**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-COMMITED | 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-COMMITED | 123 | Value read before commit, before changes this is 123 |
| SERIALIZABLE | READ-UNCOMMITTED | 123 | Value read before commit, before changes this is 123 |
| READ-COMMITED | REPEATABLE-READ | 123 | Value read before commit, before changes this is 123 |
| READ-COMMITED | SERIALIZABLE | 123 |  |
| READ-COMMITED | READ-COMMITED | 123 | Value read before commit, before changes this is 123 |
| READ-COMMITED | READ-UNCOMMITTED | 123 | Value read before commit, before changes this is 123 |
| READ-UNCOMMITTED | REPEATABLE-READ | 103 | This reads uncommited changes, thus 103 read |
| READ-UNCOMMITTED | SERIALIZABLE | 103 |  |
| READ-UNCOMMITTED | READ-COMMITED | 103 | This reads uncommited changes, thus 103 read |
| READ-UNCOMMITTED | READ-UNCOMMITTED | 103 | This reads uncommited 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