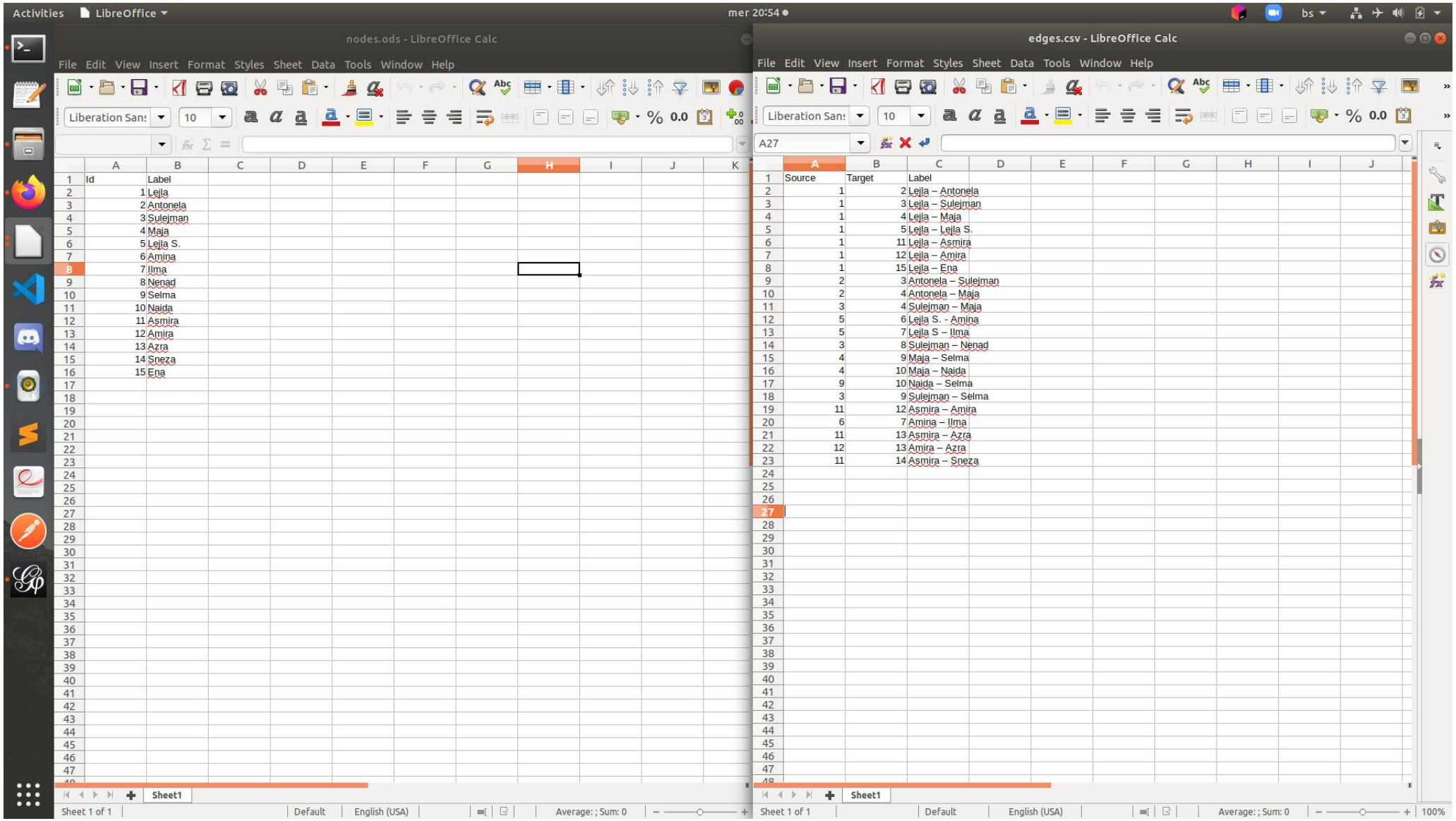


Dataset generation

- edge and/or node lists in Excel
- for node list, column names: Id, Label
- for edge list, column names: Source, Target, Label (optional)
- save as .csv files and choose “;” as delimiter

