

# Lab Assignment-6

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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

i) Queries on LIKE operator:-

The screenshot shows a SQL query window with the following queries:

```
use Library;  
  
SELECT BOOK_NAME from books_ where BOOK_NAME like 'g%'  
SELECT BOOK_NAME from books_ where BOOK_NAME like '%up'  
SELECT author_name from author_ WHERE author_name like 'l%'
```

The results are displayed in three tables:

BOOK_NAME
1 Guilty mind
2 Guilty mind

BOOK_NAME
1 Caught up
2 Tom Up
3 Caught up

author_name
1 lohith
2 Lohith

The status bar at the bottom indicates: Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 7 rows

ii) Queries on ALL operator:-

The screenshot shows a SQL query window with the following queries:

```
SELECT no_of_issues from books_  
where no_of_issues > all(  
select no_of_issues from books_ WHERE author_id>14 )  
  
SELECT author_id,author_name from  
author_ WHERE author_id > all(  
select author_id from books_)
```

The results are displayed in two tables:

no_of_issues
1 12
2 23
3 45
4 67
5 34
6 24
7 75
8 29
9 13
10 12
11 12
12 13

author_id	author_name
1 16	Pran
2 17	Vishwa
3 18	Geetha

The status bar at the bottom indicates: Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 15 rows

```

SELECT author_id,author_name from
author_ WHERE author_id > all(
select author_id from books_ where author_id<6)

```

165 %

Results Messages

	author_id	author_name
1	6	Shandha
2	7	Lohith
3	8	Bhanupriya
4	9	Lohith
5	10	Koushik
6	11	Sohail
7	12	Greeshma
8	13	Malikarjun
9	14	Pavan
10	15	Suman
11	16	Priya
12	17	Vishwa
13	18	Geetha

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 13 rows

iii) Queries on ANY operator:-

```

SELECT no_of_issues from books_
where no_of_issues > ANY(
select no_of_issues from books_ WHERE author_id>15 )

SELECT author_id,BOOK_NAME from books_
WHERE author_id > ANY(
select author_id from books_ WHERE published_year>2015)

```

165 %

Results Messages

no\_of\_issues

	author_id	BOOK_NAME
1	8	Close my eyes
2	7	My Band
3	8	Fantasy Girl
4	15	No Flaws
5	10	Drop It
6	8	Close my eyes
7	7	My Band
8	8	Fantasy Girl
9	9	No Flaws
10	10	Drop It
11	9	ALONE
12	9	SOLO

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 12 rows

```

SELECT author_id,BOOK_NAME from books_
WHERE author_id > ANY(
select author_id from books_ where bought_year>2019)

```

165 %

Results Messages

	author_id	BOOK_NAME
1	5	Close my eyes
2	5	Fantasy Girl
3	15	No Flaws
4	10	Drop It
5	8	Close my eyes
6	8	Fantasy Girl
7	9	No Flaws
8	10	Drop It
9	9	ALONE
10	9	SOLO

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 10 rows

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iv) Queries on ANY and ALL comparison :-

```

select author_id from books_
where author_id > all(
select author_id from books_ where author_id<4 )

```

165 %

Results Messages

	author_id
1	4
2	8
3	5
4	6
5	7
6	8
7	15
8	10
9	4
10	8
11	5
12	6
13	7
14	8
15	9
16	10
17	9
18	9

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 18 rows

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```

select author_id from books_
where author_id > any(
select author_id from books_ where author_id < 4 )

```

165 %

Results Messages

	author_id
1	4
2	2
3	8
4	5
5	6
6	7
7	8
8	15
9	10
10	4
11	8
12	5
13	6
14	7
15	8
16	9
17	10
18	9
19	9

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 19 rows

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2). One query for each Aggregate function.

