DBMS Lab Assignment 5

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1. Illustrate logical ANY, ALL and LIKE operator- the queries should be relevant to your respective databases 3 queries for each operator. One query explaining the difference between ANY and ALL

Ans: -

```
Use T8_Hospital_Database

SELECT * FROM FEE WHERE paydate < ANY (SELECT paydate FROM FEE
WHERE paydate > '1998-08-19' );

SELECT * FROM Doctor WHERE DID < ANY (SELECT DID FROM Doctor
WHERE Qualification = 'Flu Expert');

SELECT * FROM Doctor WHERE DID< ANY (SELECT DID FROM FEE WHERE
Current_Case = 'Bird Flu');
```

	DID	Current_Case	paydate
1	6	Cold	2015-02-12
2	8	Stomach Ache	2013-02-23
3	15	Amnosea	1998-08-19

	DID	Doctor_Name	Current_Case	DPhone_Number	Qualification	Salary
1	1	Abhishek Kumar	Covid	123456789	Flu Expert	58000
2	2	Gabru	Covid	1111111112	Flu Expert	58000
3	3	Mehndi	Bird flu	1111111113	Flu Expert	38000
4	4	Bassi	Bird flu	1111111114	Bird Watcher	38000
5	5	Brar	Fever	1111111115	Cook	48000
6	6	Shaan	Cold	1111111116	Singer	48000
7	7	Dawood		1111111117	Drug Lord	88000
8	8	Mahes	Stomach Ac...	1111111118	Flu Expert	18000

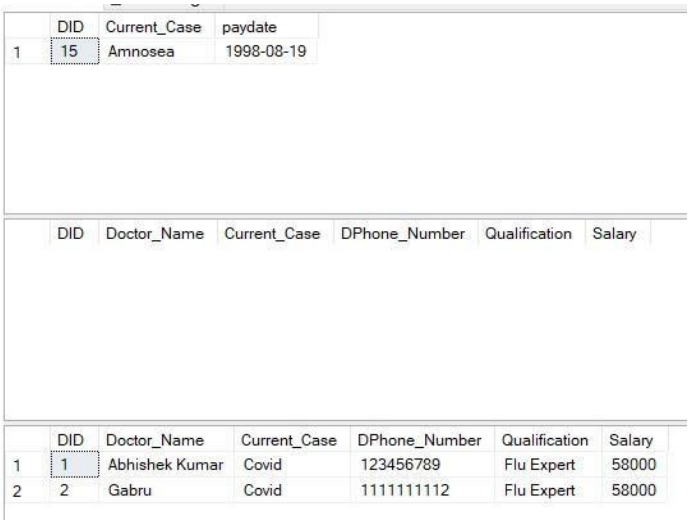
	DID	Doctor_Name	Current_Case	DPhone_Number	Qualification	Salary
1	1	Abhishek Kumar	Covid	123456789	Flu Expert	58000
2	2	Gabru	Covid	1111111112	Flu Expert	58000
3	3	Mehndi	Bird flu	1111111113	Flu Expert	38000

```
Use T8_Hospital_Database

SELECT * FROM FEE WHERE paydate < ALL (SELECT paydate FROM FEE
WHERE paydate > '1998-08-19' );

SELECT * FROM Doctor WHERE DID < ALL (SELECT DID FROM Doctor
WHERE Qualification = 'Flu Expert');
```

```
SELECT * FROM Doctor WHERE DID< ALL (SELECT DID FROM FEE WHERE
Current_Case = 'Bird Flu');
```



	DID	Current_Case	paydate
1	15	Amnosea	1998-08-19

	DID	Doctor_Name	Current_Case	DPhone_Number	Qualification	Salary

	DID	Doctor_Name	Current_Case	DPhone_Number	Qualification	Salary
1	1	Abhishek Kumar	Covid	123456789	Flu Expert	58000
2	2	Gabru	Covid	1111111112	Flu Expert	58000

```
Use T8_Hospital_Database

SELECT Doctor_Name FROM Doctor where Doctor_Name like 'a%';

SELECT Doctor_Name FROM Doctor where Doctor_Name like '%a';

SELECT Doctor_Name FROM Doctor where Doctor_Name like '%pe%';
```

