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Data Management in NoSQL Databases

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The relational data model - where data are stored in tables and hence structured according to some fixed set of attributes (that is, table columns) - has been a success for several decades. Furthermore, SQL is a standardized and widely used query and management language for relational databases. A transformation of commonly occurring data into the relational table format is however not always convenient. On the contrary, storing arbitrary documents, objects in programming language, XML data and the like in relational databases imposes a huge overhead. Moreover, relational databases are geared towards frequent queries on a stable set of data with infrequent updates.
Novel requirements for database management systems lead to an emergence of several alternatives to relational systems, so that data can be stored in other structures with a flexible update and query behavior and distributed on multiple servers. Under the slogan NOSQL (in the sense of Not Only SQL) some systems have come up that concentrate on versatile use cases while diverging from the relational data model. This talk surveys some of these NOSQL technologies that are employed in Cloud Computing or in social networks and hence will become gradually more significant. The talk will cover graph databases, XML databases, key-value stores and column-family stores.

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