Chapter 1 Three Database Revolutions

The first revolution was driven by the emergence of the electronic computer, and the second revolution by the emergence of the relational database. The third revolution has resulted in an explosion of nonrelational database alternatives driven by the demands of modern applications that require global scope and continuous availability.

What is the difference between relational and non-relational databases?

1) Relational databases, which can also be called relational database management systems (RDBMS) or SQL databases. The most popular of these are Microsoft SQL Server, Oracle Database, MySQL, and IBM DB2. These RDBMS’s are mostly used in large enterprise scenarios, with the exception of MySQL, which is mostly used to store data for web applications, typically as part of the popular LAMP stack (Linux, Apache, MySQL, PHP/ Python/ Perl).

2) Non-relational databases, also called NoSQL databases, the most popular being MongoDB, DocumentDB, Cassandra, Coachbase, HBase, Redis, and Neo4j. These databases are usually grouped into four categories: Key-value stores, Graph stores, Column stores, and Document stores (see Types of NoSQL databases).

Relational databases usually work with structured data, while non-relational databases usually work with semi-structured data (i.e. XML, JSON).