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Question 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.

Solution:

3 Queries for ANY

```
SELECT phone_number FROM T3_EmployeeDetails WHERE designation =

ANY (SELECT designation FROM T3_EmployeeDetails WHERE salary = 12500);

SELECT payment_amount FROM T3_BookingDetails WHERE customer_id =

ANY (SELECT customer_id FROM T3_CustomerDetails WHERE age<30);

SELECT * FROM T3_CustomerDetails WHERE age <

ANY (SELECT age FROM T3_CustomerDetails WHERE gender = 'M');
```

Database Output:

3 Queries for ALL

```
SELECT phone_number FROM T3_EmployeeDetails WHERE designation =

ALL (SELECT designation FROM T3_EmployeeDetails WHERE salary = 12500);

SELECT CONCAT(first_name, last_name) AS name FROM T3_CustomerDetails WHERE age <

ALL (SELECT age FROM T3_CustomerDetails WHERE age>30);

SELECT * FROM T3_CustomerDetails WHERE age <

ALL (SELECT age FROM T3_CustomerDetails WHERE gender = 'M');
```



3 Queries for LIKE

```
SELECT name, designation FROM T3_EmployeeDetails WHERE employee_id LIKE '02%';

SELECT CONCAT(first_name, last_name) AS name FROM T3_CustomerDetails WHERE first_name LIKE 'C%';

SELECT DISTINCT package_name FROM T3_PackageDetails WHERE booking_id LIKE '01%';
```

Database Output:



Query to distinguish between ANY and ALL:

```
SELECT CONCAT(first_name, last_name) AS name FROM T3_CustomerDetails WHERE first_name = ANY(SELECT first_name FROM T3_CustomerDetails WHERE first_name LIKE 'C%');

SELECT CONCAT(first_name, last_name) AS name FROM T3_CustomerDetails WHERE first_name = ALL(SELECT first_name FROM T3_CustomerDetails WHERE first_name LIKE 'C%');
```

Database Output:

```
name
1 CharanRao
2 ChemanKumar
3 ChakramKumar
```

Question 2: One query for each Aggregate function

Solution:

Queries:

```
SELECT AVG(salary) FROM T3_EmployeeDetails WHERE designation = 'Driver';

SELECT COUNT(*) FROM T3_PackageDetails WHERE cost>25000;

SELECT MAX(age) FROM T3_CustomerDetails;

SELECT MIN(age) FROM T3_CustomerDetails;

SELECT SUM(payment_amount) FROM T3_BookingDetails;
```

Database Output:



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

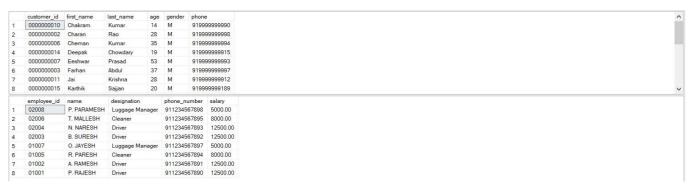
Solution:

2 Queries for ORDER BY:

```
|SELECT * FROM T3_CustomerDetails ORDER BY first_name ASC;

SELECT * FROM T3_EmployeeDetails ORDER BY employee_id DESC;
```

Database Output:



2 Queries for GROUP BY:

```
SELECT gender, COUNT(*) FROM T3_CustomerDetails WHERE age>21 GROUP BY gender;
SELECT bus_type, COUNT(*) FROM T3_Bus GROUP BY bus_type;
```

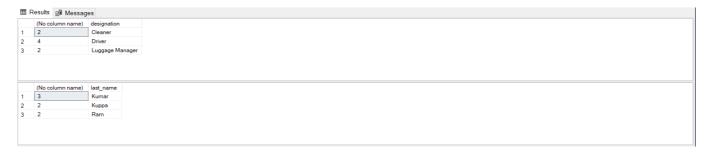
Database Output:

2 Queries for HAVING:

```
SELECT COUNT(employee_id), designation FROM T3_EmployeeDetails GROUP BY designation HAVING COUNT(employee_id) > 1;

SELECT COUNT(customer_id), last_name FROM T3_CustomerDetails GROUP BY last_name HAVING COUNT(customer_id) > 1;
```

Database Output:



Question 4: Use Aggregate function with group by and having.

