6.033 for Big Screw

$1 donation for each quiz 2 taken ($220 total) → donuts for everyone at the final exam

Charity: Greater Boston Food Bank
Propose(V):
  choose unique N, preferably N > Np
  send Prepare(N) to all nodes
  if Prepare_OK(Na, Va) from majority:
    V' = Va with highest Na, or V if none
    send Accept(N, V') to all nodes
  if Accept_OK(N) from majority:
    send Decided(V') to all

Prepare(N):
  if N > Np:
    Np = N
  reply Prepare_OK(Na, Va)

Accept(N, V):
  if N ≥ Np:
    Na = N, Va = V
  reply Accept_OK(Na, Va)
Summary

- Pessimistic replication: single-copy semantics

- Replicated state machines provide single-copy
  - Key issue: agreeing on order of operations
  - Hard case: network partition

- Paxos allows replicas to reach consensus, in presence of machine and network failures