

Visualizing Graph and Network Data



Matthew Renze

SOFTWARE CONSULTANT

@matthewrenze www.matthewrenze.com



Overview



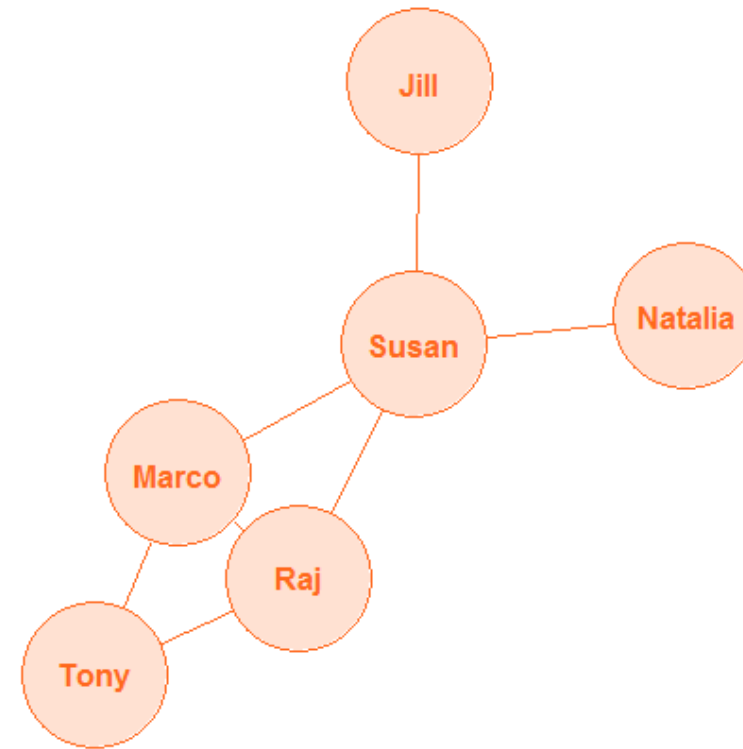
Visualizing Graph and Network Data Demo



Network Data Analysis

Relationships
Network
Graph

Susan's Social Network



Network Data Analysis

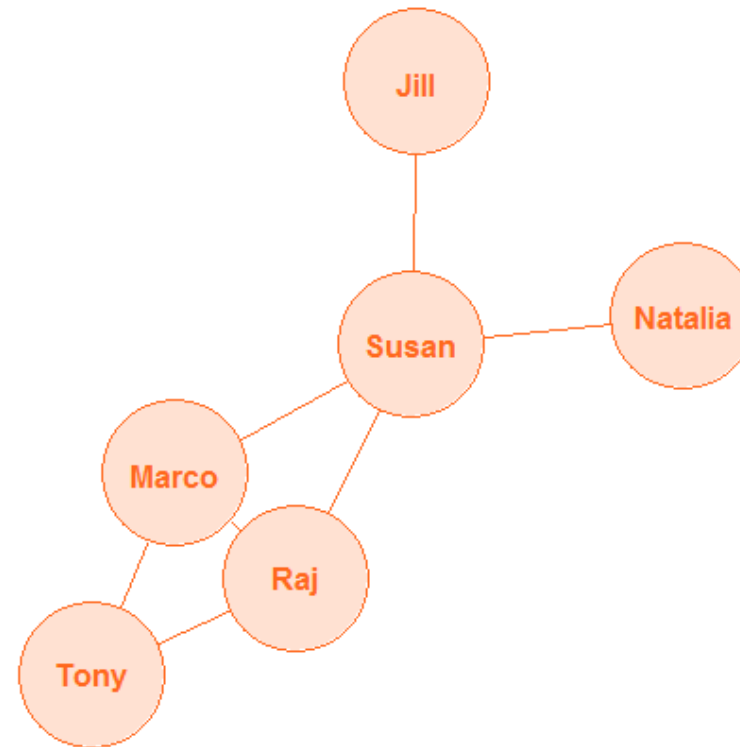
Vertices

Edges

Directed

Undirected

Susan's Social Network



Network Data Analysis

Vertices

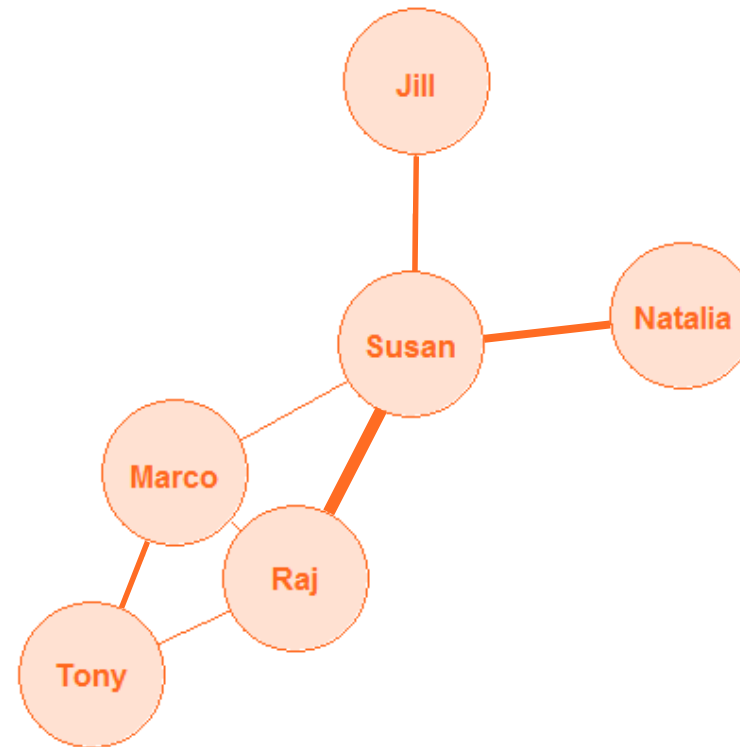
Edges

Directed

Undirected

Weighted

Susan's Social Network



Network Data Analysis

Network of pairs

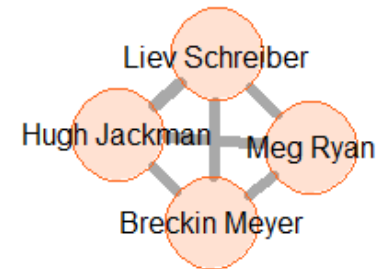
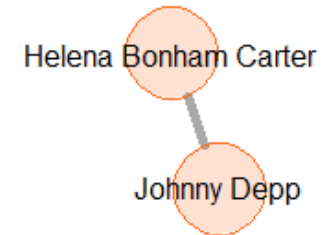
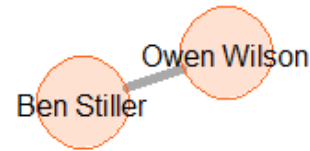
Additional variables

Actor	Partner	Movies
Hugh Jackman	Liev Shreiber	7
Breckin Meyer	Hugh Jackman	6
Breckin Meyer	Liev Shreiber	6
Breckin Meyer	Meg Ryan	6
Hugh Jackman	Meg Ryan	6
Liev Shreiber	Meg Ryan	6



