How to get from flat data to a Network Graph

This article provide follow up to the Network Graphs article.

A typical process for creating networks out of flat datasets, such as separate lists of people and projects, is to iterate through a dataset having people in each row, looking for unique values in a column containing project names, turn those project names into new nodes, and then connect those new project name nodes up to the people rows.

The above dataset started out as a simple list of ids with "tags"

image.png
Image not found or type unknown

Running it through the algorithm described, results in new nodes added, in this case A, B, and C, each with connection to the ids 1 through 6 based on the tags present.

image.png
Image not found or type unknown

image.png
Image not found or type unknown

Javascript proto-code for this looks like this:

```
var nodes = [];
var tag_column_name = "tag";

for (var i = 1; i < rows.length-1; i++) {
    var row = rows[i].split(",");
    var node = {};
    for (var j = 0; j < header.length; j++) {
      node[header[j]] = row[j];
node['type']='node';
node['connections']=undefined;
node['connectionCount']=undefined;
    }
    nodes.push(node);
    if (!tagMap[node[tag_column_name]]) {
      tagMap[node[tag_column_name]] = [];
```

```
    }
    tagMap[node[tag_column_name]].push(node.id);
  }
  var taglist = Object.entries(tagMap).map(([key, value]) => ({ id: key, links: value }));

  for (var i = 0; i < taglist.length; i++) {
    taglist[i].type = tag_column_name;
    taglist[i].connections = taglist[i].links ? taglist[i].links.join("|"): null;
    taglist[i].connectionCount = taglist[i].links ? taglist[i].links.length : 0;
    nodes.push(taglist[i]);
  }
```

Revision #3
Created 14 February 2023 00:02:12 by Jason Marsh
Updated 1 January 2026 04:40:04 by Bill