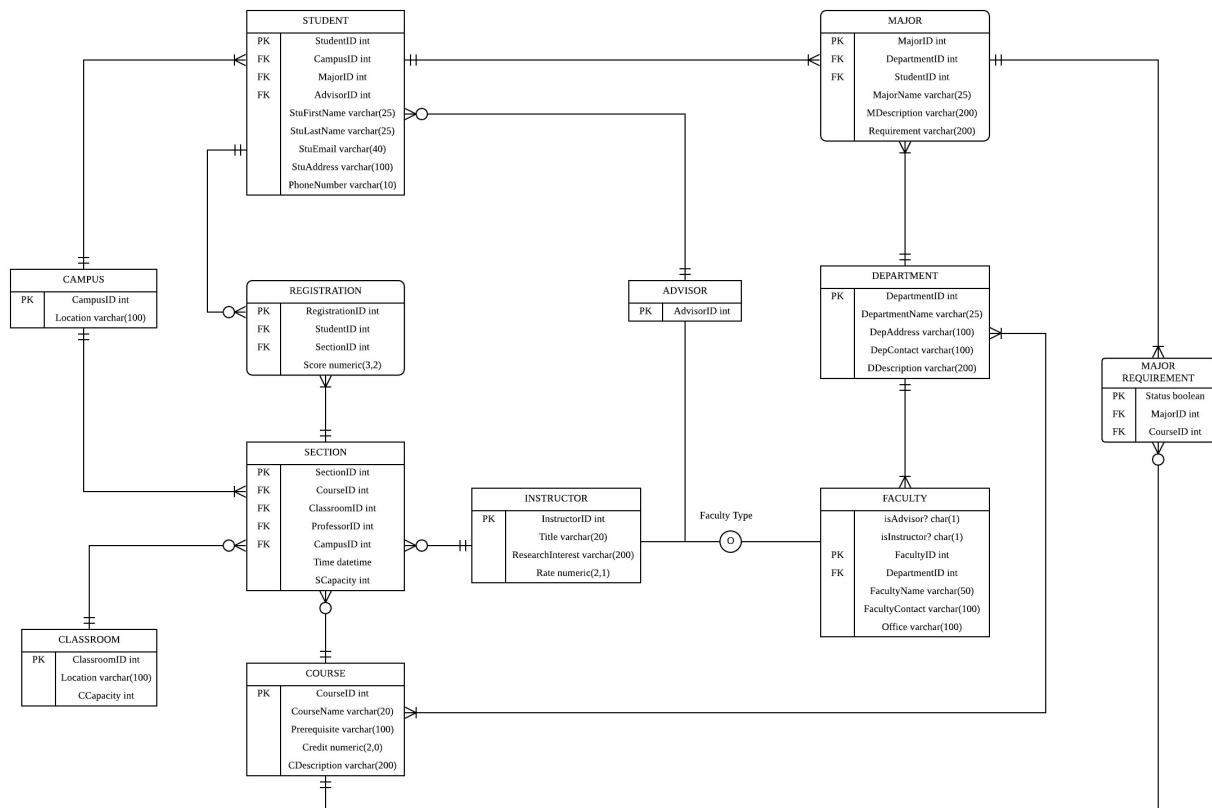


P2 Database Design & Initial ERD

Group Kung Fu Tea



The registration system is used for students to register courses in the college. The registration database is extremely important for students and universities. Only if the database system is designed reasonably and has excellent structure, students are able to know the courses clearly and register the ideal courses efficiently.

In this system, the students can search for the courses in different campuses, and check the course descriptions, prerequisites, instructor, meeting times, locations and details for the course. Besides, students can register, check and drop the exact section for the courses in the system. According to the business rules, we designed the database with the following entities and relationships.

Student:

A student can register one or more sections.

A student can have one or more grades from each section he/she has taken or is taking.

A student must belong to a campus.

A student must declare a major program.

A student must be supervised by an academic advisor.

Student's first & last name, address, telephone number and email address are recorded in the system.

A course may have many sections, each section has different meeting times and capacities.

Section:

A section must be registered by one or more students.

A section must record at least one grade for every student taking or taken.

A section must belong to a campus.

A section must be taught by an instructor.

A section can have a classroom.

A section must belong to a course.

Section time and capacity are recorded in the system.

Classroom:

A classroom can have one or more sections at different times.

Classroom location and capacity are located in the system.

Different campuses have different courses, some courses are in one campus, while some are in more than one campus, so we need Campus entity.

Campus:

A campus must have one or more students.

A campus must have one or more sections.

Campus location is recorded in the system.

Registration:

Registration is an associative entity. It associates a single instance of a student with a single instance of a section. It permits the tracking of the related studentID and sectionID. Also the grade is tracked by the registration entity, since every registration corresponds to a grade.

Course:

A course may have many sections.

A course may be required by many majors.

The course name, prerequisite, credit, description are recorded in the system.

Each faculty, including instructor and advisor, has their own department. Each department may have more than one major. Each major has their own requirements for students.

Department:

A department may have many majors and have at least one major.

A department has many students and faculties.

A department must contain faculties.

The department address, contact, description are recorded in the system.

Major:

A major must belong to one department.

A major may include many students, and at least includes one student.

A major has many required courses.

The major requirement and description are recorded in the system.

Each faculty recorded in the system must be either instructor or advisor.

Faculty:

A faculty must belong to one department.

A faculty can be the instructor and the advisor at the same time.

A faculty must at least be one of the advisors and the instructors.

The faculty name, contact and office are recorded in the system.

Advisor:

An advisor is a faculty, and it may conduct many students.

Instructor:

An instructor is a faculty, and it may conduct many sections.

The instructor title, rate and research interest are recorded in the system.

Data Type:

STUDENT

StudentID int

StuFirstName varchar(25)

StuLastName varchar(25)

StuEmail varchar(40)

StuAddress varchar(100)

Phone varchar(10)

CAMPUS

CampusID int

Location varchar(100)

REGISTRATION

RegistrationID int

Score numeric(3,2)

SECTION

SectionID int

Time DateTime

SCapacity int

CLASSROOM

ClassroomID int

Location varchar(100)

CCapacity int

COURSE

CourseID int

CourseName varchar(20)

Prerequisite varchar(100)

Credit numeric(2,0)

CDescription varchar(200)

INSTRUCTOR

InstructorID int

Title varchar(20)

ResearchInterest varchar(200)

Rate numeric(2,1)

ADVISOR

AdvisorID int

MAJOR

MajorID int

MajorName varchar(25)

MDescription varchar(200)

Requirement varchar(200)

DEPARTMENT

DepartmentID int

DepartmentName varchar(25)

DepAddress varchar(100)

DepContact varchar(100)

DDescription varchar(200)

FACULTY

isAdvisor? char(1) 'Y' or 'N'

isInstructor? char(1) 'Y' or 'N'

FacultyID int

FacultyName varchar(25)

FacultyContact varchar(100)

Office varchar(100)

MAJOR REQUIREMENT

Status char(1) 'Y' or 'N'