A System for School Administration:

Clubs, Teachers, Students, Classes

Team 6

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Database Requirements

The purpose of this system is to bring structure to the information within a school system that allows for logging, oversight and efficiency. In this system there's information on students, teachers, clubs, classes, the rooms they meet in, and the relations between all of these entities. With this structure we can be more aware of student success, we can make sure there is proper classroom availability, and we can keep track of student club details of membership and supervision.

Student

Out of the many students at our school, we want to log all the information necessary for their processes in the school. That includes information of their date of birth, their unique social security number, their major, their credit hours, their name, and their multiple phone numbers if they have any. A given student may, if desired, participate in as many clubs as they choose. This student may also be enrolled in many classes. They must be in at least one class to be in our system.

Teacher

We also want to log information of the teachers at our school. Every teacher has their unique teacher identification, which we log with their name. Any given teacher must be the professor for at least one class to be in our system. A teacher may also choose to supervise only one club.

Class

Now, the classes in our system are identified by its own course and time it meets and also by the teacher who is the professor and by the room in which the class meets. Such that the same teacher may teach the same class in the same room if it is at a different time of day. Every class must have only one professor associated with it, only one room to meet in, and at least one student taking the class.

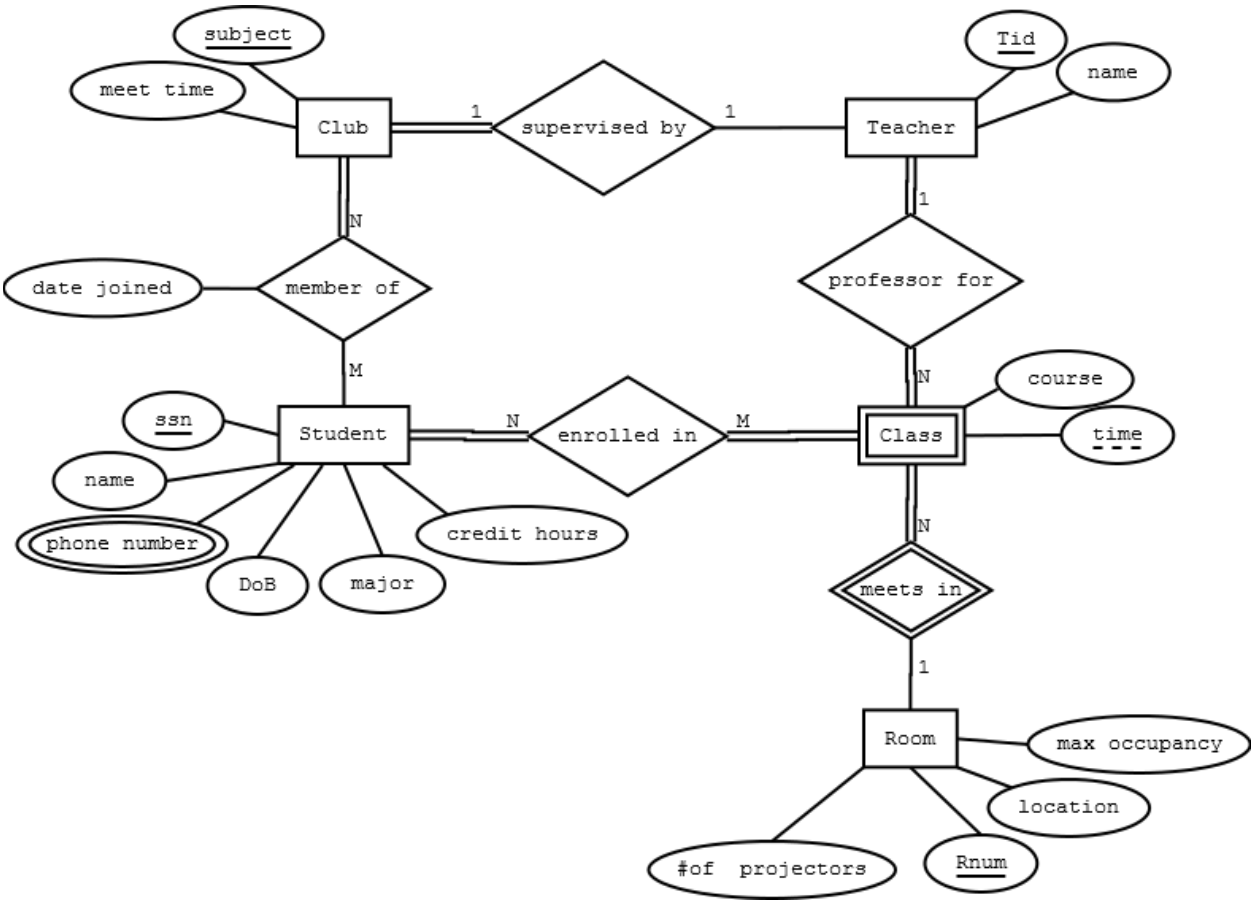
Room

In our system, we log information about each room in the school as well. That is, there's information on the location (which building), the unique room number of the space, the max capacity, and information on the number of projectors stationed there. Every room doesn't necessarily need be used for a class during a semester, though we keep this information for the possibility of high enrollment or specific requirements of a class.

Club

Students within our system are also capable of joining clubs. Each club has information recorded of its subject and when it meets during the week. For a club to exist in our system, there must be only one teacher for its supervision.

EER Diagram


subject
meet time
Club
1
supervised by
1
Teacher
Tid
name
N
1
date joined
member of
professor for
M
N
course
ssn
Student
N
enrolled in
M
Class
time
name
phone number
credit hours
DoB
major
N
meets in
1
Room
max occupancy
location
#of projectors
Rnum

Basic Relational Schema

Club(club_subject,club_meet_time,club_tid)

Student(student_ssn,student_name,student_bdate,student_major,student_credit_hours)

Teacher(teacher_id,teacher_name)

Class(class_room_num,class_time,class_id,class_course)

Room(room_num,room_location,room_max_occupancy,room_projectors)

Student_Phone(phone_student_ssn,phone_number)

Enrolled_In(enrolled_student_ssn,enrolled_class_room_num,enrolled_class_time)

Member_Of(member_student_ssn,member_club_subject,member_date_joined)

Integrity Constraints

IC name & table(s)	IC type	English Statement	Page # where implemented	Page # where tested
teacher_PK Teacher	Key	Two teachers may not have the same ID number.		
student_phone_FK_1 Student_Phone	Foreign Key	Student's phone numbers must be connected to a real student's SSN.		
club_IC_1 Club	1-attribute	Clubs must meet on a valid day of the week.		
room_IC_1 Room	2-attribute 1-row	If a room has two projectors in it, then its occupancy must be greater than or equal to 30.		