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Discussion 6.1

Web 430

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[**Differences between SQL and NoSQL**](https://seanmcgary.com/posts/how-to-structure-a-nodejs-express-project)

* SQL has primary key that is a unique identifier for a row. There are also attributes and foreign keys which are links to other tables.
* SQL has constraints which assign a type for a column and only that type is allowed wether it is character or string.
* SQL storage is concentrated and not partitioned or segregated thus one node contains the entire copy of the data while NoSQL provides a value in a hash which is distributed into a location in one of multiple nodes. It is more easily scalable as more partitions can be added in the database engine usually managed dynamically while SQL needs more memory due to relationships.
* NoSQL stores data in key value stores which means one key can have an object with many properties while SQL databases are only able to store the data of each key in a single field and then use relationships to tie it to other fields.

**Alternatives to MongoDB**

The two most popular alternatives to MongoDB are Cassandra and Hbase. These type of databases are used by many modern companies. They all share characteristics however their implementations and potentially use case may vary. One of the features that vary is in their data model. While MongoDB uses flexible schemas, Cassandra has more structure in key space and colum family tables. Hbase also stores data as key and value like MongoDB. The most popular of the three in terms of usage in the field is Cassandra.

NoSQL databases are made for modern big data usage. These types of databases store data in a key value pattern which means that one key can have a lot of values which relate to that key. SQL is very stuctured in the way that it accepts, interacts and sends data. Scaling has been a big part of the popularity of NoSQL databases as they scale both vertically and horizontally. The fact that NoSQL databases have gotten away from traditional relationships, allows them to be more quickly accessible, scalable and easier to implement as a solution.

Reference List

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