
CS246: Database Management Systems Lab

Lab # 05 (1 Questions, 60 Marks)

Lab session: AL1

Held on: 05-Feb-2024 (Mon)

Lab Timings: 14:00 to 17:00 Hours Pages: 3

Submission time: 16:45 Hrs, 05-Feb-2024

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1. Some of the tasks are so designed to emit errors when SQL statements are invoked. You should make an informed effort to find the cause of the errors. You do not need to resolve the errors.
2. Write all the SQL statements in a text file named with `your_roll_number.sql` file name & extension and upload. Note replace the text `your_roll_number` with appropriate roll number.
3. Refer to table creation document
4. Refer to table modification document
5. Refer to insert statement
6. Refer to update statement
7. Refer to delete statement

Question 1: (60 points)

Write MySQL statements for the following tasks:

Task 01 (2 marks) create a database named `week05`. Within this database, create the following tables.

Task 02 (8 marks) **no constraints** Create a table *T1* with the following columns

1. (1 mark) 1st column is of char data type of fixed length 20
2. (1 mark) 2nd column is of integer data type
3. (1 mark) 3rd column is of float data type

Perform the following operations *T1*

- (1 mark) Insert a record having value ('student 01', 270101001, 9.8)
- (1 mark) Insert a record having value ('student 02', 270101002, 8.9)
- (1 mark) Insert a record having value ('student 03', 270101003, 7.6)
- (1 mark) Update the CPI of student 03 to 8.1
- (1 mark) Delete record of student 02

Task 03 (9 marks) **primary key constraint** Create a table *T2* with the following columns

1. (1 mark) 1st column is of char data type of fixed length 20
2. (2 marks) 2nd column is of integer data type. Place primary key constraint on this column
3. (1 mark) 3rd column is of float data type

Perform the following operations *T2*

- (1 mark) Insert a record having value ('student 01', 270101001, 9.8)
- (1 mark) Insert a record having value ('student 01', 270101002, 8.9)
- (1 mark) Insert a record having value ('student 02', 270101001, 7.6)
- (1 mark) Update student 01 roll number to 270101002.
- (1 mark) Delete record of student 02

Task 04 (9 marks) **unique and not null constraints** Create a table *T3* with the following columns

1. (2 marks) 1st column is of char data type of fixed length 20. Place **not null** constraint on this column
2. (2 marks) 2nd column is of integer data type. Place **unique key** constraint on this column
3. (1 mark) 3rd column is of float data type

Perform the following operations *T3*

- (1 mark) Insert a record having value (NULL, 270101001, 9.8)
- (1 mark) Insert a record having value ('student 02', 270101002, 8.9)
- (1 mark) Insert a record having value ('student 03', 270101002, 7.6)
- (1 mark) Update the name of student to NULL.
- (1 mark) Delete record of student 02.

Task 05 (9 marks) **Data quality issues** Create a table *T4* with the following columns

1. (1 mark) 1st column is of char data type of fixed length 20.
2. (2 marks) 2nd column is of integer data type. Place **primary key** constraint on this column
3. (2 marks) 3rd column is of float data type with default value of 0.0

Perform the following operations *T4*

- (1 mark) Insert a record having value (NULL, 270101001)
- (1 mark) Insert a record having value (NULL, 270101002, 8.9)
- (1 mark) Insert a record having value ('student 03', 270101002, -7.6)
- (1 mark) Insert a record having value ('student 03', 270101003, 8.2)
- (1 mark) Insert a record having value ('student 03', 270101004)

Task 06 (12 marks) **An initial good table** Create a table *T5* with the following columns

1. (2 marks) 1st column is of char data type of fixed length 20 and having **not null** constraint.
2. (2 marks) 2nd column is of integer data type. Place **primary key** constraint on this column
3. (2 marks) 3rd column is of float data type with default value of 0.0

Perform the following operations *T5*

- (1 mark) Insert a record having value (NULL, 270101001)
- (1 mark) Insert a record having value ('student 01', 270101001, 9.6)
- (1 mark) Insert a record having value ('student 02', 270101002, 8.2)
- (1 mark) Insert a record having value ('student 02', 270101003, 7.6)
- (1 mark) Insert a record having value ('student 03', 270101003, 7.2)
- (1 mark) Insert a record having value ('student 04', 270101004)

Task 07 (11 marks) **altering table** Create a table *T6* with the following columns

1. (1 mark) 1st column is of char data type of fixed length 20
2. (1 mark) 2nd column is of integer data type
3. (1 mark) 3rd column is of float data type

Perform the following operations *T6*

- (1 mark) Insert a record having values ('student 01', 270101001, 9.6)
- (1 mark) Insert a record having values ('student 02', 270101001, 9.4)
- (1 mark) Insert a record having values ('student 03', 270101001, 9.2)
- (1 mark) Add a primary key constraint to the integer column
- (1 mark) Add a column of integer data type (representing semester number) with default value 1.
- (1 mark) Insert a record having values ('student 03', 270101002, 9.2, 3)
- (1 mark) Insert a record having value ('student 03', 270101001, 9.2)
- (2 marks) Delete the column of integer data type (representing roll)