Solution:

Queries:

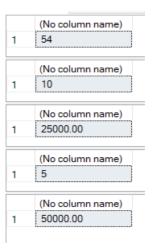
```
SELECT AVG(age) FROM T3_CustomerDetails GROUP BY last_name HAVING last_name = 'Ram';

SELECT COUNT(booking_id) FROM T3_PackageDetails GROUP BY cost HAVING cost = 50000;

SELECT MAX(payment_amount) FROM T3_BookingDetails GROUP BY payment_dateTime HAVING payment_dateTime = '2021-02-19 09:37:00.000';

SELECT MIN(age) FROM T3_CustomerDetails GROUP BY last_name HAVING last_name = 'kuppa';

SELECT SUM(salary) FROM T3_EmployeeDetails GROUP BY designation HAVING designation = 'Driver';
```



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

Solution:

Queries:

```
SELECT designation, AVG(salary) AS AverageSalary FROM T3_EmployeeDetails WHERE designation = 'Luggage Manager'
GROUP BY designation HAVING AVG(salary) < (SELECT AVG(salary) FROM T3_EmployeeDetails WHERE designation = 'Cleaner');

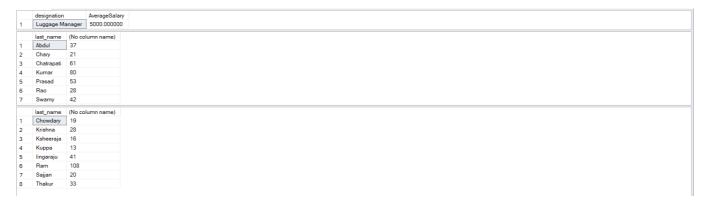
SELECT last_name, SUM(age) FROM T3_CustomerDetails WHERE customer_id =

ANY(SELECT customer_id FROM T3_BookingDetails WHERE payment_amount = 25000) GROUP BY last_name HAVING last_name LIKE '%a%';

SELECT last_name, SUM(age) FROM T3_CustomerDetails WHERE customer_id =

ANY(SELECT customer_id FROM T3_BookingDetails WHERE payment_amount = 50000) GROUP BY last_name HAVING last_name LIKE '%a%';
```

Database Output:



Question 6: Illustrate the Usage of Except, Exists, Not Exists, Union, Intersection

Solution:

Query:

```
SELECT customer_id FROM T3_CustomerDetails EXCEPT SELECT customer_id FROM T3_BookingDetails;

SELECT * FROM T3_CustomerDetails WHERE EXISTS(SELECT customer_id FROM T3_BookingDetails WHERE payment_amount = 25000);

SELECT * FROM T3_BookingDetails WHERE NOT EXISTS (SELECT customer_id FROM T3_CustomerDetails WHERE age>180);

SELECT customer_id FROM T3_BookingDetails UNION SELECT customer_id FROM T3_CustomerDetails;

SELECT booking_id FROM T3_PackageDetails INTERSECT SELECT booking_id FROM T3_DestinationDetails;
```



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

Solution:

3 Queries for INNER JOIN:

```
SELECT * FROM T3_DestinationDetails AS DEST INNER JOIN T3_PackageDetails AS PACK ON DEST.booking_id = PACK.booking_id;

SELECT * FROM T3_BookingDetails AS BOOKING INNER JOIN T3_DestinationDetails AS DEST ON BOOKING.booking_id = DEST.booking_id;

SELECT * FROM T3_BookingDetails AS BOOKING INNER JOIN T3_Bus AS BUS ON BOOKING.booking_id = BUS.booking_id;
```

Database Output:

