A relationship is an association between tables of data (Database relationships, 2021), such as a table of courses at school and a table of teachers at the same school. A record on the course table will reference a record on the teacher table (Chapple, 2021).

Relational databases are best for consistency, if your application needs the data to be accurate then relational setups are the best option (Talha, 2022). Relational databases allow for each field to have constraints set up that let you control what types of data can be entered (Dev, 2020).

Relational databases handling large amounts of data require more expensive special-purpose hardware to process transactions in a timely fashion (Talha, 2022). These databases scale vertically meaning as the database grows, the more the machine must be expanded.

NoSQL databases are faster to update and pull data from. They can be used on less expensive general-purpose hardware (Talha, 2022). NoSQL scales horizontally which means the database is built across multiple machines instead of expanding on a single high-end machine.

NoSQL does not offer the same level of consistency as a relational database (Talha, 2022). Accessing data is a less flexible process compared to a relational database, you need to have the specific keys to access each value or piece of data (Dev, 2020).

MySQL is a relational database system with built in security through the Secure Socket Layer (SSL) protocol. In order to access the database, a user must provide proper credentials, ensuring that only authorized users can access the database (Top MySQL Features, 2022). You can also store reused functions in MySQL so you can save time on development and queries (Taylor, 2022).

MongoDB can use sharding to partition data to multiple servers. These partitions are tracked so queries will pull from the correct shard (Dev, 2020). MongoDB has a tool to help automatically manage your database called MongoDB Atlas. To use Atlas, you can create a free account and sign up for the free option (MongoDB, 2021).

# References

Chapple, M. (2021, June 11). *What Is a Database Relationship?* Retrieved from Lifewire: https://www.lifewire.com/database-relationships-p2-1019758

*Database relationships*. (2021, March 2). Retrieved from IBM: https://www.ibm.com/docs/en/control-desk/7.6.0?topic=structure-database-relationships

Dev, B. A. (2020, February 10). *SQL vs NoSQL Explained [Video}*. Retrieved from YouTube: https://www.youtube.com/watch?v=ruz-vK8IesE

Talha. (2022, May 6). *Relational Database Vs NoSQL: 7 Critical Aspects*. Retrieved from Hevo Data: https://hevodata.com/learn/relational-database-vs-nosql/

Taylor, D. (2022, August 29). *MongoDB vs MySQL – Difference Between Them*. Retrieved from Guru99: https://www.guru99.com/mongodb-vs-mysql.html

*Top MySQL Features*. (2022, September 26). Retrieved from Interview Bit: https://www.interviewbit.com/blog/mysql-features/