

ECE 356 Lab 3: Transactions and Performance

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Part 1)

READ transaction_isolation value	UPDATE transaction_isolation value	Enrollment	Observation
REPEATABLE-READ	REPEATABLE-READ	123	Value read before commit, before changes this is 123
REPEATABLE-READ	SERIALIZABLE	123	
REPEATABLE-READ	READ-COMMITTED	123	Value read before commit, before changes this is 123
REPEATABLE-READ	READ-UNCOMMITTED	123	Value read before commit, before changes this is 123
SERIALIZABLE	REPEATABLE-READ	123	Value read before commit, before changes this is 123
SERIALIZABLE	SERIALIZABLE	None	ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction Read lock so we have to wait for update transaction to finish and commit.
SERIALIZABLE	READ-COMMITTED	123	Value read before commit, before changes this is 123
SERIALIZABLE	READ-UNCOMMITTED	123	Value read before commit, before changes this is 123
READ-COMMITTED	REPEATABLE-READ	123	Value read before commit, before changes this is 123
READ-COMMITTED	SERIALIZABLE	123	
READ-COMMITTED	READ-COMMITTED	123	Value read before commit, before changes this is 123
READ-COMMITTED	READ-UNCOMMITTED	123	Value read before commit, before changes this is 123
READ-UNCOMMITTED	REPEATABLE-READ	103	This reads uncommitted changes, thus 103 read
READ-UNCOMMITTED	SERIALIZABLE	103	
READ-UNCOMMITTED	READ-COMMITTED	103	This reads uncommitted changes, thus 103 read
READ-UNCOMMITTED	READ-UNCOMMITTED	103	This reads uncommitted changes, thus 103 read

These isolation levels set different read permissions based on a locking methodology.

Part 2) Check lab3.sql for answers.

Part 3)

Run this to get average, max and min from 'events_transactions_history':

```
select avg((TIMER_END-TIMER_START)/1000000),  
max((TIMER_END-TIMER_START)/1000000),  
min((TIMER_END-TIMER_START)/1000000)  
from events_transactions_history;
```

No indexing added

average: 91219919.10029245

max: 92567812.1512

min: 90314643.7580

indexing on batting.playerID and master.playerID

Average: 405176.68439081

Max: 618931.1001

Min: 235891.7451

indexing on batting.playerID, batting.RBI and master.playerID

Average: 368429.65879801

Max: 497618.0712

Min: 284903.6202

indexing on batting.playerID, batting.HR and master.playerID

Average: 294915.73468910

Max: 522861.4961

Min: 255917.9192

indexing on batting.playerID, batting.RBI, batting.HR and master.playerID

Average: 780012.81749100

Max: 1400912.9104

Min: 611258.8250