School Database

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Rayna Arora
Lucy Waters
Meghan Spinazze

04/25/2025

Phase #3

Table of Attendance

Name of attendees	Date/time	Duration of meeting	Method of collaboration	Agenda for Meeting
Anika, Rayna, Lucy, Meghan	04/18, 1:30 pm	2 hours	In-Person	Discussed the final project and distributed work
Anika, Rayna, Lucy, Meghan	04/25, 4:30 pm	2 hours	Virtual	Complied, checked, and submitted the final project

Contribution Table

Name	Contribution
Anika Rastogi	I created test queries 24-30. I also tested and checked test queries 17-23.
Rayna Arora	I updated the phase 2 script to fit query requirements, updated the select* document, completed test queries 9-16, checked and tested queries 1-8, and compiled the testing data.
Lucy Waters	I created test queries 17-23. I also tested and checked test queries 24-30.
Meghan Spinazze	I completed test queries 1-8. I tested queries 9-16. I created the final project document, the contribution table, and table of attendance.

Individual Reflections

Meghan:

This project has taught me many life skills. One of the main things I gathered from this project was furthering my ability to work in a group. There were many times where we had to figure out how to coordinate meetings even though we have very busy schedules. I also had to learn how to communicate exactly what was needed from my group members to ensure our project's success. We also had to figure out how to distribute work evenly so that everyone has a similar amount of responsibilities. This project also strengthened my leadership skills. There were many times when I had to step up and be a leader otherwise things may not have gotten done. There were also many times when we procrastinated till very close to the deadline which made some milestones very hard to complete. This further emphasized something I already knew, but still struggle to remember, which is that it is often necessary to start things much earlier than you expect. There were also times when I did not read the entire lab manual, and I missed an important detail that someone else had to point out to me. I have been told many times from my other lab classes that reading the entire manual is essential, but this finally made it sink in.

I also learned many technical skills from this project. It not only further cemented the ERD and DML skills we had been practicing all semester, but I believe it helped me master the DDL skills I knew less about. Even just being a part of creating an entire database from scratch truly strengthened my database and SQL understanding. Even if I do not go directly into a database management career after I graduate, I believe that understanding databases in this way is crucial for a career in cybersecurity. I now truly grasp the importance of database safety and security, and will be further able to help prevent cyber attacks on databases.

Rayna Arora:

The college database that we have created can be used for managing student, faculty, and course info, creating student and professor schedules. Other high-level uses include student course selection, classroom assignment based on course requirements, a learning space directory for students and professors alike, and tracking student performance. Students can also browse courses and make selections based on eligibility and interest. The information can be matched with individual learning needs to optimize the learning experience.

It is an efficient data warehouse that connects most agents on a college campus to the resources most useful to them. The elementary database we have created for this course can realistically be expanded and scaled up to include other major agents like administration operations, security and emergency services, and student life & engagement facilities. Admin can use it to set department budgets and make staffing decisions. The professor's data, combined with the courses they teach, can provide meaningful insights for performance evaluations, considerations for raises/ promotions, identifying gaps in the faculty roster, and making hiring decisions.

