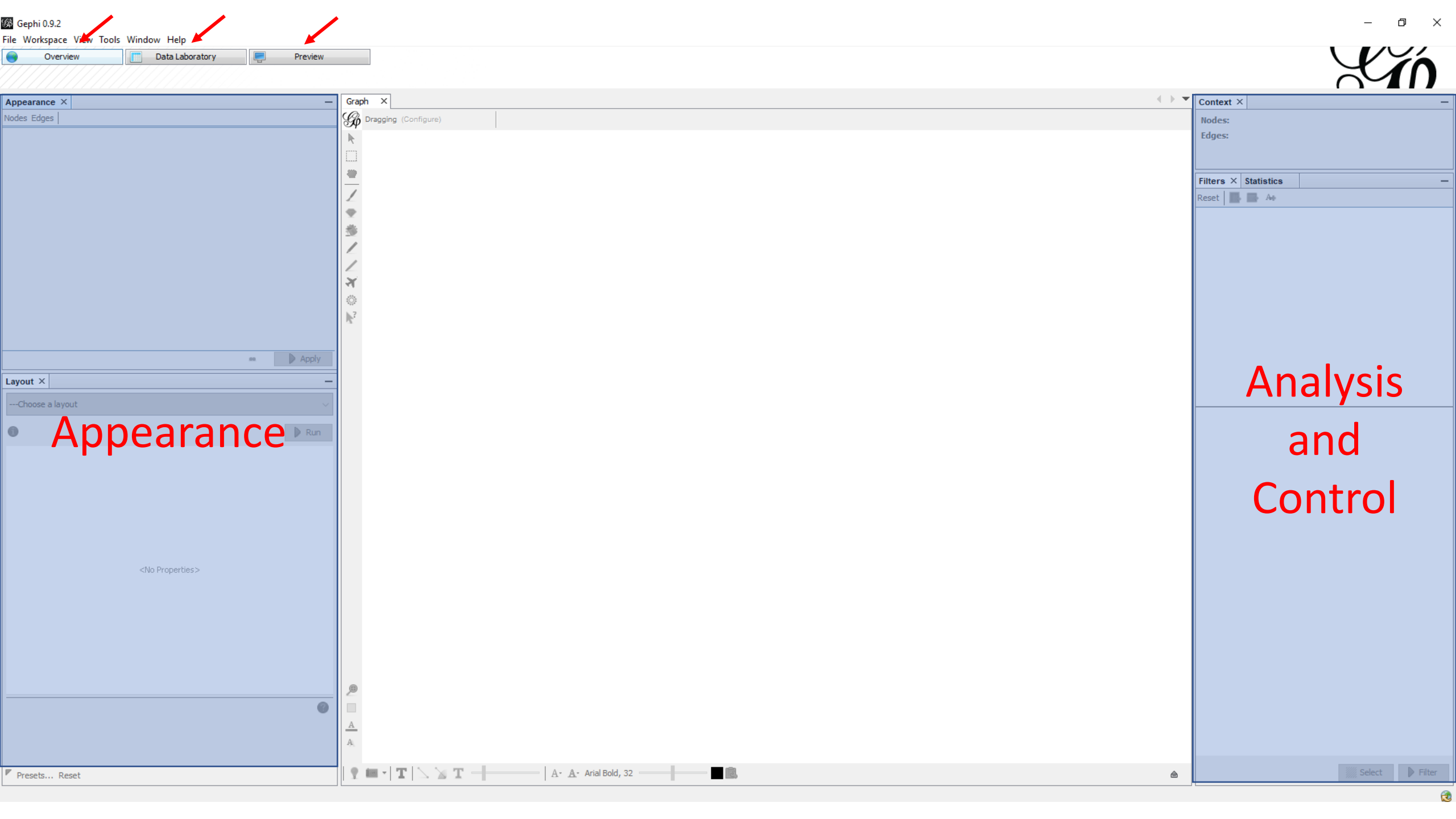
GE2234 Social Networks

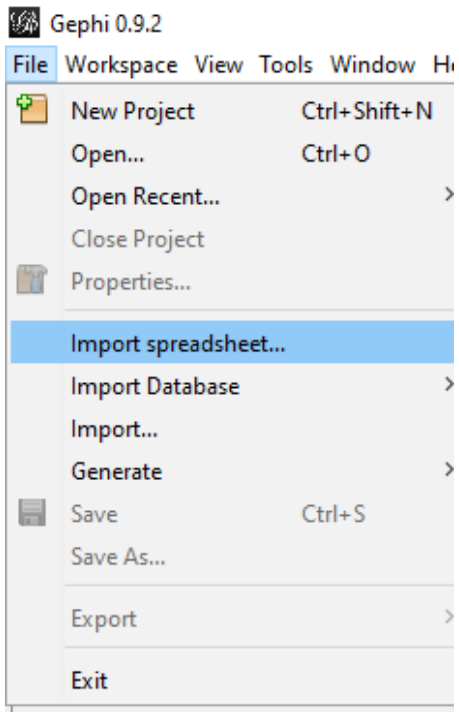
for Media, Business and Technological Applications

