

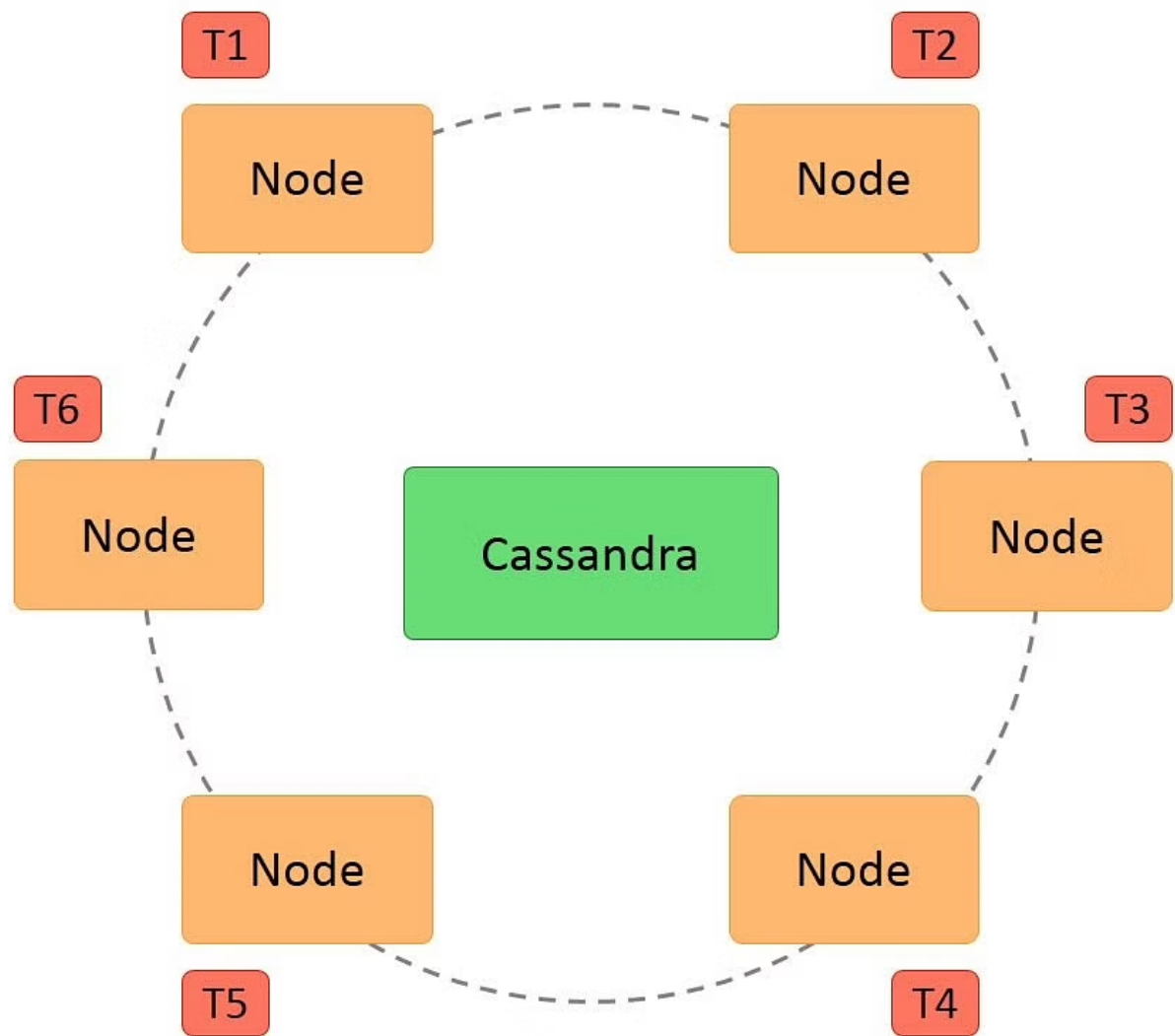
Discuss about the architecture and properties of Cassandra. Roll no ending at 1,3,5,7

Some of the features of **Cassandra architecture** are as follows:

Cassandra is designed such that it has no master or slave nodes. It has a ring-type architecture, that is, its nodes are logically distributed like a ring.

Data is automatically distributed across all the nodes. Similar to HDFS, data is replicated across the nodes for redundancy. Data is kept in memory and lazily written to the disk. Hash values of the keys are used to distribute the data among nodes in the cluster.

A hash value is a number that maps any given key to a numeric value. For example, the string 'ABC' may be mapped to 101, and decimal number 25.34 may be mapped to 257. A hash value is generated using an algorithm so that the same value of the key always gives the same hash value. In a ring architecture, each node is assigned a token value, as shown in the image below:



Source: Simplilearn

Additional features of Cassandra architecture are:

- Cassandra architecture supports multiple data centers.
- Data can be replicated across data centers.

- You can keep three copies of data in one data center and the fourth copy in a remote data center for remote backup. Data reads prefer a local data center to a remote data center.