	Doctor_Name
1	Abhishek Kumar

	Doctor_Name
1	Sweta
2	Reva

	Doctor_Name
1	Pewds

2. One query for each Aggregate function.

Ans: -

```
Use T8_Hospital_Database

SELECT COUNT(*) As total_doctors FROM Doctor;

SELECT SUM(Salary)as sum_of_Salary FROM Doctor;

SELECT AVG(Salary)as avg_of_Salary FROM Doctor;

SELECT MIN(Salary)as min_of_Salary FROM Doctor;

SELECT MAX(Salary)as max_of_Salary FROM Doctor;
```

	total_doctors
1	20

	sum_of_Salary
1	900000

	avg_of_Salary
1	45000

	min_of_Salary
1	18000

	max_of_Salary
1	98000

3. Illustrate the usage of order by, group by and having clause (2 queries for each case)

Ans: -

```
Use T8_Hospital_Database

SELECT Doctor_Name FROM Doctor order by DID;

SELECT * FROM FEE order by paydate;

SELECT DID FROM Doctor group by DID having DID < 3 ;

SELECT DID FROM Doctor group by DID having DID > 25 ;
```

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes

	DID	Current_Case	paydate
1	1	Mental Issue	NULL
2	2	Covid	NULL
3	3	Bird flu	NULL
4	4	Bird flu	NULL
5	5	X-ray	NULL
6	9		NULL
7	10		NULL
8	11	Gas	NULL

	DID
1	1
2	2

	DID

4. Use Aggregate function with group by and having

Ans: -

```
Use T8_Hospital_Database

SELECT max(Salary) as max_Salary FROM Doctor GROUP BY Qualification;

SELECT min(Salary) as min_Salary FROM Doctor GROUP BY Qualification;

SELECT sum(Salary) as sum_Salary FROM Doctor GROUP BY Qualification;

SELECT avg(Salary) as avg_Salary FROM Doctor GROUP BY Qualification;

SELECT count(Salary) as count_Salary FROM Doctor GROUP BY Qualification;
```

	max_Salary
1	38000
2	28000
3	48000
4	68000
5	48000
6	88000
7	38000
8	58000

	min_Salary
1	38000
2	28000
3	48000
4	68000
5	48000
6	88000
7	38000
8	18000

	sum_Salary
1	38000
2	28000
3	48000
4	68000
5	48000
6	88000
8	210000
9	98000
10	28000
11	18000

	avg_Salary
9	98000
10	28000
11	18000
12	38000
13	38000
14	48000
15	28000
16	38000

	count_Salary
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1

5. Write at least 3 nested queries using order by, group by and having clause.

Ans: -

```
Use T8_Hospital_Database

SELECT Doctor_Name,DID FROM Doctor group by Doctor_Name,DID;

SELECT DID,Qualification,Doctor_Name FROM Doctor group by
DID,Qualification,Doctor_Name order by Doctor_Name desc;

SELECT Doctor_Name,Qualification FROM Doctor group by
Doctor_Name,Qualification order by Doctor_Name desc;
```

	Doctor_Name	DID
1	Abhishek Kumar	1
2	Gabru	2
3	Mehndi	3
4	Bassi	4
5	Brar	5
6	Shaan	6
7	Dawood	7
8	Mahes	8

	DID	Qualification	Doctor_Name
1	13	Call Center	Sweta
2	11	Tribal	Shankar
3	6	Singer	Shaan
4	19	Psychologist	Reva
5	14	Gamer	Pewds
6	20	Enterprenaur	Mercedes
7	3	Flu Expert	Mehndi
8	8	Flu Expert	Mahes

	Doctor_Name	Qualification
1	Sweta	Call Center
2	Shankar	Tribal
3	Shaan	Singer
4	Reva	Psychologist
5	Pewds	Gamer
6	Mercedes	Enterpren...

6. Illustrate the Usage of Except, Exists, Not Exists, Union, Intersection

Ans: -

```
Use T8_Hospital_Database

SELECT Doctor_Name FROM Doctor except select Doctor_Name from
Doctor where Qualification='Bird Flu';

SELECT * FROM FEE where exists(select DID from Doctor where DID<5);

SELECT * FROM FEE where not exists(select DID from Doctor where
DID>27);

SELECT DID FROM Doctor union select DID from FEE;

SELECT DID FROM Doctor intersect select DID from FEE;
```

	Doctor_Name
1	Abhishek Kumar
2	Bassi
3	Bhangar
4	Bhau
5	Brar
6	Buff
7	Dawood
8	Gabru

	DID	Current_Case	paydate
4	4	Bird flu	NULL
5	5	X-ray	NULL
6	6	Cold	2015-02-12
7	7		NULL
8	8	Stomach Ac...	2013-02-23
9	9		NULL
10	10		NULL
11	11	Gas	NULL

	DID	Current_Case	paydate
1	1	Mental Issue	NULL
2	2	Covid	NULL
3	3	Bird flu	NULL
4	4	Bird flu	NULL
5	5	X-ray	NULL
6	6	Cold	2015-...
7	7		NULL
8	8	Stomach Ac...	2013-...

