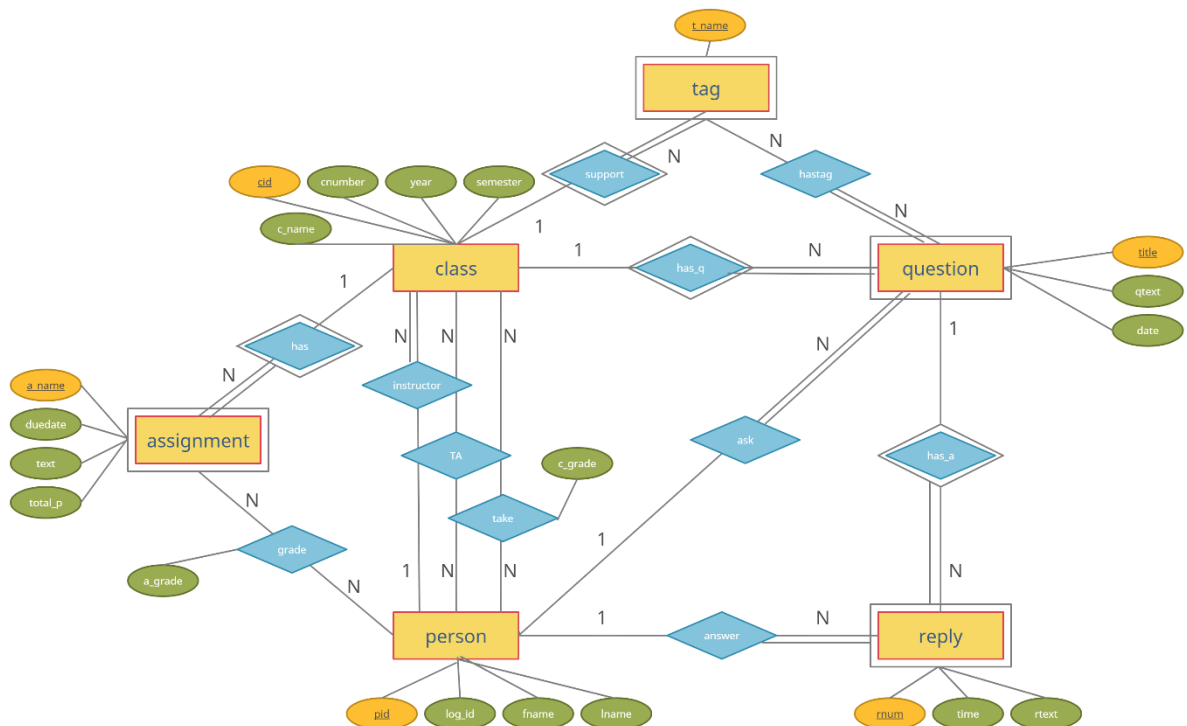CS 377 Learning Management System

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Question 1

Additional assumptions:

1. Each class is uniquely identified by cid (before adding this attribute, a class is identified by 3 attributes: number, semester and year, I add cid in order to so simplify it)

2. A student doesn't have to take any classes and a class can have no student

3. Each assignment is uniquely identified by its class's cid and assignment name

4. Each question is uniquely identified by its class's cid and the question title, each question should has at least one tag. That is said, inside each class, the question tile should be unique

5. Each tag is uniquely identified by its class's cid and the tag name

6. Each reply is uniquely identified by its questions' cid and title, and rnum (e.g. 3 means this is the 3rd reply for that question)

Question 2

Hastag {t_name, cid, title}

Tag {cid, t_name}

Question {cid, title, qtext, date, ask_pid}

Reply {cid, title, rnum, rtext, time, answer_pid}

Person {pid, log_id, fname, lname}

Class {cid, cnumber, year, semester, c_name, instructor_pid}

Assignment {cid, a_name, duedate, text, total_p}

Ta {cid, ta_pid}

Take {cid, take_pid, c_grade}

Grade {cid, a_name, stu_pid, a_grade}

Question 3

FDs:

cnumber → cname

Primary key FDs

cid, title → qtext, date, ask_pid

cid, title, rnum → rtext, time, answer_pid

:

cid, a_name → duedate, text, total_p

cid, take_pid → c_grade

cid, a_name, stu_pid → a_grade

cid → cnumber, year, semester, c_name, instructor_pid

pid → log_id, fname, lname

3NF relational schema:

Course {cnumber, cname}

Hastag {t_name, cid, title}

Tag {cid, t_name}

Question {cid, title, qtext, date, ask_pid}

Reply {cid, title, rnum, rtext, time, answer_pid}
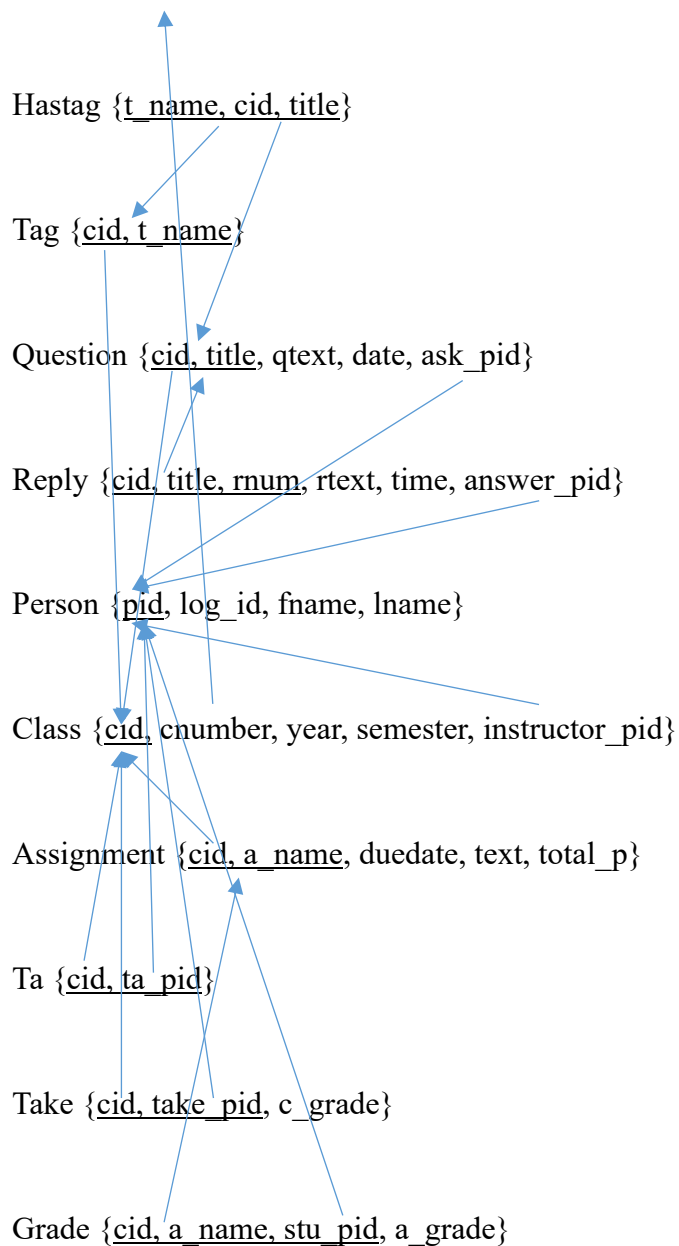
Person {pid, log_id, fname, lname}

Class {cid, cnumber, year, semester, instructor_pid}

Assignment {cid, a_name, duedate, text, total_p}

Ta {cid, ta_pid}

Take {cid, take_pid, c_grade}

Grade {cid, a_name, stu_pid, a_grade}

Now the schema is in 3NF since for every FD X→B in all relations, one of the following is true: X is a superkey OR B is a key attribute

Question 4

Link: http://34.135.64.127/

Question 5

Done

Question 6

(c)

Course

cnumber, VARCHAR(10), Unique identifier for course

c_name, VARCHAR(40), course name

Person

pid, VARCHAR(10), Unique identifier for user

log_id, VARCHAR(15), login ID

fname, VARCHAR(15), first name

lname, VARCHAR(15), last name

Class

cid, CHAR(10), Unique identifier for class

cnumber, VARCHAR(10), course number

semester, VARCHAR(6), the semester offered this class

instructor_pid, VARCHAR(10), the pid for this class's instructor

year, INT, the year offered this class

Ta

ta_pid, VARCHAR(10), the pid for this class's TA

cid, CHAR(10), the unique identifier for a class

Take

take_pid, VARCHAR(10), the pid for a student taking this class

c_grade, VARCHAR(2), the final letter grade

cid, CHAR(10), the unique identifier for a class

Assignment

cid, CHAR(10), the unique identifier for a class

a_name, VARCHAR(20), the assignment name

duedate, DATE, the due date for this assignment

text, TEXT, text explaining the content of this assignment

total_p, INT, the total point of this assignment

Grade

a_name, VARCHAR(20), the assignment name

stu_pid, VARCHAR(10), the pid for student doing this assignment

a_grade, INT, the grade the student get for this assignment

cid, CHAR(10), the unique identifier for a class

Question

date, TIMESTAMP, the time when this question was posted

title, VARCHAR(200), title of the question

qtext, TEXT, text explaining the question

ask_pid, VARCHAR(10), the pid for whom asked this question

cid, CHAR(10), the unique identifier for a class

Reply

rnum, INT, the order for this reply under the question

rtext, TEXT, the content of this reply

time, TIMESTAMP, the time this reply posted

answer_pid, VARCHAR(10), the pid for whom posted this reply

title, VARCHAR(200), the title of question that this reply answered

cid, CHAR(10), the class that question belongs to

Tag

t_name, VARCHAR(15), the name of tag

cid, CHAR(10), the unique identifier for a class

Hastag

t_name, VARCHAR(15), the name of tags this question has

title, VARCHAR(200), the title of the question

cid, CHAR(10), the class the question belongs to

Question 7

Scourse.php

    Display related information of a class for a student

    Click assignment name to see assignment detail

    At the bottom of the page, there is a Q&A button which lead to the Q&A page of the class

(Question 9)

Question 8

Tcourse.php

Display relate information of a class for a teaching staff

Create new assignments

Click assignment name to see assignment detail

Click check to see students' grade and grade class & assignments

At the bottom of the page, there is a Q&A button which lead to the Q&A page of the class

(Question 9)

Check_assi.php

Insert new assignment to tables

Grade.php

Show all grade of a student for this class

If the student didn't have a final grade yet, the teaching staff can enter a grade

Input grade for assignment that has not been graded yet

Check_letter.php

Insert final grade to tables

Grade_a.php

Insert new grade for assignments to tables

Question 9

Question.php

Click the supported tag to filter the posts

Create new posts

Create_q.php

Inset new questions to the table

Qa.php

Display questions under specific tag

Click check for more information and replies

Reply.php

Show all the information related to a question post

Can reply to the question

Create_reply.php

Insert replies to the table

Question 10

Index.html

The default starting page for the website, click start to redirect to login page

Login.php

User can input the user id and login id

Check.php

Check user id and login id, if they match, redirect to home page

Login_bk.php

Home page, show all the courses related to the user

Click course number to redirect to correspond pages (Question 7 & 8)

At the bottom of the page, the user can apply for a transcript (Question 11)

Question 11

Transcript.php

Automatically generate a transcript for the user