KUPPA VENKATA KRISHNA PAANCHAJANYA

Registration No.: 19BCS063

Database Management Systems Lab Assignment – 5

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:

```
911234567890
 911234567891
 911234567893
 50000.00
 50000.00
customer_id first_name
00000000001 Kiran
                                                 91999999999
 0000000002 Charan
                                                 91999999999
 0000000003 Farban
                        Abdul
 00000000005 Laban
                                   18 M
                                                 919999999995
 0000000007
             Eeshwar
                        Prasad
```

3 Queries for ALL

```
SELECT phone_number FROM T3_EmployeeDetails WHERE designation =

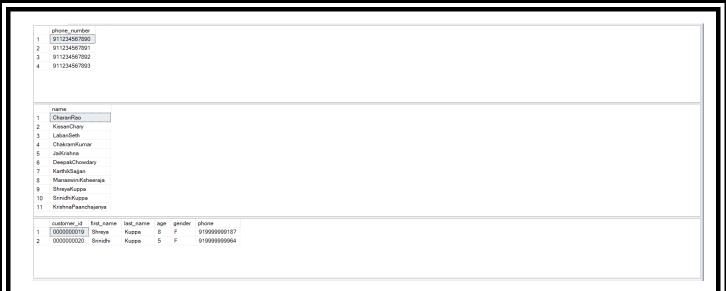
ALL (SELECT designation FROM T3_EmployeeDetails WHERE salary = 12500);

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');
```



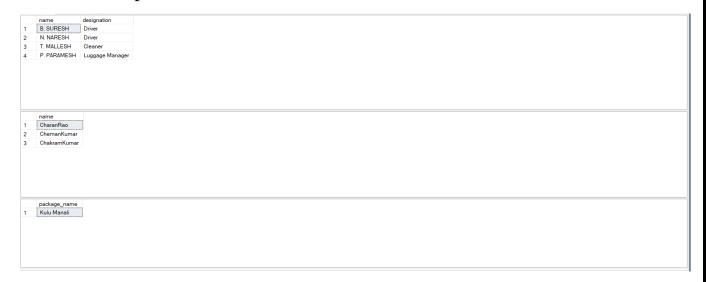
3 Queries for LIKE

```
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:



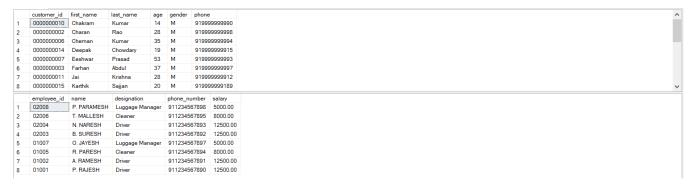
Question 3: Illustrate the usage of order by, group by and having clause (2 queries for each case)

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';

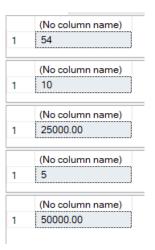
SELECT COUNT(booking_id) FROM T3_PackageDetails GROUP BY cost HAVING cost = 50000;

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';
```

Database Output:



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:

