

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

The screenshot shows a SQL query editor with three queries using the ANY operator. The first query selects rooms where the room number is less than any room number from a subquery of rooms with patient ID less than 50. The second query selects doctors where the doctor ID is less than any doctor ID from a subquery of doctors specializing in ortho. The third query selects patients where the patient ID is less than any patient ID from a subquery of patients with blood group 'O+'. The results are displayed in three tables below the queries.

```
SELECT * FROM T1_Room
WHERE Room_num < ANY (SELECT Room_num
                      FROM T1_Room
                      WHERE Patient_ID < 50
                      )

SELECT * FROM T1_Doctor
WHERE doc_ID < ANY (SELECT doc_ID
                   FROM T1_Doctor
                   WHERE doc_specialization = 'ortho'
                   );

SELECT * FROM T1_Patient
WHERE Patient_ID < ANY (SELECT Patient_ID
                      FROM T1_Patient
                      WHERE [Blood Group] = 'O+'
                      );
```

Results:

Room_num	Room_type	Patient_ID
101	ICU	11
116	General	101
204	General	10
216	General	100

doc_ID	doc_name	doc_specialization
1	Heni	Ortho
2	Mike	Physician
3	Rustom	Child

Patient_ID	Name	age	Blood Group	Phone_no	app_ID	Room_num
1	Akshat	22	B-	257137	564	404
2	Vineet	29	O+	555813	301	204
3	Grace	51	B+	176796	493	101
4	Ankit	23	AB+	971637	927	216

Query executed successfully. | localhost (15.0 RTM)

```
SELECT * FROM T1_Room
WHERE Room_num > ALL (SELECT Room_num
                      FROM T1_Room
                      WHERE Room_num < 210
                      );
SELECT * FROM T1_Doctor
WHERE doc_ID <> ALL (SELECT doc_ID
                   FROM T1_Doctor
                   WHERE doc_name = 'Henri'
                   );
SELECT * FROM T1_Room
WHERE Room_num <> ALL (SELECT Room_num
                     FROM T1_Room
                     WHERE Room_type = 'ICU'
                     );
```

110 %

Results Messages

	Room_num	Room_type	Patient_ID
1	216	General	100
2	404	General	1

	doc_ID	doc_name	doc_specialization
1	4	Divyank	Ortho
2	5	Kush	Phy
3	2	Mike	Physician
4	3	Rustom	Child

	Room_num	Room_type	Patient_ID
1	116	General	101
2	204	General	10
3	216	General	100
4	404	General	1

Query executed successfully.

localhost (15.0 RTM)

```
SELECT Name FROM T1_patient
WHERE Name like 'A%'

SELECT Name FROM T1_patient
WHERE Name like '%t'

SELECT Name FROM T1_patient
WHERE Name like '%ra%'
```

133 %

Results Messages

	Name
1	Akshat
2	Ankit

	Name
1	Akshat
2	Ankit
3	Vineet

	Name
1	Grace

Query executed successfully.

localhost (15.0 RTM)

Difference between ANY and ALL

SQLQuery5.sql - Io...Aparna Kholia (61)*

```
SELECT * FROM T1_room
WHERE Room_num < ANY (SELECT Room_num
                      FROM T1_room
                      WHERE Room_num < 300 and Room_num > 150
                      );

SELECT * FROM T1_room
WHERE Room_num > ALL (SELECT Room_num
                     FROM T1_room
                     WHERE Room_num < 300 and Room_num > 150
                     );
```