Tutorial 1: Gephi Basics

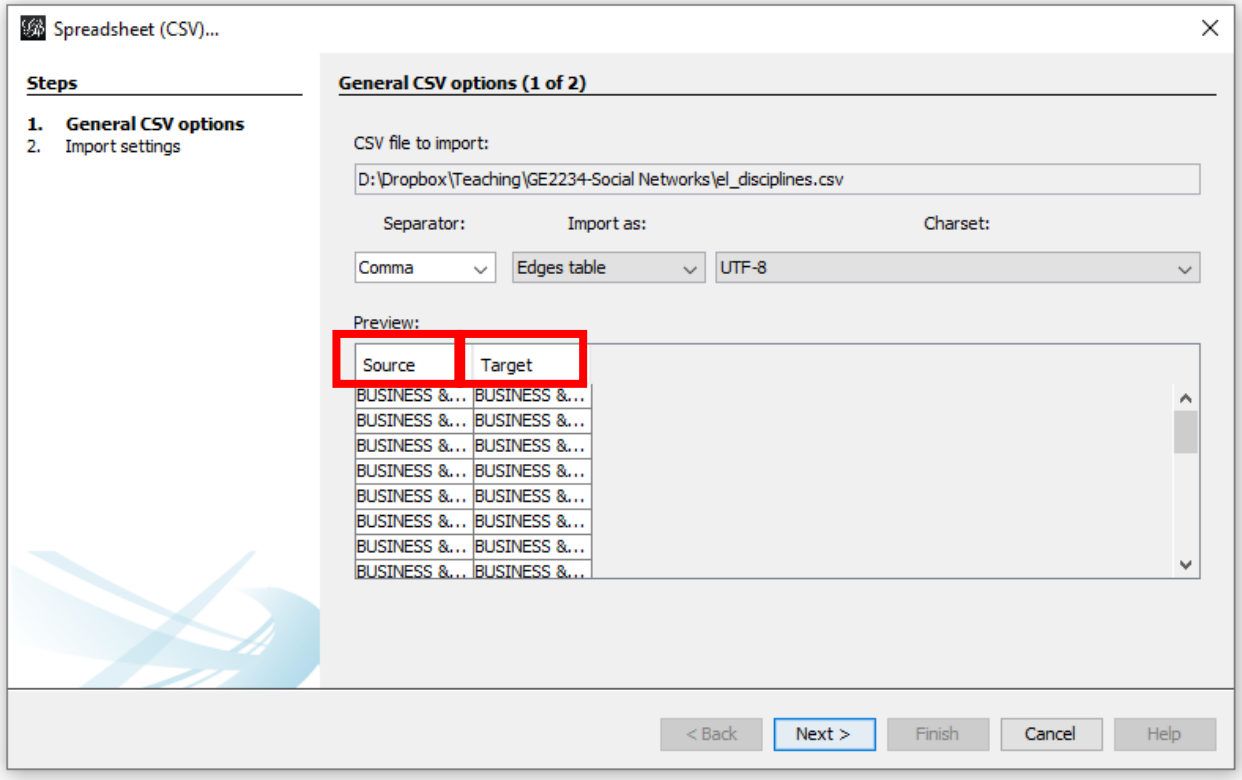
By Dr. Wang Xiaohui, Vincent


Gephi 0.9.2
File Workspace View Tools Window Help
Overview
Data Laboratory
Preview
Appearance
Nodes Edges
Apply
Layout
---Choose a layout
Run
<No Properties>
Presets... Reset
Graph
Dragging (Configure)
Arial Bold, 32
Context
Nodes:
Edges:
Filters
Statistics
Reset
Select
Filter
Appearance
Analysis and Control

1.

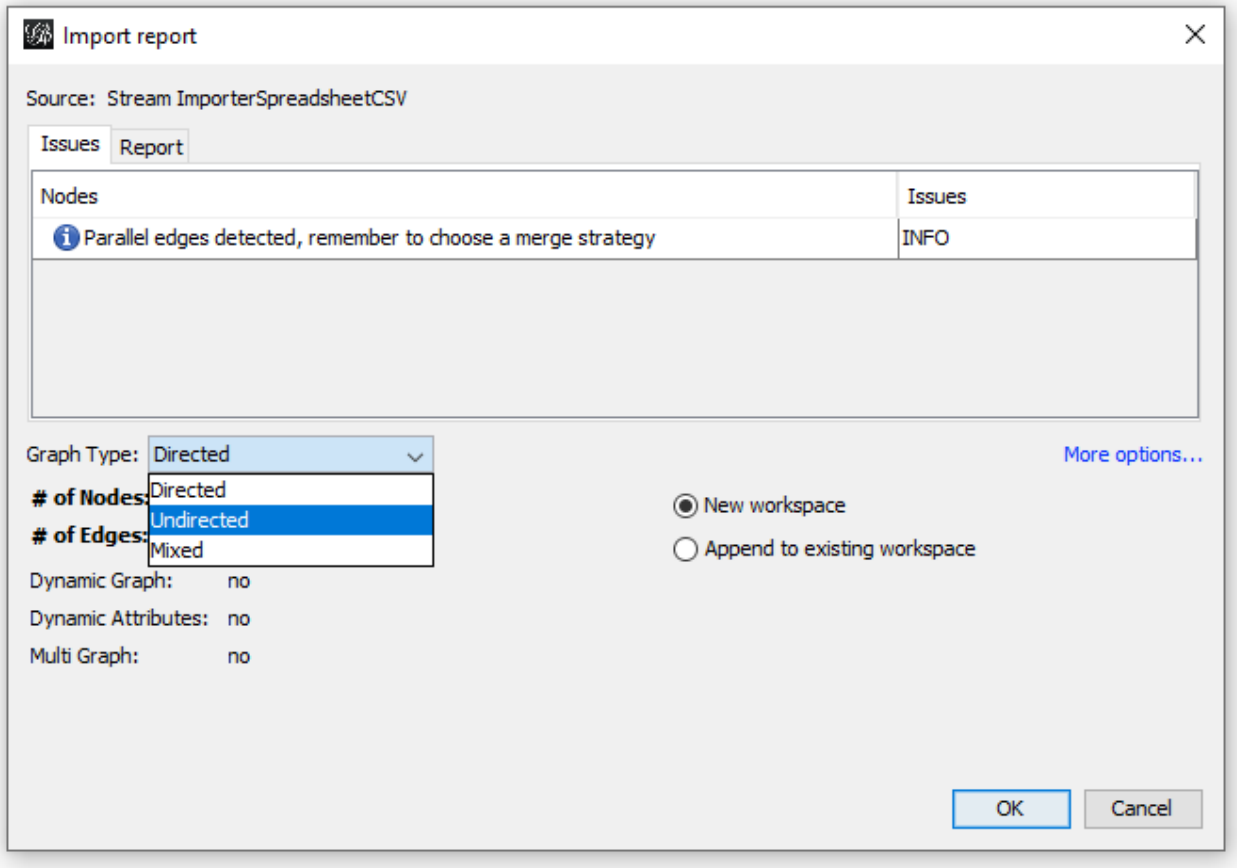


2.

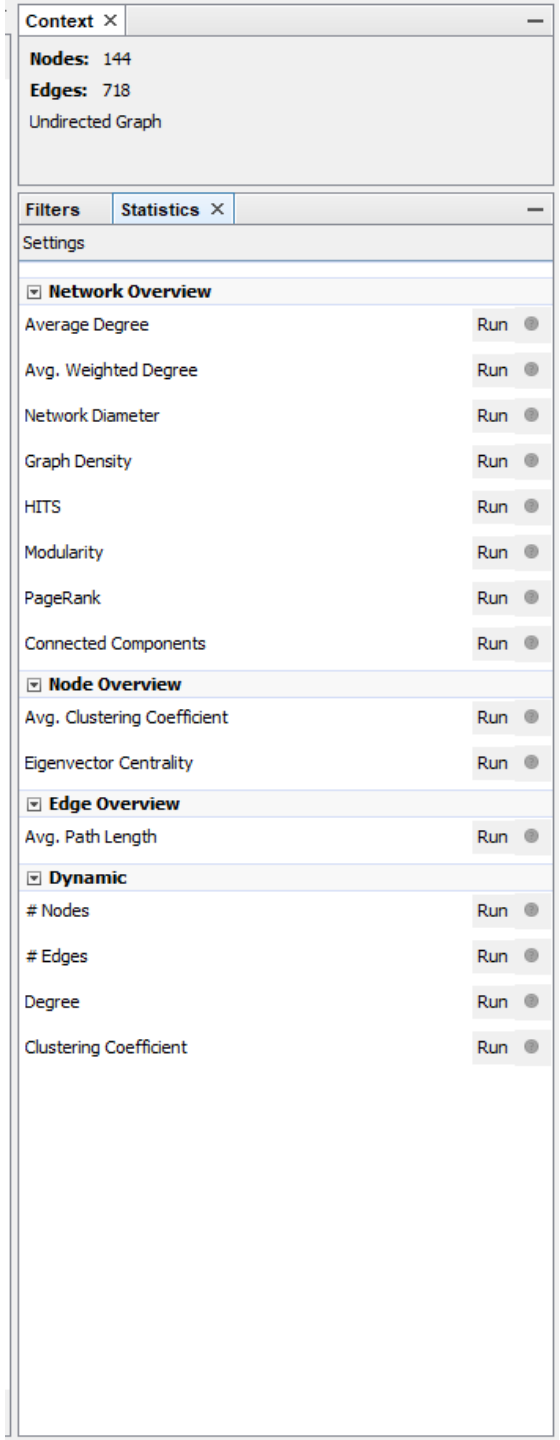


- Import Spreadsheet -> el_disciplines.csv -> edge table
- Imported spreadsheet should be an edgelist with colname “Source” and “Target”

3.