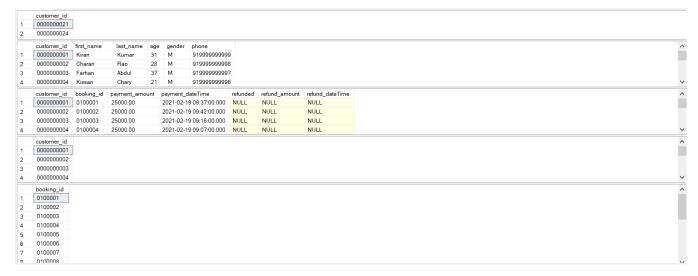
```
SELECT customer_id FROM T3_CustomerDetails EXCEPT SELECT customer_id FROM T3_BookingDetails;

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:

		•														
		city	hotel_name	hotel_description	address	booking_ic					tarting_p					
1	0100001	Kulu Manali	Raj Palace	Good	Kulu Manali		Kulu Manali	Chill Out!	25000		lyderaba	d				
2	0100002	Kulu Manali	Raj Palace	Good	Kulu Manali	0100002	Kulu Manali	Chill Out!	25000		lyderaba					
3	0100003	Kulu Manali	Raj Palace	Good	Kulu Manali	0100003	Kulu Manali	Chill Out!	25000	0.00 F	lyderaba	d				
4	0100004	Kulu Manali	Raj Palace	Good	Kulu Manali	0100004	Kulu Manali	Chill Out	25000	0.00 H	lyderaba	d				
5	0100005	Kulu Manali	Raj Palace	Good	Kulu Manali	0100005	Kulu Manali	Chill Out!	25000	0.00 H	lyderaba	d				
6	0100006	Kulu Manali	Raj Palace	Good	Kulu Manali	0100006	Kulu Manali	Chill Out!	25000		lyderaba	d				
7	0100007	Kulu Manali	Raj Palace	Good	Kulu Manali		Kulu Manali	Chill Out!	25000		lyderaba	d				
8	0100008	Kulu Manali	Raj Palace	Good	Kulu Manali	0100008	Kulu Manali	Chill Out!	25000	0.00 F	lyderaba	d				
	customer_id	booking_id	payment_am	ount payment_da	teTime	refunded	refund_amount	refund_dateTime	booking_id	city		hotel_name	hotel_description	address		
1	0000000001	0100001	25000.00	2021-02-19	09:37:00.000	NULL	NULL	NULL	0100001	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
2	0000000002	0100002	25000.00	2021-02-19	09:42:00.000	NULL	NULL	NULL	0100002	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
3	000000003	0100003	25000.00	2021-02-19	09:16:00.000	NULL	NULL	NULL	0100003	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
4	0000000004	0100004	25000.00	2021-02-19	09:07:00.000	NULL	NULL	NULL	0100004	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
5	000000005	0100005	25000.00	2021-02-19	09:34:00.000	NULL	NULL	NULL	0100005	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
6	000000006	0100006	25000.00	2021-02-19	09:12:00.000	NULL	NULL	NULL	0100006	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
7	000000007	0100007	25000.00	2021-02-19	09:18:00.000	NULL	NULL	NULL	0100007	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
8	8000000008	0100008	25000.00	2021-02-19	09:58:00.000	NULL	NULL	NULL	0100008	Kulu I	Manali	Raj Palace	Good	Kulu Manali		
	customer_id	booking_id	payment_am	ount payment_da	teTime	refunded	refund_amount	refund_dateTime	booking_id	bus_ic	d bus_t	ype dateAr	dTime_of_Arrival	dateAndTime_d	f_Departure	
1	0000000001	0100001	25000.00	2021-02-19	09:37:00.000	NULL	NULL	NULL	0100001	8714	Sleep	per 2021-	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	Sleep	per 2021-	03-04 15:15:00.000	2021-03-06 15:	15:00.000	
3	000000003	0100003	25000.00	2021-02-19	09:16:00.000	NULL	NULL	NULL	0100003	8714	Sleep	per 2021-	03-04 15:15:00.000	2021-03-06 15:	15:00.000	
4	000000004	0100004	25000.00	2021-02-19	09:07:00.000	NULL	NULL	NULL	0100004	8714	Sleep	per 2021-	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	Sleep	per 2021-	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	Sleep		03-04 15:15:00.000	2021-03-06 15:	15:00.000	
7	0000000007	0100007	25000.00		09:18:00.000	NULL	NULL	NULL	0100007	8714	Sleep		03-04 15:15:00.000	2021-03-06 15:	15:00.000	
8	8000000008		25000.00	2021-02-19	09:58:00.000	NULL	NULL	NULL	0100008	8714	Sleep	per 2021-	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	Sleep	per 2021-	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	NULL	0100010	8714	Sleep	per 2021-	03-04 15:15:00.000	2021-03-06 15:	15:00.000	
11	000000011	0200011	50000.00	2021-02-19	11:13:00.000	NULL	NULL	NULL	0200011	6938	2 Sea	ater 2021-	03-04 05:30:00.000	2021-03-08 15:	15:00.000	
12	000000012	0200012	50000.00	2021-02-19	10:18:00.000	NULL	NULL	NULL	0200012	6938	2 Sea	ater 2021-	03-04 05:30:00.000	2021-03-08 15:	15:00.000	
13	0000000013	0200013	50000.00	2021-02-19	10:20:00.000	NULL	NULL	NULL	0200013	6938	2 Sea	ater 2021-	03-04 05:30:00.000	2021-03-08 15:	15:00.000	
14	000000014	0200014	50000.00	2021-02-19	10:25:00.000	NULL	NULL	NULL	0200014	6938	2 Sea	ater 2021-	03-04 05:30:00.000	2021-03-08 15:	15:00.000	