Small Graph

Five-time or More Acting Pairs



Relationships

Labels

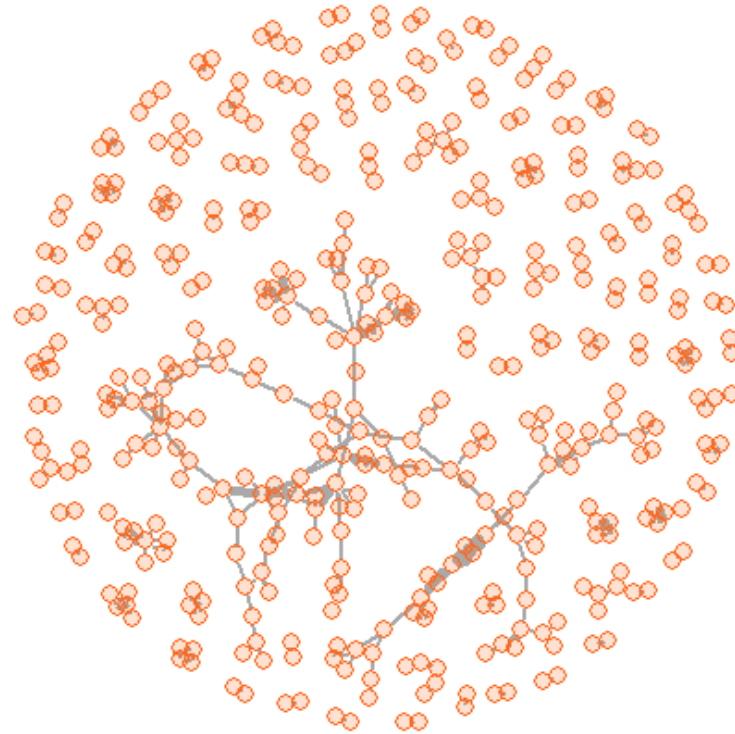
Small number of vertices

Additional variables



Large Graph

Twice or More Acting Pairs



Shape and patterns
Minimize noise
Additional variables



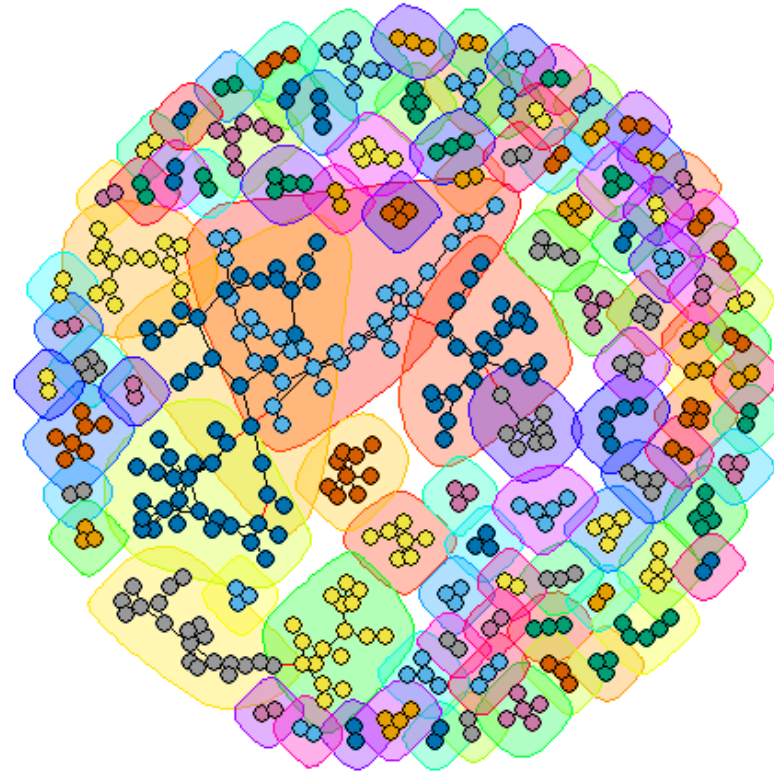
Community Graph

Clusters

Colored polygons

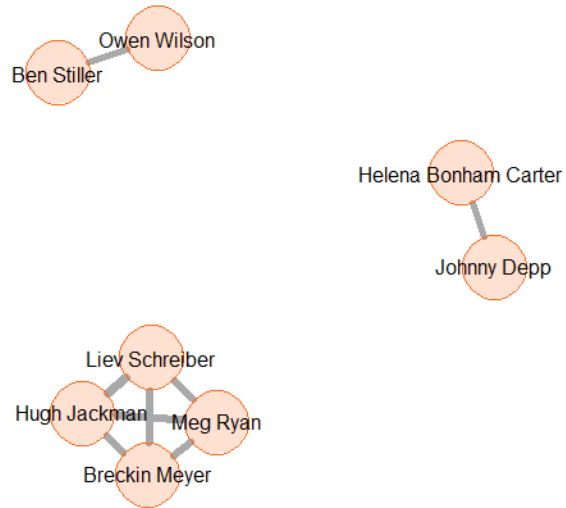
Two-color lines

Acting Communities

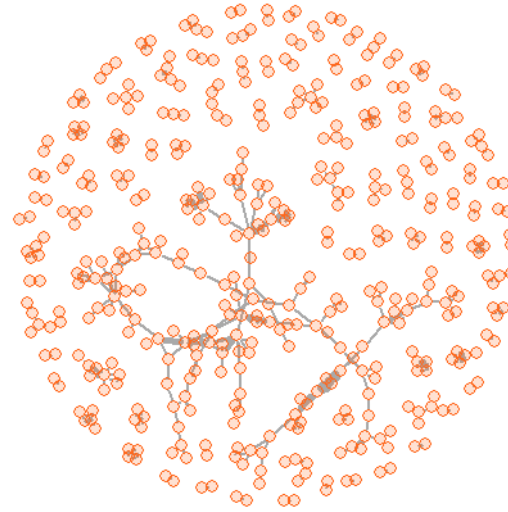


