

Hexaware Technologies LTD

SQL Assignment Exercise (Day 3)

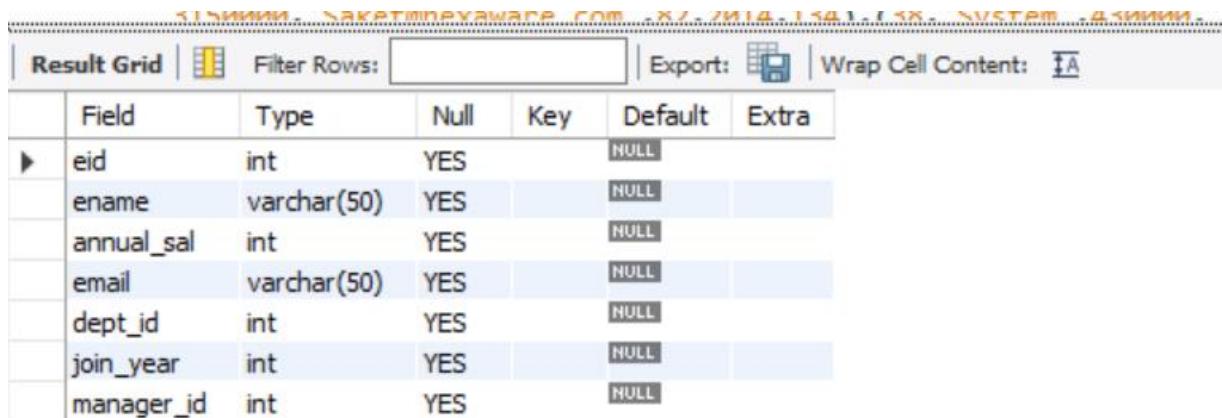
Trainer:- Mr. Veerababu
Date: 28/11/2023

Trainee: Suraj Kumar
Date of Sub: 29/11/23

Write the SQL Queries for each of the following query:

Note: The table name is ex_employee.

Here is the description of the table:

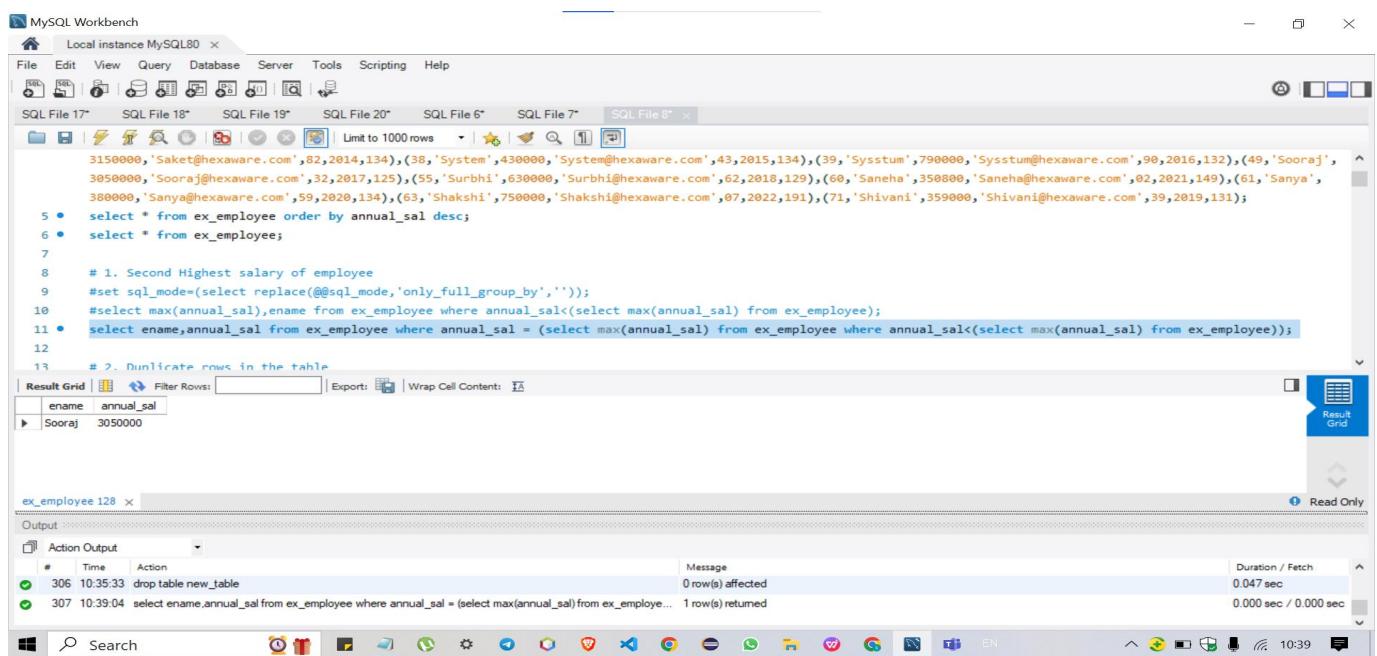


The screenshot shows the 'Result Grid' tab of MySQL Workbench displaying the schema for the 'ex_employee' table. The table has seven columns: eid, ename, annual_sal, email, dept_id, join_year, and manager_id. All columns are defined as integers (int) and have 'YES' listed under the 'Null' column. The 'Default' column for all columns contains the value 'NULL'. There are no entries in the 'Extra' column.

Field	Type	Null	Key	Default	Extra
eid	int	YES		NULL	
ename	varchar(50)	YES		NULL	
annual_sal	int	YES		NULL	
email	varchar(50)	YES		NULL	
dept_id	int	YES		NULL	
join_year	int	YES		NULL	
manager_id	int	YES		NULL	

SQL Exercises

1. Query to find Second Highest Salary of Employee?



The screenshot shows the MySQL Workbench interface with a script editor containing SQL code to find the second highest salary. The code uses common table expressions (CTEs) to first find the maximum salary and then find the second highest salary by filtering rows where the salary is less than the maximum. The output shows the result grid with one row: Sooraj with an annual salary of 3050000.

```

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help
SQL File 17* SQL File 18* SQL File 19* SQL File 20* SQL File 6* SQL File 7* SQL File 8* ×
Limit to 1000 rows | ⚡ Filter Rows: Export: Wrap Cell Content: Result Grid

5 • select * from ex_employee order by annual_sal desc;
6 • select * from ex_employee;
7
8 # 1. Second Highest salary of employee
9 #set sql_mode=(select replace(@@sql_mode,'only_full_group_by',''));
10 #select max(annual_sal),ename from ex_employee where annual_sal<(select max(annual_sal) from ex_employee);
11 • select ename,annual_sal from ex_employee where annual_sal = (select max(annual_sal) from ex_employee where annual_sal<(select max(annual_sal) from ex_employee));
12
13 # 2. Duplicate rows in the table

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid
ename annual_sal
Sooraj 3050000

Output
Action Output
# Time Action Message Duration / Fetch
306 10:35:33 drop table new_table 0 row(s) affected 0.047 sec
307 10:39:04 select ename,annual_sal from ex_employee where annual_sal = (select max(annual_sal) from ex_employee... 1 row(s) returned 0.000 sec / 0.000 sec

Search
EN
10:39

```

2. Query to find duplicate rows in table?

The screenshot shows the MySQL Workbench interface with several tabs open at the top: SQL File 17*, SQL File 18*, SQL File 19*, SQL File 20*, SQL File 6*, SQL File 7*, and SQL File 8*. The SQL File 8* tab contains the following SQL code:

```
7  
8  # 1. Second Highest salary of employee  
9  #set sql_mode=(select replace(@@sql_mode,'only_full_group_by',''));  
10 #select max(annual_sal),ename from ex_employee where annual_sal<(select max(annual_sal) from ex_employee);  
11 • select ename,annual_sal from ex_employee where annual_sal = (select max(annual_sal) from ex_employee where annual_sal<(select max(annual_sal) from ex_employee));  
12  
13 # 2. Duplicate rows in the table  
14 -- insert into ex_employee values(39,'Praveen',450000,'praveen@hexaware.com',108,2009,108),(36,'Anil',400000,'anil@hexaware.com',208,2019,100);  
15 select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;  
16  
17 # 3. Fetch monthly salary of employee  
18 • select ename,annual_sal div 12 as monthly_sal from ex_employee;
```

