

TCP Server

- `socket()`
- `bind(socket, struct sockaddr*, int addrLen);`
- `listen(socket, int backlog)`
 - `newsocket = accept(socket, struct sockaddr*, int *addrLen)`
 - `recv()/send()`
 - `close(newsocket)`

Peer to Peer

- BitTorrent
- Gnutella (old school)
- Napster

- Distributed HashTable
 - (Amazon) Dynamo
 - Chord
 - Riak
 - Overlay network

Vocabulary

- Peer
- Bootstrapping
- Decentralized
- Overlay network

Centralized Directory

- Napster used this method
- Why is this good?
- Why is this bad?

Gnutella

- Overlay network
- Query flooding
 - version 0.4
 - unstructured system
- Query Routing
 - version 0.6
 - Ultrapeers
 - Query Routing Table

BitTorrent

- Divide files into 256KB chunks
- Download chunks from peers
 - get a list of peers
 - rarest first
 - rate based priority (incentive)
- *Tracker* per file
- *Trackerless* files
 - Distributed Hash Table

Distributed Hash Table

- Key, Value pair storage
 - structured system
- Distribute data to spread load
- Circular
 - only track your successor and predecessor (or 2)
 - short cuts across the circle
 - insertion and removal
- Replicate data
- Chord