

NATIONAL INSTITUTE OF TECHNOLOGY  
KARNATAKA



DATABASE SYSTEM LAB

REPORT : 4

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Q1. Create a Database of 'Lecturers' with 10 tuples which consist of :

- i) First name,
- ii) last name,
- iii) age,
- iv) city,
- v) state,
- vi) pin code,
- vii) subject,
- viii) salary
- ix) years of experience.

Query\_a) :

```
mysql> create table Lecturers(FirstName varchar(20),LastName varchar(20),Age int ,City varchar(15),State varchar(15),Pin_Code int,Subject varchar(15),Salary int,Experience int);
Query OK, 0 rows affected (0.01 sec)
```

Query\_b) :

```
mysql> select *
-> from Lecturers;
```

FirstName	LastName	Age	City	State	Pin_Code	Subject	Salary	Experience
Rahul	Srivastava	32	Agra	UP	234601	Biology	42000	4
Viplav	K	36	Manglore	Karnataka	402301	Chemistry	46000	2
Anshul	Gupta	46	Benguluru	Karnataka	412502	Math	50000	8
Piyush	Sherma	28	Noida	UP	220421	Geology	20000	1
Naman	Kumar	41	Patna	Bihar	304212	Physics	18000	4
Krishana	Kumar	33	Ahemdabad	Gujrat	502306	C	65000	4
Ajith	N	33	Udupi	Karnataka	403803	C	55000	7
Deep	Singh	30	Farrukhabad	UP	209603	C	40000	1
Arshad	Shah	65	Gagiyabad	UP	280651	Neurology	80000	8
Aman	Mishra	27	Gaya	Bihar	304803	TOC	75000	6

```
10 rows in set (0.00 sec)
```

Query1) Write a query to find the salary where age <=25 and salary >=20000.

```
mysql> select Salary
-> from Lecturers
-> where Age <= 25 and Salary >= 20000;
Empty set (0.00 sec)
```

Query2) Write a query to print the lecturers between the ages of 25-35.

```
mysql> select *
-> from Lecturers
-> where Age between 25 and 35;
```

FirstName	LastName	Age	City	State	Pin_Code	Subject	Salary	Experience
Rahul	Srivastava	32	Agra	UP	234601	Biology	42000	4
Piyush	Sherma	28	Noida	UP	220421	Geology	20000	1
Krishana	Kumar	33	Ahemdabad	Gujrat	502306	C	65000	4
Ajith	N	33	Udupi	Karnataka	403803	C	55000	7
Deep	Singh	30	Farrukhabad	UP	209603	C	40000	1
Aman	Mishra	27	Gaya	Bihar	304803	TOC	75000	6

6 rows in set (0.00 sec)

Query3) Check the experience of a lecturer, if their experience is greater than 2 years increment their salary by 20%.

```
mysql> update Lecturers
-> set Salary=Salary+(Salary*20)/100
-> where Experience > 2;
Query OK, 7 rows affected (0.00 sec)
Rows matched: 7 Changed: 7 Warnings: 0
```

```
mysql> select *
-> from Lecturers;
```

FirstName	LastName	Age	City	State	Pin_Code	Subject	Salary	Experience
Rahul	Srivastava	32	Agra	UP	234601	Biology	50400	4
Viplav	K	36	Manglore	Karnataka	402301	Chemistry	46000	2
Anshul	Gupta	46	Benguluru	Karnataka	412502	Math	60000	8
Piyush	Sherma	28	Noida	UP	220421	Geology	20000	1
Naman	Kumar	41	Patna	Bihar	304212	Physics	21600	4
Krishana	Kumar	33	Ahemdabad	Gujrat	502306	C	78000	4
Ajith	N	33	Udupi	Karnataka	403803	C	66000	7
Deep	Singh	30	Farrukhabad	UP	209603	C	40000	1
Arshad	Shah	65	Gagiyabad	UP	280651	Neurology	96000	8
Aman	Mishra	27	Gaya	Bihar	304803	TOC	90000	6

10 rows in set (0.00 sec)

Query4) List the names of the lecturers who are not from Karnataka.

```
mysql> select concat(FirstName,' ',LastName) as Name
-> from Lecturers
-> where State not in ('Karnataka');
+-----+
| Name          |
+-----+
| Rahul Srivastava |
| Piyush Sherma   |
| Naman Kumar     |
| Krishana Kumar  |
| Deep Singh      |
| Arshad Shah     |
| Aman Mishra     |
+-----+
7 rows in set (0.00 sec)
```

