## Lab 4 CS254

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**Q1.** Create a db of Lecturers with 10 tuples which consist of First name, last name, age, city, state, pin code, subject, salary and years of experience.

```
CREATE TABLE Lectures(
   First name varchar(255),
   Last name varchar(255),
   Age int,
   City varchar(255),
   State varchar(255),
   Pin code varchar(20),
   Subject varchar(255),
   Salary int,
   Years of experience int);
INSERT INTO Lectures VALUES
    ("Hello", "Boy", 19, "Bangalore", "Karnataka", "560010", "C", 25000,
1),
    ("Boo", "Girl", 26, "Mumbai", "Maharashtra", "410010", "OS", 20000,
3),
    ("Ram", "Di", 23, "Mangalore", "Karnataka", "575025", "C", 22000, 0),
    ("Trans", "Long", 27, "Delhi", NULL, "101010", "DBMS", 25000, 4),
    ("John", "Cena", 25, "Bangalore", "Karnataka", "560020", "C", 24000,
3),
    ("Robert", "Ford", 24, "Pune", "Maharashtra", "410020", "OS", 20000,
3),
    ("Augustus", "Roman", 22, "Jaipur", "Rajasthan", "301010", "DBMS",
21000, 2),
```

```
("Archie", "Andrews", 20, "Jaisalmer", "Rajasthan", "301020", "OS",
19000, 0),
    ("Flaber", "Fisk", 27, "Mumbai", "Maharashtra", "410030", "DBMS",
22000, 1),
    ("Tony", "Stark", 22, "Bangalore", "Karnataka", "560030", "C", 30000,
3);
SELECT First_name, Last_name, Age, Salary FROM Lectures WHERE Age >= 25
AND Salary >=20000;
```

**a.)** Write a query to find the salary where age  $\leq$ =25 and salary  $\geq$ =20000

```
CREATE TABLE Lectures(
              First_name varchar(255),
Last_name varchar(255),
                                                                                                                                                                                                                                                                Input for the program (Optional)
              Age int,
City varchar(255),
State varchar(255),
Pin_code varchar(20),
               Subject varchar(255),
                                                                                                                                                                                                                                                             Output:
                                                                                                                                                                                                                                                             First_name Last_name
Boo Girl 26 20000
                                                                                                                                                                                                                                                                                                                                                                                                   Salary
                                                                                                                                                                                                                                                                                                                                                                     Age
INSERT INTO Lectures VALUES
            RT INTO Lectures VALUES

("Hello", "Boy", 19, "Bangalore", "Karnataka", "560010", "C", 25000, 1),

("Boo", "Girl", 26, "Mumbai", "Maharashtra", "410010", "05", 20000, 3),

("Ram", "Di", 23, "Mangalore", "Karnataka", "575025", "C', 22000, 0),

("Trans", "Long", 27, "Delhi", NULL, "101010", "DBMS", 25000, 4),

("John", "Cena", 25, "Bangalore", "Karnataka", "560020", "C", 24000, 3),

("Robert", "Ford", 24, "Pune", "Maharashtra", "410020", "OS", 20000, 3),

("Augustus", "Roman", 22, "Jaipur", "Rajasthan", "301010", "DBMS", 21000, 2),

("Archie", "Andrews", 20, "Jaisalmer", "Rajasthan", "301020", "OS", 19000, 0),

("Flaber", "Fisk', 27, "Mumbai", "Maharashtra", "410030", "DBMS", 22000, 1),

("Tony", "Stark", 22, "Bangalore", "Karnataka", "560030", "C", 30000, 3);
                                                                                                                                                                                                                                                            Trans Long 27
John Cena 25
Flaber Fisk 27
                                                                                                                                                                                                                                                                                                                                            25000
                                                                                                                                                                                                                                                                                                                                             24000
                                                                                                                                                                                                                                                                                                                                            22000
 SELECT First_name, Last_name, Age, Salary FROM Lectures WHERE Age >= 25 AND Salary >=20000
```

