DATABASE MANAGEMENT SYSTEMS

Prepared by:  Paul Yun, Collin Woodruff, and Colby Wellens

Elementary School Database



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# Team Members

* Paul Yun – Comp. Sci. Major
* Collin Woodruff – Comp. Sci. Major with a Software Engineering Track
* Colby Wellens- Comp. Sci. Major

# Introduction

For our database project, we plan to create a database system that manages records for any school which requires information to be stored. We will keep data on the employees of the school as well as the students. Students, admins, teachers, and employees alike will be able to access this database. However, they will have certain restrictions on the data they can access depending on their position. Classes, grades, participation, violations, and attendance will be available for students, admins, and teachers.

The departments include Math, Science, Literature, English, Fine Arts, Social Sciences, Health & Physical Education, Computers & Technology, and Mass Communications. Teachers/ Students can only view information pertaining to the student (demographic information, and grades). Administrators will have access to ALL information regarding students, employees, and teachers. Information (ssn, salary, name, etc.) on the employees and teachers.

## Process Description

In many schools across the nation thousands of children from Pre-K through grade 5 are enrolled in elementary schools every year. Students are taught all sorts of different subjects such as math, science, history, and literature at a basic level that is then built upon in each grade thereafter. Elementary schools are vital to a person’s education because during their developing years they need to be taught all of these subjects so that they can build upon them in the future and potentially further their education into college.

With that in mind there need to be teachers teaching all of these students these different subjects. These teachers have families they need to support so they will be getting paid a salary. These teachers are extremely important to their students’ path towards success because without good teachers then the students they would be outputting would not be very successful, smart or driven. These teachers are fostering the education of the youth and we wouldn’t want them to be upset or do more work than they should.

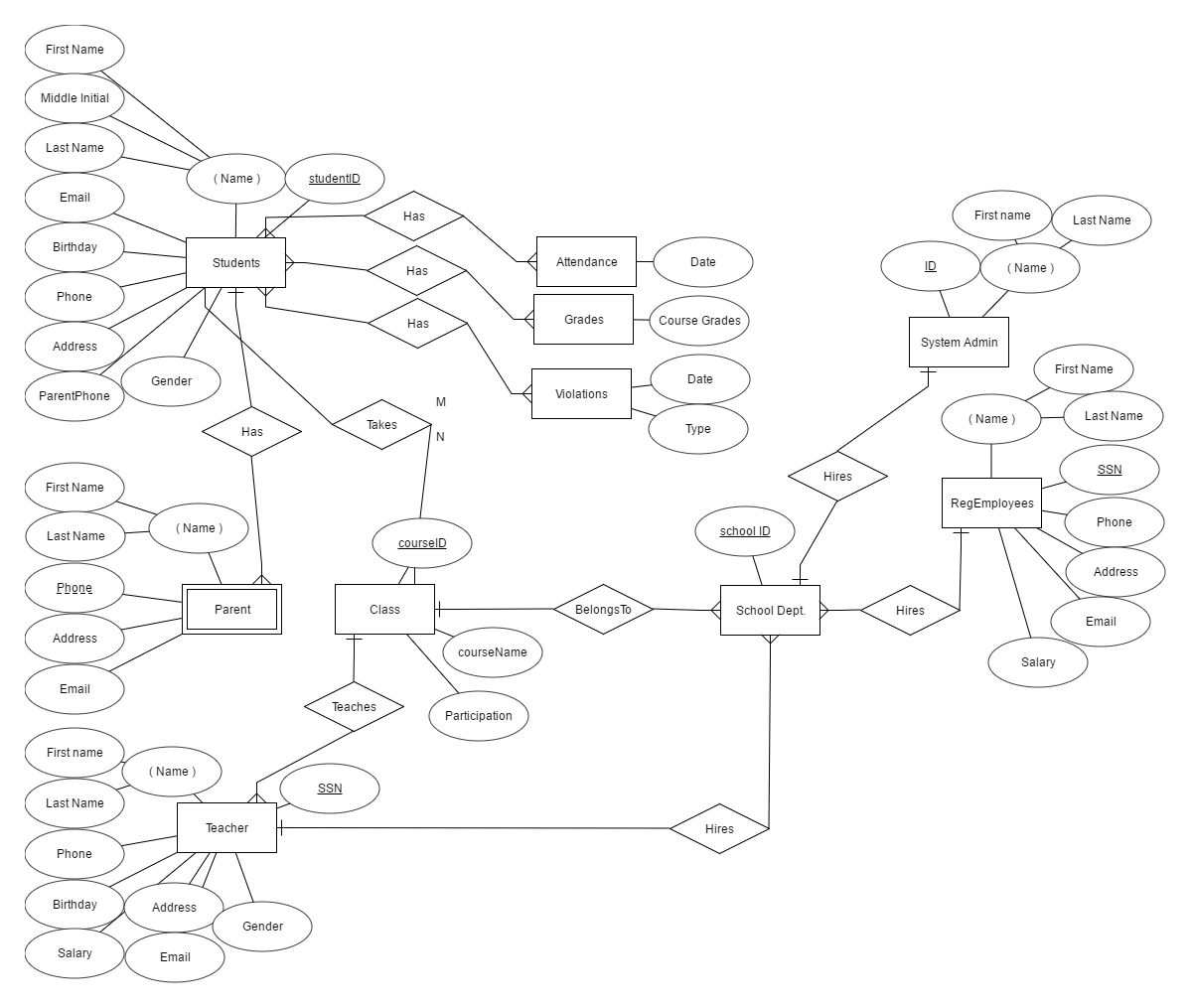
A school cannot be run solely with students and teachers, without administrators there would be nobody to keep the teachers in line and look after the emotional well-being of the students. The administrators such as the principal, vice principal, or any of the guidance counselors help create a safe place of learning for each and every student. These administrators make sure that the teachers are doing their jobs and that there is no one in the school that shouldn’t be in there. Also the guidance counselors are there to help any students with emotional problems, disabilities, or if the student is having a bad day.

