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A relationship, in the context of databases, is a situation that exists between two relational database tables when one table has a foreign key that references the primary key of the other table. Relationships allow relational databases to split and store data in different tables, while linking disparate data items. The Oracle database would be an example of a relational database. An Oracle database is a collection of data treated as a unit. The purpose of a database is to store and retrieve related information. A database server is the key to solving the problems of information management. There are many advantages to relational databases. A Relational Database system is the simplest model, as it does not require complex structuring or querying processes. It doesn’t involve tedious architectural processes like hierarchical database structuring or definition. As the structure is simple, it is sufficient to be managed with simple SQL queries and does not require complex queries to be designed. In the relational database system, multiple tables can be related to one another using a primary key and foreign key concept. This makes the data to be non-repetitive. There is no chance for duplication of data. There are a few cons as well. Relational databases require a lot of structure and a certain level of planning because columns must be defined, and data needs to fit correctly into somewhat rigid categories. The structure is good in some situations, but it creates issues related to the other drawbacks, such as maintenance and lack of flexibility and scalability. Relational databases are not ideal for handling large quantities of unstructured data. Data that is largely qualitative, not easily defined or dynamic is not optimal for relational databases, because as the data changes or evolves, the schema must evolve with it, which takes time.

NoSQL databases were created in internet and cloud computing eras that made it possible to more easily implement a scale-out architecture. NoSQL databases have proven popular because they allow the data to be stored in ways that are easier to understand or closer to the way the data is used by applications. Fewer transformations are required when the data is stored or retrieved for use. Many different types of data, whether structured, unstructured, or semi-structured, can be stored and retrieved more easily. One of the most frequently cited drawbacks of NoSQL databases is that they don’t support ACID (atomicity, consistency, isolation, durability) transactions across multiple documents. With appropriate schema design, single-record atomicity is acceptable for lots of applications. Two SQL features are scalability and data retrieval, and two Mongo DB features are adhoc queries and indexing.