

Database Management Lab Assignment 7

Hand out: 30.03.2022 , Due:

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Instructions

i. Write SQL commands and execute them to solve each assignment. Create a pdf file with the screen shots of each query as well as the output. (Show result panel before and after output if necessary)

ii. Submit one file containing all answers and named it <roll_no>_assignment<number>.pdf

iii. Question 4 is optional. We encourage you to solve them to explore many functionalities provided by psycopg2 and SQLAlchemy library

1. Create a *student* table with three columns (*roll_no*, *name*, *grade*). Insert following three records into the table. (1.5 marks)

- (1,'X','A')
- (2,'Y','B')
- (3,'Z','C')

Now, create a trigger that will not allow to enter any record into the student table with a grade that is not used before in any record in the student table. Use the following records to test the functionality of the trigger.

- (4,'M','B') should be inserted into the table
- (5,'N','D') should give error

2. Create a *connection* table with two columns (*name1*, *name2*) which shows the relationship between two individuals. Write triggers to maintain the relationship in the table. I.e., if (x,y) is deleted/added from/to the table then (y,x) should also be deleted/added respectively (3 marks)

To show the functionality of triggers:

- Insert ('A','B') and ('C','D') into the connection table and ('B','A') and ('D','C') should automatically be inserted into the table.
- Delete ('D','C') from the connection table and ('C','D') should automatically be deleted from the table.

3. Create a new table similar to student table in question 1 and name it "grades" and use *student_log* table from the demo replacing *date* column with *time*). Also, use the *student_logs* function (change date to time) and *log_trigger* trigger from the demo. Insert following records into the table. (1.5 marks)

- (1,'X','A')
- (2,'Y','B')
- (3,'Z','C')

On insertion, the *log_trigger* should be invoked and log the values into the *student_log* table.

After inserting the records, create a trigger such that when you update the grade of a student in the grade table, the time in the student_log table should be updated to the current time.

To show the functionality of trigger, update the grade of student 'Y' to 'A'.

4. Access the DVD Rental Database using Python. Perform the following tasks
 - a. Show the Customers name and email id who live in Abu Dhabi city.
 - b. Find the top 5 film categories on the basis of film count.
 - c. Use the film_in_stock function from the functions available in the database and find the inventory ids for following inputs:-
 - i. (1,1)
 - ii. (1,2).