Network Data Visualization

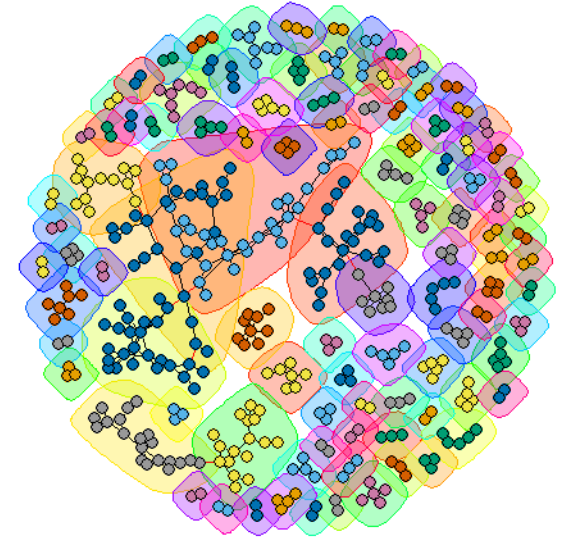
Five-time or More Acting Pairs



Twice or More Acting Pairs



Acting Communities





1. Which actors have acted together?
2. Are there acting communities?



Load the Data



Create a Small Graph



Plot a Small Graph



Create a Large Graph



Plot a Large Graph



Create Clusters



Plot Communities Graph





Summary



Visualizing Graph and Network Data Demo

