

Proposal

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For this project, our team will design a course management web application (which is similar to Coursework). Both instructors and students can use this website to handle issues related to courses. This web application will have 10 entity sets, which are Course, Semester, User, Instructor, Student, Department, Question, File, Assignment and Announcement. Also, there are 9 relationship sets, including Open, Take, Instruct, Belongs, Ask, Reply, Upload, PostAssignment and PostAnnouncement. Detailed attributes are listed below.

Entity Sets:

Course(course_id, session, course_name, syllabus, credit)

Semester(year, season, begin_date, end_date)

User(user_id, user_name, password, gender, user_type, phone, email)

Instructor(user_id, title_level)

Student(user_id, enroll_date)

Department(dep_id, dep_name)

Question(que_id, que_title, que_description)

File(file_id, file_name, file_content)

Assignment(ass_id, ass_title, ass_description, due_date, points)

Announcement(ann_id, ann_title, ann_content)

Relationship Sets:

Open(open_cid, course_id, session, year, season, time, location)

Take(user_id, open_cid)

Instruct(user_id, open_cid)

Belongs(user_id, dep_id)

Ask(user_id, que_id, time)

Reply(user_id, que_id, time, ans_content)

Upload(open_cid, file_id, time)

PostAssignment(open_cid, ass_id, time)

PostAnnouncement(open_cid, ann_id, time)

Constraints:

1. Each course opened in each semester can only have exactly one instructor.
2. Each student can belong to exactly one department.
3. Course and Semester compose an aggregation that represents a distinguishable course opened at a certain semester.
4. File, Assignment and Announcement are weak entities of the aggregation composed by Course and Semester.
5. Question is the weak entity of Student.
6. Only students can ask questions and only instructors can answer questions. Instructors can provide multiple answers for a certain question.

We will try to mine some data online for this project. However, if we failed to obtain reliable data, we'll then make up fake data to populate our database. To be more practical and formal, we will format our data as Coursework does.

With our web application, students are able to see course schedule, choose courses and download assignments. When they are confused with the assignments or what they learnt in class, they can post questions. Instructors can use this site to upload files, answer students' questions, upload assignments and post announcements.