```

use Library

select sum(PRICE) from books_
select avg(PRICE) from books_ where author_id > 2
select count(no_of_issues) from books_ where author_id > 4
select max(PRICE) from books_ where author_id > 6
select min(no_of_issues) from books_ where author_id > 8

```

149 %

Results Messages

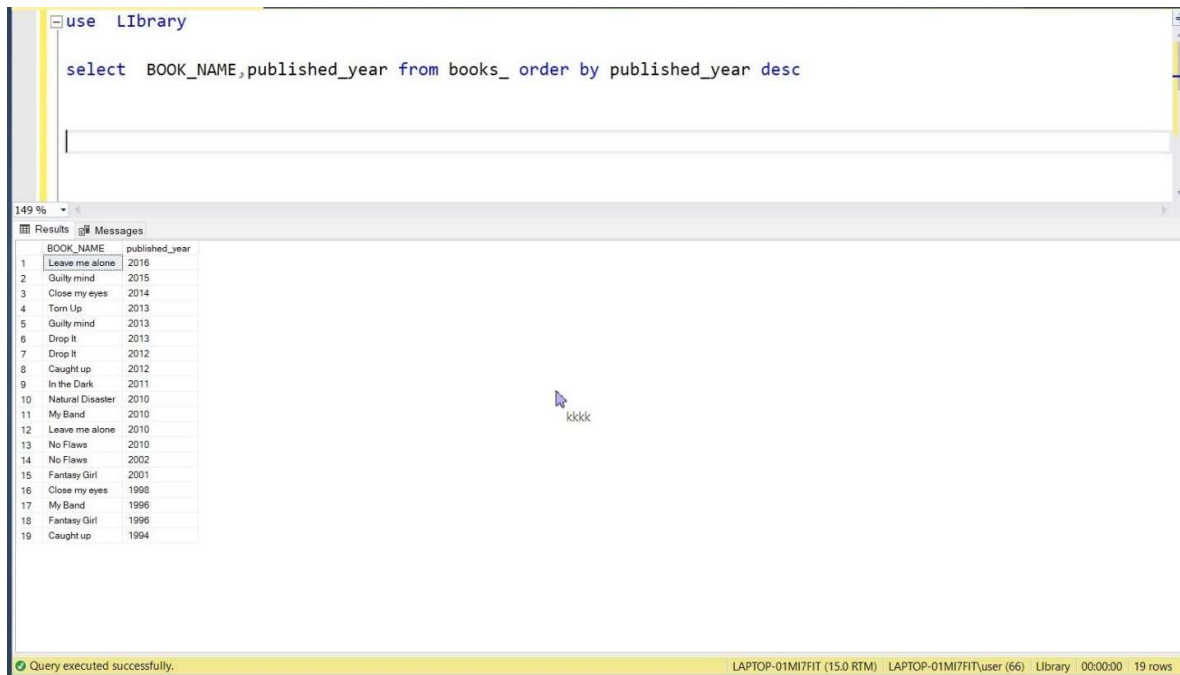
	(No column name)
1	18599
1	1002
1	14
1	890
1	1

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (61) Library 00:00:00 5 rows

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

#### i) ORDER BY :-



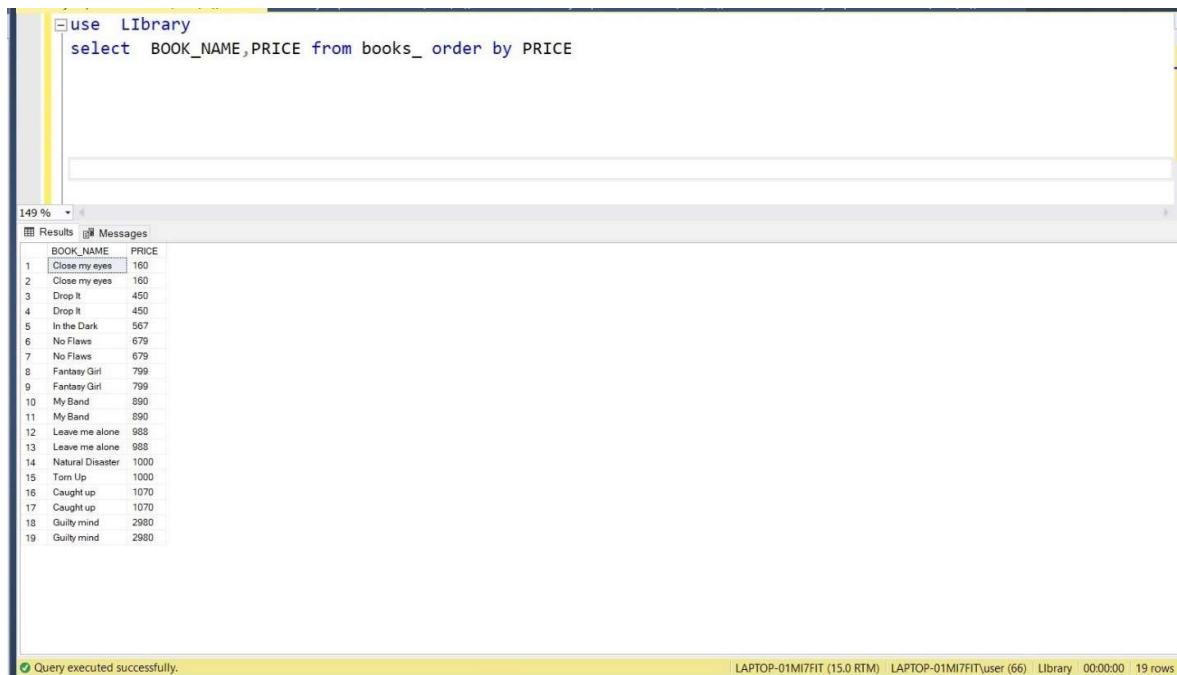
```
use Library