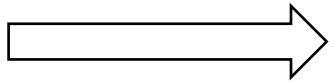


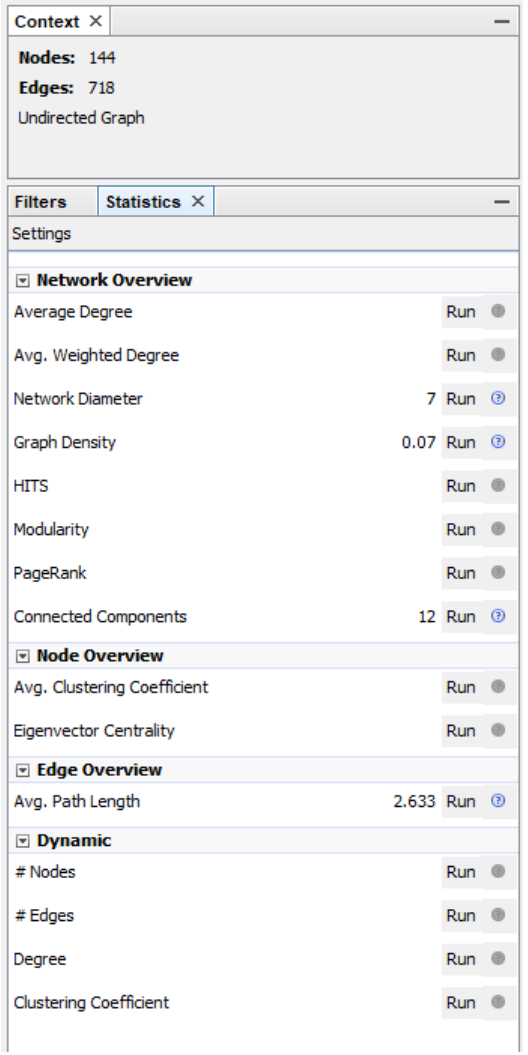
- Graph Type: Undirected -> OK



- Describe the graph

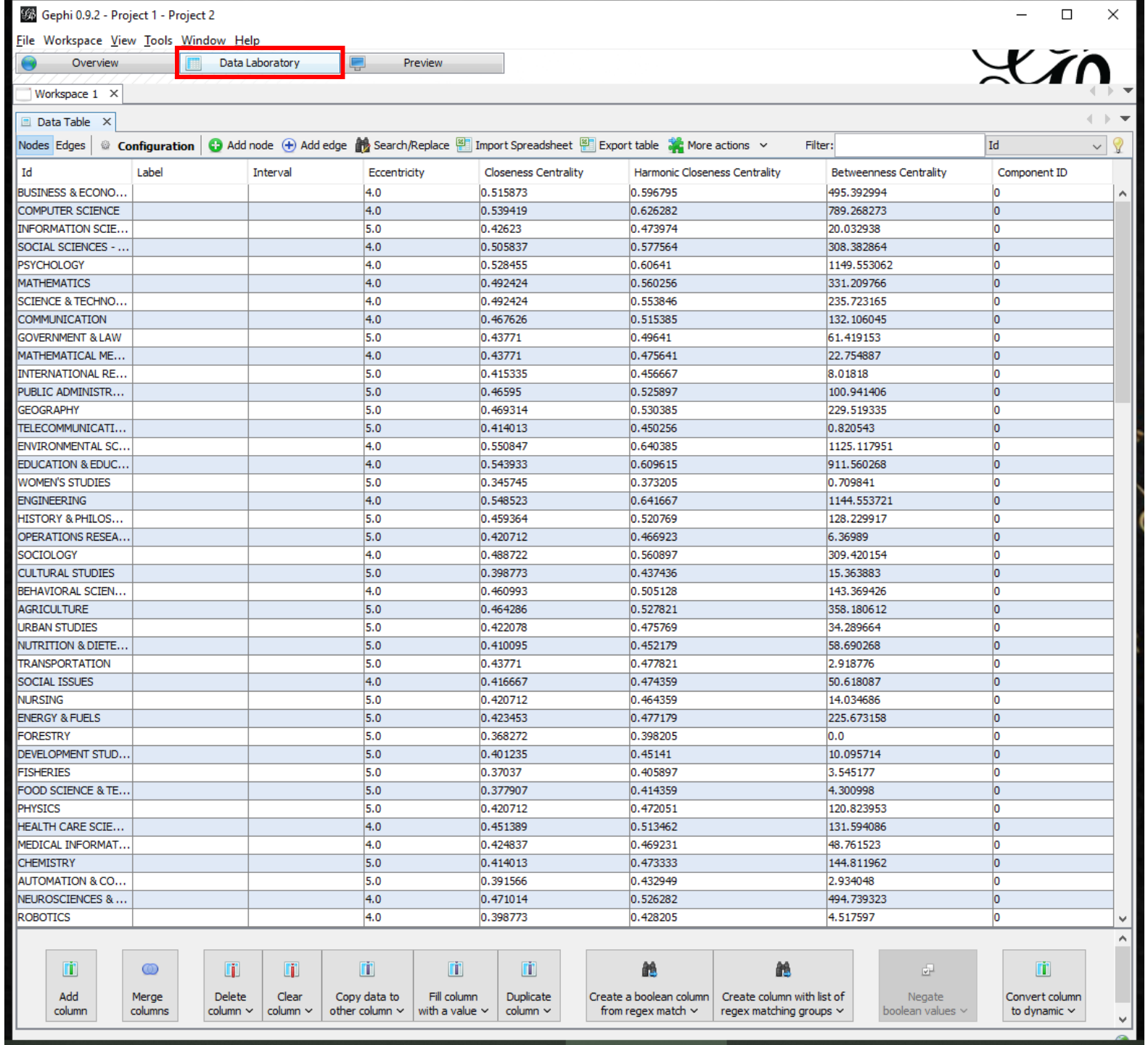
- Statistic analysis area
- Try to run **diameter**, **density**, **connected components**
- And interpret





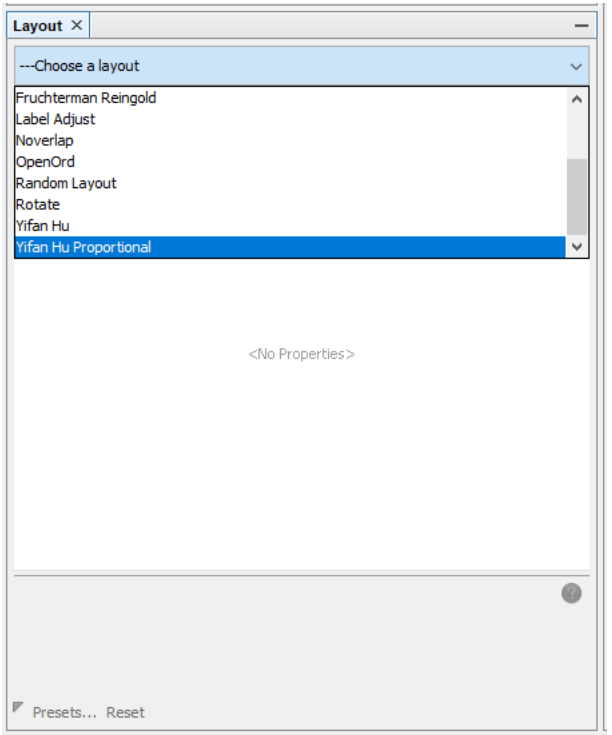
Results:

