Naming

- DNS
- Freenet
- Chord

Goals

- Performance
  - Fast lookups
  - Fast updates
- Scalability
  - Clients/servers
  - Names
  - Lookups
- Reliability
  - Accuracy
  - Availability
- Ubiquity
  - Portability
- Security
  - Authentication of updates
  - Plausible deniability
  - Access control.
- Management overhead
  - Delegation/no centralization
- Context Sensitive naming

API

- Lookup
  - Context-based (keyword)
- Reverse lookup
- Triggers?

Biggest Problems in DNS

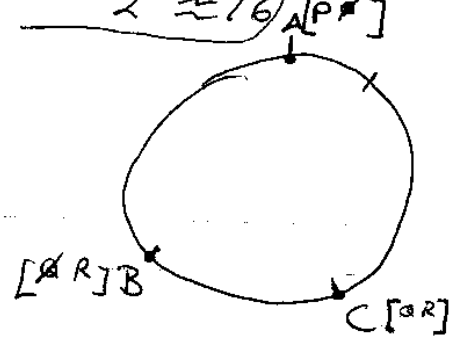
- Search capability
- Context sensitivity
- Politics
- Time for missing name to be found
- Security

Chord

- fast updates
  lookups

2^m idspace

e.g. $2^m \approx 16$



root

A, B

A

hops		
1	~~B~~	C
2	~~B~~	C
4	~~B~~	C
8	~~B~~	B

B

1	~~A~~	A
2	~~A~~	A
4	~~A~~	A
8	~~B~~	C

hash(file) → ID ∈ 2^m
hash(node) → ID ∈ 2^m

C

1	B
2	B
4	A
8	A

performance ~ $O(m)$

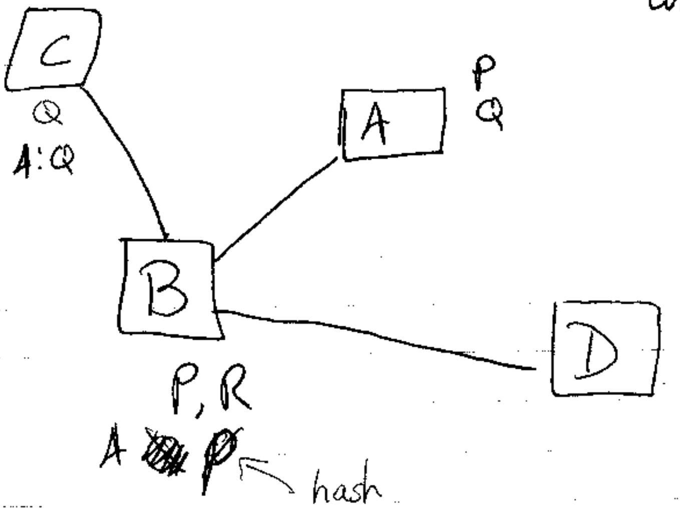
hash ↓

Node	
A	⌀
B	10
C	7

Files	
P	⌀
Q	1
R	4

Freenet

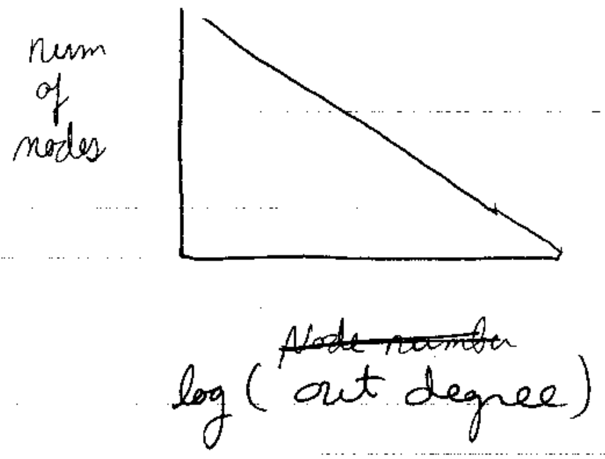
Depth first Search
with a limit



not garunteed data will be found even if data is there.

C asks B for Q B says A is Ø so should be close.

(BC) uses hash # for file as graps



$$\frac{1}{i^{K}}$$