As you can see there are many important roles that are in play even in an elementary school. Without a database system these schools are keeping all their records on paper and every once in a while a record is lost and there is no way to recover it since it is a paper trail. With our database system these schools would no longer need to worry about lost data because everything would be on their very own locally hosted or publically hosted server. We suggest keeping both servers in case there is a security breach on the publically hosted server. The database will keep all the information about the students, teachers, and administrators and there will no longer be a need for paper records. This will keep the school running more smoothly and efficiently.

### User Requirements

There are many students in the school as well as staff from teachers and administrators to other regular employees that help maintain the school. Each regular employee has information put into the database about them and the information that is required for the database is their first name, last name, social security number, phone number, home address, email address, current salary, username, and password. This information is used to identify each individual regular employee working at the school. The administrators also need to put their information into the database and the information required for them is their id number, first name, last name, username, and password. The administrators administrate the school and the database so their requirements are relatively small. The teachers also need to be in the database and the information required of them is their first name, last name, social security number, gender, birthdate, phone number, home address, email address, current salary, username, password, and course id number. The teachers are one of the most important positions to keep the school running but there wouldn’t be a school without the students. The students information required is their student id number, first name, middle initial, last name, gender, birthdate, parent phone number, home address, email address, username, and password. The students also need their parent’s information which is their first name, last name, phone number, home address, email address, and their child’s student id number. The school is also divided up into different departments and the information for each department required is the school id number, course id number, social security number, id number, and employee social security number. Within each department there exists some classes which also need to have their information in the database and the information required for those are the course id number, course name, participation, and student id number. With each class there is a grade so the information to be put into the database is the course grade, the course id number, and student id number. Attendance is also kept through our database system so there needs to be data input from the attendance date and the student id number. If the student had any violations they would be listed in the database so the information for that is the violation date, violation type, and student id number. The database also allows administrators and teachers to modify the database such as adding classes to a student’s schedule, updating a grade, or deleting a class that was dropped. The students will be able to view their classes, grades, violations, and attendance records in case there is any discrepancies or if the student or student’s parents want to stay up to date with their performance.