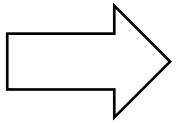
Diameter: 7
Radius: 0
Average Path length: 2.632734530938124

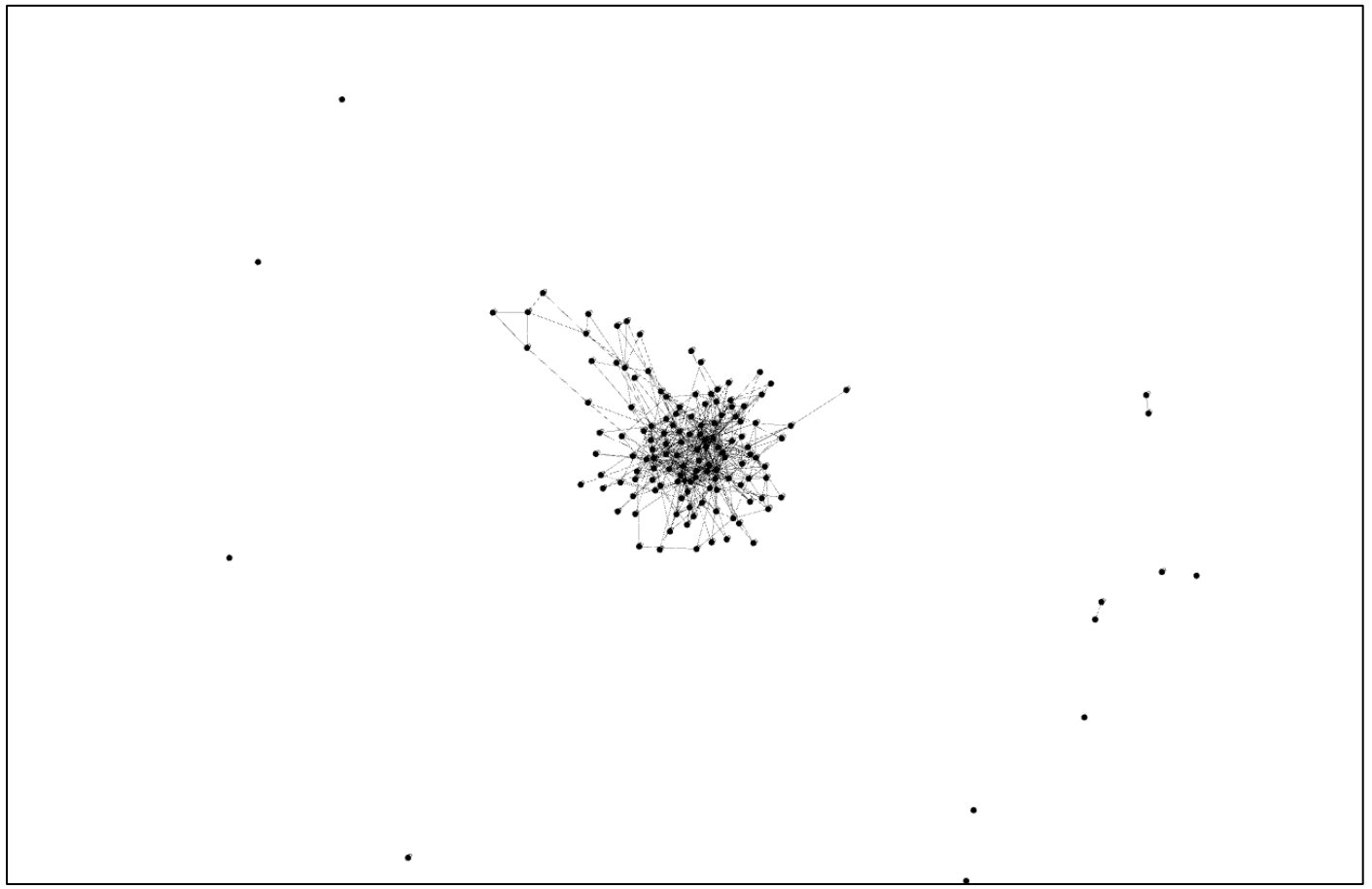


- Node Attribute Table
- And the Edge Attribute Table
- More attributes appeared after statistic analysis

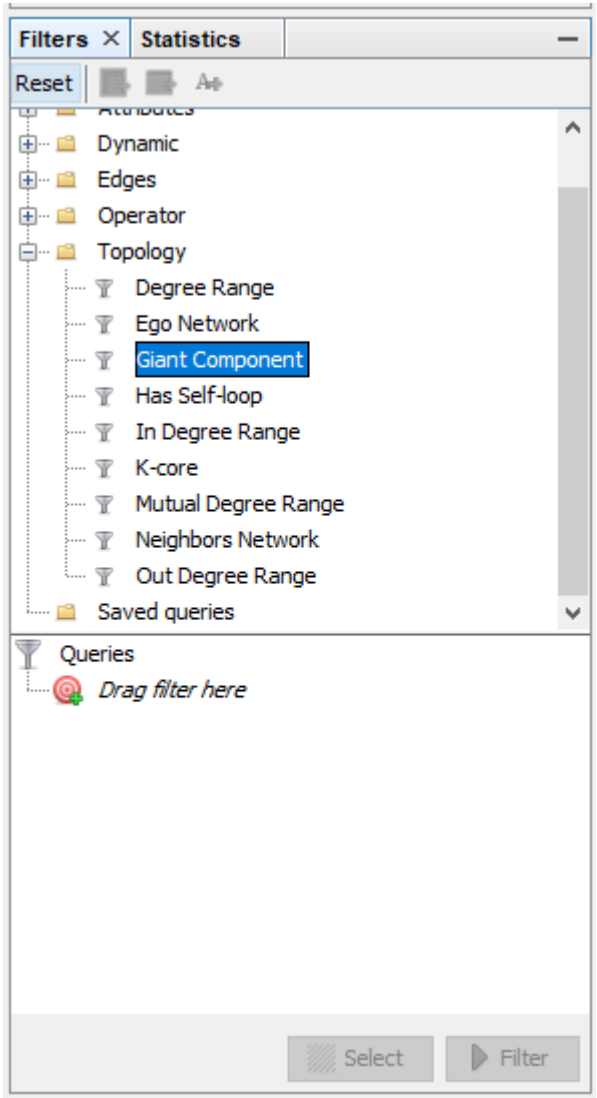
Let’s try some fancy stuff – Layout Design

