

Computational Social Science Workshop 2016
Social Network Analysis

Jinseok Kim

Graduate School of Library and Information Science

University of Illinois at Urbana-Champaign

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Goals of the Session

- Learning by doing
 - How to conceptualize a network
 - How to input network data
 - How to visualize a network
- Getting familiar with
 - a network analysis tool: NodeXL
 - basic network terms
 - Degree Centrality

A dream scenario: You got a NSF funding!

- It requires a research trip to an island

The Republic of Monkeys

- In the island, a group of monkeys live and all they do is banana picking from a banana tree

Defining a social network

- A group of (**monkeys**) connected by the (**collaboration**) relationship
 - Monkeys = actors, nodes , or vertices (singular: vertex)
 - Collaboration relationship = ties, lines, or edges
- Characterizing a network
 - Directed vs **Undirected**
 - Weighted vs **Unweighted**

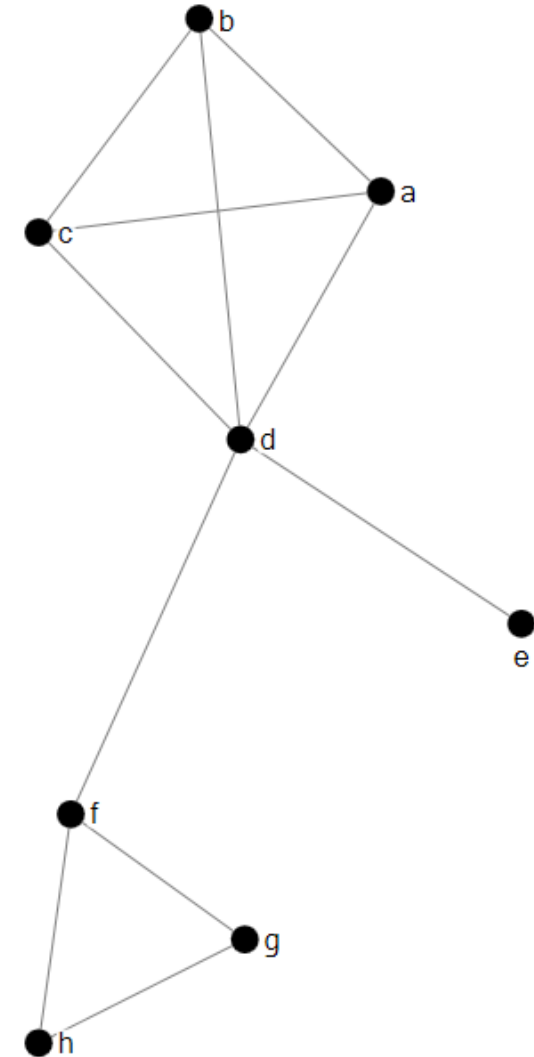
Generating network data

- Two monkeys are connected to each other by a collaboration relationship
- The connected relationship is represented by a pair of monkey names (or ids)

a	b
a	c
a	d
b	c
b	d
c	d
d	e
d	f
f	g
f	h
g	h

Analysis, visualization, and knowledge finding from a network

- Who's the important one?
- Structure of collaboration



Another example: Les Miserables

- Two actors are connected to each other if they appear in the same scene
- Network analysis can provide information about, for example, who is most connected, and thus most important in terms of network structure

Recap

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I hope you enjoy social network analysis
Thank You!

- Question: jkim362@Illinois.edu