select BOOK_NAME, published_year from books_ order by published_year desc
```

	BOOK_NAME	published_year
1	Leave me alone	2016
2	Guilty mind	2015
3	Close my eyes	2014
4	Tom Up	2013
5	Guilty mind	2013
6	Drop It	2013
7	Drop It	2012
8	Caught up	2012
9	In the Dark	2011
10	Natural Disaster	2010
11	My Band	2010
12	Leave me alone	2010
13	No Flaws	2010
14	No Flaws	2002
15	Fantasy Girl	2001
16	Close my eyes	1998
17	My Band	1996
18	Fantasy Girl	1996
19	Caught up	1994

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (66) Library 00:00:00 19 rows

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```
use Library

select BOOK_NAME, PRICE from books_ order by PRICE
```

	BOOK_NAME	PRICE
1	Close my eyes	160
2	Close my eyes	160
3	Drop It	450
4	Drop It	450
5	In the Dark	567
6	No Flaws	679
7	No Flaws	679
8	Fantasy Girl	799
9	Fantasy Girl	799
10	My Band	890
11	My Band	890
12	Leave me alone	988
13	Leave me alone	988
14	Natural Disaster	1000
15	Tom Up	1000
16	Caught up	1070
17	Caught up	1070
18	Guilty mind	2980
19	Guilty mind	2980

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (66) Library 00:00:00 19 rows