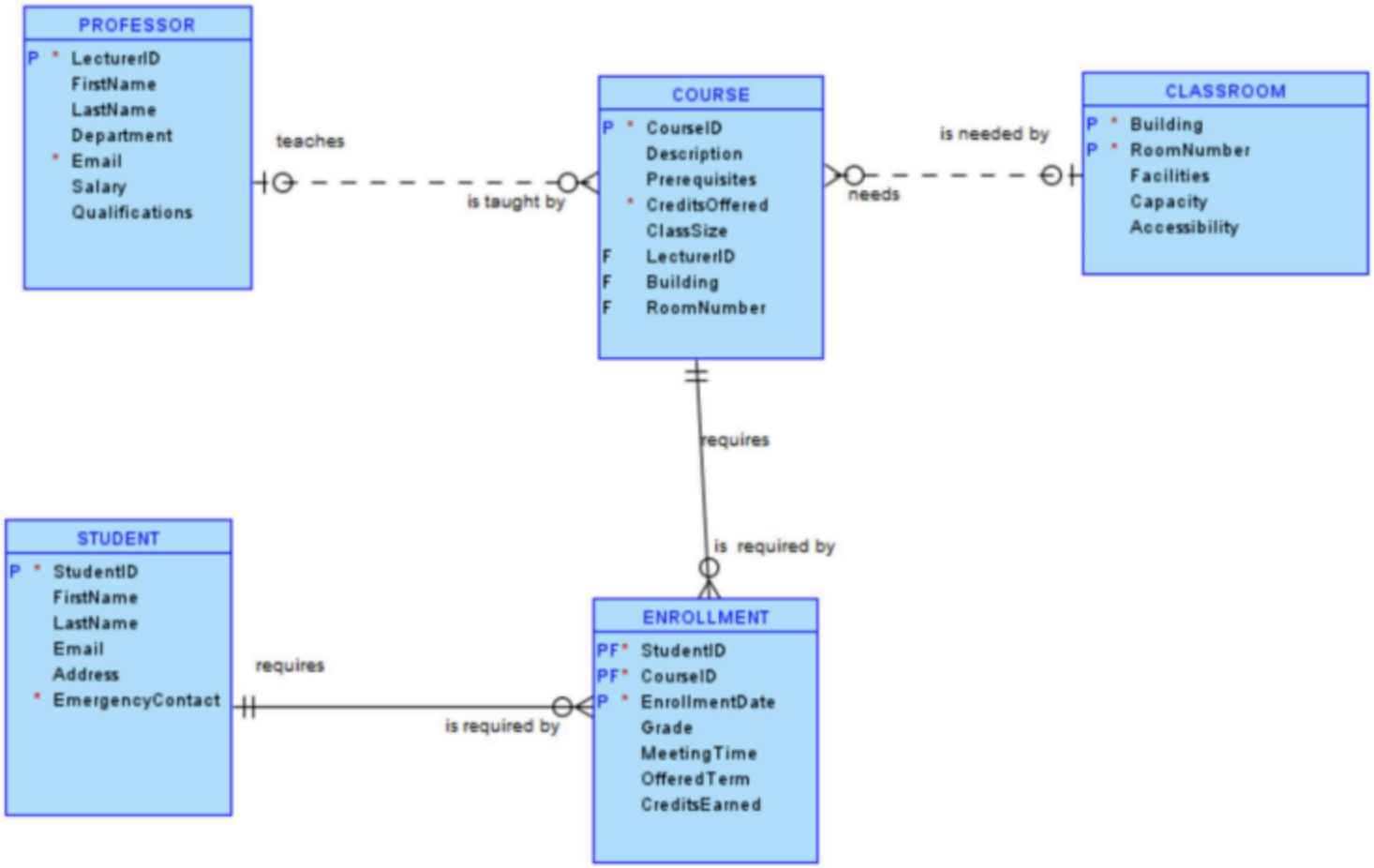
The classroom table can be scrutinised to maximize classroom utilization per semester, find gaps in facilities provided and accessibility features, and make construction/ renovation decisions. There are endless possibilities for determining growth goals based on a real-time benchmark of the whole college ecosystem.

Working on this project alongside my teammates was a very fulfilling experience. One of our biggest obstacles was to narrow down the scope of the project. We took great care to focus on the fundamental entities that would be involved in a college campus and select a few important attributes for each of the entities. The creation of the ERDs was a fairly streamlined process. We had to update the relationships as we moved forward based on questions that arose while working on Phase 2, and had to revise some of the test data we loaded during Phase 2 before beginning Phase 3 to make it easier and more realistic to query. The hardest challenge for phase 3 was to visualise the connections between all of the entities and create meaningful queries based on these connections. It was overall a stimulating process that gave me a lot of insights into database creation and implementation, and how flexible you have to be during the whole process.

Lucy Waters

Working on this database project was both challenging and rewarding. It gave me a better understanding of how databases actually work and why they are so important in real-life situations. In the beginning, I only knew the basic ideas behind databases, but by the end of this project, I had hands-on experience with creating and managing one from the ground up. Our goal was to build a database that could keep track of students, courses, professors, classrooms, and enrollments. At first, it was a little confusing trying to figure out how all the tables were supposed to connect. But once I understood how foreign keys and relationships worked, everything started to make more sense. I realized that a small mistake in one table could affect a lot of other parts of the database.

