**Learning Journal Unit 8**

This week’s topic is very important, and a fitting end to the course. So far we have studies databases in isolation, but in the real world, programs must be able to interact with databases, manually and automatically (programmatically). This is what we are learning, and the different ways this can be done. For example through STATIC SQL, where the SQL statement is known prior to executing the code of the programming language, and is clearly defined. There is a cursor variable that both SQL and programming language access.

On the other hand, in DYNAMIC SQL, the statement is unknown, and is essentially created dynamically by the programming language each time the code is run. It (the SQL statement) is stored in a string variable. This type of SQl and programming language interaction is allegedly more flexible[[1]](https://paperpile.com/c/Gi4qfI/SD4F).

Then we also have things like APIs that allow us to plug right into the SQL language in an interoperable way (from my understanding thus far). So the code is embedded right into the programming language, and then, using a precompiler, converted to communicate with the API? [[2]](https://paperpile.com/c/Gi4qfI/peQV) I am still working my head through all of the minutia.

Dynamic SQL takes longer to execute because it is creating the sql statement at runtime. However, it is very versatile, and perhaps more common even than the traditional STATIC SQL which only works when you know the exact statements and values to look for in advance. STATIC SQL seems to be generally superior otherwise. It is also important to note however, that DYNAMIC SQL applications can contain some elements of STATIC SQL as well.

pureQuery is very interesting as well, and seems to rectify some of the disadvantages of dynamic SQL, by essentially converting the database into a java object. I am learning about it from IBM and it seems like a very unique and valuable solution [[3]](https://paperpile.com/c/Gi4qfI/9d2T).

Overall, as I prepare for the final exam, I think I have learned a great deal in the course, and am excited for future courses on the topic. I do think I could deepen my understanding a bit further, and fell behind in parts of the course which was unfortunate. I will continue reading about databases during my time off, and make sure I am ready for Databases II!, where I expect we will start making applications that communicate with databases, as a continuation of this chapter!!

Thank you very much for your work and role as instructor in the course! Until next time!

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**References:**

1. [Learning Guide Unit 8: Introduction [Internet]. [cited 4 Nov 2018]. Available:](http://paperpile.com/b/Gi4qfI/SD4F) <https://my.uopeople.edu/mod/book/view.php?id=153323&chapterid=163184>

2. [Sharma N, Perniu L, Chong RF, Iyer A, Nandan C, Mitea A-C, et al. database Fundamentals. IBM Canada. 2010; 96–101.](http://paperpile.com/b/Gi4qfI/peQV)

3. [pureQuery: IBM’s new paradigm for writing Java database applications [Internet]. [cited 4 Nov 2018]. Available:](http://paperpile.com/b/Gi4qfI/9d2T) <https://www.ibm.com/developerworks/data/library/techarticle/dm-0708ahadian/index.html>