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## ii) GROUP BY :-



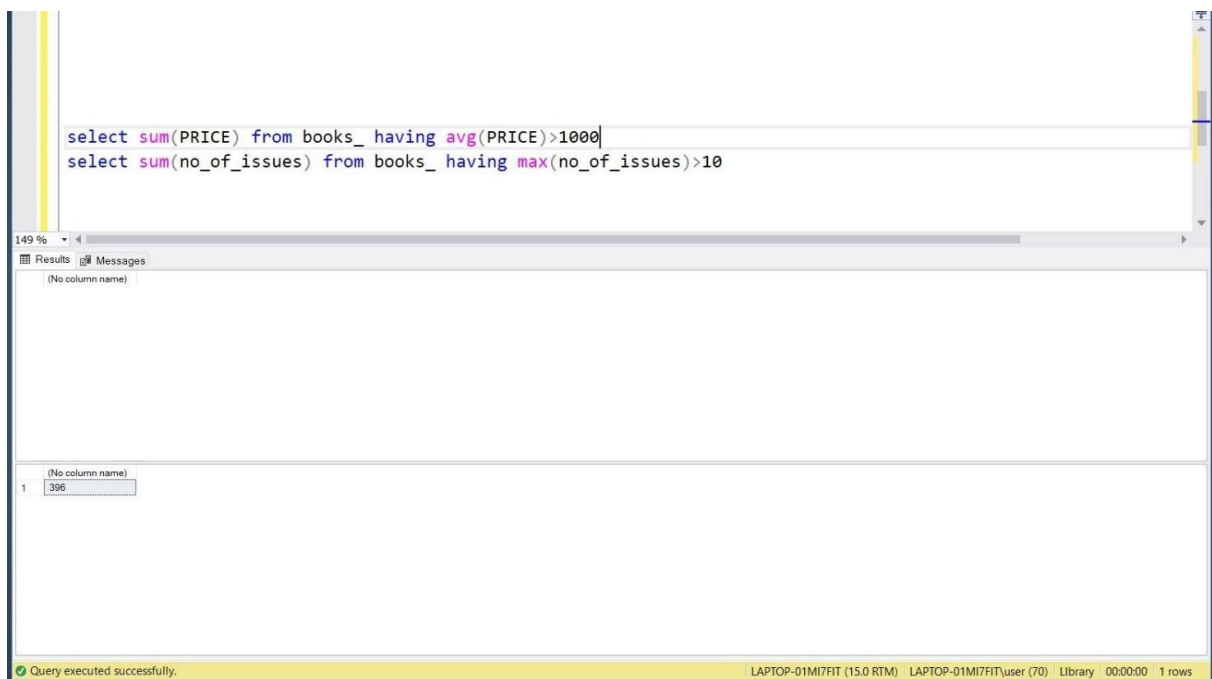
```
select bought_year from books_ group by bought_year
select no_of_issues from books_ group by no_of_issues
```

bought_year
2000
2004
2012
2013
2014
2015
2016
2017

no_of_issues
1
4
5
6
9
11
12
13
23
24
29
34
45
67
75

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00 23 rows

## iii) HAVING :-



```
select sum(PRICE) from books_ having avg(PRICE)>1000
select sum(no_of_issues) from books_ having max(no_of_issues)>10
```

(No column name)
396

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00 1 rows

#### 4) Use Aggregate function with group by and having

```
select bought_year, count(author_id) as no_of_books_bought from books_ group by bought_year
select published_year, count(PRICE) as no_of_books_published from books_ group by published_year
```

149 %

Results Messages

	bought_year	no_of_books_bought
1	2000	1
2	2004	1
3	2012	8
4	2013	1
5	2014	2
6	2015	2
7	2016	2
8	2020	2

	published_year	no_of_books_published
1	1994	1
2	1996	2
3	1998	1
4	2001	1
5	2002	1
6	2010	4
7	2011	1
8	2012	2
9	2013	3
10	2014	1
11	2015	1
12	2016	1

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00 20 rows

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```
select sum(PRICE) from books_ having avg(PRICE)>1000
select sum(no_of_issues) from books_ having max(no_of_issues)>10
```

149 %

Results Messages

(No column name)

1	398
---	-----

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00 1 rows

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

```
--select published_year,count(PRICE) as no_of_books_published from books_
--group by published_year
--having count(PRICE) >1
--order by count(PRICE)

--select author_id ,avg(price) as average_price from books_
--group by author_id
--having avg(price) > 1000

--select author_id ,avg(no_of_issues) as average_issues from books_
--group by author_id
--having avg(PRICE) > (select PRICE from books_ where author_id = 2)
```

149 %

Results Messages

	published_year	no_of_books_published
1	1996	2
2	2012	2
3	2013	3
4	2010	4

	author_id	average_price
1	4	1070
2	5	2980

	author_id	average_issues
1	4	60
2	5	5

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00

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

i) EXISTS and NOT EXISTS :-

```
--SELECT *
--FROM books_
--WHERE EXISTS (SELECT author_id FROM books_ WHERE author_id = 3);

