**MODULE 8: PORTFOLIO PROJECT**

Lessons Learned and Reflection

Ismail Elmaliki

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Mike Peterson, PhD

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As a student enrolled in the Database Management course at Colorado State University Global Campus, these past eight weeks have been an incredible, fun, and challenging learning journey. Prior to enrolling for this course, I had a vague understanding of databases and limited knowledge of queries – but at this point of the course, I’ve gained tremendous knowledge and a clear understanding of the following topics:

* Installing and configuring MySQL
* Storing data in MySQL
* Selecting and modifying table data stored in MySQL tables
* Configuring MySQL to a Python script
* Improving MySQL database query performance

What made this course exciting is learning relational database concepts using MySQL then applying those very concepts through challenging critical thinking weekly assignments. For example, in our first critical thinking assignment from Module 1 we were required to setup MySQL – either on Windows or Linux. Rather than installing MySQL on Windows, I chose to install and setup MySQL on a Linux distribution because of my existing knowledge in Linux and cloud computing. Another part of the course that was challenging were table joins – especially distinguishing between inner join, left outer join, and right outer join. With the help of our assigned reading by Boronczyk (2015), challenging topics like joining were broken down with example queries and their outputs. In addition to the reading, putting those concepts into practice with critical thinking assignments engrained those concepts and prepared us for the week after to combine our newly acquired skillset with new course material content. In addition to installing MySQL, other challenging tasks included subqueries and eliminating distinct data from queries. Referencing MySQL Subquery (2018), subqueries added a layer of complexity at first but is extremely useful when getting used to it. Also referencing Using MySQL DISTINCT to Eliminate Duplicates (2018), the DUPLICATE clause is a must to know in order to eliminate redundant data and query only information that’s necessary.

Another fun learning experience was applying our knowledge of MySQL queries with Python scripting – a skill that’s relevant in my current job. With information included such as installing all required Python packages (p. 78) then including required steps to fire up a Python script with MySQL, Boronczyk provided just enough context – that way I was able to connect the dots while still being challenged from our module 6 critical thinking assignment. Not only is this skill another tool I’ve added to my skillset but gaining knowledge on how to use the MySQL connector with Python has helped me become more valuable in my current role and has created a track for me to take on System Engineer tasks.

Lastly, database backup methods and optimization are two golden topics that are critical – especially for database administrators in companies that are data driven. Although we’ve dealt with databases containing a large dataset, companies will often have even larger datasets! With all the skills that I’ve gained thus far, optimization will be a big factor in working for any company in order to query data (from tables that may be over millions of lines) efficiently. From a database administrator perspective, it’s important to keep in mind multiple backup solutions and to ensure that databases are always running with minimal production disruptions and downtimes. For example, with many ways of performing backups (p. 124), one that stuck out the most is replication; when it comes to the topic of cloud computing, replication is a feature that’s usually included by default for relational databases. With having master-slave MySQL databases, this’ll ensure data is consistent across all users who are accessing that same database – because the last thing we’d want with data is inconsistency!

References

Boronczyk, T. (2015). Jump Start MySQL.

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Using MySQL DISTINCT to Eliminate Duplicates. (n.d.). Retrieved August 5, 2018, from

MySQLTutorial website: http://www.mysqltutorial.org/mysql-distinct.aspx