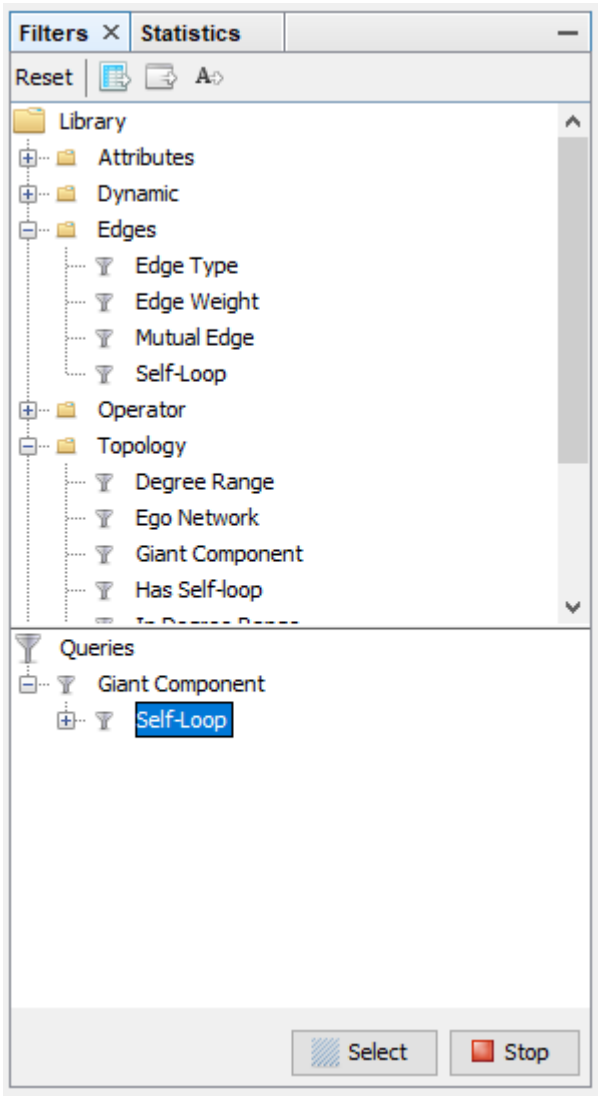


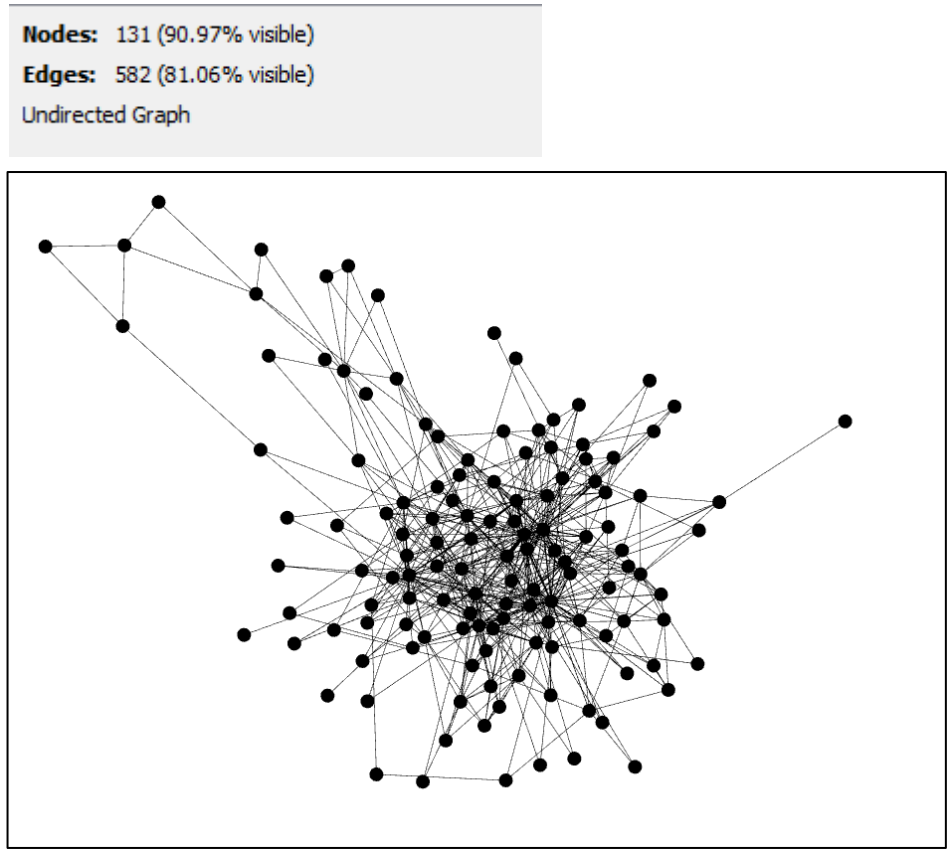




Add Filters to improve the layout



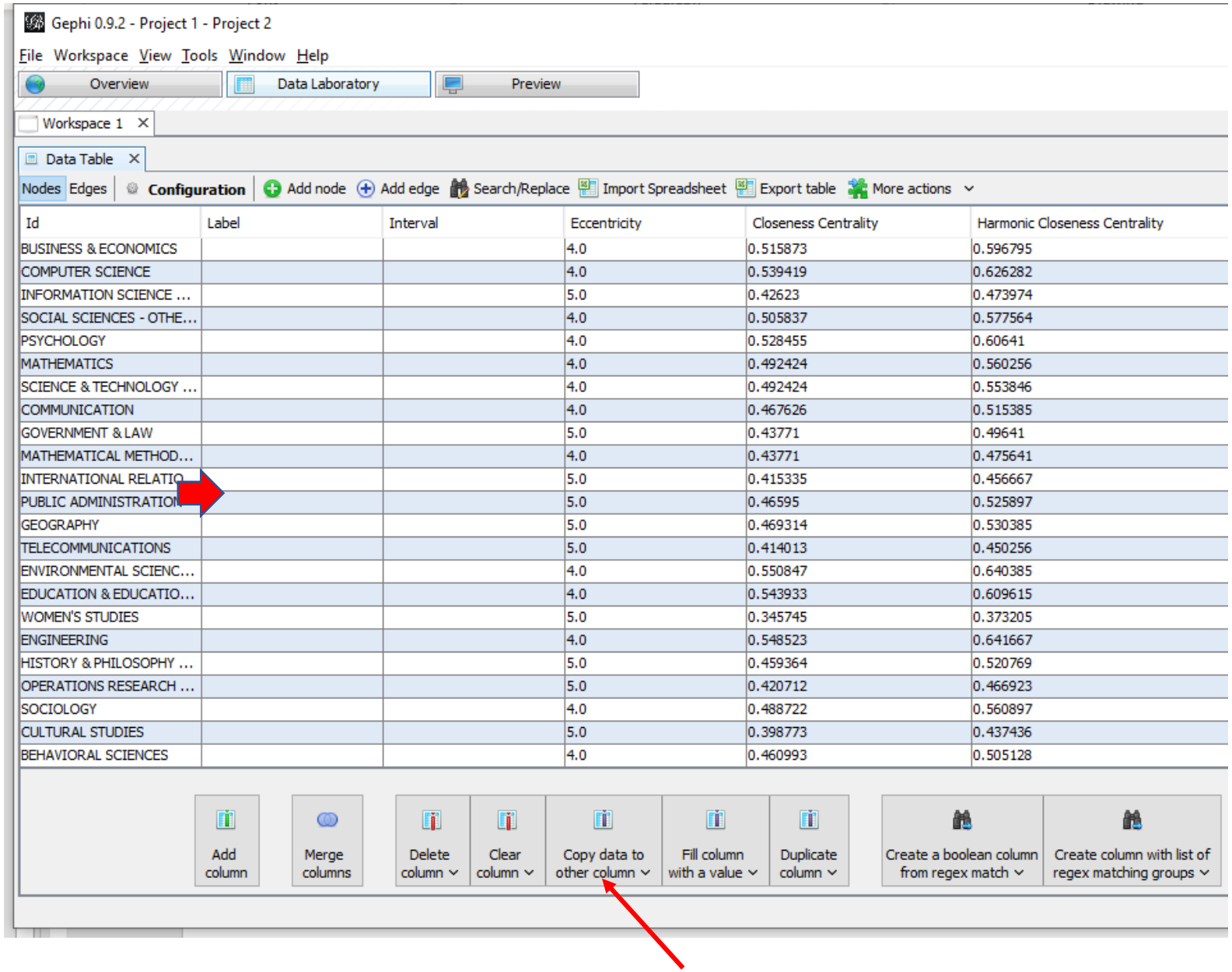




Much better

- Drag the attribute to the Queries panel, can include parent and child queries, and click Filter

