

**Explain, generally, what is meant by a NoSQL database.**

Characteristics of NoSQL:

- **Non-relational**  
Which means that we don't divide the database into different tables of atomic values using normalization, as we do with SQL.
- **Mostly open-source**  
Almost all of what is characterized as NoSQL databases are open-source. There are a few exceptions, but they aren't relevant to us at the moment.
- **Cluster-friendly**  
Since there are no relations, NoSQL databases are easily scalable.
- **21<sup>st</sup> century web**  
All NoSQL databases come from the 21<sup>st</sup> century web culture.
- **Schema-less**

**Explain how databases like MongoDB and redis would be classified in the NoSQL world.**

#### **MongoDB - Document**

A document data model is a storage of documents, where each document is a complex data structure, usually represented in JSON. In a document model, you can retrieve whole documents or partial data of a document, update documents etc. And in contrast to key/value databases, document databases can see structure within the aggregate.

A document database has no schema (just like the other NoSQL databases), however you will need to use some kind of schema, in our case in the form of mongoose.

#### **redis – Key/Value**

Key/value store means that you have a key which is linked to a certain value in the database. The database doesn't know what the value is and it doesn't care. It could be an image, a complex document etc.

So Key-value databases like redis is like a hashmap but persistent in the disc.

It is also possible to store metadata about the value, which means that the difference between key-value databases and document databases isn't

**Explain using a relevant example, how redis can increase scalability (drastic) for a server, using server side sessions.**

Example: see RedisSessionScalability.js