Alexander Hunt
Module 1.3
CSD310-340A Database Development and Use (2261-DD)
October 26, 2025

1. In the context of relational databases, what are relationships? Describe at least two, and provide an example of their use.

In a relational database a relationship is an associated between tables and keys. Usually it is between the primary key of one table and a foreign key in another. There are two common types of relationships. One to many and many to many. GeeksforGeeks. (2025g, September 8).

2. What are the advantages of relational databases? What are the advantages of NoSQL databases?

Advantages of relational databases include strong data integrity and consistency. As well as powerful query capabilities. These databases are also mature in their tools and standards.

Advantages of NoSQL databases are that they are flexible in schema. They allow for storage of changing data structures. They can also handle large-volume distributed data sets. They are good for speedy large scale unstructured data use cases.

3. What are the disadvantages of relational databases? What are the disadvantages of NoSQL databases?

Disadvantages of relational databases is that they have rigid schema. Inefficient horizontal scaling, and struggle with very large volumes of unstructured data. NoSQL databases struggle with ACID guarantees, they are less mature in their tools and standards, and modeling the data can be complex if relationships need to be represented.

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4. Identify at least two features of MySQL and two features of MongoDB, and describe what they are and how they are used.

MySQL:

- Supports ACID-compliant transactions
- Support for multiple storage engines like InnoDB, MyISAM, and more.

MongoDB:

- Supports a flexible JSON-like document (Bson) and supports varying fields.
- Built-in replication and sharding for horizonal scaling.

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