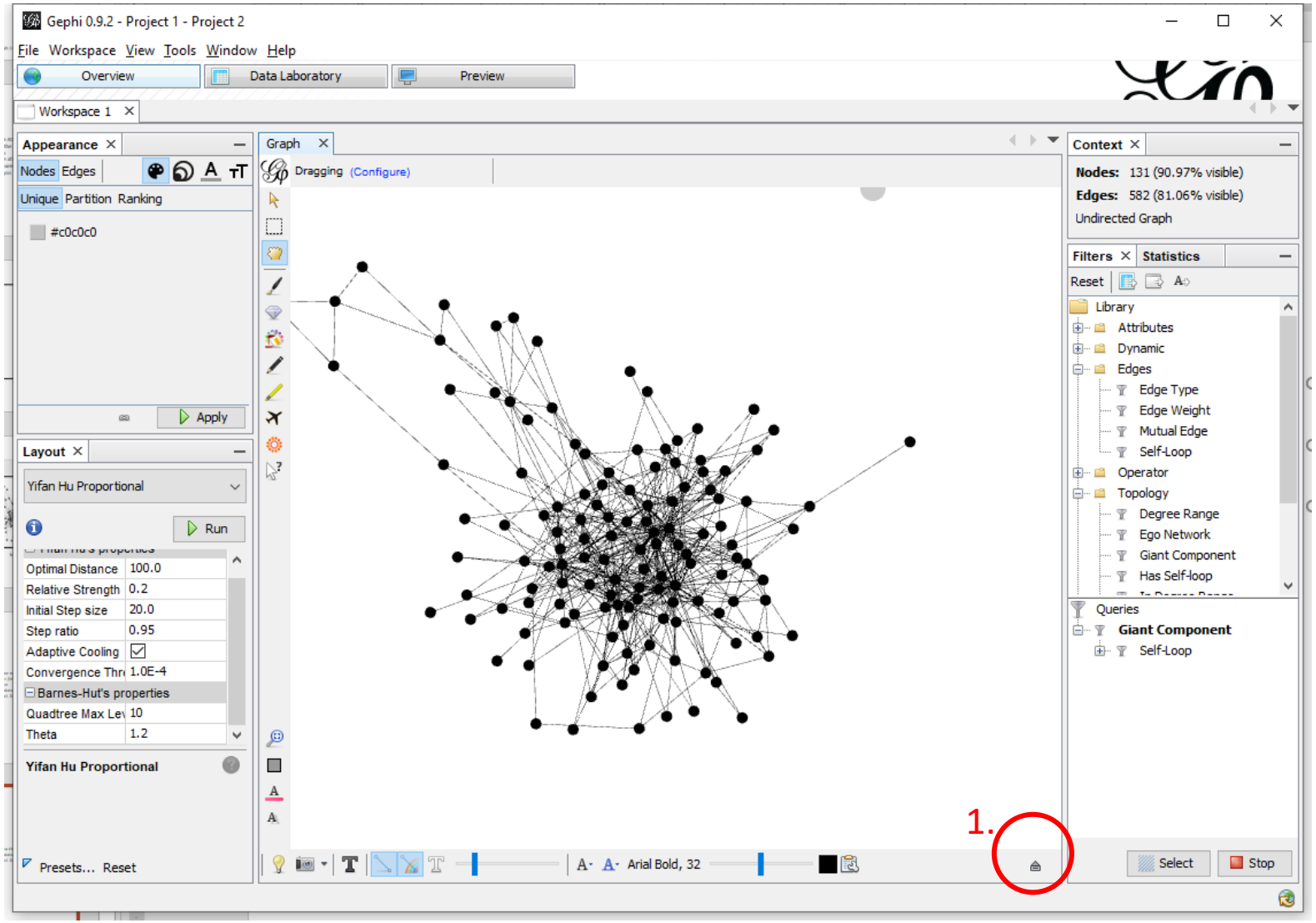
Add labels to the node and show on the graph



Id	Label	Interval	Eccentricity	Closeness Centrality	Harmonic Closeness Centrality
BUSINESS & ECONOMICS			4.0	0.515873	0.596795
COMPUTER SCIENCE			4.0	0.539419	0.626282
INFORMATION SCIENCE ...			5.0	0.42623	0.473974
SOCIAL SCIENCES - OTHE...			4.0	0.505837	0.577564
PSYCHOLOGY			4.0	0.528455	0.60641
MATHEMATICS			4.0	0.492424	0.560256
SCIENCE & TECHNOLOGY ...			4.0	0.492424	0.553846
COMMUNICATION			4.0	0.467626	0.515385
GOVERNMENT & LAW			5.0	0.43771	0.49641
MATHEMATICAL METHOD...			4.0	0.43771	0.475641
INTERNATIONAL RELATIO			5.0	0.415335	0.456667
PUBLIC ADMINISTRATION			5.0	0.46595	0.525897
GEOGRAPHY			5.0	0.469314	0.530385
TELECOMMUNICATIONS			5.0	0.414013	0.450256
ENVIRONMENTAL SCIENC...			4.0	0.550847	0.640385
EDUCATION & EDUCATIO...			4.0	0.543933	0.609615
WOMEN'S STUDIES			5.0	0.345745	0.373205
ENGINEERING			4.0	0.548523	0.641667
HISTORY & PHILOSOPHY ...			5.0	0.459364	0.520769
OPERATIONS RESEARCH ...			5.0	0.420712	0.466923
SOCIOLOGY			4.0	0.488722	0.560897
CULTURAL STUDIES			5.0	0.398773	0.437436
BEHAVIORAL SCIENCES			4.0	0.460993	0.505128

- First we need to copy the node names (Id column) to the Label column
- Copy data to other column -> Id -> Label. Done