--SELECT *
--FROM books_
--WHERE not EXISTS (SELECT author_id FROM books_ WHERE author_id = 3);
```

149 %

Results Messages

ID	BOOK_NAME	author_id	PRICE	barcode_	category	no_of_issues	published_year	bought_year	
1	1	Natural Disaster	1	1000	2938476	209	12	2010	2012
2	2	In the Dark	1	567	98567	405	23	2011	2012
3	3	Caught up	4	1070	88456	708	45	2012	2013
4	4	Torn Up	2	1000	44567	560	67	2013	2014
5	5	Close my eyes	8	160	967467	769	34	2014	2014
6	6	Guilt mind	5	2980	7665246	156	9	2015	2016
7	7	Leave me alone	6	988	875342346	134	6	2016	2016
8	8	My Band	7	890	764563	122	5	2010	2012
9	9	Fantasy Girl	8	799	432693	342	4	2001	2012
10	10	No Flaws	15	679	45653	564	11	2002	2004
11	11	Drop it	10	450	456748	908	24	2012	2012
12	14	Caught up	4	1070	456358	879	75	1994	2012
13	16	Close my eyes	8	160	87657	657	29	1998	2000
14	17	Guilt mind	5	2980	456354	123	1	2013	2015
15	18	Leave me alone	6	988	8563425	234	13	2010	2012
16	19	My Band	7	890	65476	323	12	1996	2020
17	20	Fantasy Girl	8	799	79678	567	12	1996	2020
18	21	No Flaws	9	679	345476	343	13	2010	2012
19	22	Drop it	10	450	456358	919	1	2013	2015

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00 19 rows



## ii) EXCEPT :-

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```
select author_name from author_ except (select author_name from author_ where no_of_books>2)
```

146 %

Results Messages

	author_name
1	chandra
2	maili
3	rio
4	so_hail

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00 4 rows

## iii) UNION and INTERSECT :-

```
--select author_name from author_ where author_id in
--((select author_id from books_ where author_id>2)
--union
--(select author_id from author_ where author_id <2))

--select author_name from author_ where author_id in
--((select author_id from books_ where author_id>2)
--intersect
--(select author_id from author_ where author_id <2))
```

146 %

Results Messages

	author_name
1	greeshma
2	rio
3	maili
4	chandra
5	lohit
6	Bhanupriya
7	Lohith
8	Koushik
9	Suman

author\_name

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (70) Library 00:00:00

~

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

### i) JOIN :-

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

```
SELECT BOOK_NAME, books_.author_id from books_  
_join author_ on author_.author_id = books_.no_of_issues
```

The query results are displayed in a table with two columns: BOOK\_NAME and author\_id. The results are as follows:

BOOK_NAME	author_id
Natural Disaster	1
Guilty mind	5
Leave me alone	6
My Band	7
Fantasy Girl	8
No Flaws	15
Guilty mind	5
Leave me alone	6
My Band	7
Fantasy Girl	8
No Flaws	9
Drop It	10
ALONE	9
SOLO	9

The status bar at the bottom indicates: Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 14 rows

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

```
SELECT books_.author_id ,COUNT(BOOK_NAME) from books_  
_JOIN author_ | on author_.author_id = books_.author_id GROUP by books_.author_id
```

The query results are displayed in a table with two columns: author\_id and COUNT(BOOK\_NAME). The results are as follows:

author_id	COUNT(BOOK_NAME)
1	2
2	1
3	2
4	2
5	2
6	2
7	2
8	4
9	3
10	2
15	1

The status bar at the bottom indicates: Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 10 rows

~

```

SELECT BOOK_NAME, COUNT(BOOK_NAME) from books_
JOIN author_ on author_.author_id = books_.author_id GROUP by BOOK_NAME

```

165 %

Results Messages

	BOOK_NAME	(No column name)
1	ALONE	1
2	Caught up	2
3	Close my eyes	2
4	Drop It	2
5	Fantasy Girl	2
6	Guilty mind	2
7	In the Dark	1
8	Leave me alone	2
9	My Band	2
10	Natural Disaster	1
11	No Flaws	2
12	SOLD	1
13	Tom Up	1

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 13 rows

~

ii) RIGHT JOIN :-

```

SELECT PRICE, avg(PRICE) from books_
right JOIN author_ on author_.author_id = books_.author_id GROUP by PRICE

```

165 %

Results Messages

	PRICE	(No column name)
1	NULL	NULL
2	160	160
3	450	450
4	567	567
5	679	679
6	799	799
7	890	890
8	988	988
9	1000	1000
10	1070	1070
11	2980	2980
12	10001	10001

