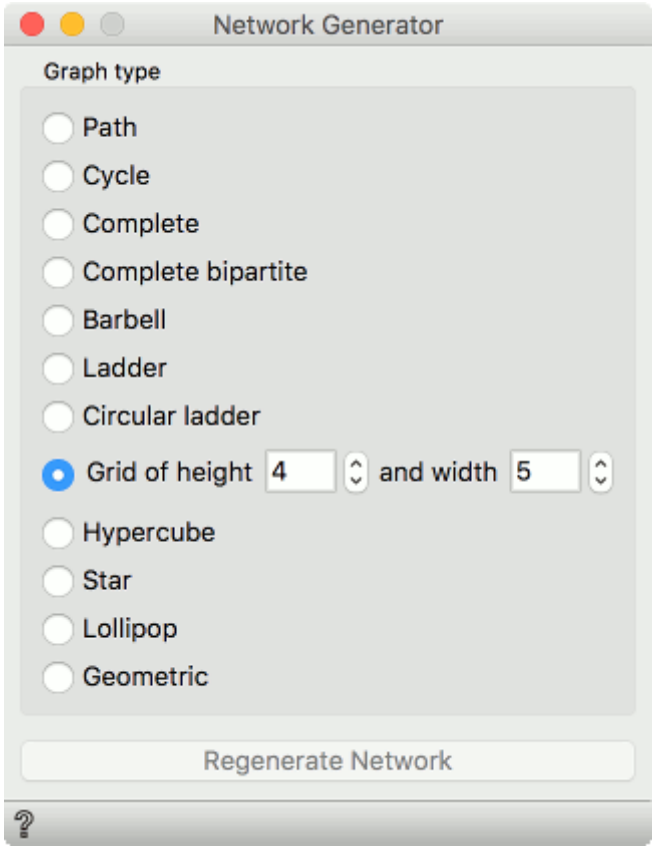
Network Generator

Construct example graphs.

Outputs

- Generated Network: An instance of Network Graph.

Network Generator constructs exemplary networks. It is mostly intended for teaching/learning about networks.



Graph options:

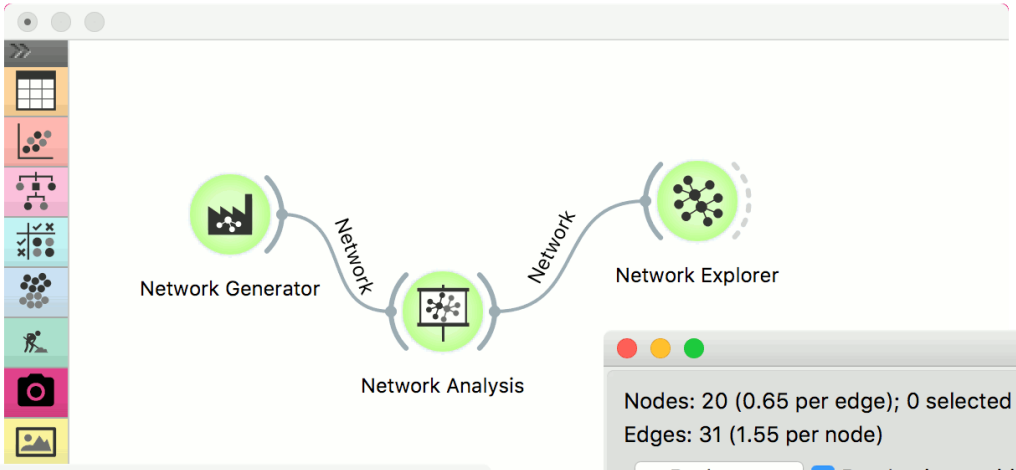
- Path: a graph that can be drawn so that all of its vertices and edges lie on a single straight line.
- Cycle: a graph that consists of a single cycle, i.e. some number of vertices (at least 3) are connected in a closed chain.
- Complete: simple undirected graph in which every pair of distinct vertices is connected by a unique edge.
- Complete bipartite: a graph whose vertices can be divided into two disjoint and independent sets.

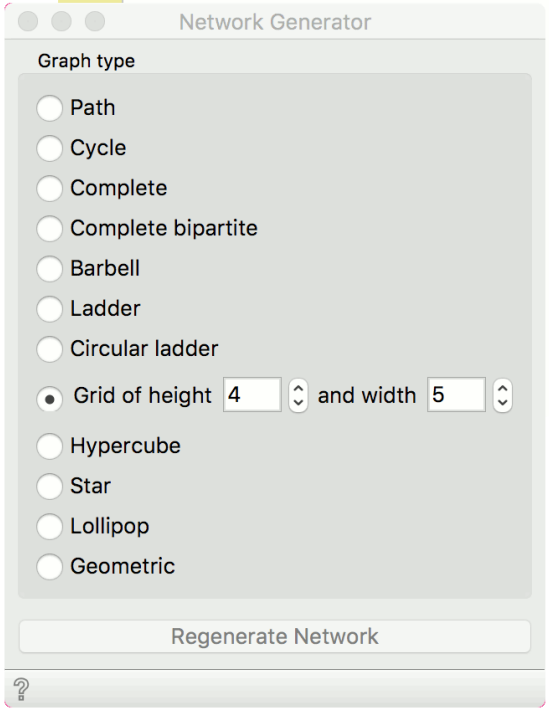
- Barbell: two complete graphs connected by a path.
- Ladder: planar undirected graph with 2n vertices and 3n-2 edges.
- Circular ladder: Cartesian product of two path graphs.
- Grid: a graph whose drawing, embedded in some Euclidean space, forms a regular tiling.
- Hypercube: a graph formed from the vertices and edges of an n-dimensional hypercube.
- Star: Return the Star graph with n+1 nodes: one center node, connected to n outer nodes.
- Lollipop: a complete graph (clique) and a path graph, connected with a bridge.
- Geometric: an undirected graph constructed by randomly placing N nodes in some metric space.

