Graphs

Trees
<table>
<thead>
<tr>
<th>ID</th>
<th>Nodes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>15</td>
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<tr>
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## Nodes

<table>
<thead>
<tr>
<th>ID</th>
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<th>Attribute 2</th>
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<tbody>
<tr>
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<tr>
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<tr>
<td>4</td>
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<td>Medium</td>
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### Nodes

<table>
<thead>
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<tr>
<td>4</td>
<td>40</td>
<td>Medium</td>
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</tbody>
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### Edges

<table>
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<tbody>
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<table>
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Degree
Degree

3
Degree
Cycle
Undirected

Directed

Cycle
Undirected

Directed

Cycle
Acyclic
Undirected

Directed

Unconnected
Undirected

Directed

Unconnected

Weighted
Undirected

Directed

Unconnected

Weighted

Tree

Hierarchy
Undirected

Directed

Unconnected

Weighted

Tree

Hierarchy
Visual Bibliography of Tree Visualizations

http://treevis.net/
Indentation

Node-Link

Layering

Enclosure
Indentation

Node-Link

Layering

Enclosure
Indentation

Node-Link

Layering

Enclosure
Indentation

Node-Link

Layering

Enclosure
Reingold-Tilford “Tidy” Layout

- Compact
- No Crossings
- Preserves Symmetry
- Linear Algorithm
Reingold-Tilford Layout
Reingold-Tilford Layout
Reingold-Tilford Layout
Reingold-Tilford Layout
Reingold-Tilford Layout
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Reingold-Tilford Layout
Reingold-Tilford Layout
Reingold-Tilford Layout
Reingold-Tilford Layout
SUGIYAMA

- Depth not strictly enforced
Indentation
Node-Link
Layering
Enclosure
<table>
<thead>
<tr>
<th>Operator</th>
<th>Layout</th>
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</thead>
<tbody>
<tr>
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</table>

Indentation
Node-Link
Layering
Enclosure
Indentation

Node-Link

Layering

Enclosure
Indentation
Node-Link
Layering
Enclosure
World Population

World (6,964,195,249)

- Asia: 4,174,984,067
- Africa: 1,060,491,021
- Americas: 958,306,818
- Europe: 732,609,380

Subdivisions:
- Asian countries
  - Southern Asia
  - South-Eastern Asia
  - Eastern Asia
  - Western Asia
- African countries
  - Eastern Africa
  - Western Africa
  - Northern Africa
  - Middle Africa
- Americas
  - South America
  - Central America
  - Caribbean
- European countries
  - Eastern Europe
  - Southern Europe
  - Western Europe
  - Northern Europe

http://bl.ocks.org/ganeshv/6a8e9ada3ab7f2d88022
Tree of Life
mammals
Indentation
Node-Link
Layering
Enclosure
Indentation
Node-Link
Layering
Enclosure
Visual Complexity

http://www.visualcomplexity.com/vc/
Node-Link Matrix
Undirected

Directed

Unconnected

Weighted

Tree

Hierarchy
Force-Directed Layout

Repulsion: \( f_R(d) = C_R \cdot m_1 \cdot m_2 / d^2 \)

Attraction: \( f_A(d) = C_A \cdot (d - L) \)

Iteratively move nodes and recalculate....
Force-Directed Layout

Minimize edge crossings
Minimize area
Minimize line bends
Minimize line slopes
Maximize smallest angle between edges
Maximize symmetry
It’s shit cool up here on the Global Maximum mate

Local Maximum
Social Action:

https://vimeo.com/7308004
Pivot Graphs

coming soon...maybe?
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 0.9.1

Release Notes | System Requirements

Features
Quick start
Screenshots
Videos

Support us! We are non-profit. Help us to innovate and empower the community by donating only 8c:

Donate

APPLICATIONS

✔ Exploratory Data Analysis: intuition-oriented

Like Photoshop™ for graphs.

PAPERS
Node-Link Matrix
Networks
Spanning Tree Layout
Force-Directed Layout
Simplification
Matrix Diagrams

Hierarchies
Indented / Node-Link / Enclosure / Layers
Focus + Context techniques for scale
Reingold-Tilford Layout
Sugiyama Layout