133 %

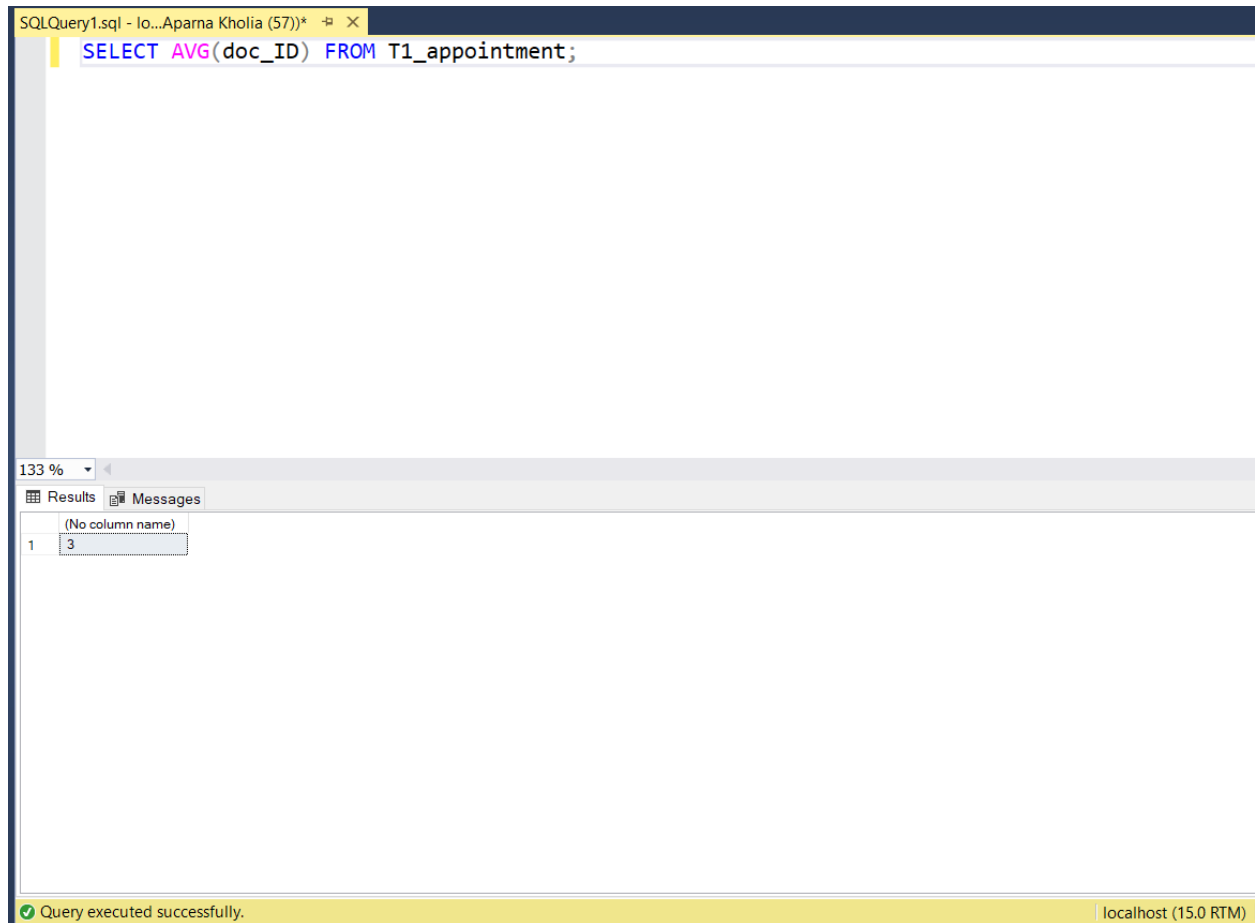
Results Messages

	Room_num	Room_type	Patient_ID
1	101	ICU	11
2	116	General	101
3	204	General	10

	Room_num	Room_type	Patient_ID
1	404	General	1

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna... Hospital



2) One query for each Aggregate function.




The screenshot shows a SQL query editor window with the following components:

- Query Editor:** Contains the SQL query `SELECT AVG(doc_ID) FROM T1_appointment;`
- Results Panel:** Displays the query results in a table with one row and one column. The column header is "(No column name)" and the value is 3.
- Status Bar:** Shows a green checkmark and the message "Query executed successfully." along with the connection information "localhost (15.0 RTM)".

	(No column name)
1	3


SQLQuery1.sql - Io...Aparna Kholia (57)) *  



```
SELECT COUNT(*)  
FROM T1_Room  
WHERE Room_num>110;
```

133 % 


Results Messages

	(No column name)
1	4

 Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna...


SQLQuery1.sql - Io...Aparna Kholia (57)) *  

```
SELECT MAX(Room_num)  
From T1_Patient;
```

133 % 

Results Messages

	(No column name)
1	404

 Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna...

SQLQuery1.sql - lo...Aparna Kholia (57))*

SELECT MIN(Room_num)

From T1_Patient;

133 %

Results Messages

(No column name)

1101

Query executed successfully.

localhost (15.0 RTM) | DESKTOP-JMLN98U\Aparna...

SQLQuery1.sql - lo...Aparna Kholia (57))*

SELECT SUM(Room_num)

From T1_Patient;

133 %

Results Messages

(No column name)

11041

Query executed successfully.

localhost (15.0 RTM) | DESKTOP-JMLN98U\Aparna...

