

CS 439 H

Homework # 6 – Due Nov 19 @ 11:59PM

Problem 1

Describe a mechanism through which an operating system can maintain the coherence of file instances that are accessed through the open/read/write/close interface and those that are accessed through the mmap() interface.

Problem 2

Consider the following schedule:

$r_1(x), r_2(x), r_1(z), r_1(y), w_1(y), w_2(x),$

1. Is this schedule serializable? If so, show how, and if not, explain why.
2. For each of the data records x, y , and z , identify what type of locks will be acquired by the transaction manager.

Problem 3

Consider the following schedule:

$r_1(x), r_2(x), w_1(y), w_2(x), r_3(y), w_3(y), w_2(y),$

1. Is this schedule serializable? If so, show how, and if not, explain why.
2. If the schedule is executed under strict two-phase locking, can a deadlock occur? Explain your answer.

Problem 4

Consider the following schedule:

$r_1(x), r_2(x), w_1(y), w_2(x), r_3(y), w_3(y), w_2(y),$

Explain what happens if T1 aborts.

Submission Instructions

To submit your homework, typeset your answers into a document using whichever editor you prefer. Make sure that your code works! Send a note including a PDF file of your solution with the subject: UT439H:HW6. This will be read by a machine so please be precise. Please send the file to mootaz@us.ibm.com.