
CS246: Database Management Systems Lab

Lab # 05 (1 Questions, 102 Points)

Held on 06-Feb-2023

Lab Timings: 14:00 to 18:00 Hours Pages: 3

Submission: 18:00 Hrs, 06-Feb-2023

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- a. This lab assignment is based on the concepts covered in chapter 3 **introduction to SQL** in the previous week CS245 theory class.
- b. You can refer to the text book for SQL syntax.

Question 1: (102 points)

Using MySQL perform the following tasks:

Task 01 - 3 Marks Create a database named *week05*

Task 02 Create tables

- a. (3 marks) A table **student** containing the following

| | | |
|------------------------|------------------------|--|
| 1 st column | cid | string of characters of fixed size 7 |
| 2 nd column | roll_number | string of characters of fixed size 10 |
| 3 rd column | name | string of characters of fixed size 100 |
| 4 th column | approval_status | string of characters of fixed size 20 |
| 5 th column | credit_status | string of characters of fixed size 10 |

with the following constraints:

- **roll_number** and **cid** as primary key.
- **name** cannot take null values

Note - **credit_status** takes two values **Credit** and **Audit**

approval_status takes two values **Approved** and **Pending**

- b. (3 marks) A table **course** containing the following

| | | |
|------------------------|-------------|--|
| 1 st column | cid | string of characters of fixed size 7 |
| 2 nd column | name | string of characters of fixed size 100 |

with the following constraints:

- **cid** as primary key.
- **name** cannot take null values

- c. (3 marks) A table **credit** containing the following

| | | |
|------------------------|----------------------|--------------------------------------|
| 1 st column | cid | string of characters of fixed size 7 |
| 2 nd column | l (lecture) | integer |
| 3 rd column | t (tutorial) | integer |
| 4 th column | p (practical) | integer |
| 5 th column | c (credits) | float |

with the following constraints:

- `cid` as primary key.
- `l` cannot take null values
- `t` cannot take null values
- `p` cannot take null values
- `c` cannot take null values

Task 03 Populate data

- (5 marks) populate data from the file `students-credits.csv` into table `student`
- (5 marks) populate data from the file `courses.csv` into table `course`
- (5 marks) populate data from the file `credits.csv` into table `credit`

Use any one of the following methods to populate the data

- Using several insert statements, each insert statement corresponding to one line of the data file into a table. These insert statements are generated using a C program
- Using MySQL `load` statement

Task 04 Queries involving single table

- (5 marks) List all the columns of the `student` table pertaining to Adarsh Kumar Udai
- (5 marks) List `cid`, student `name` and `credit_status` of students who are Crediting course EE 390
- (5 marks) List the columns `cid`, `roll_number`, `credit_status`, `approval_status` of student whose course registration is Pending and are Crediting the course
- (5 marks) List `cid`, `l`, `t`, `p`, `c` of course which are not 6 credits
- (5 marks) List student `roll_number`, `name`, `cid`, `credit_status` and `approval_status` who are Auditing courses and who got Approved for audit

Task 05 Queries involving multiple tables

- (5 marks) List course `name`, `l`, `t`, `p`, `c` having 8 credits
- (5 marks) List course `name`, `l`, `t`, `p`, `c` having tutorial components
- (5 marks) List course `cid`, `name`, `l`, `t`, `p`, `c` with 6 credits and not having credit structure 3-0-0 (correspond to 1-t-p)
- (5 marks) List the `cid`, course `name`, student `name`, `l`, `t`, `p`, `c` of each course registered by student named Pasch Paul 01e
- (5 marks) List the `roll_number`, student `name`, `cid`, course `name`, `l`, `t`, `p`, `c` of students crediting courses with course structure 3-1-0-8 and course are offered by ECE department (whose course id starts with EE);

Task 06 String operations

- (5 marks) List `cid` and student `name` in which ATUL appears any where in the student name. Use UPPER to convert a string to all upper case letters

- b. (5 marks) List `roll_number`, `credit_status` and course `name` of student whose course `name` starts with “introduction to”. Convert all the characters in course `name` to lower letters using LOWER function
- c. (5 marks) List the number of students in all the third year EE courses.
- d. (5 marks) List the `cid` and course `name` of minor courses offered by the institute in which the middle digit should be 2. That is a course of the form CC 123, CC 724 or CC 829
- e. (5 marks) List student `name`, `cid`, course `name` and `credit_status` is Credit by student whose student `name` starts with “A” ends with “TA”. First convert all the characters to capital letters using UPPER function.

Instructions Adhere to the following

SQL statements Write the SQL statements corresponding to each task in a text.

File naming text file name should be [Your roll number].sql

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

Mobile phones are not allowed inside the lab

Submission Procedure You should upload all the SQL files and C program files in MS assignments site.

Marking Scheme Mentioned against each task/sub task