

Class: CECS 323 Sec 01

Project Name: MongoDB Enrollment Project Design

Team #: 5

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Parent Table Name	Child Table Name	Multiplicity	Direction	Design Pattern	Comments	Rationale
departments	majors	1 ..1 to 1 ..*	Parent to Child	One-to-Few	Each department document will have an array of the majors it offers. The information for majors (name and description) will be embedded into the department document.	The information for every major is relatively small (just the name and description) and there do not appear to be more than roughly 40 majors per college and less than that per department, at CSULB.
departments	courses	1 ..1 to 0 ..*	Parent to Child	One-to-Many	Each department document will have an array of course IDs.	A department has many courses that it offers.
departments	courses	1 ..1 to 0 ..*	Child to Parent	Two-Way Referencing	Each course document will have the ID of its parent document along with the department abbreviation.	Courses are often identified with the combination of the course abbreviation and the course number so it would be nice to have them both appear if the courses document is queried and department names/abbreviations don't appear to change often.
majors	studentmajors	1 ..1 to 0 ..*	Parent to Child	One-to-Many	Each major will have a list of declared-students' major ID	One major can have at least a couple hundred students but less than thousand (Like CSULB)
majors	studentmajors	1 ..1 to 0 ..*	Child to Parent	Two-Way Referencing	Each studentmajor will have the ID derived from its parent document	Each student has a specific declaration date followed by a majors(or university) request.

students	studentmajors	1 ..1 to 0 ..*	Parent to Child	One-to-Few	The entire contents of Studentmajor is embedded into student.	Each student will have mostly likely up to a few major (like major and minor)
courses	sections	1 ..1 to 0..*	Parent to Child	One-toMany	Sections will have Section Number	One course can have multiple sections but a section cannot be associated with multiple courses
students	enrollments	1 ..1 to 0 ..*	Parent to Child	One-to-Many	Enrollment will have an enrollment ID associated with it	A student can be enrolled in multiple courses
sections	enrollments	1 ..1 to 0 ..*	Parent to Child	One-to-Many	Enrollment will have an enrollment ID associated with it	A section can have multiple students enrolled
enrollments	passfail	1 ..1 to 0 ..1	These two categories of enrollments are complete and disjoint so we can create subschemas and have data be validated against the subschemas, using “oneOf” to ensure that the data for enrollment is valid according to one of the subschemas.			
enrollments	lettergrade	1 ..1 to 0 ..1				