Query5) Create one more column address and print the address combining city, state and pin code.

```
mysql> select concat(City,',',State,',',Pin_Code) as Address
-> from Lecturers;
+-----+
| Address          |
+-----+
| Agra,UP,234601   |
| Manglore,Karnataka,402301 |
| Bengaluru,Karnataka,412502 |
| Noida,UP,220421  |
| Patna,Bihar,304212 |
| Ahemdabad,Gujrat,502306 |
| Udupi,Karnataka,403803 |
| Farrukhabad,UP,209603 |
| Gaggiyabad,UP,280651 |
| Gaya,Bihar,304803 |
+-----+
10 rows in set (0.00 sec)
```

Query6) Find the sum of salaries of all the lecturers in the table and also find out minimum, maximum and average salary.

```
mysql> select sum(Salary) as tot_sal,  
-> min(Salary) as min_sal,  
-> max(Salary) as max_sal,  
-> avg(Salary) as avg_sal  
-> from Lecturers;  
+-----+-----+-----+-----+  
| tot_sal | min_sal | max_sal | avg_sal |  
+-----+-----+-----+-----+  
| 568000 | 20000 | 96000 | 56800.0000 |  
+-----+-----+-----+-----+  
1 row in set (0.00 sec)
```

Query7) Find out the youngest and oldest lecturer in your table.

```
mysql> select*  
-> from Lecturers  
-> where Age = (select min(Age) from Lecturers) or  
-> Age = (select max(Age) from Lecturers);  
+-----+-----+-----+-----+-----+-----+-----+-----+  
| FirstName | LastName | Age | City | State | Pin_Code | Subject | Salary | Experience |  
+-----+-----+-----+-----+-----+-----+-----+-----+  
| Arshad | Shah | 65 | Gagiyaabad | UP | 280651 | Neurology | 96000 | 8 |  
| Aman | Mishra | 27 | Gaya | Bihar | 304803 | TOC | 90000 | 6 |  
+-----+-----+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)
```

Query8) 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.

Query8.1) UPDATE Lecturers  
SET Subject='Python'  
WHERE Subject='C';

Query8.2) :

```
mysql> select concat(FirstName,' ',LastName) as Name, Subject from Lecturers;
```

Name	Subject
Rahul Srivastava	Biology
Viplav K	Chemistry
Anshul Gupta	Math
Piyush Sherma	Geology
Naman Kumar	Physics
Krishana Kumar	Python
Ajith N	Python
Deep Singh	Python
Arshad Shah	Neurology
Aman Mishra	TOC

10 rows in set (0.00 sec)

Query9) Write a query to retrieve the lecturers whose salary is greater than 20000 and name starts with ‘a’.

```
mysql> select *  
-> from Lecturers  
-> where Salary > 20000 and FirstName like 'a%';
```

FirstName	LastName	Age	City	State	Pin_Code	Subject	Salary	Experience
Anshul	Gupta	46	Benguluru	Karnataka	412502	Math	60000	8
Ajith	N	33	Udupi	Karnataka	403803	Python	66000	7
Arshad	Shah	65	Gagiyabad	UP	280651	Neurology	96000	8
Aman	Mishra	27	Gaya	Bihar	304803	TOC	90000	6

4 rows in set (0.01 sec)

Query10) Write a query to retrieve the lecturers whose experience is above 2 years and first name has 's'.

```
mysql> select *
-> from Lecturers
-> where Experience > 2 and FirstName like '%s%';
```

FirstName	LastName	Age	City	State	Pin_Code	Subject	Salary	Experience
Anshul	Gupta	46	Benguluru	Karnataka	412502	Math	60000	8
Krishana	Kumar	33	Ahemdabad	Gujrat	502306	Python	78000	4
Arshad	Shah	65	Gagiyabad	UP	280651	Neurology	96000	8

```
3 rows in set (0.01 sec)
```



Q2. Create a database of 'movies' consisting of

- i)Movie id,
- ii)Movie title,
- iii)Actor,
- iv)actress,
- v)year,
- vi)Rating (out of 5),
- vii)budget,
- viii)location
- ix)Director.