	_	J												
		city	_	hotel_description	address	booking_ic	package_name	package_descr			ng_point			
1	0100001	Kulu Manali	Raj Palace	Good	Kulu Manali	0100001	Kulu Manali	Chill Out!	25000	0.00 Hyde	erabad			
2	0100002	Kulu Manali	Raj Palace	Good	Kulu Manali	0100002	Kulu Manali	Chill Out!	25000		erabad			
3	0100003	Kulu Manali	Raj Palace	Good	Kulu Manali	0100003	Kulu Manali	Chill Out!	25000	0.00 Hyde	erabad			
		Kulu Manali	Raj Palace	Good	Kulu Manali	0100004	Kulu Manali	Chill Out!	25000		erabad			
5	0100005	Kulu Manali	Raj Palace	Good	Kulu Manali	0100005	Kulu Manali	Chill Out!	25000	0.00 Hyde	erabad			
-		Kulu Manali		Good	Kulu Manali	0100006	Kulu Manali	Chill Out!	25000		erabad			
		Kulu Manali	Raj Palace	Good	Kulu Manali	0100007	Kulu Manali	Chill Out!	25000		erabad			
8	0100008	Kulu Manali	Raj Palace	Good	Kulu Manali	0100008	Kulu Manali	Chill Out!	25000	0.00 Hyde	erabad			
	customer_id	booking_id	payment_amo	unt payment_da	teTime	refunded	refund_amount	refund_dateTime	booking_id	city	hotel_na	me hotel_description	address	
1	0000000001	0100001	25000.00	2021-02-19	09:37:00.000	NULL	NULL	NULL	0100001	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
2	0000000002	0100002	25000.00	2021-02-19	09:42:00.000	NULL	NULL	NULL	0100002	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
3	000000003	0100003	25000.00	2021-02-19	09:16:00.000	NULL	NULL	NULL	0100003	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
4	0000000004	0100004	25000.00	2021-02-19	09:07:00.000	NULL	NULL	NULL	0100004	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
5	0000000005	0100005	25000.00	2021-02-19	09:34:00.000	NULL	NULL	NULL	0100005	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
6	0000000006	0100006	25000.00	2021-02-19	09:12:00.000	NULL	NULL	NULL	0100006	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
7	0000000007	0100007	25000.00	2021-02-19	09:18:00.000	NULL	NULL	NULL	0100007	Kulu Mar	ali Raj Pala	ace Good	Kulu Manali	
8	8000000000	0100008	25000.00	2021-02-19	09:58:00.000	NULL	NULL	NULL	0100008	Kulu Mar	ali RajPala	ace Good	Kulu Manali	
	customer_id	booking_id	payment_amo	unt payment_da	teTime	refunded	refund_amount	refund_dateTime	booking_id	bus_id	bus_type da	ateAndTime_of_Arrival	dateAndTime_of_Departure	
1	0000000001	0100001	25000.00	2021-02-19	09:37:00.000	NULL	NULL	NULL	0100001	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
2	0000000002	0100002	25000.00	2021-02-19	09:42:00.000	NULL	NULL	NULL	0100002	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
3	0000000003	0100003	25000.00	2021-02-19	09:16:00.000	NULL	NULL	NULL	0100003	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
4	0000000004	0100004	25000.00	2021-02-19	09:07:00.000	NULL	NULL	NULL	0100004	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
5	0000000005	0100005	25000.00	2021-02-19	09:34:00.000	NULL	NULL	NULL	0100005	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
6	0000000006	0100006	25000.00	2021-02-19	09:12:00.000	NULL	NULL	NULL	0100006	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
7	0000000007	0100007	25000.00	2021-02-19	09:18:00.000	NULL	NULL	NULL	0100007	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
8	8000000000	0100008	25000.00	2021-02-19	09:58:00.000	NULL	NULL	NULL	0100008	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
9	0000000009	0100009	25000.00	2021-02-19	09:54:00.000	NULL	NULL	NULL	0100009	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
10	0000000010	0100010	25000.00	2021-02-19	11:12:00.000	NULL		NULL	0100010	8714	Sleeper 2	021-03-04 15:15:00.000	2021-03-06 15:15:00.000	
11	0000000011	0200011	50000.00	2021-02-19	11:13:00.000	NULL	NULL	NULL	0200011	6938	2 Seater 2	021-03-04 05:30:00.000	2021-03-08 15:15:00.000	
							A 11 11 1	NULL	0200012	6938	2 Seater 2	021-03-04 05:30:00.000	2021-03-08 15:15:00.000	
12	0000000012		50000.00	2021-02-19	10:18:00.000	NULL	NULL	NULL	0200012		L OCUIO	02 1 00 04 00:00:00:00	2021-03-00 13.13.00.000	
	0000000012 0000000013	0200012 0200013	50000.00 50000.00		10:18:00.000	NULL	NULL	NULL	0200012			021-03-04 05:30:00.000	2021-03-08 15:15:00.000	
13				2021-02-19			NULL			6938	2 Seater 2			

