Performance
- caching
- consistency
- batching
- speculative fetch
- write scheduling
- replication (probability)
- flash cache

Cache (6.004)

\[ A = t_x A_r + (1-t)D_0 \]
\[ t_x = 0.9 \]
\[ D_0 = 1 \mu s \]
\[ t = 1 \mu s \]

Locality of reference
- We do not exactly know the pages but they contribute.

Replacement

LRU:
1 4
2 3
3 2
4 1

What is the best page to throw out?

Isolation, lock off acquire (lock)
Ibarfor (lock)

Producer consumer
- Shift modularity
- Show code (still wrong)

Small atomic

acquire (lock)

while (lock=1)
lock = 1; 
if (taken)
   0: free

TSL: rem R
rem = 1
for orphaned
show code