CS246: Database Management Systems Lab

Lab # 12 (1 Questions, 55 Points)
Held on 10-Apr-2023
Lab Timings: 14:00 to 18:00 Hours   Pages: 2
Submission: 18:00 Hrs, 10-Apr-2023
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a. This lab assignment is based on the concepts covered in chapter 5 **Advanced SQL** in the CS245 theory class.

b. You can refer to the text book for SQL syntax.

Question 1: (55 points)

Advanced aggregation functions Using `MySQL` **version 8.0 and above** perform the following tasks:

Task 01 (1 mark) Create a database named *week12*

Task 02 (2 marks) **Create table**

    a. A table `student` containing the following

1st column	`name`	string of characters of fixed size 50
2nd column	`IQ`	integer
3rd column	`gender`	one character

    with `name` as primary key.

    b. A table `speak` containing the following

1st column	`name`	string of characters of fixed size 50
2nd column	`language`	string of characters of fixed size 50

    with `name, language` as primary key.

Task 03 (2 marks) **populate data**

    a. Populate data from file `student.csv` into table `student`

    b. Populate data from file `speak.csv` into table `speak`

Task 04 (10 marks) Answer the following

    a. (5 marks) Write SQL without using `rank()` function for the query Which language(s) is/are spoken by the fewest students?

    b. (5 marks) Write SQL using `rank()` function for the above query.

Task 05 (10 marks) Answer the following

    a. (5 marks) Write SQL without using `rank()` Who speaks the most languages?

    b. (5 marks) Write SQL using `rank()` for the above query

Task 06 (10 marks) Answer the following

a. (5 marks) Write SQL query without using `rank()`, `dense_rank()`, `over()`, `window()` functions for the query "Which gender has the highest average IQ?"

b. (5 marks) Write SQL using `rank()`, `dense_rank()`, `over()`, `window()` functions for the above query

Task 07 (10 marks) Write SQL query for "List the Japanese speakers with the two highest IQs"

Task 08 (10 marks) Write SQL query for "Which students has the highest IQ for their gender?"

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 <u>honest and independent</u> 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 python script files in MS assignments site.

Marking Scheme Mentioned against each task/sub task