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 12 rows

~

```

SELECT author_.author_name,books_.BOOK_NAME  from books_
right JOIN author_ on author_.author_id= books_.author_id

```

165 %

Results Messages

	author_name	BOOK_NAME
1	greeshma	Natural Disaster
2	greeshma	In the Dark
3	koushik	Tom Up
4	so_hail	NULL
5	rio	Caught up
6	rio	Caught up
7	mali	Guilty mind
8	mali	Guilty mind
9	chandra	Leave me alone
10	chandra	Leave me alone
11	lohith	My Band
12	lohith	My Band
13	Bhanupriya	Close my eyes
14	Bhanupriya	Fantasy Girl
15	Bhanupriya	Close my eyes
16	Bhanupriya	Fantasy Girl
17	Lohith	No Flaws
18	Lohith	ALONE
19	Lohith	SOLO
20	Koushik	Drop It
21	Koushik	Drop It
22	Sohail	NULL
23	Greeshma	NULL
24	Malikarjun	NULL
25	Pavan	NULL
26	Suman	No Flaws
27	Priya	NULL
28	Vishwa	NULL
29	Geetha	NULL

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 29 rows

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```

SELECT author_.author_name,count(BOOK_NAME)  from books_
right JOIN author_ on author_.author_id= books_.author_id group by author_.author_name

```

165 %

Results Messages

	author_name	(No column name)
1	Bhanupriya	4
2	chandra	2
3	Geetha	0
4	greeshma	2
5	Koushik	3
6	lohith	5
7	mali	2
8	Malikarjun	0
9	Pavan	0
10	Priya	0
11	rio	2
12	so_hail	0
13	Sohail	0
14	Suman	1
15	Vishwa	0

Query executed successfully. LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT\user (57) Library 00:00:00 15 rows

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### iii) LEFT JOIN :-

```
SELECT BOOK_NAME,COUNT(BOOK_NAME) from books_  
left JOIN author_ on author_.author_id = books_.author_id GROUP by BOOK_NAME
```

165 %

Results Messages

	BOOK_NAME	(No column name)
1	ALONE	1
2	Caught up	2
3	Close my eyes	2
4	Drop It	2
5	Fantasy Girl	2
6	Guilty mind	2
7	In the Dark	1
8	Leave me alone	2
9	My Band	2
10	Natural Disaster	1
11	No Flaws	2
12	SOLO	1
13	Tom Up	1

Query executed successfully.

LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT(user (57)) Library 00:00

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```
SELECT author_.author_name,books_.BOOK_NAME from books_  
left JOIN author_ on author_.author_id= books_.author_id
```

165 %

Results Messages

	author_name	BOOK_NAME
1	greeshma	Natural Disaster
2	greeshma	In the Dark
3	rio	Caught up
4	koushik	Tom Up
5	Bhanupriya	Close my eyes
6	mali	Guilty mind
7	chandra	Leave me alone
8	lohith	My Band
9	Bhanupriya	Fantasy Girl
10	Suman	No Flaws
11	Koushik	Drop It
12	rio	Caught up
13	Bhanupriya	Close my eyes
14	mali	Guilty mind
15	chandra	Leave me alone
16	lohith	My Band
17	Bhanupriya	Fantasy Girl
18	Lohith	No Flaws
19	Koushik	Drop It
20	Lohith	ALONE
21	Lohith	SOLO

Query executed successfully.

LAPTOP-01MI7FIT (15.0 RTM) LAPTOP-01MI7FIT(user (57)) Library 00:00:00 21 rows

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```
SELECT author_.author_name,count(BOOK_NAME) from books_  
left JOIN author_ on author_.author_id= books_.author_id group by author_.author_name  
having avg(books_.PRICE) > 100
```

165 %

Results Messages

	author_name	(No column name)
1	Bhanupriya	4
2	chandra	2
3	greeshma	2
4	Koushik	3
5	Lohith	5
6	malli	2
7	rio	2
8	Suman	1

Query executed successfully

LAPTOP-DIM7ET / (SSA) SQL> | LAPTOP-DIM7ET / (SSA) SQL> | LAPTOP-DIM7ET / (SSA) SQL>