

# Announcements

- Remember: you are responsible for verifying what you submit through the submit server. You can download the zip file you submitted.
- No office hours during Spring Break
- Any questions about P3?

# Peer-to-Peer Networks (Part of this material is from Wikipedia)

- P2P is a computer network that relies on the computing power and bandwidth of the network's participants rather than concentrating it in a set of servers
- Purposes
  - File sharing (e.g., audio, video, data, etc.)
  - Telephony
  - You can share your files and share files of other members in the network
- **Pure P2P system** - does not have the notion of clients or servers but only equal peer nodes that function as both clients and servers.
- **Non pure P2P system** - A user will send a search to a centralized server(s) for an item (e.g., a song) and the server will return a list of peers with the item. The server will also facilitate the connection and download

# Original Napster

- First widely-used p2p music sharing system, allowing the exchange of MP3 format song files
- It had a localized index for MP3 files
- Napster was not fully peer-to-peer
  - Used central servers to maintain lists of connected systems and their files
  - Actual transactions were conducted directly between machines.
- Napster was shut down to comply with an injunction that ordered Napster to prevent the trading of copyrighted music on its network
- Napster has been resurrected as a commercial online music service

# P2P Networks

- Some P2P Networks
  - **eDonkey2000**
    - Most popular network (According to Slyck.com)
  - **Gnutella**
    - True peer-to-peer system that operates without a central server
    - Second most popular network file sharing network system (According to Slyck.com)
  - **FastTrack**

# Slyck.com

- A site with plenty of information about P2P networks is:
  - [www.slyck.com](http://www.slyck.com)
  - Let's see the table with users per network provided on that site
- A more complete list of P2P networks and the clients that connect to it can be found at
  - <http://slyck.com/programs.php>

# P2P Protocols

- **FastTrack**
  - Both the name of a protocol and a network
  - Uses supernodes to improve scalability. A supernode is an indexing server.
  - Powerful computers running client software will automatically become a supernode, effectively acting as a temporary indexing server for other, slower clients.
- **(MFTP) Multisource File Transfer Protocol**
  - Still under development
  - Allows file identification by contents regardless of the file's name
  - Allows sharing of metadata (e.g., this file is good) about a given file with links on Web sites

# P2P Protocols

- **Bittorrent**
  - Both the name of a protocol and a P2P client application
  - Designed to widely distribute large amounts of data
  - It reduces server load by letting clients download a file from each other
  - Peers download missing file fragments from each other and upload those that they already have to clients (peers)
  - Clients start sharing file fragments with their peers before the requested file is downloaded