Spring Professional Exam Tutorial v5.0

Question 08

Question 08 - What is a transaction? What is the difference between a local and a global transaction?

Transaction is an operation that consist of series of tasks, in which all of those tasks should be performed, or none of the tasks should be performed. Those tasks are being treated as one unit of work. If all tasks in transaction are successful, changes made by those tasks are preserved, if at least one of the tasks is unsuccessful, changes made by tasks that were already completed will be reverted and any tasks awaiting execution will no be executed.

Transaction should follow ACID principle:

- Atomicity – All changes are applied or none changes are applied
- Consistency – system should go from one valid state to other valid state, any constraints on data should never be left in invalid state
- Isolation – one transaction cannot affect other one, concurrent execution of transaction should leave system in the same state as if sequential execution of transaction would be performed
- Durability – guarantees that if transaction has been committed, data will be preserved, even in case of system/power failure

Question 08 - What is a transaction? What is the difference between a local and a global transaction?

Global transaction is a kind of transaction that spans multiple transactional resources. Those resources can be anything, but usually include databases (can be more then one) and queues. In Java, popular standard for managing global transaction is JTA, which is an API for using transaction system provided by Application Server.

Local transaction are resource specific transaction, they do not span across multiple transactional resources. Local transactions are much simpler than global transaction however main disadvantages is lack of ability to treat series of tasks dealing with multiple transactional resources such as databases or databases and queues as single unit of work.