CS345 - Database Systems

Final Project Proposal

Charlie Reinhardt

At St. Lawrence, the Peterson Quantitative Resource Center (PQRC) is a place for students to get help on their quantitative homework. It is staffed by current St. Lawrence students, and is run by two professors (currently Professor Dr. Michael Schuckers and Instructor Mr. A.J. Dykstra). Mentors follow a weekly schedule where they work the same 1-4 hour shifts on the same days every week. The PQRC stores information about mentors and their schedules in a variety of excel spreadsheets and word documents.

Not every mentor who works at the PQRC has taken every quantitative class at St. Lawrence. While students coming in for help on introductory Math, Computer Science, and Statistics classes can almost always find a mentor who can help, students asking for help on advanced (200 or 300 level) or “specialized” (Economics, Physics, Biology, Chemistry) classes often struggle to find a mentor who can help. As a result, a course coverage sheet (which outlines when a mentor who can help with a given class is working) is incredibly valuable. With the current “database” system, generating a course coverage sheet is a long, tedious, and manual process. With a well-designed relational database, generating a course coverage sheet could be done much quicker, and could be updated multiple times throughout the year.

Oftentimes, a mentor will have a one-time conflict with their regularly scheduled shift. They will communicate with other PQRC mentors and get another student to cover their shift. As very few mentors have taken the same series of classes at St. Lawrence, shift changes often impact course coverage information. As a result, the meticulously-generated course coverage sheet is often incorrect as it does not reflect shift changes and switches. With a well-designed relational database, course coverage information could be generated on the fly, as mentor’s change shifts.

All students at St. Lawrence must take at least one quantitative class in order to graduate, and for some students, this class is their worst nightmare. When these students think about coming into the PQRC, they often get scared of the concept of walking into a room full of math nerds. This database could store some fun information about current mentors, such as their interests and hobbies. If active students could access this information and get to know mentors better, they might be less afraid of coming into the PQRC for help.

The final aspect of this project would be making it usable by current PQRC directors, who have little SQL experience. To do this, the database would need some method of importing mentor and course information with a web form or a csv file, as well as a simple process to generate a course coverage sheet. While a fully fledged UI is outside of the scope of this project, the back-end infrastructure to make data easily insertable would be well worth the effort.