Unit 10

# Working with SQL
# (Summary Post)

## Discussion Forum – Alternates to SQL

Over three weeks, consideration was given to the trend of NoSQL databases. NoSQL databases do not have the notion of schema, which is their most significant benefit compared to relational databases. "Benefit" because their focus is on quick data retrieval and storage of semi-structured or unstructured data. Another advantage of NoSQL databases is their open-source nature, which leads to lower setup and administration costs than relational databases. Yet another benefit is that the semi-structured or unstructured data of NoSQL databases allow them to dynamically accommodate the needs of a system instead of the system adapting to the needs of a database  (Kunda & Phiri, 2017).

Given the benefits of NoSQL, businesses must however consider that NoSQL databases are not as mature as relational databases—operating since the 1980s. Also, for consideration is the *type* of data they wish to handle and also the *transactional* nature of the system's data. Relational databases implement the ACID model (which emphasises consistency), while NoSQL databases favour BASE (which emphasises scalability) (Kunda & Phiri, 2017). Both models achieve the same end goal: to persist data, but data recency differs between the two.  Another downside is that NoSQL databases do not have a standard query language (Lee et al., 2013). Each NoSQL vendor provides its own implementation language, which may prove challenging if an organisation is unfamiliar with the nuances or structures of the language or implements multiple NoSQL databases from different vendors.

NoSQL databases will not wholly replace relational databases. That is, until industry support matures, providing better business intelligence integration and admin tools and increasing the number of skilled developers capable of developing with NoSQL databases.  But, as with all things, the industry takes time to improve on existing technology. NoSQL databases will eventually be able to compete with their relational databases in transaction processing comfortably.

# References

Kunda, D. & Phiri, H. (2017) A comparative study of nosql and relational database. *Zambia ICT Journal*, *1*(1):1-4.

Lee, K.K.Y., Tang, W.C. & Choi, K.S. (2013) Alternatives to relational database: comparison of NoSQL and XML approaches for clinical data storage. *Computer methods and programs in biomedicine*, *110*(1):99-109.