Issues and solutions in a Disconnected environment

- Caching
  - What to cache.
  - Some predictive caching systems
- Hoarding: a technique to reduce the cost of cache misses.
- Different techniques to maintain consistency.
- Update conflict detection and resolution.

Coda

- Disconnected vs. Weakly connected
  - Prefetching: why not addressed?
    - mainly prefetch is a performance issue
    - Coda's hoarding technique make prefetching harder to implement
  - Server callback:
    - how sure can you be when weakly-connected?
- 100 MB of storage? Too much.
  - Space for hoarding applications
  - Space use during Emulation (in particular logging)
  - Space for Recoverable Virtual Memory (cache directory, symbolic link, status of blocks, etc.)

Coda

- Techniques to free disk space.
  - Compression of file cache and Recoverable Virtual Memory. Trade off between Computation time vs. space.
  - Back out of updates made by users.
  - Allow file cache and RVM to be copy to floppy disks.

Consistency in Bayou Architecture

- Bayou - a bottom-up approach to specific design problems
  - Compared to Coda design:
    more distributed, more emphasis on "small" clients
- Key components:
  - read-any/write-any to enhanced availability
  - anti-entropy protocol for eventual consistency
  - dependency check to detect update conflict
  - primary server to commit writes.
- An Uneasy Question: How effective is anti-entropy?