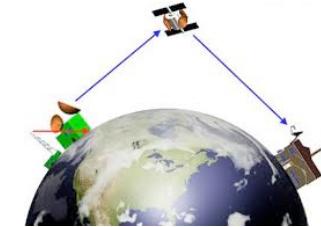


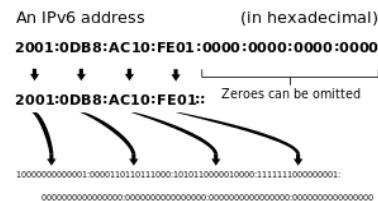
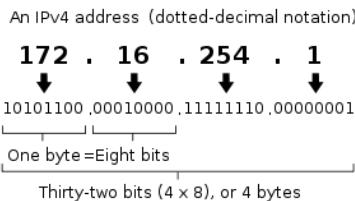
Networks

CSCI 10 - Santa Clara University - Winter 2017
Michael J. Bannister



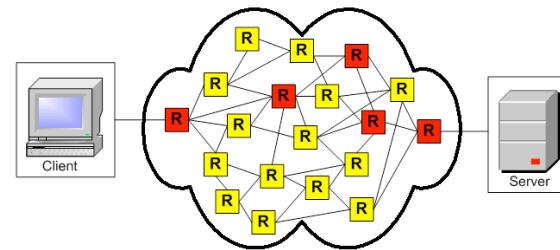
Addressing

- IPv4 - 32 bit number; written in "256" using dot-decimal notation
 - IPv6 - 128 bit number;



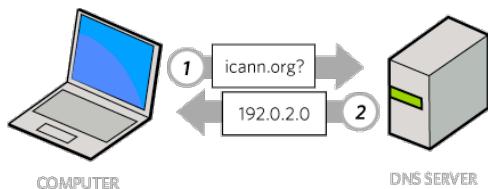
Navigating

- Routers are used to "locally" find paths



Naming

- DNS servers are used to bind names (google.com) to IP addresses like addresses (172.217.4.110).
- Naming is hierarchical



What is a network?

Nodes - singular entities; considered indivisible; may have attributes and qualities

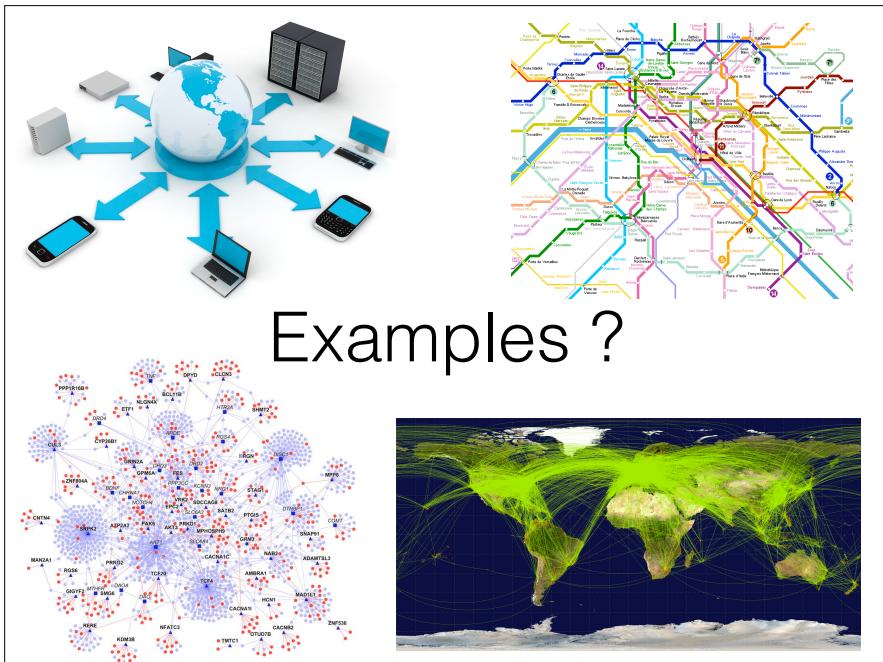
Links - a connection between two nodes; may have attributes and qualities

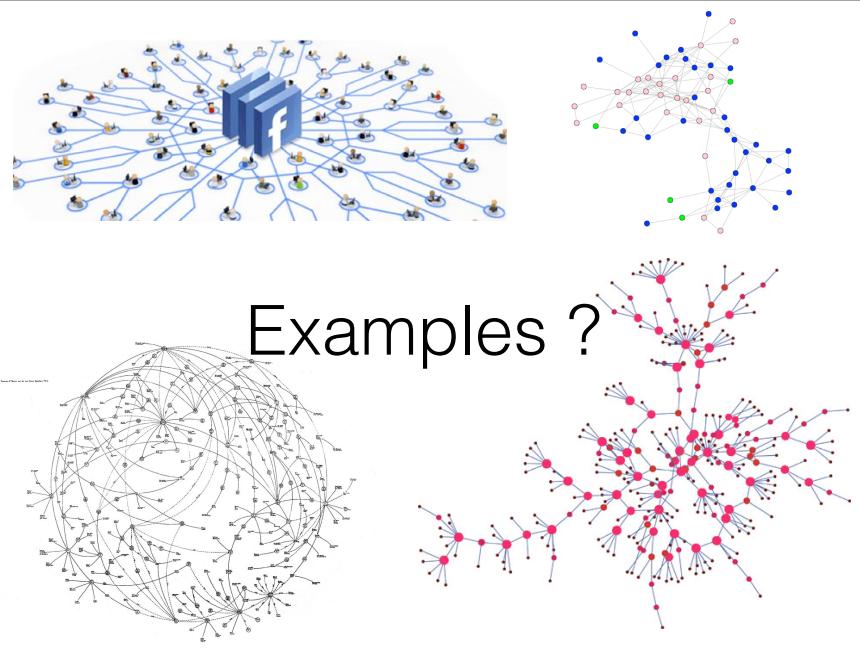
Examples ?

What is a social network?

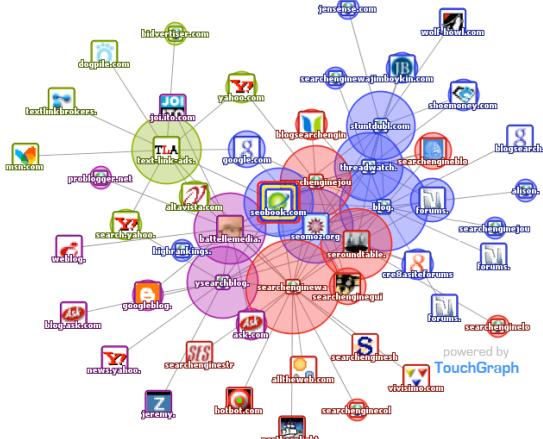
Actors - individuals and organizations

Dyadic ties - social interactions between actors





The Web Graph and Random Walks



What is a graph?

Vertices - Similar to a point in geometry

Edges - Connect two vertices