15	000000015	0200015	50000.00	2021-02-19	10:38:00.000	NULL	NULL	NULL	0200015	6938	2 Sea	ater 2021-	03-04 05:30:00.000	2021-03-08 15:	15:00.000	

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

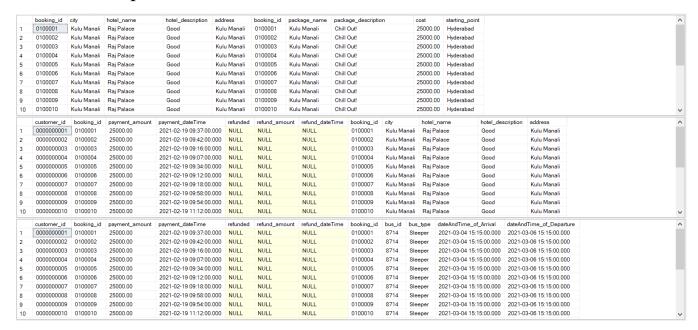
SELECT * FROM T3_BookingDetails AS BOOKING LEFT OUTER JOIN T3_Bus AS BUS ON BOOKING.booking_id = BUS.booking_id;

	,	city	hotel_name	hotel_description	address	booking_id				ge_descriptio	n	cost	starting_poin	ıt		
1	0100001	Kulu Manali	Raj Palace	Good	Kulu Manali	0100001			Chill (25000.00				
2	0100002	Kulu Manali	Raj Palace	Good	Kulu Manali	0100002			Chill (25000.00				
3	0100003	Kulu Manali	Raj Palace	Good	Kulu Manali	0100003	Kulu I		Chill (25000.00				
4	0100004	Kulu Manali	Raj Palace	Good	Kulu Manali	0100004	Kulu I		Chill (25000.00				
5		Kulu Manali	Raj Palace	Good	Kulu Manali	0100005	Kulu I		Chill (25000.00				
6	0100006	Kulu Manali	Raj Palace	Good	Kulu Manali	0100006	Kulu	Manali (Chill (Outl		25000.00				
7	0100007	Kulu Manali	Raj Palace	Good	Kulu Manali	0100007	Kulu		Chill (25000.00				
8	0100008	Kulu Manali	Raj Palace	Good	Kulu Manali	0100008	Kulu	Manali (Chill (Out!		25000.00				
9	0100009	Kulu Manali	Raj Palace	Good	Kulu Manali	0100009	Kulu I	Manali (Chill (Out!		25000.00) Hyderabad			
10	0100010	Kulu Manali	Raj Palace	Good	Kulu Manali	0100010	Kulu	Manali (Chill (Out!		25000.00) Hyderabad			
	customer_id	booking_id	payment_amount	payment_dateTime	refunded	refund_amo	ount r	efund_dateTi	me	booking_id	city	hotel_r	name	hotel_descrip	otion address	
1	0000000001	0100001	25000.00	2021-02-19 09:37:00	000 NULL	NULL	1	NULL		0100001	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
2	0000000002	0100002	25000.00	2021-02-19 09:42:00	000 NULL	NULL	1	NULL		0100002	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
3	000000003	0100003	25000.00	2021-02-19 09:16:00	000 NULL	NULL	1	NULL		0100003	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
4	0000000004	0100004	25000.00	2021-02-19 09:07:00	000 NULL	NULL	1	NULL		0100004	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
5	0000000005	0100005	25000.00	2021-02-19 09:34:00	000 NULL	NULL	1	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	- 1	NULL		0100010	Kulu Man	ali RajPa	lace	Good	Kulu Manali	
	customer id	booking id	payment amount	payment dateTime	refunded	refund amo	ount r	efund dateTi	me	booking id	bus id I	us type	dateAndTime of	f Arrival da	steAndTime of Depar	ture
1	0000000001	0100001	25000.00	2021-02-19 09:37:00.	000 NULL	NULL		NULL		0100001	8714	Sleeper	2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
2	0000000002	0100002	25000.00	2021-02-19 09:42:00	000 NULL	NULL		NULL		0100002	8714	Sleeper	2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
3	0000000003	0100003	25000.00	2021-02-19 09:16:00	000 NULL	NULL		NULL		0100003	8714	Sleeper	2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
4	0000000004	0100004	25000.00	2021-02-19 09:07:00	000 NULL	NULL		NULL		0100004	8714	Sleeper	2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
5	0000000005	0100005	25000.00	2021-02-19 09:34:00	000 NULL	NULL		NULL		0100005	8714	Sleeper	2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
6	0000000006	0100006	25000.00	2021-02-19 09:12:00	000 NULL	NULL		NULL		0100006			2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
7	0000000007	0100007	25000.00	2021-02-19 09:18:00	000 NULL	NULL		NULL		0100007			2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
8	8000000008	0100008	25000.00	2021-02-19 09:58:00	000 NULL	NULL		NULL		0100008	8714	Sleeper	2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	0
9	0000000009	0100009	25000.00	2021-02-19 09:54:00		NULL		NULL		0100009			2021-03-04 15:		021-03-06 15:15:00.0	
10	0000000010	0100010	25000.00	2021-02-19 11:12:00	000 NULL	NULL		NULL		0100010			2021-03-04 15:	15:00.000 20	021-03-06 15:15:00.0	10
-																

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
JOIN
```

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	91999999993
2	Somesh	0200013	33	91999999914
3	Shreya	0200019	8	919999999187
4	Raghavendra	0100008	42	919999999992
5	Eeshwar	0100007	53	91999999993
6	Deepak	0200014	19	91999999915
7	Cheman	0100006	35	91999999994