

## Collaborative Discussion 2 – Summary Post

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Kikelomo Obayemi

OOIS\_PCOM7E May 2021

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### « Collaborative Discussion 2: Alternatives to SQL



Kikelomo Obayemi

#### Summary Post

8 days ago

Our discussion and activities in the last three weeks have been centered around the two main types of database management systems: relational (SQL) and non-relational (NoSQL) databases. As previously stated, NoSQL databases (such as Cassandra, Redis, MongoDB and Couch DB) offer significant benefits, they outdo their SQL counterparts in their ease of use, high availability and scalability features (Microsoft, 2021). With increased use of social media and cloud-computing applications as well as the resultant generation of big data, these features have become major drivers for the adoption of NoSQL technologies by internet-based companies (Strauch et al., 2011).

Despite its growing popularity, NoSQL databases are not a replacement for SQL databases (such as Oracle, Microsoft SQL Server, Sybase and Microsoft Access). The choice of database management system implemented by a company is dependent on its use. Organisations have to take into consideration that the ACID (Atomicity, Consistency, Isolation and Durability) properties of a SQL database are an important feature that is difficult to achieve by NoSQL databases (Lotfy et al., 2016). Shiff & Rowe (2018) stated that NoSQL databases are better suited for applications that require consistent data and multi-row transactions such as accounting systems. Furthermore, SQL databases have been proven over decades and as such have a huge community of experts that can provide support and help to enhance knowledge in the field (Shiff & Rowe, 2018).

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It is worth noting that the database management system environment is rapidly evolving. The next generation technology known as NewSQL (such as NuoDB, VoltDB ClustrixDB, Xerounde) provides the scalable performance of NoSQL databases whilst maintaining the ACID properties of relational database systems to give businesses the best of both worlds (Moniruzzaman, 2014).

#### References

Lotfy, A.E., Saleh, A.I., El-Ghareeb, H.A. and Ali, H.A. (2016) A middle layer solution to support ACID properties for NoSQL databases. *Journal of King Saud University-Computer and Information Sciences*, 28(1), 133-145. Available from: <https://doi.org/10.1016/j.jksuci.2015.05.003>. [Accessed 9 July 2021]

Microsoft (2021), Relational vs NoSQL data. Available from: <https://docs.microsoft.com/en-us/dotnet/architecture/cloud-native/relational-vs-nosql-data> [Accessed 8 July 2021]

Moniruzzaman, A.B.M. (2014). Newsql: Towards next-generation scalable rdbms for online transaction processing (oltp) for big data management. *arXiv preprint*. Available from: <https://arxiv.org/pdf/1411.7343.pdf> [Accessed 10 July 2021]

Shiff L., & Rowe W. (2018) SQL vs NoSQL Databases: What's The Difference? Available From: <https://www.bmc.com/blogs/sql-vs-nosql/#:~:text=Scalability:Another%20big%20difference&text=Most%20SQL%20databases%20are%20vertically,more%20servers%20to%20the%20database.> [Accessed 8 July 2021]

Strauch, C., Sites, U.L.S. and Kriha, W. (2011) NoSQL databases. *Lecture Notes, Stuttgart Media University*, 20, 24. Available From: <https://www.researchgate.net/profile/Jesus-Sanchez-3/publication/271111111-NoSQL-databases/links/547000000cf97c000000000000.pdf>