The Result Grid shows the following data:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
39	Praveen	450000	praveen@hexaware.com	108	2009	108
36	Anil	400000	anil@hexaware.com	208	2019	100

The Output pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
307	10:39:04	select ename,annual_sal from ex_employee where annual_sal = (select max(annual_sal) from ex_employee);	1 row(s) returned	0.000 sec / 0.000 sec
308	10:40:24	select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;	2 row(s) returned	0.000 sec / 0.000 sec

3. How to fetch monthly Salary of Employee if annual salary is given?

The screenshot shows the MySQL Workbench interface with several tabs open at the top: SQL File 17*, SQL File 18*, SQL File 19*, SQL File 20*, SQL File 6*, SQL File 7*, and SQL File 8*. The SQL File 8* tab contains the following SQL code:

```
17 # 3. Fetch monthly salary of employee  
18 • select ename,annual_sal div 12 as monthly_sal from ex_employee;  
19  
20 # 4. Fetch first record from the table  
21 • select * from ex_employee limit 1;  
22
```

The Result Grid shows the following data:

ename	monthly_sal
Sunil	29166
Susil	37500
Suraj	54166
Praveen	12500
subodh	36666
Sonu	29166
Soni	37500
Sheshank	31666
Sher	17083
Samosa	262500
Shayri	25833
Shekhar	31666

The Output pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
308	10:40:24	select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,join_year,manager_id having count(*)>1;	2 row(s) returned	0.000 sec / 0.000 sec
309	10:40:44	select ename,annual_sal div 12 as monthly_sal from ex_employee LIMIT 0, 1000	26 row(s) returned	0.000 sec / 0.000 sec

4.What is the Query to fetch first record from Employee table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:

```
18 • select ename,annual_sal div 12 as monthly_sal from ex_employee;
19
20 # 4. Fetch first record from the table
21 • select * from ex_employee limit 1;
22
23 # 5. Fetch last record from the table
```
- Result Grid:** Displays the result of the query `select * from ex_employee limit 1;`. The output is:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
1	Sunil	350000	sunil@hexaware.com	52	2019	111
- Action Output:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
309	10:40:44	select ename,annual_sal div 12 as monthly_sal from ex_employee LIMIT 0, 1000	26 row(s) returned	0.000 sec / 0.000 sec
310	10:41:07	select * from ex_employee limit 1	1 row(s) returned	0.000 sec / 0.000 sec

5.What is the Query to fetch last record from the table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:

```
23 # 5. Fetch last record from the table
24 • select * from ex_employee order by eid desc limit 1;
25
26 # 6. Display first 5 records from the table
27 • select * from ex_employee limit 5;
28
```
- Result Grid:** Displays the result of the query `select * from ex_employee order by eid desc limit 1;`. The output is:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
71	Shivani	359000	Shivani@hexaware.com	39	2019	131
- Action Output:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
310	10:41:07	select * from ex_employee limit 1	1 row(s) returned	0.000 sec / 0.000 sec
311	10:41:26	select * from ex_employee order by eid desc limit 1	1 row(s) returned	0.000 sec / 0.000 sec

6.What is Query to display first 5 Records from Employee table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains two queries:

```
24 • select * from ex_employee order by eid desc limit 1;
25
26 # 6. Display first 5 records from the table
27 • select * from ex_employee limit 5;
28
29 # 7. Display Nth from the table. --- let n = 10;
```
- Result Grid:** Displays the results of the second query, showing 5 rows of employee data:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
1	Sunil	350000	suni@hexaware.com	52	2019	111
2	Susil	450000	susil@hexaware.com	53	2019	112
3	Suraj	650000	suraj@hexaware.com	23	2023	121
4	Praveen	150000	praveen@hexaware.com	55	2021	116
5	subodh	440000	subodh@hexaware.com	34	2023	131
- Action Output:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
311	10:41:26	select * from ex_employee order by eid desc limit 1	1 row(s) returned	0.000 sec / 0.000 sec
312	10:41:49	select * from ex_employee limit 5	5 row(s) returned	0.000 sec / 0.000 sec

