

CS 245: Database System Principles

Review Session 2

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Crash Recovery

- Failure model
- Undo logging
- Redo logging
- Undo/Redo logging
- Checkpoints
- Media failures

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Concurrency Control

- Serializability
- Two phase locking (2PL)
- Multiple granularity locking
- Tree protocol
- Validation protocol

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More Transaction Processing

- Recoverable, ACR, strict schedules
- Deadlocks
- Logical logging
- Long transactions

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Data Warehousing

- Architecture
- Data models
- Data mining operations
- View materialization
- Data integration

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Additional Problem 1

	S	X	I	IS	IX	II
S	T	F	F			
X	F	F	F			
I	F	F	T			
IS						
IX						
II						

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Additional Problem 2

S: r1(X) r2(X) w2(Y) r1(Y) w1(Z)

Is schedule S:

- Conflict serializable?
- 2PL? (S/X locks)
- Validation?
- Tree? (X locks only)

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Additional Problem 3

S: r1(A)r2(B)w1(C)w2(D)r3(C)w1(B)w4(D)w2(A)

Tid = timestamp, no re-running dead T's,
S/X locks

Run actions in S using:

- Wait-die
- Wound-wait

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