Winston Shine

ILC Database Theory/Security

Week 8 Progress Report

3/6/2023

My goal is to study Database Theories and Security through the book Translucent Databases. Some additional smaller goals I am trying to accomplish are doing my work this quarter with docker containers and If time allows study a bit about document-oriented databases.

This week I studied MySQL user management. The chapter I read was about coordinating users and talked about how Translucent Databases have some good and bad points when it comes to user control. The main idea of user management in translucent databases is to protect access to the database or the information in it with public key cryptography. I believe the alternative to this is using a Role-based access system. The down side is with key based access you don’t necessarily have direct control over users, so you couldn’t freely take away or permit access to users as needed. The plus side is it provides faster access. I don’t quite understand how having a key based authentication for information in the database is faster than role-based access, but I’d imagine it had to do with the algorithms encrypting the data. Another plus is that you can add multiples stages of encryption and require multiple keys in order to gain access to something. This brings up how this makes general use more difficult because the number of passwords a user needs to remember increases as you continue to add security. So, I guess while it is faster it’s also more complicated to use.

I spent some time examining how create users in MySQL as well as what options you have for user control and creations, and then tried it out. This chapter had a lot of code examples that I spent time trying to understand, some of these were queries but mostly it was java code. My first goal next week is to recreate and try out the java code they had in this chapter. Once that is accomplished, I will start reading chapter 8 on Synchronization.