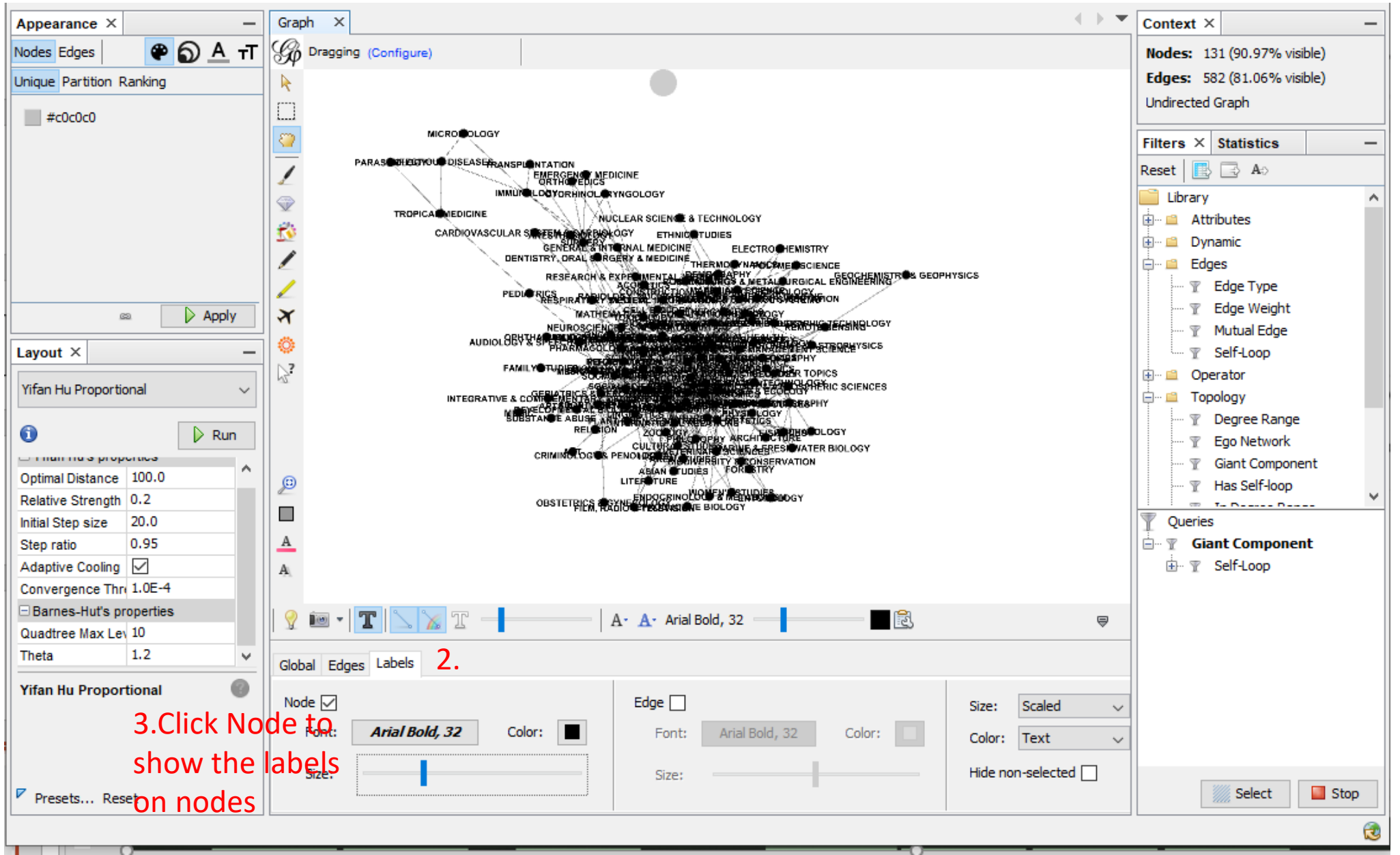
Add labels to the node and show on the graph



Click to unfold the options

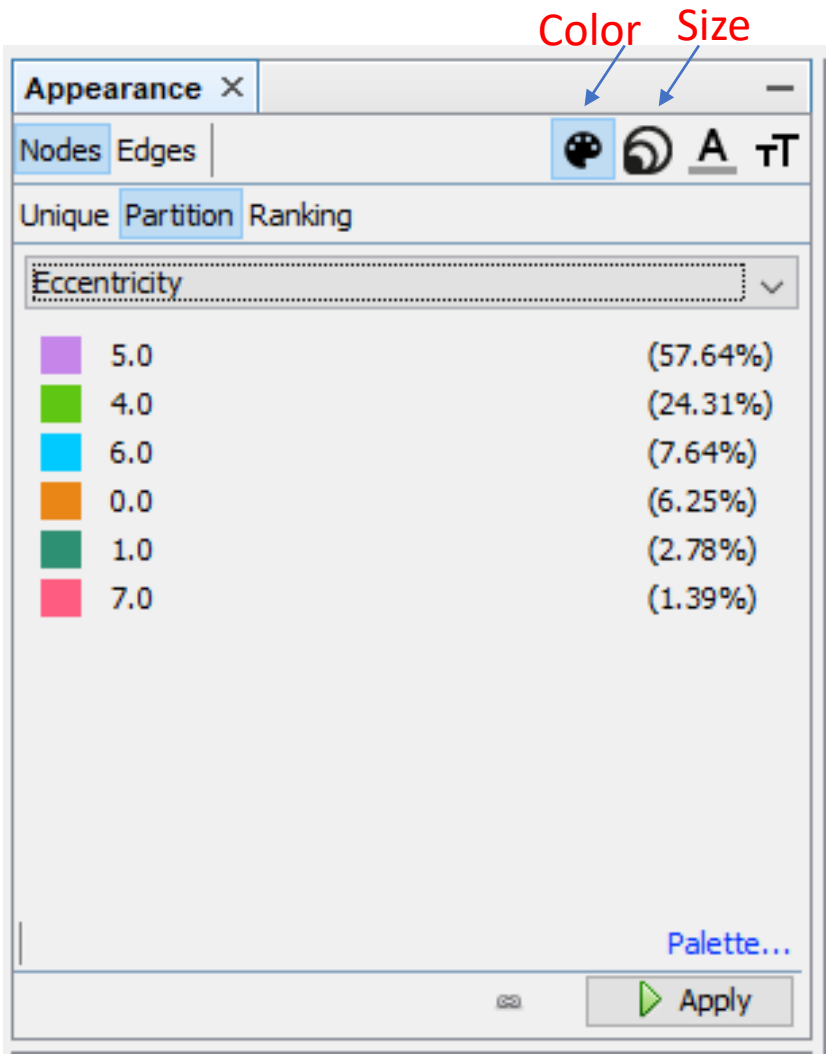
- Back to the Overview page
- Click the unfold icon under the Graph panel, choose Label, and click nodes

