

CSCI 251: Concepts of Parallel and Distributed Systems

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November 13th, 2017

Optimistic Concurrency Control

There are three phases for optimistic concurrency control:

- Working phase
- Validation phase
- Update phase

The time for the working phase is usually greater than the time for the validation and update. At any given time, only one transaction can be in validation and update phase. Several transactions can be in the working phase at any given time.

Backwards Validation

For transaction T_v , T_v must not read objects written by T_i such that $i < v$. We check if $RS(T_v) \cap WS(T_i) = \emptyset$ for each T_i that overlaps with T_v . If this is true, then T_v passes the validation test, otherwise it fails the validation and is aborted.

Forward Validation

If T_v fails validation:

1. Abort T_v
2. Hold update of T_v until conflicting transactions finish
3. Abort all conflicting transactions

Reminders

Project 2 details. Let Professor Kumar know if you are working solo or in a group by Monday, November 20th.

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You can find all my notes at <http://omgimanerd.tech/notes>. If you have any questions, comments, or concerns, please contact me at alvin@omgimanerd.tech