**LS SQL Assignment**

**Analytics Club, IITB**

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**1. Overview:**

This is the assignment for LS SQL. You may use any online SQL compiler to check your queries. One has been given below for your reference.

https://www.mycompiler.io/new/sql

Instructions for doing the rest of the assignment have been given in the sections below.

**2. Creating the table:**

Below files contain the MySQL code to create tables and insert information into the table which shall be used at the time of calling the queries.

Click on the link given below to open the folder which consists of the two files to be downloaded :

https://drive.google.com/drive/folders/1Ww7oRAG3FEXPgD7vTowFLAyr-HHsL5oe

Download the two files and paste the code in the following sequence:

DDL.sql *→* largeRelationsInsertFile.sql

**3. Set 1 Queries:**

1. Find the names of all the instructors from Biology department

select name, dept\_name from instructor

where dept\_name= 'Biology';

2. Find the names of courses in Computer science department which have 3 credits

select title from course

where dept\_name='Comp. Sci.' and credits='3';

3. For the student with ID 12345 (or any other value), show all course id and title of all courses registered for by the student.

SELECT c.course\_id, c.title

FROM takes as t inner join course as c where t.course\_id = c.course\_id

and t.id = 1000;

4. As above, but show the total number of credits for such courses (taken by that student). Don’t display the tot creds value from the student table, you should use SQL aggregation on courses taken by the student.

SELECT c.course\_id, c.title, SUM(c.credits) AS total\_credits

FROM takes as t

JOIN course as c ON t.course\_id = c.course\_id

WHERE t.id = 1000

GROUP BY c.course\_id, c.title;

5. As above, but display the total credits for each of the students, along with the ID of the student; don’t bother about the name of the student. (Don’t bother about students who have not registered for any course, they can be omitted)

=>select t.id as student\_id, sum(c.credits) as total\_credits from takes as t

join course as c on t.course\_id=c.course\_id

group by t.id;

6. Find the names of all students who have taken any Comp. Sci. course ever (there should be no duplicate names)

select distinct s.name from takes as t

join student as s on s.id=t.id

join course as c on t.course\_id=c.course\_id

where c.dept\_name='Comp. Sci.';

7. Display the IDs of all instructors who have never taught a course. Interpret “taught” as “taught” or “is scheduled to teach”.

SELECT i.id

FROM instructor as i

LEFT JOIN teaches as t ON i.id = t.id

WHERE t.id IS NULL;

8. As above, but display the names of the instructors also, not just the IDs.

SELECT i.id, i.name

FROM instructor as i

LEFT JOIN teaches as t ON i.id = t.id

WHERE t.id IS NULL;

**4 Set 2 Queries:**

You need to create a movie database. Create three tables, one for actors(AID, name), one for movies(MID, title) and one for actor\_role(MID, AID, rolename). Use appropriate data types for each of the attributes, and add appropriate primary/foreign key constraints.

9. Insert data to the above tables (approx 3 to 6 rows in each table), including data for actor ”Charlie Chaplin”, and for yourself (using your roll number as ID).

CREATE TABLE Actors (

AID INT PRIMARY KEY,

Name VARCHAR(50)

);

CREATE TABLE Movies (

MID INT PRIMARY KEY,

Title VARCHAR(50)

);

CREATE TABLE Actor\_Role (

MID INT,

AID INT,

RoleName VARCHAR(255),

PRIMARY KEY (MID, AID),

FOREIGN KEY (MID) REFERENCES Movies(MID),

FOREIGN KEY (AID) REFERENCES Actors(AID)

);

INSERT INTO Actors (AID, Name)

VALUES (1, 'Charlie Chaplin'),

(2, 'Robert Downey Jr.'),

(3, 'Tom Hanks'),

(4, 'Meryl Streep'),

(5, 'Leonardo DiCaprio'),

(210070048, 'Kushal C Gajbe');

INSERT INTO Movies (MID, Title)

VALUES (1, 'City Lights'),

(2, 'Modern Times'),

(3, 'The Great Dictator'),

(4, 'Titanic'),

(5, 'Shutter Island');

INSERT INTO Actor\_Role (MID, AID, RoleName)

VALUES (1, 1, 'The Tramp'),

(2, 1, 'The Tramp'),

(3, 1, 'Adenoid Hynkel'),

(4, 5, 'Jack'),

(5, 5, 'Teddy Daniels');

10. Write a query to list all movies in which actor ”Charlie Chaplin” has acted, along with the number of roles he had in that movie.

SELECT m.Title, COUNT(ar.RoleName) AS Number\_of\_Roles

FROM Movies AS m

JOIN Actor\_Role AS ar ON m.MID = ar.MID

JOIN Actors AS a ON ar.AID =a.AID

WHERE a.Name = 'Charlie Chaplin'

GROUP BY m.MID;

11. Write a query to list all actors who have not acted in any movie

select a.aid, a.name from actors as a

left join actor\_role as ar on a.aid=ar.aid

where ar.aid is NULL;

12. List names of actors, along with titles of movies they have acted in. If they have not acted in any movie, show the movie title as null.

select a.name, m.title from actors as a

left join actor\_role as ar on a.aid=ar.aid

left join movies as m on m.mid= ar.mid;

**6. Submission Guidelines:**

Make a copy of this document in your own drive and enter the answers to the queries right below the query, in the space given there. eg.

Q] Display all the information in table ’XYZ’

SELECT \* FROM XYZ