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9/3/17
CS-6310 Software Architecture and Design
Assignment 2

Object Oriented Analysis

CLASSES, ATTRIBUTES, and OPERATIONS

Class #1: System <... to manage the online course enrollments and grade recordings.>

- Current Course Catalog attr: <... will select courses from the most current Course Catalog>

- Current Term attr: < this system will be used to help determine the instructor and course offerings on a term-by-term basis>

- Academic Administrators attr: <... an administrator role will be useful as a focal point for supporting certain commands and reports. >

- Course Requests attr: <...be used to monitor and manage student course requests, along with the student costs and progress towards graduation.>

- Remove Course() op: <system must be able to support the creation of new courses, along with the update and occasional removal of existing courses.>

- Add Course() op: <system must be able to support the creation of new courses, along with the update and occasional removal of existing courses.>

- Approve Course Request() op: <The system will also be used ... manage student course requests>

Class #2: Students <students will be given the opportunity to take a wide variety of courses.>

- UUSID attr: < Each student will have a "UUSID" (University Unique Student Identifier) so that they can be distinguished from other students, past or present.>

- Name attr: <The system must be able to track some basic identifying information for each of the students, to include names, home addresses, and phone numbers at a minimum.>

- Address attr: <The system must be able to track some basic identifying information for each of the students, to include names, home addresses, and phone numbers at a minimum.>

- Phone Number attr: <The system must be able to track some basic identifying information for each of the students, to include names, home addresses, and phone numbers at a minimum.>
- Job attr: <students will select courses that are most appropriate for their current job/position and future goals>
- Courses attr: <...students will be given the opportunity to take a wide variety of courses>
- Academic Records attr: <For each course that is taken by a student, an academic record must be maintained that records the student's performance during that session of the course. >
- Money attr: <During any single term, students will be permitted to take as many courses as their schedule allows, and as they can afford>
- Degree Program attr: <A student may only be enrolled in one degree program at a time, though they will be allowed to switch between programs subject to certain restrictions>
- Request Course() op: <The system must also allow students to request enrollment in certain courses during each term>
- Enroll in Degree Program() op: <....will establish degree programs for the students>

Class #3: Course Catalog <Students will select courses from the most current Course Catalog>
- Courses attr: <Students will select courses from the most current Course Catalog>
- Add Course() op: <...support the creation of new courses, along with the update and occasional removal of existing courses.>
- Remove Course() op: <...support the creation of new courses, along with the update and occasional removal of existing courses.>

Class #4: Course <Students will select courses from the most current Course Catalog>
- Term attr: <...these courses might be offered during any (or all) of the Fall, Spring and/or Summer terms.>

- Online attr: <Online courses can be offered in a variety of formats, and with content that is comparable to on-campus courses.>

- Instructor attr: <an instructor being assigned to the course>

- Course Id attr: <Each course must have a distinct Course ID ...>

- Course Title attr: <Each course must have…. the course title>

- Description attr: <Each course must have …. description>

- Prerequisites attr: <Some of the more advanced courses might also have prerequisite courses that must be passed before the advanced course can be taken>

- Cost attr: <....And courses also have different costs...>

Class #5: Instructor <Qualified instructors must teach these courses. >

- UUIID attr: <Instructors will also have a University Unique Instructor ID (UUIID) to distinguish them from other instructors.>

- Qualified attr: <Qualified instructors must teach these courses. >

- Name attr: <The system must be able to store the names, office hours and e-mail addresses for the instructors...>

- Office Hours attr: <The system must be able to store the names, office hours and e-mail addresses for the instructors…>

- Email address attr: <The system must be able to store the names, office hours and e-mail addresses for the instructors…>

- Course attr: <each instructor can be assigned to teach (at most) one courser>

- Enter Record() op: <Instructors must be able to enter academic records and final grades once the course has been completed at the end of the term.>

Class #6: Academic Administrator <The clients will have Academic Administrators who will assign instructors to courses from term to term.>

- Assign Course Instructor() op: <The clients will have Academic Administrators who will assign instructors to courses from term to term>

- Get Academic Record() op: <...The list of courses that a student has completed;>

- Calculate Cost For Term() op: <...The costs that a student has paid to take courses during a certain term, and overall>
- Calculate Cost () op: <...The costs that a student has paid to take courses during a certain term, and overall>
- Get number of students in course() op: <The number of students enrolled in courses during the current term.>

Class #7: Degree Program <The student would like a goal for graduation, so the clients will establish degree programs for the students>

- Name attr: <Each degree program will have a clear and distinct name.>
- Courses attr: <will consist of a set of courses that must be successfully passed.>

Class #8: Record <For each course that is taken by a student, an academic record must be maintained that records the student's performance during that session of the course.>

- Term attr: <Since a student might take a course multiple times, the term and year must also be maintained for each attempt.>
- Year attr: <Since a student might take a course multiple times, the term and year must also be maintained for each attempt.>
- Course attr: <For each course that is taken by a student, an academic record must be maintained>
- Grade attr: <Instructors must be able to enter academic records and final grades once the course has been completed>

Class #9: Course Request <The system will also be used to monitor and manage student course requests>

- Course attr: <The system will also be used to monitor and manage student course requests>
- Student attr: <The system will also be used to monitor and manage student course requests>

RELATIONSHIPS

- Approve Course Request: Association between System and Course Requests <system to manage the online course enrollments and grade recordings.>

- Add and Remove Courses: Association between System and Course Catalog <system will be used to help determine the instructor and course offerings on a term-by-term basis.>

- Request Course: Association between Students and Courses <...students will be given the opportunity to take a wide variety of courses>

- Student in Degree Program: Association between Students and Degree Programs <....establish degree programs for the students.>

- Course Catalog consisting of courses: Aggregation between Course Catalog and Courses <...select courses from the most current Course Catalog>

- Assign Instructor to Course: Academic administrator assigns association class, Instructor, to Course <The clients will have Academic Administrators who will assign instructors to courses from term to term>

- Enter Record: Association class, Record, between Student and Instructor <Instructors must be able to enter academic records and final grades once the course has been completed at the end of the term.>

- Degree Program Consists of Courses: Aggregation between Degree Program and Courses <Degree Programs will consist of a set of courses that must be successfully passed.>