

## CS211 PA4 Grading scheme

**I. Document** (implementation + cache analysis): **16 pts**

**II. 14 test cases:** Total possible **84 pts**

**III. Extra credit:** Cold misses (**6 pts**); Capacity misses + Conflict misses (**18 pts**); Random replacement (**10 pts**); L1 & L2 analysis (**10 pts**)

**Basic functionality: 100**

**Max possible: 144**

### Testing with:

Cache size: 16KB

Block size: 4

4-way associative cache

Input file: pinatrace.out

1. make (6 pts)

2. ./sim -h (6 pts)

3. Direct mapped cache, write through, LRU (6 pts)

./sim 16384 direct 4 LRU wt pinatrace.out

CACHE HITS: 710738

CACHE MISSES: 30478

MEMORY READS: 30478

MEMORY WRITES: 238846

4. Direct mapped cache, write through, FIFO (6 pts)

./sim 16384 direct 4 FIFO wt pinatrace.out

CACHE HITS: 710738

CACHE MISSES: 30478

MEMORY READS: 30478

MEMORY WRITES: 238846

5. Direct mapped cache, write back, LRU (6 pts)

./sim 16384 direct 4 LRU wb pinatrace.out

CACHE HITS: 710738

CACHE MISSES: 30478

MEMORY READS: 30478

MEMORY WRITES: 12539

6. Direct mapped cache, write through, FIFO (6 pts)

./sim 16384 direct 4 FIFO wb pinatrace.out

CACHE HITS: 710738

CACHE MISSES: 30478

MEMORY READS: 30478

MEMORY WRITES: 12539

7. 4-way assoc, write through, LRU (6 pts)

./sim 16384 assoc:4 4 LRU wt pinatrace.out

CACHE HITS: 721309

CACHE MISSES: 19907

MEMORY READS: 19907  
MEMORY WRITES: 238846

8. 4-way assoc, write through, FIFO (6 pts)  
./sim 16384 assoc:4 4 FIFO wt pinatrace.out

CACHE HITS: 721183  
CACHE MISSES: 20033  
MEMORY READS: 20033  
MEMORY WRITES: 238846

9. 4-way assoc, write back, LRU (6 pts)  
./sim 16384 assoc:4 4 LRU wb pinatrace.out

CACHE HITS: 721309  
CACHE MISSES: 19907  
MEMORY READS: 19907  
MEMORY WRITES: 2838

10. 4-way assoc, write back, FIFO (6 pts)  
./sim 16384 assoc:4 4 FIFO wb pinatrace.out

CACHE HITS: 721183  
CACHE MISSES: 20033  
MEMORY READS: 20033  
MEMORY WRITES: 2943

11. fully assoc, write through, LRU (6 pts)  
./sim 16384 assoc 4 LRU wt pinatrace.out

CACHE HITS: 721277  
CACHE MISSES: 19939  
MEMORY READS: 19939  
MEMORY WRITES: 238846

12. fully assoc, write through, FIFO (6 pts)  
./sim 16384 assoc 4 FIFO wt pinatrace.out

CACHE HITS: 721239  
CACHE MISSES: 19977  
MEMORY READS: 19977  
MEMORY WRITES: 238846

13. fully assoc, write back, LRU (6 pts)  
./sim 16384 assoc 4 LRU wb pinatrace.out

CACHE HITS: 721277  
CACHE MISSES: 19939  
MEMORY READS: 19939  
MEMORY WRITES: 2673

14. fully assoc, write through, FIFO (6 pts)  
./sim 16384 assoc 4 FIFO wb pinatrace.out

CACHE HITS: 721239  
CACHE MISSES: 19977  
MEMORY READS: 19977  
MEMORY WRITES: 2711

