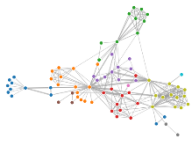
4.2 B NETWORKS AND TREES

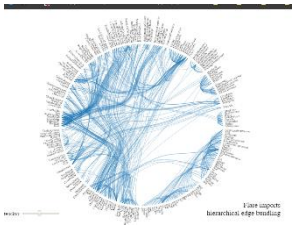
1. Force Directed Graph

IDIOM	**Force Directed Node-Link Diagram**
Data	Network or tree | The data consists of co-occurrence of characters in the play Les Misérables. Nodes consists of each character. Links consists strengths between the characters.
Task	Explore topology, locate paths, Identifying clusters.
Encoding	Point marks for nodes, connecting line marks for link.



2. Hierarchical Edge Bundling

IDIOM	**Hierarchical Edge Bundling**
Data	Hierarchical related entities (Hierarchy between classes in a software project)
Task	Visualize dependencies between various classes in a software project.
Encoding	Tree transform to visualize node, and line mark with bundle interpolation to draw dependencies.



Differences between the above Idioms:

Force Directed Node-Link Diagram

- Uses force to visualize strong relation.
- Visualizes topology of the network and locate paths
- The strength of force depicts the relationship strength between nodes
- Can be used to identify a group of nodes which form a cluster with a strong relationship
- Since they are based on properties of common objects like spring, more intuitive and easier to understand.
- Relatively easy to code with libraries

Hierarchical Edge Bundling

- Uses links between nodes to represent the relationship.
- Visualizes hierarchal relationships.
- The more connection a node has the darker/wider is the connection with other nodes.
- Can be used to find most / more connected nodes in a hierarchy
- Can be sometimes confusing some time to see connections between highly common connected nodes.
- Produces aesthetically pleasing graphs.