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Assignment: #7- Course Management System – Final Design Phase (v3)

Static Description for Brett Haines:

The biggest change to the UML class diagram is the addition of the “University” class. This creates an explicit interface through which a user can interact with the rest of the classes in the system. Additionally, the “prereqs” course list was changed to a list of Strings containing “prerequisiteIDs” in order to make an easier reference to each particular “Course.”

Another major change was the removal of the “Person” abstract class in favor of “Employee”. This change means the “Student” class is no longer a subclass of anything else.

In the new diagram, “Semester” was changed from an enum to a full class. This allows a “Semester” object to contain its year in addition to its term, among other info about what student requests are pending for that semester.

“Request” is now a separate class instead of being an association class between “Student” and “Course”.

The “Catalog” class was removed entirely. This is mainly because “Catalog” had no practical purpose at this stage in the planning.

Finally, the “AcademicRecord” and “CoursePerformance” classes were combined into a single “Record” class that is stored as list within the relevant student. This considerably reduces the complexity of checking a student’s past performances.

Static Description for Jorge Perez:

As a team we picked my design. The main structure stayed same with a few changes on it.

The main changes were:

In my previous UML design there was CoursesToTake, CoursesPrerequisite and Course, these got condensed in only Course, this Course now will possess an arraylist of Strings with the Ids of the Courses that it has as a prerequisite.

The Class semester was added as per the implicit requirements.

Changes happened in the Professor Class to represent that it can only hold one course at a time, and to specify more the qualifications and skills to be able to match him with a correct course.

A Queue of granted request was added to the university class to keep track of the order of these requests.

Static Description for Matthew McDermott:

Our group approach to solving the Course Management system is quite different than my solution in the previous assignment. We added a “University” class that contains attributes and methods to keep all operations of the system simple and easy to maintain. The “University” class contains information and functionality that replaces the three classes in my previous assignment called “Administrator,” “StatTracker,” and “CMS_IMP.”

The new design also replaces the class “Person,” which used to be a parent to Administrator, Counselor, Instructor, and Student and replaces it with “Employee” which is the parent to “Counselor” and “Professor”. This change enables the “University” class to contain lists that separate all “Employee” instances from all “Student” instances, which makes it much simpler to perform operations on each different type.

Another welcomed change was the removal of the “pastCourses” list in “Student” which made another more simple approach where instances of “Record” will account for history of every “Student” and the courses they have taken previously.

The “Semester” class was also introduced to handle the new functionality required by the client and for easier organization of information per semester.

The “Program” class was removed for simplicity as it was discussed that in the future we could implement a list of courseIDs for each “Student” if a student’s program was required for any reason.