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|  | **SQL Databases** | **NoSQL Databases** |
| ***Definitions*** | SQL stands for Structural Query Language which is basically a language used by databases | NoSQL, also referred to as “not only SQL”, “non-SQL”, is an approach to database design that enables the storage and querying of data outside the traditional structures found in relational databases. |
| ***Data Storage Model*** | Tables with fixed rows and columns | Document: JSON documents, Key-value: key-value pairs, Wide-column: tables with rows and dynamic columns, Graph: nodes and edges |
| ***Development History*** | Developed in the 1970s with a focus on reducing data duplication | Developed in the late 2000s with a focus on scaling and allowing for rapid application change driven by agile and DevOps practices. |
| ***Examples*** | Oracle, MySQL, Microsoft SQL Server, and PostgreSQL | Document: MongoDB and Couch DB, Key-value: Radis and Dynamo DB, Wide-column: Cassandra and HBase, Graph: Neo4j and Amazon Neptune |
| ***Schemas*** | Rigid | Flexible |
| ***Scaling*** | Vertical (scale-up with a larger server) | Horizontal (scale-out across commodity servers) |
| ***Multi-Record ACID Transactions*** | Supported | Most do not support multi-record ACID transactions. However, some—like MongoDB—do. |
| ***Hierarchical data storage*** | Not Suitable | Best for hierarchical data storage |
| ***Data to Object Mapping*** | Requires ORM (object-relational mapping) | Many do not require ORMs. MongoDB documents map directly to data structures in most popular programming languages. |

**SQL Databases vs NoSQL Databases**