Query\_a) :

```
mysql> create table movies(Movie_id int,Movie_title varchar(25),Actor varchar(20),Actress varchar(20),Year int,Rating int,Budget int,Location varchar(20),Director varchar(20));
Query OK, 0 rows affected (0.01 sec)
```

Query\_b) :

```
mysql> select *
-> from movies;
```

Movie_id	Movie_title	Actor	Actress	Year	Rating	Budget	Location	Director
1	Diljale	Ajay	Karishma	1988	3	300000	Bombay	Mahesh Bhatt
2	Mushafir	Sanjay Dutt	Dimple Kapadiya	2000	4	6000000	Bombay	Lila Bhanshalli
3	Munna Bhai MBBS	Sanjay Dutt	Gracia Singh	2003	5	10000000	Hydrabad	Sunil Dutt
4	1920 The Evil	Rajnish Duggal	Adha Sharma	2008	3	8000000	london	Sajid Khan
5	Hera Pheri	Akshay Kumar	Adha Sharma	2002	5	5000000	london	Sunil Kumar
6	Kantara	Rishabh Shetty	Shaptamy Gauda	2022	5	70000000	Karnataka	Rishabh Shetty
7	Jab Tak Hai Jan	SRK	Anushaka Sharma	2012	5	30000000	london	Yash Chopra

```
7 rows in set (0.00 sec)
```

Query1) Write a query to print the movies which have the same actress.

```
mysql> select *
-> from movies
-> where Actress = (select Actress from movies group by Actress having count(Actress) > 1);
```

Movie_id	Movie_title	Actor	Actress	Year	Rating	Budget	Location	Director
4	1920 The Evil	Rajnish Duggal	Adha Sharma	2008	3	8000000	london	Sajid Khan
5	Hera Pheri	Akshay Kumar	Adha Sharma	2002	2	5000000	london	Sunil Kumar

```
2 rows in set (0.00 sec)
```



Query2) Write a query to print the movies with a budget greater than 1,00,000 and has an actors name starting with A.

```
mysql> select *
-> from movies
-> where Budget > 100000 and Actor like 'A%';
```

Movie_id	Movie_title	Actor	Actress	Year	Rating	Budget	Location	Director
1	Diljale	Ajay	Karishma	1988	3	300000	Bombay	Mahesh Bhatt
5	Hera Pheri	Akshay Kumar	Adha Sharma	2002	5	5000000	london	Sunil Kumar

```
2 rows in set (0.00 sec)
```

Query3) Write a query to filter the movies which were shot in location London and have rating above 4.

```
mysql> select *
-> from movies
-> where Location = 'london' and Rating > 4;
```

Movie_id	Movie_title	Actor	Actress	Year	Rating	Budget	Location	Director
5	Hera Pheri	Akshay Kumar	Adha Sharma	2002	5	5000000	london	Sunil Kumar
7	Jab Tak Hai Jan	SRK	Anushaka Sharma	2012	5	30000000	london	Yash Chopra

```
2 rows in set (0.00 sec)
```

Query4) Print the average rating of the movies released after 1990 and find the most and least rated movie.

Query4.1) :

```
mysql> select avg(Rating)
-> from movies
-> where Year > 1990;
```

avg(Rating)
4.5000

```
1 row in set (0.00 sec)
```

Query4.2) :

```
mysql> select *
-> from movies
-> where Rating = (select min(Rating) from movies) or Rating = (select max(Rating) from movies);
```

Movie_id	Movie_title	Actor	Actress	Year	Rating	Budget	Location	Director
1	Diljale	Ajay	Karishma	1988	3	300000	Bombay	Mahesh Bhatt
3	Munna Bhai MBBS	Sanjay Dutt	Gracia Singh	2003	5	10000000	Hydrabad	Sunil Dutt
4	1920 The Evil	Rajnish Duggal	Adha Sharma	2008	3	8000000	london	Sajid Khan
5	Hera Pheri	Akshay Kumar	Adha Sharma	2002	5	5000000	london	Sunil Kumar
6	Kantara	Rishabh Shetty	Shaptamy Gauda	2022	5	70000000	Karnataka	Rishabh Shetty
7	Jab Tak Hai Jan	SRK	Anushaka Sharma	2012	5	30000000	london	Yash Chopra

