CS345: Database Laboratory

Database Regular Lab Session (1 Questions, 20 Points)
Time: 09:00–12:00 (3.0 hours.) Pages: 3

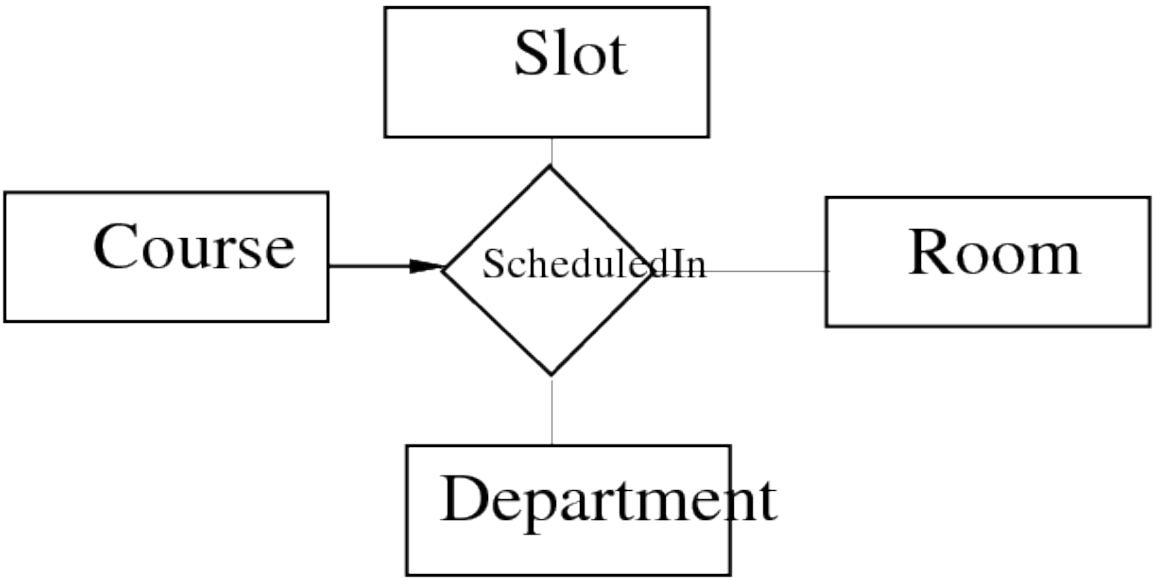
IIT Guwahati

09 Feb 2018 (Fri) Lab session: ML5

Question 1: (20 points)

You are given the file `db-09-feb-2018.tar.gz` having a set of 13 files containing information about class time table schedule of each department along with institute time table for institute level core courses.

The ER diagram for `ScheduledIn` relation is given as:



Attributes for each entity in the above ER diagram is given as: Underlined attribute(s) denotes the primary key for the entity.

- **Course:** `course_id, division`
- **Department:** `department_id, name`
- **Slot:** `letter, day, start_time, end_time`
- **Room:** `room_number, location`
- **Note:** Login to mysql through the command: `mysql -uroot -p` (Maths and Computing students: password is `abc123`)

1. **Problem Statement - ER to Relational Table**: (Refer to section 3.5 of Raghu Ramakrishnan text book and `https://dev.mysql.com/doc/refman/5.7/en/create-table.html`)

   (a) Create database using the following SQL statement: `create database 09feb2018;`

(b) Go into the created database with SQL statement: `use 09feb2018;`

(c) Convert the above ER diagram into relational tables. Write SQL statements to create tables residing in the database `09feb2018`. Write comments for each of the created table. Save the SQL statements into a file with name: `roll_number.sql`

(d) Clearly indicate the attributes in the `ScheduledIn` table.

(e) Indicate primary key constrint for the `ScheduledIn` table.

(f) Obtain foreign key constrints for the `ScheduledIn` table.

(g) Carefully go through the class time table for each of PDF file. You should also carefully go through your relational tables. Prepare as many CSV data files as there are number of tables. Populate each of the CSV file as per the class time table PDF files data. Note there is no automated way for preparation of this data.

(h) No need to prepare database for the lab courses (which are scheduled in the ML1-5 or AL1-5 slots).

(i) Additional constraints are as follows:

- division in Course entity take values from the set {I, II, III, IV, NA}. Divisions are assigned to institute level core courses only (100 level courses). Divisions are NOT assigned to department level courses.
- letter in the Slot entity take values from the set {A, B, C, D, E, F, G, H, I, J, K, L, A1, B1, C1, D1, E1}.
- day in the Slot entity take values from the set {Monday, Tuesday, Wednesday, Thursday, Friday}.
- location in the Room entity take values from the set {'Core-I', 'Core-II', 'Core-III', 'Core-IV', 'LH', 'Local'}.
- Courses in slots `ML1, ML2, ML3, ML4, ML5, AL1, AL2, AL3, AL4, AL5` need not be included.

(j) Note: In order to contain variations in solutions and have uniformity, I have given the ER diagram before hand. You must best utilize this opportunity to obtain time table instance data from the database files and populate.

2. **Instructions**

(a) Your should present in the lab for all the three hours.

(b) You must use SQL to achieve this task. CSV files should be ASCII files (do not prepare file formats ods/xls/xlsx formats).

(c) **Naming convention:** For every file you create, prepend the file with your roll_number. For example, if you create a CSV file with name: course.csv then the file name should be `150101999_course.csv`.

(d) **File to be submitted:** You should submit a .tar.gz file (with name roll_number.tgz) containing following:

i. roll_number.sql

ii. all csv files you have created

(e) **Submission Policy:**

i. **On time submission:** Assignments which reached my mail box on or before **28-Feb-2018, 16:00:00:00 hours** (Coinciding with the CS344 mid-semester examination timing) are considered as on time submissions. There is NO penalty associated with these submissions.

ii. **Late submission policy:** Any submission after the specified on-time submission WILL NOT BE EVALUATED. They will be awarded 0 marks.

iii. **Double submission policy**: You should submit the assignment **once and only once**.

iv. **Series of valid excuses:** Students who still have excuses SHOULD excuse the instructor.

v. **Absentee submission**: For your assignment to be evaluated, you SHOULD present in the lab and sign the attendance sheet. In case you are absent for the lab and found to submit the assignment, your submission will be evaluated and will receive as many **negative marks** for the positive marks you earned in the evaluation process without any further discussion.

(f) **CSE student only:** You are not allowed to perform **mysql** installation during the lab session. If you have not installed **mysql** please leave the lab without disturbing fellow students.

(g) **Maths & Computing students only:** Chaning of the root password of mysql server will invite disciplinary action.

(h) **Mobile phones** are not allowed inside the lab.

(i) **Silence:** Any discussion among students should take place outside the lab. TAs has every right to maintain order in lab.

(j) **Submitting your solution:** email to `vijaya.saradhi@gmail.com`. Subject: CS345: assignment-4: Your roll number.

(k) Attach the .tar.gz file prepared in step 2 (d).

3. **Marking Policy**

(a) Entity to tables - 1 mark each.

(b) Table `ScheduleIn` - 4 marks; (with justification of placed attributes).

(c) Foreign key constraints in ScheduleIn table - 2 marks.

(d) Domain value, NOT NULL, Default constraints - 3 marks.

(e) CSV files data preparation: 5 * 2 = 10 marks.