	DID
1	1
2	2
3	3
4	4
5	5

7. INNER JOIN, LEFT OUTER JOIN, RIGHT OUTER JOIN- 3 queries for each instance

Ans: -

```
Use T8_Hospital_Database

select D1.Doctor_Name from Doctor D1 inner join Doctor D2 on
D2.Current_Case='Bird Flu';

select D1.Doctor_Name from Doctor D1 inner join Doctor D2 on
D2.DID<2;

select D1.Doctor_Name from Doctor D1 inner join Doctor D2 on
D2.Qualification='Flu Expert';
```

	Doctor_Name
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes
9	Bhangar
10	Bhau
11	Shankar

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes

	Doctor_Name
10	Bhau
11	Shankar
12	Lakshman
13	Sweta
14	Pewds
15	Kevin
16	Ken

```
Use T8_Hospital_Database

select D1.Doctor_Name from Doctor D1 left join Doctor D2 on
D2.Current_Case='Bird Flu';

select D1.Doctor_Name from Doctor D1 left join Doctor D2 on D2.DID<2;

select D1.Doctor_Name from Doctor D1 left join Doctor D2 on
D2.Qualification='Flu Expert';
```

	Doctor_Name
1	Abhishek Kumar
2	Abhishek Kumar
3	Gabru
4	Gabru
5	Mehndi
6	Mehndi
7	Bassi
8	Bassi

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes

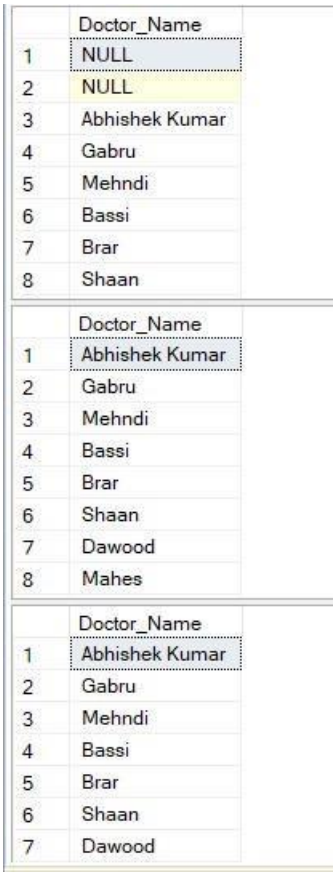
	Doctor_Name
1	Abhishek Kumar
2	Abhishek Kumar
3	Abhishek Kumar
4	Abhishek Kumar
5	Abhishek Kumar
6	Gabru
7	Gabru

```
Use T8_Hospital_Database

select D1.Doctor_Name from Doctor D1 right join Doctor D2 on
D2.Current_Case='Bird Flu';

select D1.Doctor_Name from Doctor D1 right join Doctor D2 on
D2.DID<2;
```

```
select D1.Doctor_Name from Doctor D1 right join Doctor D2 on
D2.Qualification='Flu Expert';
```



	Doctor_Name
1	NULL
2	NULL
3	Abhishek Kumar
4	Gabru
5	Mehndi
6	Bassi
7	Brar
8	Shaan

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood

8. Use all the above condition in JOIN as well.

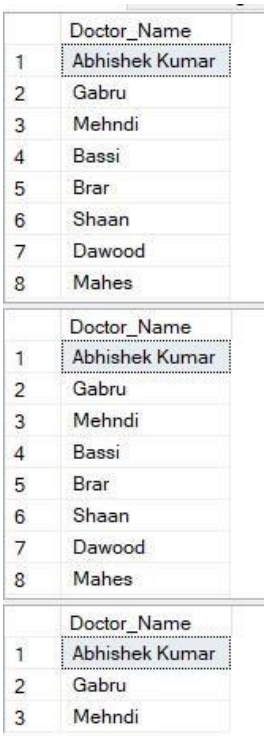
Ans: -

```
Use T8_Hospital_Database

select D1.Doctor_Name from Doctor D1 join Doctor D2 on
D2.Current_Case='Bird Flu';

select D1.Doctor_Name from Doctor D1 join Doctor D2 on D2.DID<2;

select D1.Doctor_Name from Doctor D1 join Doctor D2 on
D2.Qualification='Flu Expert';
```



	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi
4	Bassi
5	Brar
6	Shaan
7	Dawood
8	Mahes

	Doctor_Name
1	Abhishek Kumar
2	Gabru
3	Mehndi