3 Queries for LEFT OUTER JOIN:

```
SELECT * FROM T3_DestinationDetails AS DEST LEFT OUTER JOIN T3_PackageDetails AS PACK ON DEST.booking_id = PACK.booking_id;

SELECT * FROM T3_BookingDetails AS BOOKING LEFT OUTER JOIN T3_DestinationDetails AS DEST ON BOOKING.booking_id = DEST.booking_id;

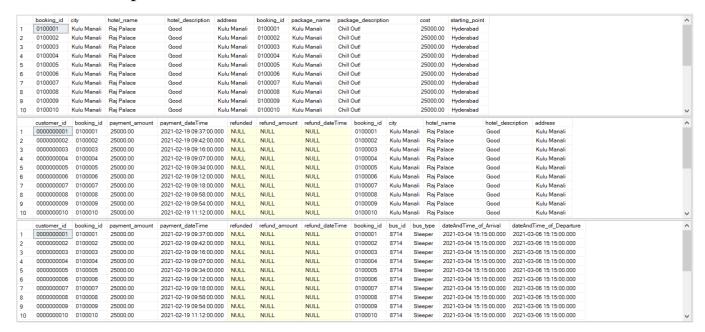
SELECT * FROM T3_BookingDetails AS BOOKING LEFT OUTER JOIN T3_Bus AS BUS ON BOOKING.booking_id = BUS.booking_id;
```

