Alternatives to SQL: Summary Post

Course: MSc Computer Science

Module: Object-Oriented Information Systems

Assignment: ePortfolio

Date: Friday 23rd July 2021

Student ID: 126853

Summary Post:

Post:

We have explored the fundamentals of databases during the last three units, with a key focus being on Database Design and Structures. As part of this, we have produced Entity Relationship Diagrams to show how data in a normalised form can be linked together and structured. During these units, we have performed some revision tasks on SQL within Codio, covering the basic CRUD actions and the more complex table updates (ALTER, DROP, etc.). In addition, a series of challenges were set for us to demonstrate our understanding of these topics using real-life scenarios.

It has become evident that NoSQL (Not Only SQL) databases are the option of choice when working with Big Data applications. One reason for this is the enhanced query speed (when performing large volumes of queries) compared to traditional SQL databases. For example, one 2013 study showed that the CouchBase NoSQL database was on average up to 25 times faster than Microsoft SQL Server (Manoharan & Li, 2013). Another benefit of NoSQL technology is that it utilises a dynamic schema, allowing users/developers to update as data and requirements change (MongoDB, n.d.), avoiding the requirement for service downtime or disruption when a traditional schema is changed.

The usage of technologies such as NoSQL over traditional SQL should be evaluated on a case-by-case business, with a key focus on business needs. For example, NoSQL is more likely to fit businesses that routinely need to perform large, complex, dynamic queries – such as business intelligence applications and analytics (Smirnov, 2021). Sigera (2021) states that one of the key benefits is that it allows unstructured data input, which is perfect for applications that need large volumes of data stored and processed quickly.

References:

Li, Y., Manoharan, S. (2013) 'A performance comparison of SQL and NoSQL databases'. Canada, 27-29 August. Canada: IEEE. 15-19. Available From: https://ieeexplore.ieee.org/document/6625441 [Accessed 30th June 2021].

MongoDB. (n.d.) NoSQL vs Relational Databases. Available From: https://www.mongodb.com/scale/nosql-vs-relational-databases [Accessed 10th July 2021].

Smirnov, A. (2021) Initial Post (Response to Edgell, T). Available From: https://www.my-course.co.uk/mod/hsuforum/discuss.php?d=262690 [Accessed 10th July 2021].

Sigera, S. (2021) Initial Post (Response to Justus, M). Available From: https://www.my-course.co.uk/mod/hsuforum/discuss.php?d=262472 [Accessed 10th July 2021].

Screenshot:

Kieron Holmes

Summary Post

12 days ago

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