One of the harder parts for me was dealing with SQL errors. Sometimes my queries wouldn't work because I forgot about a constraint or tried to insert something that didn't match a related table. These situations were frustrating, but I learned how to read the error messages and fix the issues step by step. It really taught me the importance of paying attention to detail. I also got a lot better at using different SQL commands, like SELECT, JOIN, UPDATE, and DELETE. These commands helped us answer questions about the data and make changes to it. I can see how databases like this would be helpful in schools, businesses, hospitals, and pretty much anywhere that deals with a lot of information. Overall, this project helped me grow my technical skills and made me more confident with working in a team and solving problems. It showed me that databases are way more than just a school project—they're tools that can be used in the real world to keep things organized and running smoothly.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LastName
Department
* Email
Salary
Qualifications
teaches
is taught by
COURSE
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Description
Prerequisites
* CreditsOffered
ClassSize
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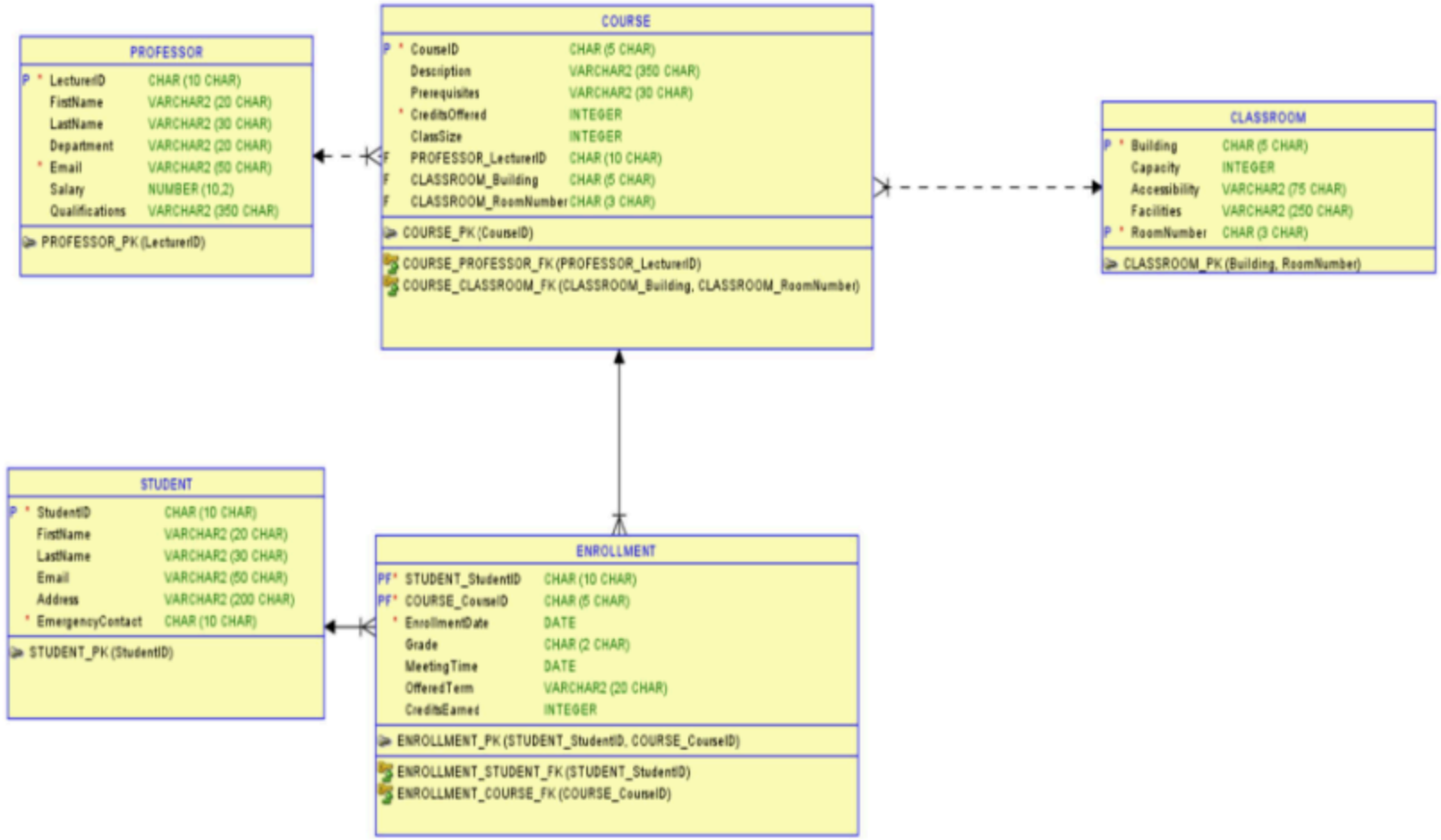
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LastName VARCHAR2 (30 CHAR)
Department VARCHAR2 (20 CHAR)
* Email VARCHAR2 (50 CHAR)
Salary NUMBER (10,2)
Qualifications VARCHAR2 (350 CHAR)
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Description VARCHAR2 (350 CHAR)
Prerequisites VARCHAR2 (30 CHAR)
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ClassSize INTEGER
F PROFESSOR_LecturerID CHAR (10 CHAR)
F CLASSROOM_Building CHAR (5 CHAR)
F CLASSROOM_RoomNumber CHAR (3 CHAR)
COURSE_PK (CourseID)
COURSE_PROFESSOR_FK (PROFESSOR_LecturerID)
COURSE_CLASSROOM_FK (CLASSROOM_Building, CLASSROOM_RoomNumber)
CLASSROOM
P * Building CHAR (5 CHAR)
Capacity INTEGER
Accessibility VARCHAR2 (75 CHAR)
Facilities VARCHAR2 (250 CHAR)
P * RoomNumber CHAR (3 CHAR)
CLASSROOM_PK (Building, RoomNumber)
STUDENT
P * StudentID CHAR (10 CHAR)
FirstName VARCHAR2 (20 CHAR)
LastName VARCHAR2 (30 CHAR)
Email VARCHAR2 (50 CHAR)
Address VARCHAR2 (200 CHAR)
* EmergencyContact CHAR (10 CHAR)
STUDENT_PK (StudentID)
ENROLLMENT
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* EnrollmentDate DATE
Grade CHAR (2 CHAR)
MeetingTime DATE
OfferedTerm VARCHAR2 (20 CHAR)
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