6 rows in set (0.00 sec)

Query5) Update the rating of the movie directed by a particular director with 5 ratings.

```
mysql> update movies
-> set Rating = 2
-> where Rating = 5;
Query OK, 4 rows affected (0.00 sec)
Rows matched: 4 Changed: 4 Warnings: 0
```

```
mysql> select *
-> from movies;
```

Movie_id	Movie_title	Actor	Actress	Year	Rating	Budget	Location	Director
1	Diljale	Ajay	Karishma	1988	3	300000	Bombay	Mahesh Bhatt
2	Mushafir	Sanjay Dutt	Dimple Kapadiya	2000	4	6000000	Bombay	Lila Bhanshali
3	Munna Bhai MBBS	Sanjay Dutt	Gracia Singh	2003	2	10000000	Hydrabad	Sunil Dutt
4	1920 The Evil	Rajnish Duggal	Adha Sharma	2008	3	8000000	london	Sajid Khan
5	Hera Pheri	Akshay Kumar	Adha Sharma	2002	2	5000000	london	Sunil Kumar
6	Kantara	Rishabh Shetty	Shaptamy Gauda	2022	2	70000000	Karnataka	Rishabh Shetty
7	Jab Tak Hai Jan	SRK	Anushaka Sharma	2012	2	30000000	london	Yash Chopra

7 rows in set (0.00 sec)

Q3. Create a student grading database system consisting of:

T1) STUDENT(USN, SName, Address, Phone, Gender)

Query\_a) :

```
mysql> create table STUDENT(USN int ,SName varchar(20),Address varchar(20),Phone varchar(10),Gender char(1));
Query OK, 0 rows affected (0.00 sec)
```

Query\_b) :

```
mysql> select *
-> from STUDENT;
+-----+-----+-----+-----+-----+
| USN   | SName  | Address  | Phone   | Gender |
+-----+-----+-----+-----+-----+
| 1     | Arun   | Auraiya  | 6378964506 | M      |
| 2     | Karan  | Taiyapur | 7897434501 | M      |
| 3     | Abhinav | Etava    | 9978965043 | M      |
| 4     | Charu  | Bundi    | 6389780614 | F      |
| 5     | Avnish | Farrukhabad | 8808678076 | M      |
| 6     | Arhan  | Noida    | 9488958072 | M      |
+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

T2) IAMARKS(USN, Subcode, Subject name, Test1, Test2, Test3, FinalIA)

Query\_a) :

```
mysql> create table IAMARKS(USN int,Subcode varchar(10),SubName varchar(20),Test1 int,Test2 int,Test3 int,FinalIA int);
Query OK, 0 rows affected (0.00 sec)
```

Query\_b) :

```
mysql> select *
-> from IAMARKS;
```

USN	Subcode	SubName	Test1	Test2	Test3	FinalIA
1	cs110	C programming	7	9	8	24
2	ma111	math	8	9	10	27
3	cs202	dsa	3	2	4	9
4	cs203	dds	5	6	8	19
5	ch110	Chemistry	7	9	6	22
6	ch111	Chemistry lab	4	2	2	8

```
6 rows in set (0.00 sec)
```

(Each test is of 10, hence Final IA is of 30)

Query1) Categorize students based on the following criterion and print the table by

adding a category column in the student table.

If FinalIA = 30 to 20 then CAT = 'Outstanding'

If FinalIA = 20 to 10 then CAT = 'Average'

If FinalIA < 10 then CAT = 'Weak'

```
mysql> select STUDENT.USN,SName,Address,Phone,Gender,
-> if(FinalIA between 20 and 30,'Outstanding',if(FinalIA between 10 and 20,'Average','Weak'))
-> as CAT
-> from STUDENT,IAMARKS
-> where STUDENT.USN = IAMARKS.USN;
```

USN	SName	Address	Phone	Gender	CAT
1	Arun	Auraiya	6378964506	M	Outstanding
2	Karan	Taiyapur	7897434501	M	Outstanding
3	Abhinav	Etava	9978965043	M	Weak
4	Charu	Bundi	6389780614	F	Average
5	Avnish	Farrukhabad	8808678076	M	Outstanding
6	Arhan	Noida	9488958072	M	Weak

```
6 rows in set (0.00 sec)
```