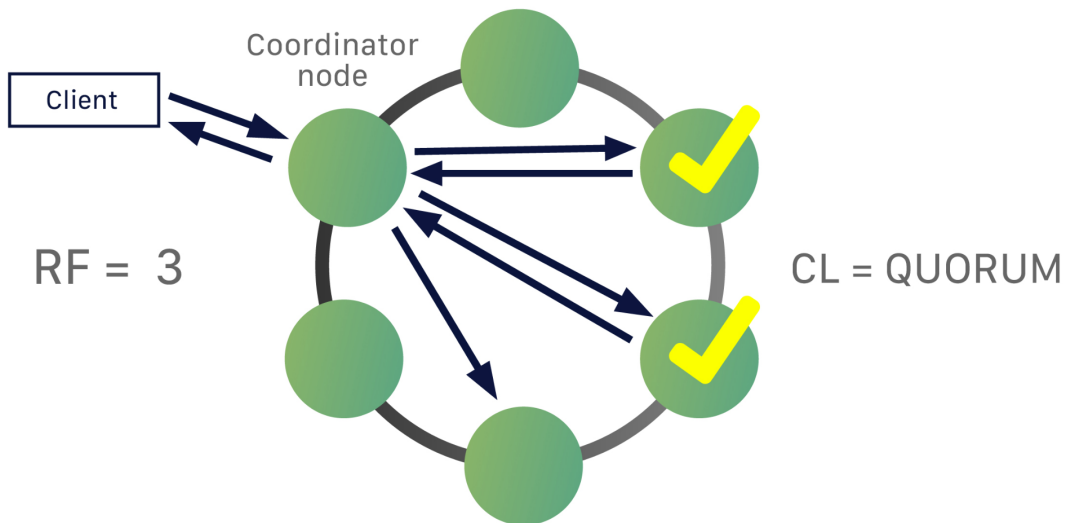# BASE TRANSACTION MODEL

A. Basically Available:

Basically available means that the data is not persistent like the Durability aspect of the ACID model, but the model will be available for most of the time.
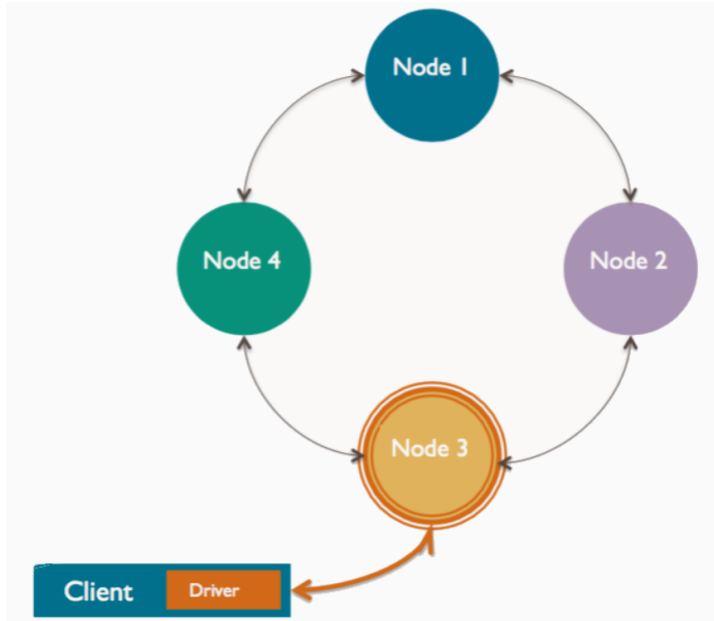In Cassandra database is stored as replicas in different nodes and clusters. These nodes are different from each other and thus when one nodes dose not work the other node takes its place and thus the user doesn't face difficulties there. But there data are replicas and not in the same form and thus consistency of data will be different

B. Soft State:

Soft State means that when a user doesn't maintains data, that will go away. Stated another way, the information will expire unless it is refreshed.
In Cassandra the soft state can be observed in two ways, one is where it mentioned Time To Live to some values and if it is not accessed than the value is discarded. And the Second one is the gossip protocol within Cassandra; a new node can determine the state of the cluster from the gossip messages it receives, and this cluster state must be constantly refreshed to detect unresponsive nodes.

C. Eventual consistency:

The fact that BASE does not enforce immediate consistency does not mean that it never achieves it. However, until it does, data reads are still possible (even though they might not reflect the reality)

In Apache Cassandra , the data is stored in different replicas. These replicas eventually becomes consistent to other replicas as the time goes on. Divergent versions of the same data may exist temporarily but they are eventually reconciled to a consistent state. Eventual consistency is a trade off to achieve high availability and it involves some read and write latencies