3) Illustrate the usage of order by, group by and having clause

order-by.sql - loca...\Aparna Kholia (61)

```
SELECT Name FROM T1_patient
WHERE Patient_ID<40 order by Name ASC;

SELECT * FROM T1_room
where Room_num<200 order by Patient_ID desc;

SELECT * FROM T1_bill
where Payment_method='Cash' order by bill_ID desc;
```

133 %

Results Messages

	Name
1	Akshat
2	Grace
3	Vineet

	Room_num	Room_type	Patient_ID
1	116	General	101
2	101	ICU	11

	bill_ID	Patient_ID	Payment_method
1	4597	1	Cash
2	2045	100	Cash

SQLQuery10.sql - I...Aparna Kholia (62))*

```
select patient_id from T1_patient  
group by patient_id having patient_id < 100 ;
```

```
select Payment_method from T1_bill  
group by Payment_method having Payment_method = 'Credit card' ;
```

133 %

Results

Messages

	patient_id
1	1
2	10
3	11

	Payment_method
1	Credit card

4) Use Aggregate function with group by and having

The screenshot shows a SQL query editor window titled "SQLQuery1.sql - lo...Aparna Kholia (57))". The query is as follows:

```
SELECT AVG(doc_ID) FROM T1_Doctor
GROUP BY doc_specialization
HAVING doc_specialization='ortho';
```

Below the query editor, the "Results" tab is active, displaying a single row of data:

(No column name)	
1	2

At the bottom of the window, a status bar indicates "Query executed successfully." and the connection details "localhost (15.0 RTM) | DESKTOP-JMLN98U\Aparna..." are shown.

SQLQuery1.sql - Io...Aparna Kholia (57))⁺ ✕

```
SELECT count(patient_id) FROM T1_Patient
GROUP BY [Blood Group]
HAVING [Blood Group]='O+';
```

133 %

Results Messages

	(No column name)
1	2

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna...

SQLQuery1.sql - Io...Aparna Kholia (57))⁺ ✕

```
SELECT max(patient_id) FROM T1_Patient
GROUP BY [Blood Group]
HAVING [Blood Group]='O+';
```

133 %

Results Messages

	(No column name)
1	101

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna...

SQLQuery1.sql - Io...Aparna Kholia (57))*

```
SELECT min(bill_ID) FROM T1_bill
GROUP BY Payment_method
HAVING Payment_method='Credit card';
```

133 %

Results Messages

	(No column name)
1	350

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna...

SQLQuery1.sql - Io...Aparna Kholia (57))*

```
SELECT sum(app_ID) FROM T1_appointment
GROUP BY app_time
having app_time='12:30';
```

133 %

Results Messages

	(No column name)
1	739

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna...

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

SQLQuery12.sql - I...Aparna Kholia (60))

```
select Name, Patient_ID from T1_Patient
group by Name, Patient_ID having Patient_ID < 50 order by Name desc;

select Room_num, room_type from T1_room
group by Room_num, room_type having room_type = 'general' order by Room_num desc;

select doc_name, doc_specialization from T1_doctor
group by doc_name, doc_specialization having doc_specialization = 'ortho' order by doc_name desc;
```

133 %

Results Messages

	Name	Patient_ID
1	Vineet	10
2	Grace	11
3	Akshat	1

	Room_num	room_type
1	404	General
2	216	General
3	204	General
4	116	General

	doc_name	doc_specialization
1	Heni	Ortho
2	Divyank	Ortho

Query executed successfully. localhost (15.0 RTM) DES

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

CODE:

```
SQLQuery1.sql - lo...Aparna Kholia (57)*
-- SELECT doc_ID FROM T1_Doctor
-- EXCEPT
-- SELECT doc_ID FROM T1_appointment;

-- SELECT * FROM T1_appointment
-- WHERE exists(SELECT doc_ID FROM T1_Doctor WHERE doc_ID <500 and T1_appointment.doc_ID=T1_Doctor.doc_ID) ;

-- SELECT * FROM T1_appointment
-- WHERE not exists(SELECT doc_ID FROM T1_Doctor WHERE doc_ID <5 and T1_appointment.doc_ID=T1_Doctor.doc_ID);

-- SELECT doc_ID FROM T1_appointment
-- UNION
-- SELECT doc_ID FROM T1_Doctor;

-- SELECT doc_ID FROM T1_appointment
-- INTERSECT
-- SELECT doc_ID FROM T1_Doctor;
```

