Reputation

Reputation and trust are important for:
- information selection
- quality of commerce

Reputation is often built on reviews

Outline:
- case studies of reputation systems
- distributed reputation systems

Web Page Reputation Ranking

- Web page ranking:
  - **Goal:** provides a ranking among Web pages, useful for search engines after relevance search.
  - **Peer-rating:** hyperlinks.
- Web page ranking 1.0:
  - rank based on the number of incoming hyperlinks
  - Enhancement: links from a page with too many links should be discounted
- Web page ranking 2.0:
  - page with N outgoing links contributes 1/N to each link receiving page's reputation
  - Enhancement: links from a high-reputation node should be valued higher

Solving a Linear Equation

- let page P's reputation be \( \text{Rep}(P) \); let page P's number of outgoing hyperlinks be \( \text{Out}(P) \)
- for each page A, assume it has incoming hyperlinks from B, C, D; then we have an equation:
  - \( \text{Rep}(A) = \frac{\text{Rep}(B)}{\text{Out}(B)} + \frac{\text{Rep}(C)}{\text{Out}(C)} + \frac{\text{Rep}(D)}{\text{Out}(D)} \)
- how many equations do we have?
- how many unknowns do we have?
- how to solve it?
Not done yet!

- People called spammers create artificial Web pages and link to each other to promote their "reputation"

- Q: how to deal with them?

Trader’s Reputation

- [http://www.epinions.com](http://www.epinions.com)
  - a Web site where consumers can post their opinions (or scores) on traders after business transactions.
  - new consumers can browse through them to form an understanding

- Can this be automatic?
  - e.g., sum/average of the scores

- Reputation for scorers too?

Distributed Reputation System

- Reputation on the reputation system
- have the score go to a mutually agreed reputation system