

Database Design and Implementation

Chapter 2 Conceptual Exercises

2.1. Auto commit is a feature where each individual SQL statement is treated as a transaction and is automatically committed right after it is executed. This can, in turn, lead to performance issues and inconsistent states when dealing with sequences or batches of operations like multiple inserts. Performance issues arise, because each commit can entail a disk write to ensure that the transaction is durable, along with other transaction overheads like acquiring and releasing locks. Turning off auto commit allows the sequence of inserts to be treated as a single transaction. This approach minimizes the I/O operations and reduces the overhead of individual transaction management.

For these reasons, the Derby documentation likely recommends turning off auto commit during a sequence of inserts to improve performance and efficiency, and ensure atomicity of data (either all are committed or none is committed).