OUTPUT:

Results		Messages	
doc_ID			
1	6		
app_ID doc_ID Patient_ID app_time			
1	246	1	101 12:30
2	301	5	10 1:45
3	493	4	11 12:30
4	564	3	1 16:30
5	927	2	100 2:00
app_ID doc_ID Patient_ID app_time			
1	301	5	10 1:45
doc_ID			
1	1		
2	2		
3	3		
4	4		
5	5		
6	6		
doc_ID			
1	1		
2	2		
3	3		
4	4		
5	5		

Query executed successfully. localhost (15.0 RTM) | DESKTOP-JMLN98U\Aparna...

7) INNER JOIN, LEFT OUTER JOIN, RIGHT OUTER JOIN

INNERJOIN.sql - Io...Aparna Kholia (60))*

```
select T1_Doctor.doc_ID,T1_Doctor.doc_name
from T1_Doctor
inner join T1_appointment on T1_Doctor.doc_ID=T1_appointment.doc_ID;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
inner join T1_room on T1_room.Room_type='ICU' AND T1_room.Room_num=T1_Patient.Room_num;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
inner join T1_appointment on T1_appointment.app_time='12:30' AND T1_appointment.app_ID=T1_Patient.app_ID;
```

146 %

Results Messages

doc_ID	doc_name
1	Heni
2	Kush
3	Divyank
4	Rustom
5	Mike

name	patient_id
Grace	11

name	patient_id
Grace	11
Elizabeth	101

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna... Hospital 00:00:00 8 rows

INNERJOIN.sql - Io...Aparna Kholia (60))*

```
select T1_Doctor.doc_ID,T1_Doctor.doc_name
from T1_Doctor
left outer join T1_appointment on T1_Doctor.doc_ID=T1_appointment.doc_ID;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
left outer join T1_room on T1_room.Room_type='ICU' AND T1_room.Room_num=T1_Patient.Room_num;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
left outer join T1_appointment on T1_appointment.app_time='12:30' AND T1_appointment.app_ID=T1_Patient.app_ID;
```

133 %

Results Messages

doc_ID	doc_name
1	Heni
2	Mike
3	Rustom
4	Divyank
5	Kush
6	Rahul

name	patient_id
Akshat	1
Ankit	100
Elizabeth	101
Grace	11
Vineet	10

name	patient_id
Akshat	1
Ankit	100
Eliza...	101
Grace	11
Vineet	10

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna... Hospital 00:00:00

```

INNERJOIN.sql - lo...Aparna Kholia (60)*
select T1_Doctor.doc_ID,T1_Doctor.doc_name
from T1_Doctor
right outer join T1_appointment on T1_Doctor.doc_ID=T1_appointment.doc_ID;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
right outer join T1_room on T1_room.Room_type='ICU' AND T1_room.Room_num=T1_Patient.Room_num;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
right outer join T1_appointment on T1_appointment.app_time='12:30' AND T1_appointment.app_ID=T1_Patient.app_ID;

```

133 %

Results Messages

doc_ID	doc_name
1	Henri
5	Kush
4	Divyank
3	Rustom
2	Mike

name	patient_id
Grace	11
NULL	NULL
NULL	NULL
NULL	NULL
NULL	NULL

name	patient_id
Elizabeth	101
NULL	NULL
Grace	11
NULL	NULL
NULL	NULL

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna... Hospital

8) Use all the above conditions in JOIN as well.

```

INNERJOIN.sql - lo...Aparna Kholia (60)*
select T1_Doctor.doc_ID,T1_Doctor.doc_name
from T1_Doctor
join T1_appointment on T1_Doctor.doc_ID=T1_appointment.doc_ID;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
join T1_room on T1_room.Room_type='ICU' AND T1_room.Room_num=T1_Patient.Room_num;

select T1_Patient.name,T1_Patient.patient_id
from T1_Patient
join T1_appointment on T1_appointment.app_time='12:30' AND T1_appointment.app_ID=T1_Patient.app_ID;

```

133 %

Results Messages

doc_ID	doc_name
1	Henri
5	Kush
4	Divyank
3	Rustom
2	Mike

name	patient_id
Grace	11

name	patient_id
Grace	11
Elizabeth	101

Query executed successfully. localhost (15.0 RTM) DESKTOP-JMLN98U\Aparna... Hospital