**b.)** Write a query to print the lecturers between the ages of 25-35.

```
--b.)
SELECT * FROM Lectures WHERE Age BETWEEN 25 AND 35;
```

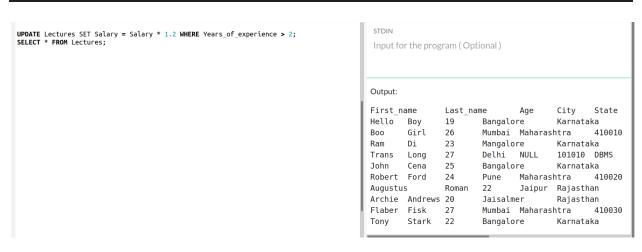


**c.)** Check the experience of a lecturer, if their experience is greater than 2 years increment their salary by 20%

```
-- c.)

UPDATE Lectures SET Salary = Salary * 1.2 WHERE Years_of_experience > 2;

SELECT * FROM Lectures;
```



**d.)**List the names of the lecturers who are not from Karnataka.





**e.)** Create one more column address and print the address combining city, state and pin code.

```
ALTER TABLE Lectures ADD Address varchar(255);

UPDATE Lectures SET Address = CONCAT(City, ", ", State, ", ", "Pin code:

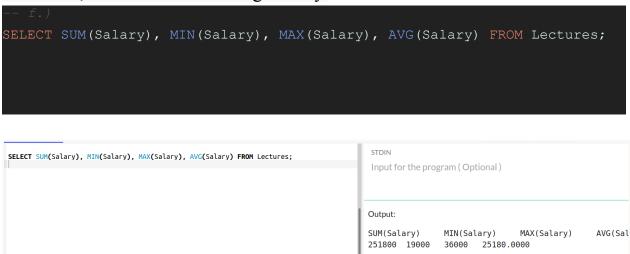
", Pin_code);

SELECT First_name, Last_name, City, State, Pin_code, Address FROM

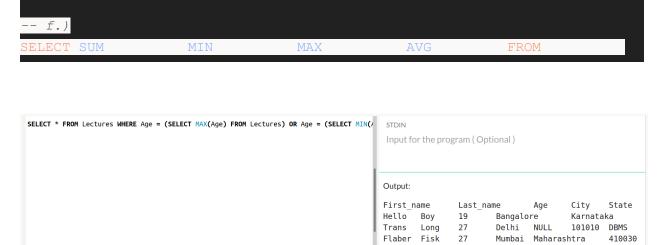
Lectures;
```

```
ALTER TABLE Lectures ADD Address varchar(255);
UPDATE Lectures SET Address = CONCAT(City, ", ", State, ", ", "Pin code: ", Pin_code);
SELECT First_name, Last_name, City, State, Pin_code, Address FROM Lectures;
                                                                                                             STDIN
                                                                                                             Input for the program (Optional)
                                                                                                            Output:
                                                                                                                      name Last_name City State Pin_code
Boy Bangalore Karnataka 560010
Girl Mumbai Maharashtra 410010 Mumbai,
                                                                                                            First name
                                                                                                            Hello Boy
                                                                                                            Boo
                                                                                                                                  Mangalore Karnataka
Delhi NULL 101010 NULL
Bangalore Karnataka
                                                                                                            Ram
                                                                                                                      Di
                                                                                                                                                                                575025
                                                                                                            Trans Long
John Cena
                                                                                                                                                                                560020
                                                                                                                                  Pune Maharashtra 410020 Pune, Ma
Roman Jaipur Rajasthan 301010
                                                                                                            Robert Ford
                                                                                                            Augustus
                                                                                                            Archie Andrews Jaisalmer Rajasthan
                                                                                                                                                                                301020
                                                                                                            Flaber Fisk Mumbai Maharashtra 410030 Mumbai,
                                                                                                            Tony Stark
                                                                                                                                  Bangalore Karnataka
                                                                                                                                                                                560030
```

**f.)** Find the sum of salaries of all the lecturers in the table and also find out minimum, maximum and average salary.



