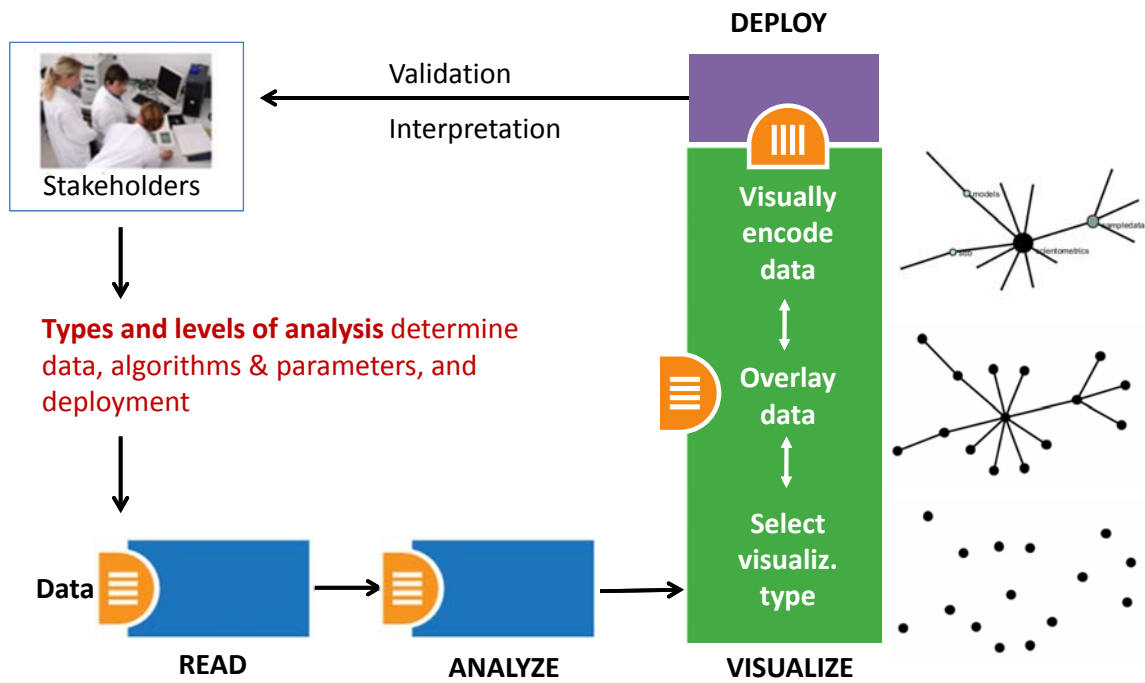


Needs-Driven Workflow Design

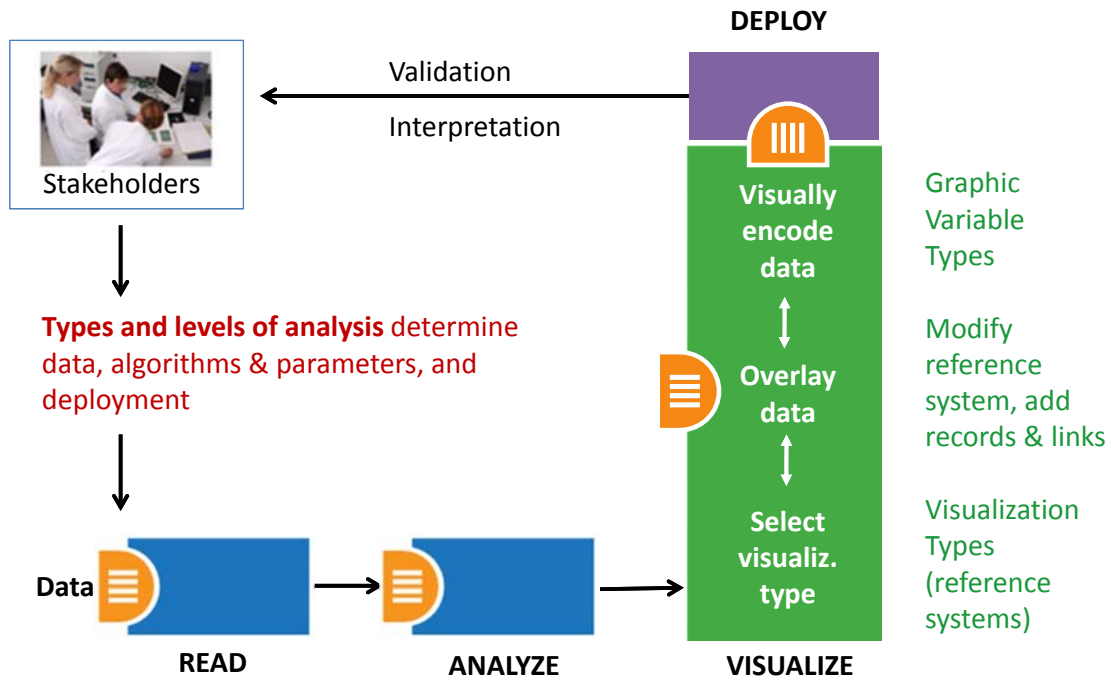


Information Visualization MOOC

Unit 5 – “With Whom”: Tree Data

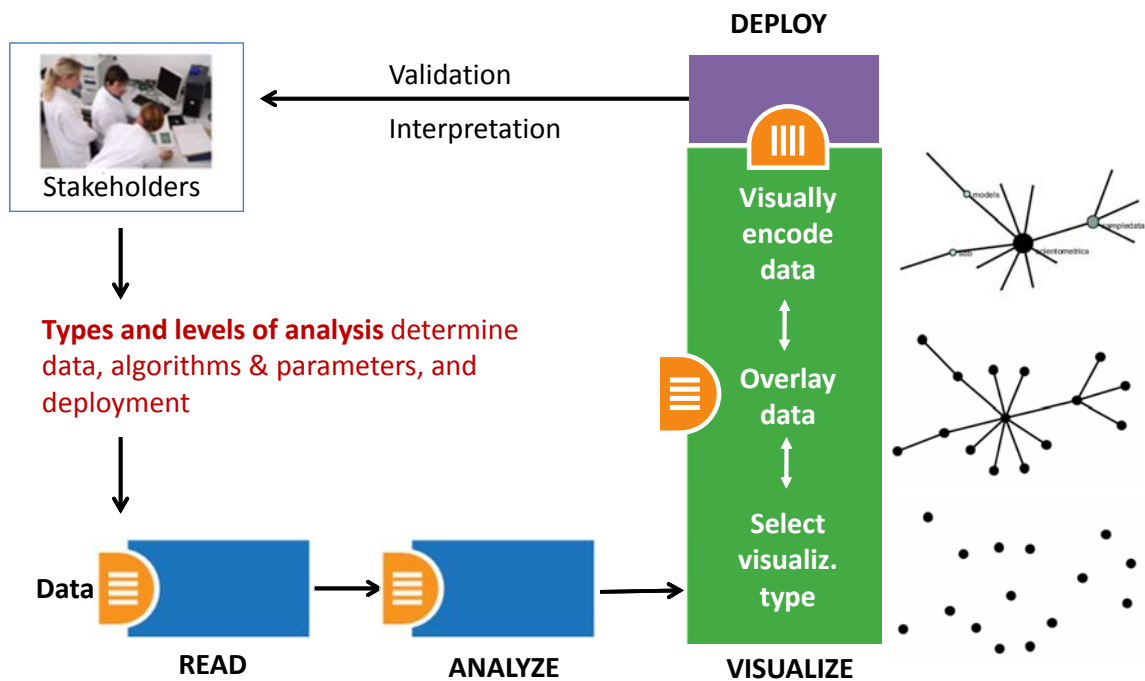
Workflow Design

Needs-Driven Workflow Design



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Needs-Driven Workflow Design



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Read Data

Sample Data:

- Stanford Large Network Dataset Collection, <http://snap.stanford.edu/data/>
- Tore Opsahl's Datasets, <http://toreopsahl.com/datasets/>
- Sci2 Datasets, <http://sci2.wiki.cns.iu.edu/display/SCI2TUTORIAL/2.5+Sample+Datasets> and general data sources, <http://sci2.wiki.cns.iu.edu/display/SCI2TUTORIAL/8.1+Datasets>

