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1.3

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

There are one-to-one and one-to-many

With one-to-one, where it responds to one record

Each item in a table would only have one entry that it corresponds to

With one-to-many, with this their could be multiple records that the table item would correspond to

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

For relational databases data accuracy would be an advantage for NoSQL databases they offer flexibility

* “Flexible Schema: NoSQL databases offer flexible schema designs that accommodate dynamic, semi-structured, or unstructured data without the need for predefined schemas. This flexibility allows developers to adapt to changing data requirements and iterate quickly without schema migration overhead.” (GeeksforGeeks, 2025)

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

For relational databases, it could offer less flexibility

“Relational databases can be less flexible than NoSQL databases, particularly when it comes to handling unstructured data or scaling horizontally. They can also be more expensive to scale and maintain, due to the need for powerful hardware and specialized database administrators.” (Shadrack, 2023)

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

For MySQL replication is listed as a feature same as MongoDB allowing information to be on multiple servers and

For MongoDB I’ve found an article going over some of the features offered

For example it mentions “sharding” and “replication”

Sharding splits larger data. “Without sharding, scaling a growing web application with millions of daily users is nearly impossible.” (*MongoDB Features & Key Characteristics*, n.d.)

Replication allows multiple servers to prevent issues with recovery.

GeeksforGeeks. (2025, April 15). *Advantages and Disadvantages of using SQL vs. NoSQL Databases*. GeeksforGeeks. https://www.geeksforgeeks.org/what-are-the-advantages-and-disadvantages-of-using-sql-vs-nosql-databases/

Shadrack, B. (2023, April 10). *Relational database vs nosql: A Beginner’s Guide*. DEV Community. https://dev.to/documatic/relational-database-vs-nosql-a-beginners-guide-37gl

*MongoDB Features & Key Characteristics*. (n.d.). MongoDB. https://www.mongodb.com/resources/products/capabilities/features