Problem Set 23

CS 311

Due Apr. 14, 2014

Due at the beginning of class in hardcopy.
Sections 10.5–8

1. Consider a RAID level 5 organization comprising five disks, with the parity for sets of four blocks on four disks stored on the fifth disk. How many blocks are accessed (distinguish between read accesses and write accesses) in order to perform the following?

   (a) A write of one block of data

   (b) A write of seven contiguous blocks of data

   Assume that none of the blocks is initially in memory.

2. Compare the throughput achieved by a RAID level 5 organization with that achieved by a RAID level 1 organization for the following:

   (a) Read operations on single blocks

   (b) Read operations on multiple contiguous blocks