Dataset generation



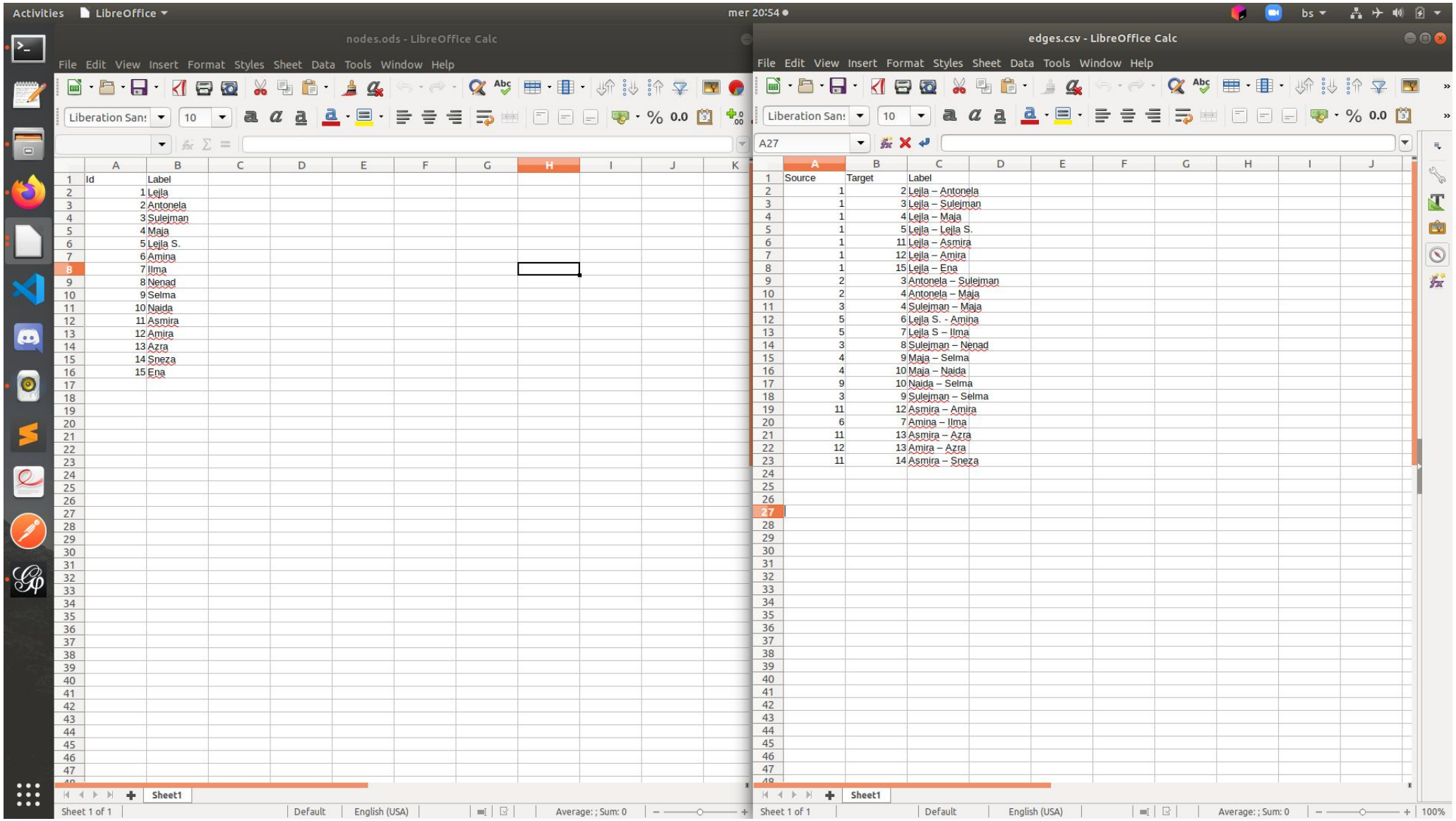
nodes.ods - LibreOffice Calc

Id	Label
1	Lejla
2	Antonela
3	Sulejman
4	Maja
5	Lejla S.
6	Amina
7	Ilma
8	Nenad
9	Selma
10	Naida
11	Asmira
12	Amira
13	Azra
14	Sneza
15	Ena

edges.csv - LibreOffice Calc

Source	Target	Label
1	2	Lejla – Antonela
1	3	Lejla – Sulejman
1	4	Lejla – Maja
1	5	Lejla – Lejla S.
1	11	Lejla – Asmira
1	12	Lejla – Amira
1	15	Lejla – Ena
2	3	Antonela – Sulejman
2	4	Antonela – Maja
3	4	Sulejman – Maja
5	6	Lejla S. - Amina
5	7	Lejla S – Ilma
3	8	Sulejman – Nenad
4	9	Maja – Selma
4	10	Maja – Naida
9	10	Naida – Selma
3	9	Sulejman – Selma
11	12	Asmira – Amira
6	7	Amina – Ilma
11	13	Asmira – Azra
12	13	Amira – Azra
11	14	Asmira – Sneza

Dataset generation



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15	Ena

edges.csv - LibreOffice Calc

Source	Target	Label
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1	11	Lejla – Asmira
1	12	Lejla – Amira
1	15	Lejla – Ena
2	3	Antonela – Sulejman
2	4	Antonela – Maja
3	4	Sulejman – Maja
5	6	Lejla S. - Amina
5	7	Lejla S – Ilma
3	8	Sulejman – Nenad
4	9	Maja – Selma
4	10	Maja – Naida
9	10	Naida – Selma
3	9	Sulejman – Selma
11	12	Asmira – Amira
6	7	Amina – Ilma
11	13	Asmira – Azra
12	13	Amira – Azra
11	14	Asmira – Sneza

Questions?