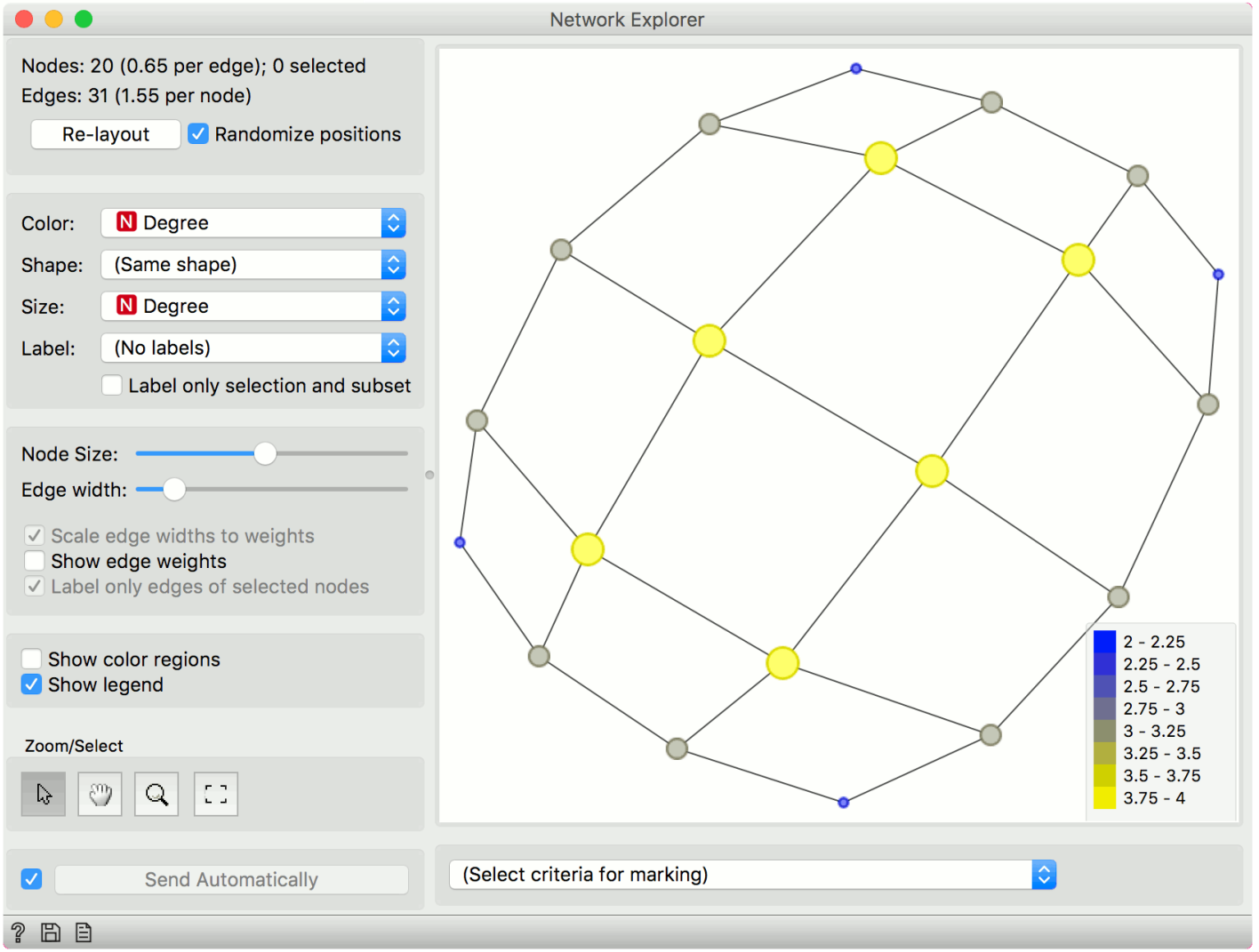
Press *Regenerate Network* to output a new graph instance.

Example

Network Generator is a nice tool to explore typical graph structures.


Network Generator
Network
Network Analysis
Network
Network Explorer


Network Generator
Graph type
Path
Cycle
Complete
Complete bipartite
Barbell
Ladder
Circular ladder
Grid of height 4 and width 5
Hypercube
Star
Lollipop
Geometric
Regenerate Network


Network Explorer
Nodes: 20 (0.65 per edge); 0 selected
Edges: 31 (1.55 per node)
Re-layout
Randomize positions
Color: Degree
Shape: (Same shape)
Size: Degree
Label: (No labels)
Label only selection and subset
Node Size:
Edge width:
Scale edge widths to weights
Show edge weights
Label only edges of selected nodes
Show color regions
Show legend
Zoom/Select
Send Automatically
(Select criteria for marking)
2 - 2.25
2.25 - 2.5
2.5 - 2.75
2.75 - 3
3 - 3.25
3.25 - 3.5
3.5 - 3.75
3.75 - 4

Here, we generated a *Grid* graph of height 4 and width 5 and sent it to Network Analysis. We computed node degrees and sent the data to Network Explorer. Finally, we observed the generated graph in the visualization and set the size and color of the nodes to *Degree*. This is a nice tool to observe and explain the properties of networks.