	booking id	city	hotel name	hotel description	address	booking id	package_name	nacka	age_descriptio	n	cost	starting_poin			
1	0100001	Kulu Manali	Rai Palace	Good	Kulu Manali	0100001	Kulu Manali	Chill			25000.00				
2	0100002	Kulu Manali	Raj Palace	Good	Kulu Manali	0100002	Kulu Manali	Chill			25000.00	-			
3	0100003	Kulu Manali	Rai Palace	Good	Kulu Manali	0100003	Kulu Manali	Chill	Out!		25000.00				
4	0100004	Kulu Manali	Raj Palace	Good	Kulu Manali	0100004	Kulu Manali	Chill	Out!		25000.00	Hyderabad			
5	0100005	Kulu Manali	Raj Palace	Good	Kulu Manali	0100005	Kulu Manali	Chill	Out!		25000.00	Hyderabad			
6	0100006	Kulu Manali	Raj Palace	Good	Kulu Manali	0100006	Kulu Manali	Chill	Out!		25000.00	Hyderabad			
7	0100007	Kulu Manali	Raj Palace	Good	Kulu Manali	0100007	Kulu Manali	Chill	Out!		25000.00	Hyderabad			
8	0100008	Kulu Manali	Raj Palace	Good	Kulu Manali	0100008	Kulu Manali	Chill	Out!		25000.00	Hyderabad			
9	0100009	Kulu Manali	Raj Palace	Good	Kulu Manali	0100009	Kulu Manali	Chill	Out!		25000.00	Hyderabad			
10	0100010	Kulu Manali	Raj Palace	Good	Kulu Manali	0100010	Kulu Manali	Chill	Outl		25000.00	Hyderabad			
	customer_id	booking_id	payment_amount	payment_dateTime	refunded	refund_amo	ount refund_date	Time	booking_id	city	hotel_n	ame	hotel_description	on address	
1	000000001	0100001	25000.00	2021-02-19 09:37:00.	000 NULL	NULL	NULL		0100001	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
2	0000000002	0100002	25000.00	2021-02-19 09:42:00	000 NULL	NULL	NULL		0100002	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
3	000000003	0100003	25000.00	2021-02-19 09:16:00.	000 NULL	NULL	NULL		0100003	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
4	0000000004	0100004	25000.00	2021-02-19 09:07:00.	000 NULL	NULL	NULL		0100004	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
5	000000005	0100005	25000.00	2021-02-19 09:34:00.	000 NULL	NULL	NULL		0100005	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
6	000000006	0100006	25000.00	2021-02-19 09:12:00.	000 NULL	NULL	NULL		0100006	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
7	000000007	0100007	25000.00	2021-02-19 09:18:00.	000 NULL	NULL	NULL		0100007	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
8	8000000008	0100008	25000.00	2021-02-19 09:58:00.	000 NULL	NULL	NULL		0100008	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
9	0000000009	0100009	25000.00	2021-02-19 09:54:00.	000 NULL	NULL	NULL		0100009	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
10	0000000010	0100010	25000.00	2021-02-19 11:12:00.	000 NULL	NULL	NULL		0100010	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
	customer_id	booking_id	payment_amount	payment_dateTime	refunded	refund_amo	ount refund_date	Time	booking_id	bus_id	ous_type o	dateAndTime_of	_Arrival date.	AndTime_of_Departure	
1	0000000001	0100001	25000.00	2021-02-19 09:37:00.	000 NULL	NULL	NULL		0100001	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
2	0000000002	0100002	25000.00	2021-02-19 09:42:00	000 NULL	NULL	NULL		0100002	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
3	000000003	0100003	25000.00	2021-02-19 09:16:00.	000 NULL	NULL	NULL		0100003	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
4	0000000004	0100004	25000.00	2021-02-19 09:07:00	000 NULL	NULL	NULL		0100004	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
5	000000005	0100005	25000.00	2021-02-19 09:34:00.	000 NULL	NULL	NULL		0100005	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
6	0000000006	0100006	25000.00	2021-02-19 09:12:00.	000 NULL	NULL	NULL		0100006	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
7	0000000007	0100007	25000.00	2021-02-19 09:18:00.	000 NULL	NULL	NULL		0100007	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
8	8000000000	0100008	25000.00	2021-02-19 09:58:00	000 NULL	NULL	NULL		0100008	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
9	0000000009	0100009	25000.00	2021-02-19 09:54:00.	000 NULL	NULL	NULL		0100009	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	
10	000000010	0100010	25000.00	2021-02-19 11:12:00.	000 NULL	NULL	NULL		0100010	8714	Sleeper	2021-03-04 15:1	5:00.000 202	1-03-06 15:15:00.000	

3 Queries for RIGHT OUTER JOIN:

SELECT * FROM T3_DestinationDetails AS DEST RIGHT OUTER JOIN T3_PackageDetails AS PACK ON DEST.booking_id = PACK.booking_id;
SELECT * FROM T3_BookingDetails AS BOOKING RIGHT OUTER JOIN T3_DestinationDetails AS DEST ON BOOKING.booking_id = DEST.booking_id;
SELECT * FROM T3_BookingDetails AS BOOKING RIGHT OUTER JOIN T3_Bus AS BUS ON BOOKING.booking_id = BUS.booking_id;

Database Output:



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

Solution:

Query:

SELECT first_name, MIN(booking_id) AS booking_id, AVG(age) AS age, MAX(phone) AS contact_no FROM T3_CustomerDetails AS Customer

T3_BookingDetails AS Booking ON Customer.customer_id = Booking.customer_id GROUP BY first_name HAVING first_name LIKE '%e%' ORDER BY first_name DESC;

	first_name	booking_id	age	contact_no
1	Sunder	0200017	54	919999999923
2	Somesh	0200013	33	91999999914
3	Shreya	0200019	8	919999999187
4	Raghavendra	0100008	42	919999999992
5	Eeshwar	0100007	53	91999999993
6	Deepak	0200014	19	919999999915
7	Cheman	0100006	35	919999999994