# Entity Relationship Diagram

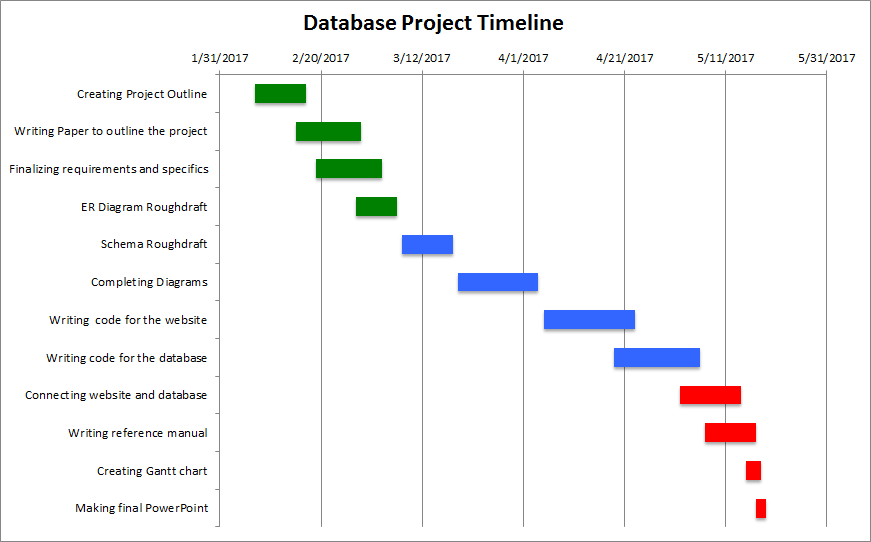


## Assumptions:

* Every student has a parent
* Every school dept. has at least one employee
* Every class has a teacher and at least one student

### Task List

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | **Start** | **Finish** | **Duration** |
| Creating Project Outline | 2/7/2017 | 2/17/2017 | 10 days |
| Writing Paper to outline the project | 2/15/2017 | 2/28/2017 | 13 days |
| Finalizing requirements and specifics | 2/19/2017 | 3/4/2017 | 13 days |
| ER Diagram Rough draft | 2/27/2017 | 3/7/2017 | 8 days |
| Schema Rough draft | 3/8/2017 | 3/18/2017 | 10 days |
| Completing Diagrams | 3/19/2017 | 4/4/2017 | 16 days |
| Writing code for the website | 4/5/2017 | 4/23/2017 | 18 days |
| Writing code for the database | 4/19/2017 | 5/6/2017 | 17 days |
| Connecting website and database | 5/2/2017 | 5/14/2017 | 12 days |
| Writing reference manual | 5/7/2017 | 5/17/2017 | 10 days |
| Creating Gantt chart | 5/15/2017 | 5/18/2017 | 3 days |
| Making final PowerPoint | 5/17/2017 | 5/19/2017 | 2 days |



# Conclusion:

We learned a lot from working on this project. We could implement a functional database into a website application. We learned how to make the UI (user interface) work together with the server side programming language to perform different queries on the database such as adding data to a table, updating data already in a table, or deleting data from a table. We also learned how to use the web application to view the data that is inside the database by using various select statements to list the data that we wanted listed. We also learned and gained experience working in a small team which is very useful in the real world. It is nice to work together on a group project because in an academic setting it is quite rare that group work is a requirement and most academic work is personal so having to work in a team as well as alone helped to give us a few different perspectives on working with a database. Databases are very common today and this project is valuable to our understanding of how most applications, whether it is a web application, desktop application, mobile application, etc. work because without a database attached to these applications they wouldn’t work the same way and wouldn’t be able to store any data. We all learned a lot from this project and it will greatly help us in the future since almost all applications in today’s society are running on databases.