

Transactions 4/25/21

Book Notes

Serializability:

★ Each transaction must behave as if they were run serially - one at a time, with no overlap

Atomicity:

★ Operations and queries need to be done atomically. This means that either all

of the operations are completed or none. There is no in between or there could be serious consequences

Transactions:

- ★ A collection of one or more operations that must be executed atomically and serially
 - ★ Transactions start with Command "START TRANSACTION"
 - Could end 2 different ways..
1. COMMIT causes the

transaction to end correctly and changes are permanently installed in the database

2. ROLLBACK causes the transaction to abort, or terminate unsuccessfully and the changes made are undone

Read-Only Transactions:

★ We can tell the DBMS that we are executing a query that does not change the database => this could let the database take advantage of parallelism/threading

ex.

SET TRANSACTION READ ONLY

Dirty Reads:

- Dirty Data - is a common term for data written by a transaction that has not yet been committed

★ A Dirty Read is a read of dirty data written by another transaction

Other Isolation Levels:

4 isolation levels:

1. Serializable

2. Read-uncommitted
3. Read-committed
4. Repeatable-read

ex.

SET TRANSACTION ISOLATION LEVEL
Allowed?

I-level	Dirty Reads	Nonrepeatable Reads	Phantoms
R-U	Y	Y	Y
R-C	N	Y	Y
R-R	N	N	Y
S	N	N	N