**g.)** Find out the youngest and oldest lecturer in your table.



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h.) One of the subject "C" was replaced with "python", write a query to do the same in the table and also print the names of lecturers and their subject after replacement.

```
UPDATE Lectures SET Subject = "python" WHERE Subject = "C";
SELECT First_name, Last_name, Subject FROM Lectures;
SELECT Subject FROM
```

```
UPDATE Lectures SET Subject = "python" WHERE Subject = "C";
SELECT First_name, Last_name, Subject FROM Lectures;
                                                                                   Input for the program (Optional)
                                                                                  Output:
                                                                                                                     Subject
                                                                                  First_name
                                                                                                   Last_name
                                                                                  Hello Boy
                                                                                                  python
                                                                                          Girl OS
                                                                                  Boo
                                                                                  Ram
                                                                                          Di
                                                                                                   python
                                                                                  Trans Long
                                                                                                   DBMS
                                                                                  John Cena
                                                                                                   python
                                                                                  Robert Ford
                                                                                                   05
                                                                                                   Roman DBMS
                                                                                  Augustus
                                                                                  Archie Andrews OS
                                                                                  Flaber Fisk DBMS
                                                                                  Tony Stark python
```

**i.)** Write a query to retrieve the lecturers whose salary is greater than 20000 and name starts with 'a'.

i.) SELECT * FROM Lectures WHERE Salary > 2000	0 AND First_name like "a%";
SELECT * FROM Lectures WHERE Salary > 20000 AND First_name like "a%";	Input for the program (Optional)  Output:  First_name

**j.)** Write a query to retrieve the lecturers whose experience is above 2 years and first name has 's'.

```
--j.)
SELECT * FROM Lectures WHERE Years_of_experience > 2 AND First_name like
"%s%";
```

```
SELECT * FROM Lectures WHERE Years_of_experience > 2 AND First_name like "%s%";

Input for the program (Optional)

Output:

First_name    Last_name    Age    City    State    Trans    Long    27    Delhi    NULL    101010    DBMS
```

**Q2.** Create a database of movies consisting of Movie id, Movie title, Actor, actress, year, Rating (out of 5), budget, location and Director.

```
CREATE TABLE movies
    (Movie_id int PRIMARY KEY,
        Movie_title varchar(255),
        Actor varchar(255),
        Actress varchar(255),
        Year int,
        Rating decimal(2,1) CHECK(Rating>=0 AND Rating<=5),
        Budget int,
        location varchar(255),
        Director varchar(255));</pre>
```

**a.)** Write a query to print the movies which have the same actress.

```
INSERT INTO movies VALUES
     (1, "The Shawshank Redemption", "Tim Robbins", NULL, 1994, 4.6,
200000, "London", "Frank Darabont"),
     (2, "Its a Wonderful Life", "James Stewart", "Donna Reed", 1946, 4.3,
150000, "London", "Frank Capra"),
```

```
(3, "The Pianist", "Adrien Brody", "Emilia Fox", 2002, 4.2, 200000,
"New York", "Roman Polanski"),
        (4, "Casino", "Robert De Niro", "Sharon Stone", 1995, 4.1, 90000,
"London", "Martin Scorsese"),
        (5, "Hera Pheri", "Akshay Kumar", "Tabu", 2000, 4, 120000, "India",
"Priyadarshan");
        (6, "Sample", "John", "Donna Reed", 1990, 4.2, 100000, "London",
"Kim");
SELECT * FROM movies WHERE Actress = "Donna Reed";
```

SELECT * FROM movies WHERE Actress = "Donna Reed";	STDIN Input for the program ( Optional )		
	Output:  Movie_id Movie_title Actor Actress Year 2 Its a Wonderful Life James Stewart Donna Re 6 Sample John Donna Reed 1990 4.2		