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Data Formats

Network Formats

- GraphML (*.xml or *.graphml)
- XGMML (*.xml)
- Pajek .NET (*.net)
- NWB (*.nwb)

Other Formats

- Pajek Matrix (*.mat)
- TreeML (*.xml)
- Edgelist (*.edge)
- CSV (*.csv)

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Tree Analysis

Extract relevant subtrees

Calculate node and edge properties—e.g., in- and out-degrees

Calculate tree properties

Sort tree

Compare trees

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Visualization Goals

Representing hierarchical data

- Structural information
- Content information

Objectives

- Efficient space utilization
- Comprehension
- Interactivity
- Esthetics

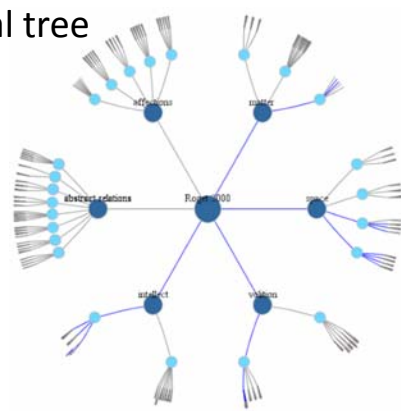
24

Visualization Types

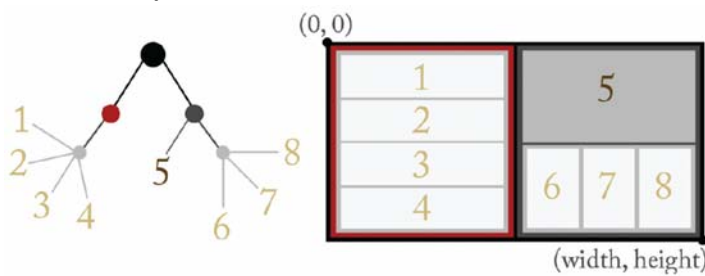
Tree view



Radial tree



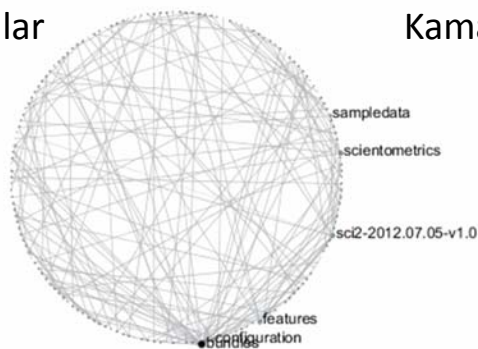
Tree map



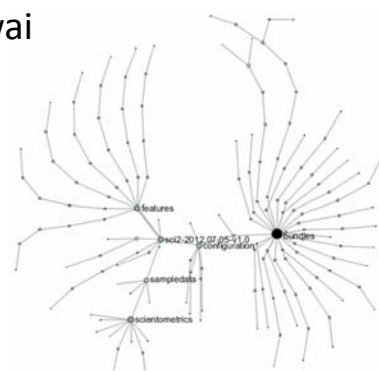
25

GUESS in Sci2

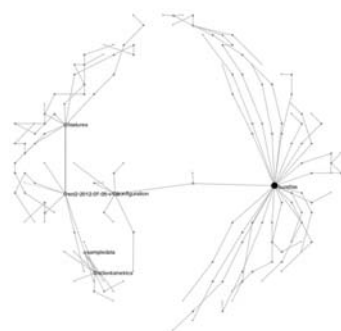
Circular



Kamada-Kawai



Fruchterman-Reingold



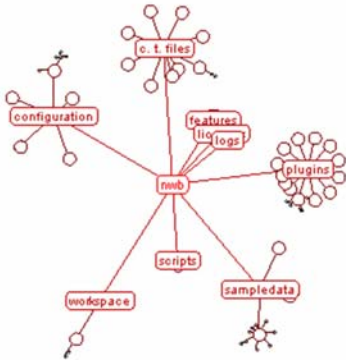
GEM



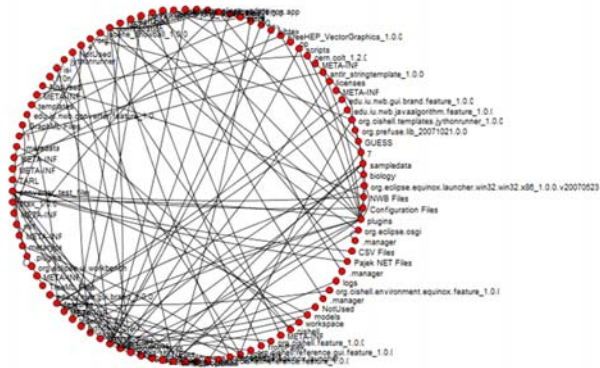
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NWB:

