

The assignment is to be turned in before noon (by 11:59 am) on February 13 , 2018. You should turn in the solutions to this assignment as a pdf file through the TEACH website. The solutions should be produced using editing software programs, such as LaTeX or Word, otherwise they will not be graded.

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### 1: Multi-granularity Locking (1 point)

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Consider a database DB with relations R1 and R2. The relation R1 contains tuples t1 and t2 and the relation R2 contains tuples t3, t4, and t5. Assume that the database DB, relations, and tuples form a hierarchy of lockable database elements. Explain the sequence of lock requests and the response of the locking scheduler to the following schedule. You may assume all lock requests occur just before they are needed, and all unlocks occur at the end of the transaction.

- T1:R(t1), T2:W(t2), T2:R(t3), T1:W(t4)

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### 2: Degrees of Consistency (1 point)

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Consider the schedule shown at Table 1.

	T1	T2
0	start	
1	read X	
2	write X	
3		start
4		read X
5		write X
6		Commit
7	read Y	
8	write Y	
9	Commit	

Table 1: Transaction schedule

What are the maximum degrees of consistency for T1 and T2 in this schedule? You must find the maximum degrees of consistency for T1 and T2 that makes this schedule possible. The degree of consistency for T1 may be different from the degree of consistency of T2.