Add labels to the node and show on the graph

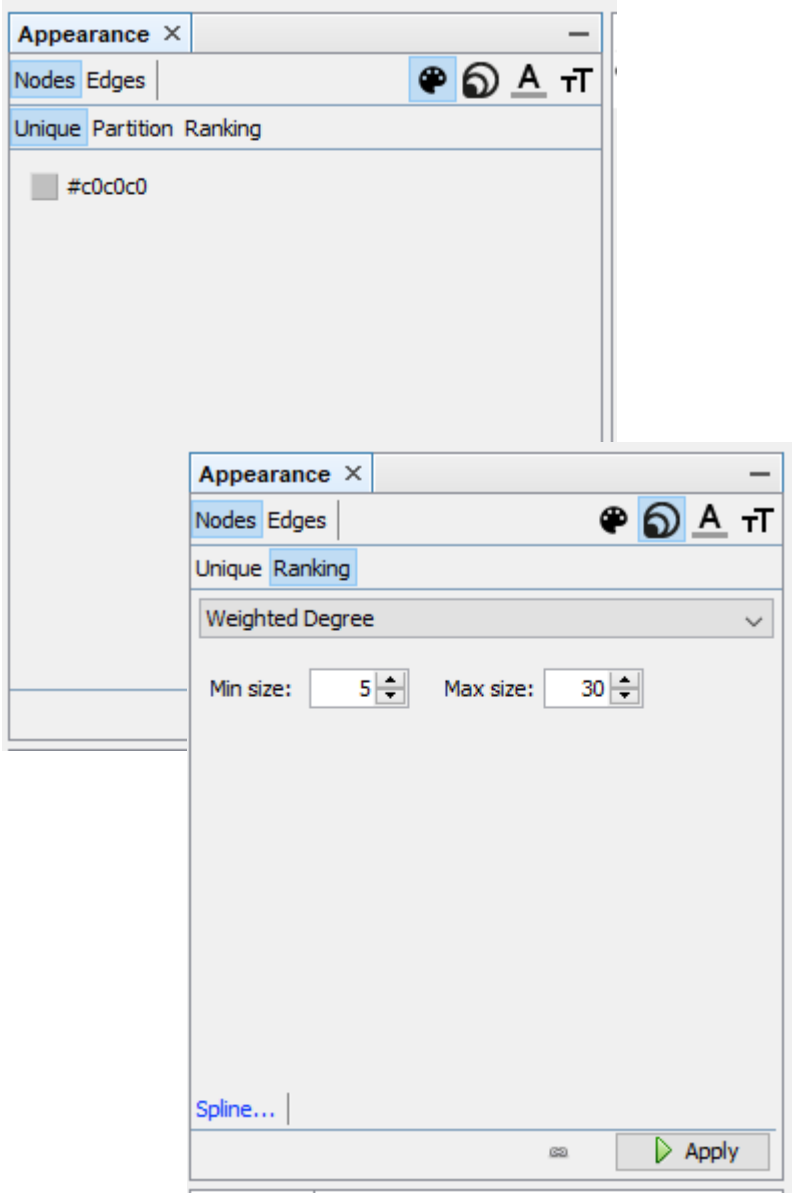


Define the node and edge attributes (most important)

- Size, color, and shape



- **Unique**: same color for all nodes
- **Partition**: categorical color for each group of nodes
- **Ranking**: range of color for continue values



Gephi 0.9.2 - Project 1 - Project 2

File Workspace View Tools Window Help

Overview | Data Laboratory | Preview

Workspace 1

Preview Settings

Presets

Default Straight

Settings | Manage renderers

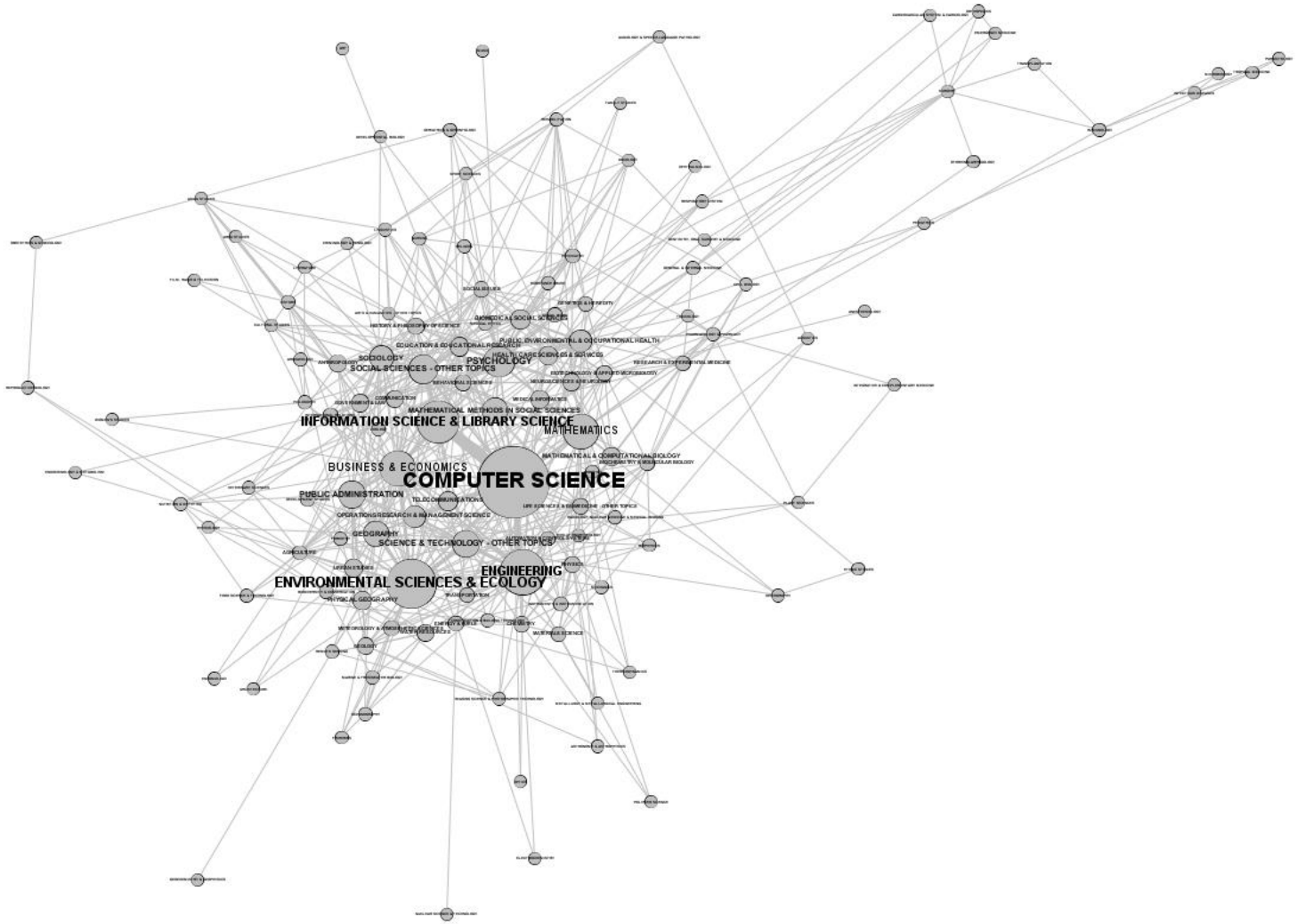
Nodes	
Border Width	1.0
Border Color	custom [0,0,0]
Opacity	100.0
Per-Node Opacity	☐
Node Labels	
Show Labels	☑
Font	
Proportional size	☑
Color	custom [0,0,0]
Shorten label	☐
Max characters	30
Outline size	0.0
Outline color	custom [255,255,255]
Outline opacity	80.0
Box	☐
Box color	parent
Box opacity	100.0
Edges	
Show Edges	☑
Thickness	10.0
Rescale weight	☑
Min. rescaled weight	0.1
Max. rescaled weight	1.0
Color	mixed
Opacity	100.0
Curved	☐
Radius	0.0
Edge Arrows	
Size	3.0
Edge Labels	
Show Labels	☑
Font	Arial 10 Plain
Color	original
Shorten label	☐
Max characters	30
Outline size	0.0
Outline color	custom [255,255,255]
Outline opacity	80.0

Preview ratio: 100%

Refresh

Export: SVG/PDF/PNG

Preview



Background Reset zoom - +