**b.)** Write a query to print the movies with a budget greater than 1,00,000 and has an actors name starting with A.

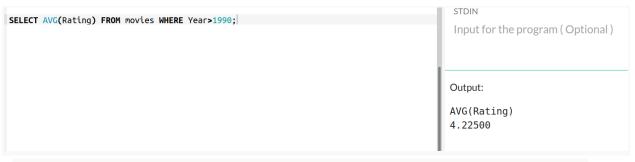
SELECT * FROM WHERE = "Donn	aa Reed"		
	STDIN		
SELECT * FROM movies WHERE Budget > 100000 AND Actor like "A%";	Input for the program ( Optional )		
	Output:  Movie_id Movie_title Actor Actress Year 3 The Pianist Adrien Brody Emilia Fox 5 Hera Pheri Akshay Kumar Tabu 2000		

**c.)** Write a query to filter the movies which were shot in location London and have rating above 4.

```
SELECT * FROM movies WHERE location="London" AND Rating > 4;
```

**d.)** Print the average rating of the movies released after 1990 and find the most and least rated movie.

```
SELECT AVG(Rating) FROM movies WHERE Year>1990;
SELECT * FROM movies WHERE Rating = (SELECT MAX(Rating) FROM movies) OR
Rating = (SELECT MIN(Rating) FROM movies);
```



**e.)** Update the rating of the movie directed by a particular director with 5 ratings.

```
UPDATE movies SET Rating = 5 WHERE Director = "Priyadarshan";
```

```
UPDATE movies SET Rating = 5 WHERE Director = "Priyadarshan";

SELECT * from movies;

Output:

Movie_id Movie_title Actor Actress Year
1 The Shawshank Redemption Tim Robbins
2 Its a Wonderful Life James Stewart Donna
3 The Pianist Adrien Brody Emilia Fox
4 Casino Robert De Niro Sharon Stone 1995
5 Hera Pheri Akshay Kumar Tabu 2000
6 Sample John Donna Reed 1990 4.2
```

**Q3.** Create a student grading database system consisting of:

STUDENT(USN, SName,

Address, Phone, Gender)

IAMARKS(USN, Subcode, Subject name,

Test1, Test2, Test3, FinalIA)

```
CREATE TABLE STUDENT(

USN int PRIMARY KEY,

SName varchar(255),

Address varchar(255),

Phone varchar(20),

Gender varchar(10) CHECK (Gender IN ('Male', 'Female', 'Others')));

CREATE TABLE IAMARKS(

USN int,

Subcode int,

'Subject name' varchar(255),

Test1 int CHECK (Test1 BETWEEN 0 AND 10),

Test2 int CHECK (Test2 BETWEEN 0 AND 10),

Test3 int CHECK (Test3 BETWEEN 0 AND 10),

FinalIA int CHECK (FinalIA BETWEEN 0 AND 30),
```

```
FOREIGN KEY (USN) REFERENCES STUDENT (USN));

CREATE TRIGGER calc_finalIA BEFORE INSERT ON IAMARKS FOR EACH ROW SET

NEW.FinalIA = NEW.Test1 + NEW.Test2 + NEW.Test3;

CREATE TRIGGER update_finalIA BEFORE UPDATE ON IAMARKS FOR EACH ROW SET

NEW.FinalIA = NEW.Test1 + NEW.Test2 + NEW.Test3;
```

**a.)** Categorize students based on the following criterion and print thetable by adding a category column in the student table. If FinalIA = 30 to 20 then CA T = 'Outstanding' If FinalIA= 20 to 10 then CA T = 'Average' If FinalIA< 10 then CA T = 'Weak'

```
SELECT *,

CASE

WHEN FinalIA BETWEEN 20 AND 30 THEN 'Outstanding'

WHEN FinalIA BETWEEN 10 AND 20 THEN 'Average'

ELSE 'Weak'

END

AS CAT FROM IAMARKS;
```