Relational & NoSQL Databases: Reflective Report

Name: Daniel Cyril Obon
Student ID: C2650218
Course: Computer Science (Year 2)
Assignment: Relational & NoSQL Databases (Task 3)

Introduction:

During my learning journey in SQL Server T-SQL modules and MongoDB development platforms, I encountered diverse challenges and opportunities to enhance my developer skills. Even with these challenges, I would say my self-assessment grade is A as I was able to implement multiple difficult queries in my TSQL Demo Portfolio, as well as good explanations on their functions. As for MongoDB, I was able to complete the whole Introduction to MongoDB course thus having all 'Proof of Completion' certificates, as well as display many examples on my ability attempting the labs and quizzes provided.

Learning Objectives:

The primary objectives were to gain further proficiency in TSQL modules for SQL Server and learning the applications of MongoDB. The goals included understanding database design principles, querying databases effectively, and implementing solutions in both relational and NoSQL database environments.

SQL Server T-SQL Module:

My proficiency in SQL has greatly improved, compared to Year 1 as we are taught more complicated topics which were built upon our previous TSQL experience in Year 1. With the more complicated TSQL topics tackled this year, it has also shown me even more practical uses of TSQL in handling databases. The practical application of TSQL for complex queries and stored procedures significantly contribute to my skills in building more robust database solutions.

However, a challenge that I have faced with TSQL involves joining multiple tables and group by. This is due to the confusion on which columns to join, and whether to use unions or joins, especially on which columns to group by. As such, this is the topic I should spend the most time revising in the future. To aid in this endeavour, I will do more tutorial exercises involving combining multiple tables, be it by joins, unions and/or group by.

MongoDB Module:

The introduction to MongoDB brought about a shift in my understanding of databases, moving from the traditional relational model to NoSQL. Learning to work with JSON-like documents has been very interesting and the MongoDB course provided for free has been helpful and interactive. This has allowed me to grasp the concept of NoSQL easily as the course was made in a very fun and disgustable way.

Unfortunately, one of the challenges I have faced trying to use MongoDB is that unlike traditional relational databases, MongoDB is schema-less, which can make schema design challenging. However, this can easily be remedied with doing more practice exercises and delving deeper into MongoDB's free courses, which can help me further understand NoSQL and its schema.

Summary on Skills:

With the skills acquired from this module, I feel more well-equipped as a Graduate Developer. Besides that, the portfolios created for both SQL and MongoDB for this assignment will enhance my employability in roles where proficiency in database management and SQL is essential. The ability to work with databases is a fundamental skill for many software development positions, which is ideal for a computer science graduate like me.