CSE 378 Winter 1998

Machine Organization and Assembly Language Programming

Problem Set #7

Due: Wednesday, March 4

This Problem Set is on cache memory. You should have read Chapter 7, Sections 1 through 3.

1. Exercises 7.7, 7.8, 7.20, 7.21. Pay particular attention to these problems because your next assignment will be to write a SPIM program to get the results you obtained by hand. Of course it will be on different input and different cache parameters. You should start thinking about the implementation of a "trace-driven simulator" that takes as input the characteristics of a cache (total size, line size, associativity) and a string of memory references and yields the number of cache misses as output.
2. Exercises 7.13, 7.14, 7.23 (you should need less than 10 memory references for each case).
3. Exercises 7.15, 7.16 (assume miss penalty is 20 cycles of the original machine), 7.27 (the CPI is not needed for this exercise).
4. Exercise 7.24