Balloon Graph



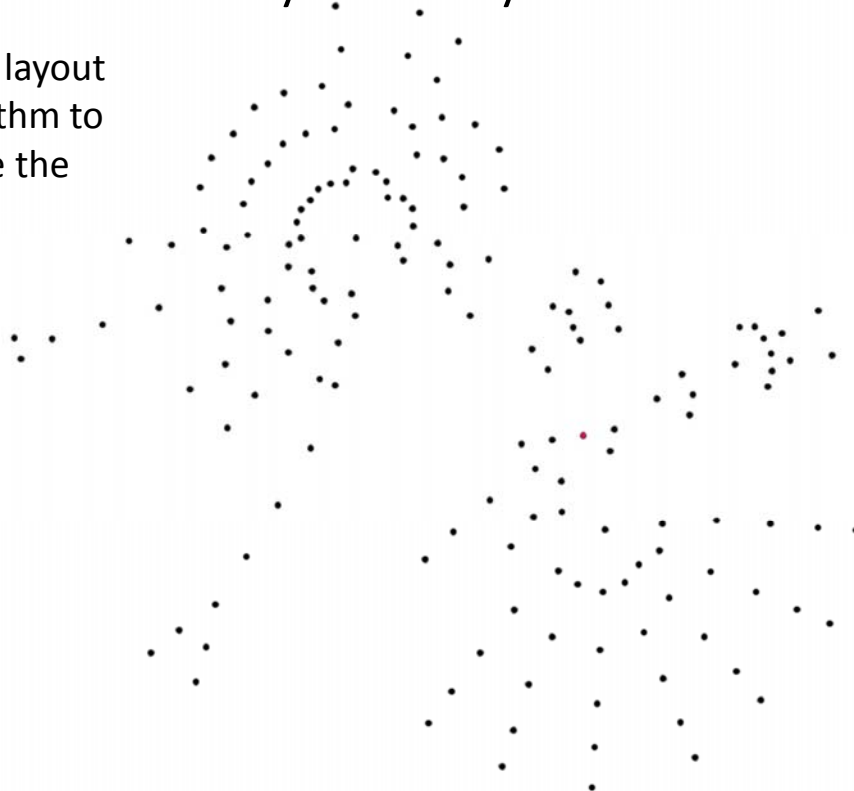
Circular



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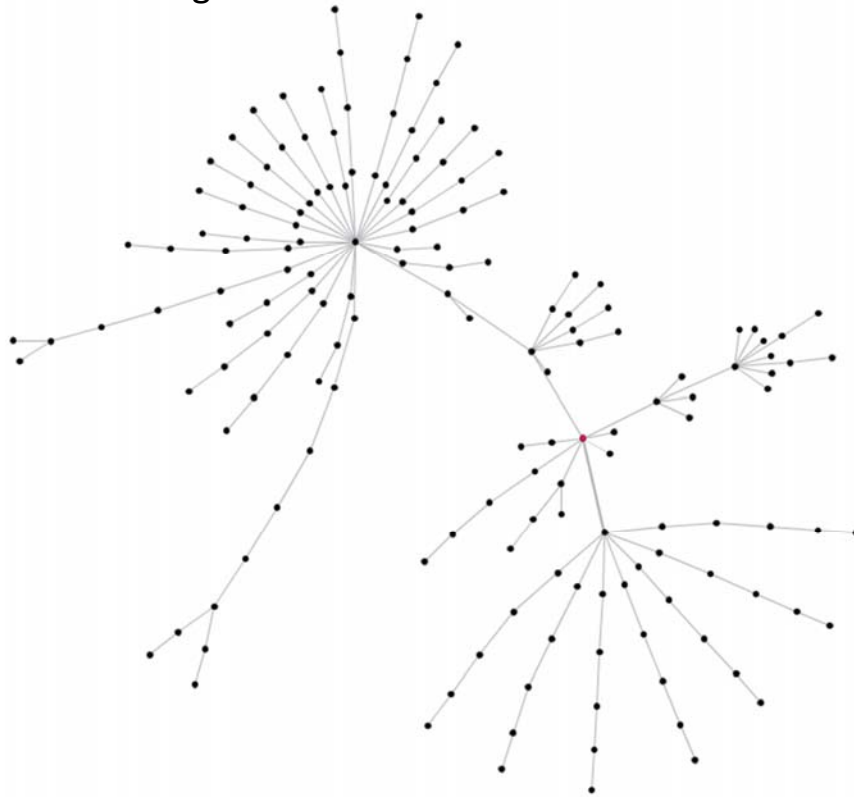
Sci2 Tool Directory Hierarchy

Apply layout algorithm to define the space



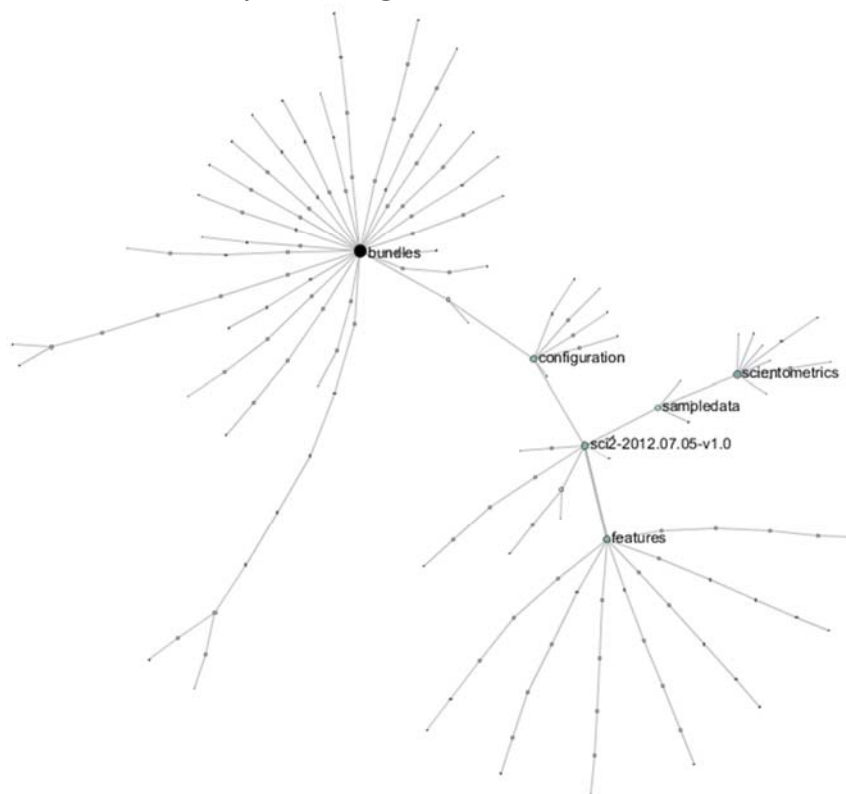
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Add nodes and edges



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Size and color code by out-degree



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Relevant Tools

- GUESS
- Gephi
- Cytoscape

30+ more are at

<http://sci2.wiki.cns.iu.edu/8.2+Network+Analysis+and+Other+Tools>

Please post your favorite tool to Twitter, Flickr using tags “ivmooc” and “#nwtools.”

