# CS246: Database Management Systems Lab

**Lab # 03 (1 Questions, 10 Points)**
**Timings: 14:00 to 18:00 Hours  Pages: 3**
**IIT Guwahati**
**Submission: 18:00 Hrs, 24-Jan-2022**
**24 Jan 2022 (Mon)**

**Question 1:** (10 points)

Write SQL statements using `MySQL` to create tables with specified constraints.

**Task 01 - table 01 - course** Refer to the file: `courses.csv` containing seven columns as specified

**CourseNo** A unique number given to a course offered by a department

**Course Title** Self explanatory

**L** Number of lecture hours per week

**T** Number of tutorial hours per week

**C** Number of practical hours per week

**Type of Course** Describes which set of students can register for this course

Create a table named `course` having seven columns one corresponding to each explained above. The columns must satisfies the following constraints:

**CourseNo** Should be the primary key

**Course Title** Should not take null values

**L** Should not take null values

**T** Should not take null values

**P** Should not take null values

**C** Should not take null values

**Type of course** should not take null values

**Task 02 - load data 01** Load the data from the file `courses.csv` into the created table `course`.

**Task 03 - table 02 - course_offered_to** Refer to the file: `courses-offered-to.csv` containing three columns as specified

**CourseNo** A unique number given to a course offered by a department

**Type of Course** Describes which set of students can register for this course

**Offered to** Which group of students the course is offered

Create a table named `course_offered_to` having three columns one corresponding to each explained above. The columns must satisfies the following constraints:

**CourseNo** Should be the primary key

**Type of course** should not take null values

**Offered to** Should not be null (use varchar datatype to this field)

**CourseNo** should be a foreign key referring to `course` table. Place action as cascade when deleting or updating rows parent table course.

**Task 04 - load data 02** Load the data from the file `courses-offered-to.csv` into the created table `courses_offered_to`.

**Task 05 - table 03 - course_exam_slot** Refer to the file: `courses-exam-slots.csv` containing three columns as specified

**CourseNo** A unique number given to a course offered by a department

**Exam Slot** Self explanatory

**Exam Date and Time** Self explanatory

Create a table named `course_exam_slot` having three columns one corresponding to each explained above. The columns must satisfies the following constraints:

**CourseNo** Should be the primary key

**CourseNo** should be a foreign key referring to `course` table. Place action as cascade when deleting or updating rows parent table course.

**Task 06 - load data 03** Load the data from the file `courses-exam-slots.csv` into the created table `courses_exam_slots`.

**Task 07 - table 04 - faculty** Refer to the directory: `faculty` containing 20 files. Each file is of identical format consisting of three columns

**faculty id** A unique number given to a faculty of a department

**department name** Self explanatory

**faculty name** Self explanatory

Create a table named `faculty` having three columns one corresponding to each explained above. The columns must satisfies the following constraints:

**faculty id** Should be the primary key

**dept name** should not take null values

**faculty name** Should not take null values

**Task 08 - load data 04** Load the data from all the files in the directory `faculty` into the created table `faculty`.

**Task 09 - table 05 - faculty_course_allotment** Refer to the file: `faculty-course-allotment.csv` containing three columns as specified

**CourseNo** A unique number given to a course offered by a department

**department name** Self explanatory

**faculty id** Self explanatory

Create a table named `faculty_course_allotment` having three columns one corresponding to each explained above. The columns must satisfies the following constraints:

**(CourseNo, faculty id)** together be primary key

**dept name** should not be null

**CourseNo** should be a foreign key refers to course table. Place action as cascade when deleting or updating rows parent table course.

**faculty id** should be a foreign key refers to faculty table Place action as cascade when deleting or updating rows of parent table faculty.

- Choose appropriate data types. It is not necessary to optimize the data types to exactly fit the given data for each column.
- You may name the columns as per your naming convention.
- Place all the above constraints while creating the table.
- Constraints should not be placed after table is created.

**Task 10 - load data 05** Load the data from the file `faculty-course-allotment.csv` into the created table `faculty_course_allotment`.

**Instructions** Adhere to the following

**Help** Following are useful SQL statements

1. `show tables;`
2. `show warnings;` (immediately after loading data you can understand warnings/errors using this)
3. `truncate table_name;` to empty a table
4. `describe table_name;` to understand the structure of a table

**Errors** In case of issues with the provided data in honoring constraints, resolve them using your discretion by modifying the input files appropriately. Every modification must be recorded in the SQL statements file as a separate line (described below) with comment symbol # placed at the beginning of the file.

**SQL statements** Write all the SQL statements corresponding to tasks 01 to task 10 in a file with your roll number and extension `.sql`.

**File naming** file name should be [Your roll number].sql. If you roll number is: 200101001 then, the file name should be `200101001.sql`

**Help** More help regarding table creation can be found at:

- table creation `https://dev.mysql.com/doc/refman/8.0/en/create-table.html`
- load data statement `https://dev.mysql.com/doc/refman/8.0/en/load-data.html`

**Independent efforts** You should make an honest and independent effort in obtaining the solution to the above problem.

**Submission Procedure** Upload the file in the MS assignments site.

**Marking Scheme** The evaluation criteria is as follows:

**1 Mark** Every task listed above carry one mark