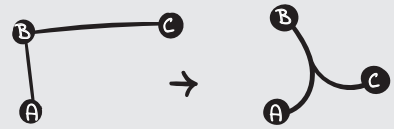
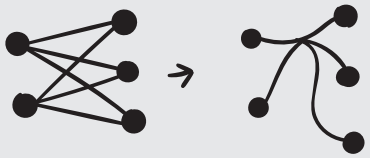
Recall that the main criterion with Confluent Drawings is that two edges are bundled only if both **source nodes** are connected to both **target nodes.**



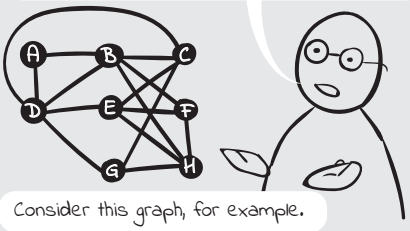
For example, in edges BA and BC, B is connected to both A and C.

To simplify the graph, we are therefore on the lookout for nodes that have a neighbour in common, or many neighbours in common.



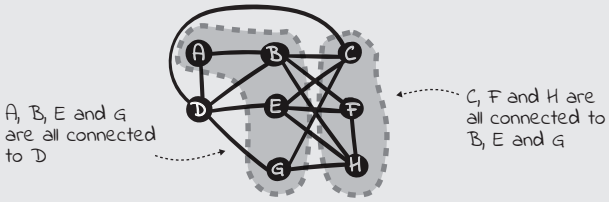
Seems simple enough.

Algorithmically, they are not that easy to construct, however. We often have to be satisfied with okay yet suboptimal solutions.

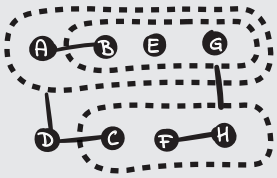


Consider this graph, for example.

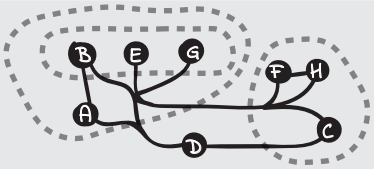
In rough terms, the algorithm looks for groups of nodes that have an outsider neighbour in common.



The edges that connect in-group nodes with the outsider is replaced by a container edge...

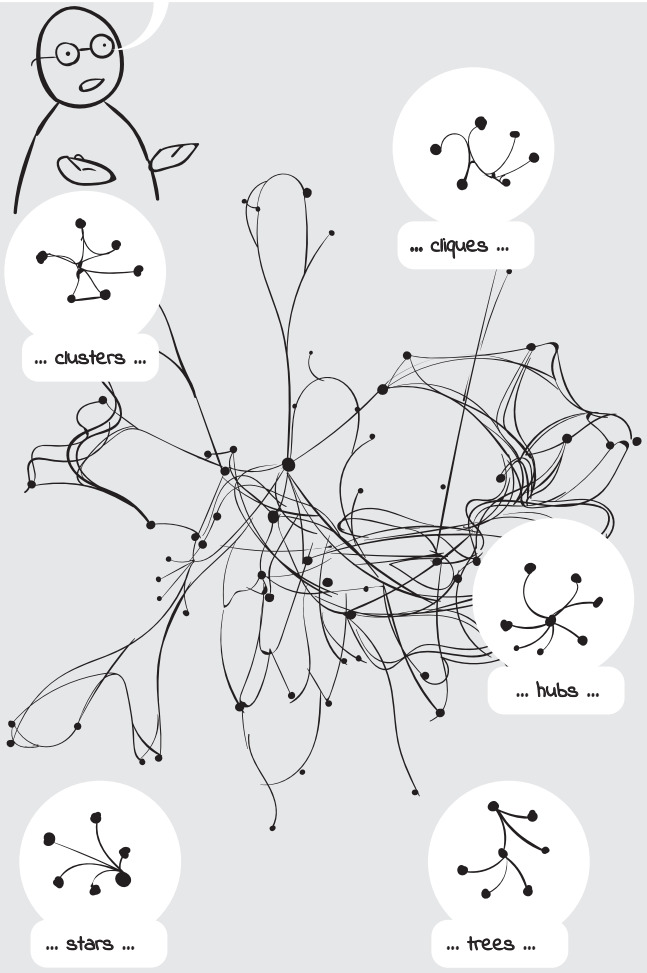


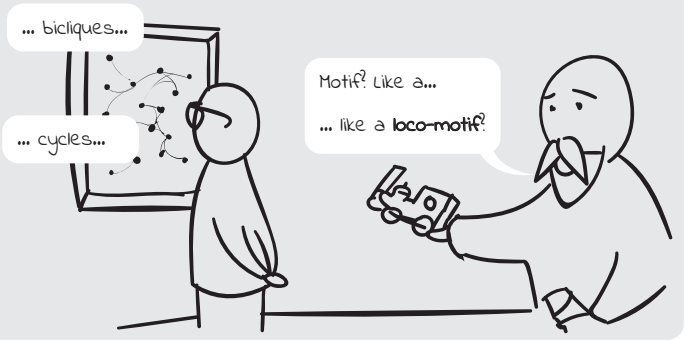
... these edges are then replaced by a bundle junction so that all nodes inside are connected to that bundle.

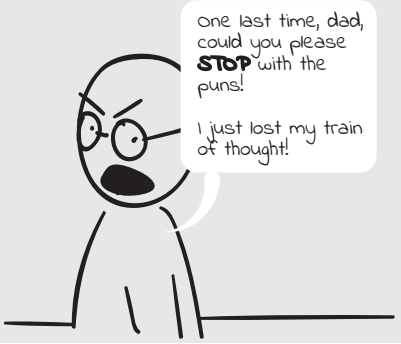


Apply some twists and turns to separate nodes into a readable layout without overlap, et voila!

For large networks that are not too chaotic or simple, this transformation can reveal beautiful structures, called "**motifs**". Motifs include things like...







* Learn more about the algorithm:
Bach, B., Henry Riche, N., Hurter, C., Marriott, K., & Dwyer, T. (2017, January). Towards Unambiguous Edge Bundling: Investigating Confluent Drawings for Network Visualization. In IEEE Transactions on Visualization and Computer Graphics (Vol. 23, No. 1, pp. 541-550).