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Milestone Four

CS 499 Capstone

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1. This entry into my CS 499 ePortfolio contains an artifact that I created back in the middle of 2020. The original artifact was created as part of my final project for DAD220. Its purpose was to perform different detailed searches on a database using joins and other methods to geta specific range. I took this artifact and created a new database and tables to represent a similar use case and then expanded on the idea using triggers.
2. This artifact was included in my ePortfolio as it demonstrates some of the required skills and techniques needed to navigate a database using SQL effectively, as well as triggers and how they can be used in different ways. In this project I created a few different ways triggers that do different things. One backs-up deleted entries, the second keeps a running total of a database without needing to search it every time. I also added a record of the date time and user ID of the person making the change to keep a security mindset in the project.
3. I believe this artifact and the accompanying SQL project that I created to complement the artifact, meet the expectations for the course outcomes. Utilizing MySQL to create, modify and use triggers to monitor tables shows an ability to use well-founded and innovative techniques, skills, and tools to accomplish industry-specific goals. Creating a trigger for a table that records who edited an entry and at what time, relates back to a security mindset. Understanding what has been done to a system and when is one of the first steps in finding out what happened after an attack or loss of data. While a trigger will not stop a treat actor from gaining access to the system, like creating a complex password for the main database and users accounts will. In the end, the more information you have, the more prepared you are to detect malicious activity as well as recover after.
4. Working through this project and learning how triggers operate was interesting and different to what I had done before in MySQL. Triggers operate automatically in the background when they are activated. This is what makes them so useful, yet also more challenging to setup and debug. My first struggles were with Oracle and getting triggers to work correctly. My main issue was not being able to easily debug my code, while this was most likely user error, I had a much better time once I installed MySQL Workbench locally. While working through this project I started to see how powerful triggers can be. With the ability to keep track of total entries, without needing to query the entire database for the number can be time saving. The ability to add timestamps and user ID stamps to modifications and store those entries in log files can be very beneficial in troubleshooting and security monitoring. There is a lot that can be accomplished by setting up a trigger on a table. I also learned that triggers can be hard to monitor and troubleshoot. This can lead to situations where a trigger can loop or break your code without having an obvious failure point, making it difficult to troubleshoot.