7. What is Query to display Nth Record from Employee table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains three queries:

```
29 # 7. Display Nth from the table. --- let n = 10;
30 • select * from ex_employee limit 1 offset 9; -- offset (n-1)
31
32 # 8. Dispay 3 highest salaries
33 • select annual_sal from ex_employee order by annual_sal desc limit 3;
```
- Result Grid:** Displays the results of the second query, showing 1 row of employee data:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
15	Samosa	3150000	Samosa@hexaware.com	19	2017	112
- Action Output:** Shows the execution log:

#	Time	Action	Message	Duration / Fetch
312	10:41:49	select * from ex_employee limit 5	5 row(s) returned	0.000 sec / 0.000 sec
313	10:42:07	select * from ex_employee limit 1 offset 9	1 row(s) returned	0.000 sec / 0.000 sec

8.How to get 3 Highest salaries records from Employee table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains three queries:
 - 30 • `select * from ex_employee limit 1 offset 9; -- offset (n-1)`
 - 31
 - 32 • `# 8. Dispay 3 highest salaries`
 - 33 • `select annual_sal from ex_employee order by annual_sal desc limit 3;`
 - 34
 - 35 • `# 9. Display odd rows from the table`
- Result Grid:** Shows the results of query 33, displaying the column `annual_sal` with values:

3150000
3150000
3050000
- Action Output:** Displays the execution log:

#	Time	Action	Message	Duration / Fetch
313	10:42:07	select * from ex_employee limit 1 offset 9	1 row(s) returned	0.000 sec / 0.000 sec
314	10:42:32	select annual_sal from ex_employee order by annual_sal desc limit 3	3 row(s) returned	0.000 sec / 0.000 sec

9.How to Display Odd rows in Employee table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains four queries:
 - 35 • `# 9. Display odd rows from the table`
 - 36 • `select * from ex_employee;`
 - 37 • `SELECT * FROM (SELECT ex_employee.* ,ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS row_num FROM ex_employee) AS numbered_rows WHERE row_num % 2 <> 0;`
 - 38
 - 39
 - 40 • `# 10. Display even rows from the table`
- Result Grid:** Shows the results of query 37, displaying the columns `eid`, `ename`, `annual_sal`, `email`, `dept_id`, `join_year`, `manager_id`, and `row_num`. The data includes:

eid	ename	annual_sal	email	dept_id	join_year	manager_id	row_num
1	Sunil	350000	sunil@hexaware.com	52	2019	111	1
3	Suraj	650000	suraj@hexaware.com	23	2023	121	3
6	subodh	440000	subodh@hexaware.com	34	2023	131	5
8	Soni	450000	Soni@hexaware.com	42	2019	152	7
10	Sher	205000	Sher@hexaware.com	58	2011	109	9
16	Shayri	310000	Shayri@hexaware.com	75	2019	162	11
20	Sona	780000	Sona@hexaware.com	62	2013	156	13
38	System	430000	System@hexaware.com	43	2015	134	15
49	Sooraj	305000	Sooraj@hexaware.com	32	2017	125	17
60	Saneha	350800	Saneha@hexaware.com	2	2021	149	19
63	Shakshi	750000	Shakshi@hexaware.com	7	2022	191	21
39	Praveen	450000	praveen@hexaware.com	108	2009	108	23
- Action Output:** Displays the execution log:

#	Time	Action	Message	Duration / Fetch
314	10:42:32	select annual_sal from ex_employee order by annual_sal desc limit 3	3 row(s) returned	0.000 sec / 0.000 sec
315	10:42:51	SELECT * FROM (SELECT ex_employee.* ,ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS ro... 13 row(s) returned	13 row(s) returned	0.000 sec / 0.000 sec

10. How to Display Even rows in Employee table?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:

```
40 # 10. Display even rows from the table
41 • select *
42 •   FROM (SELECT ex_employee.* ,ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS row_num FROM ex_employee) AS numbered_rows WHERE row_num % 2 = 0;
43
44
45 # 11. Fetch 3rd highest salary from the table using rank function().
```
- Result Grid:** Displays the results of the query, showing 13 rows of employee data with an additional column 'row_num' indicating the row number. The data includes columns: eid, ename, annual_sal, email, dept_id, join_year, manager_id, and row_num.
- Action Output:** Shows two log entries for the executed queries.
- System Bar:** Includes standard Windows-style icons for search, taskbar, and system status.

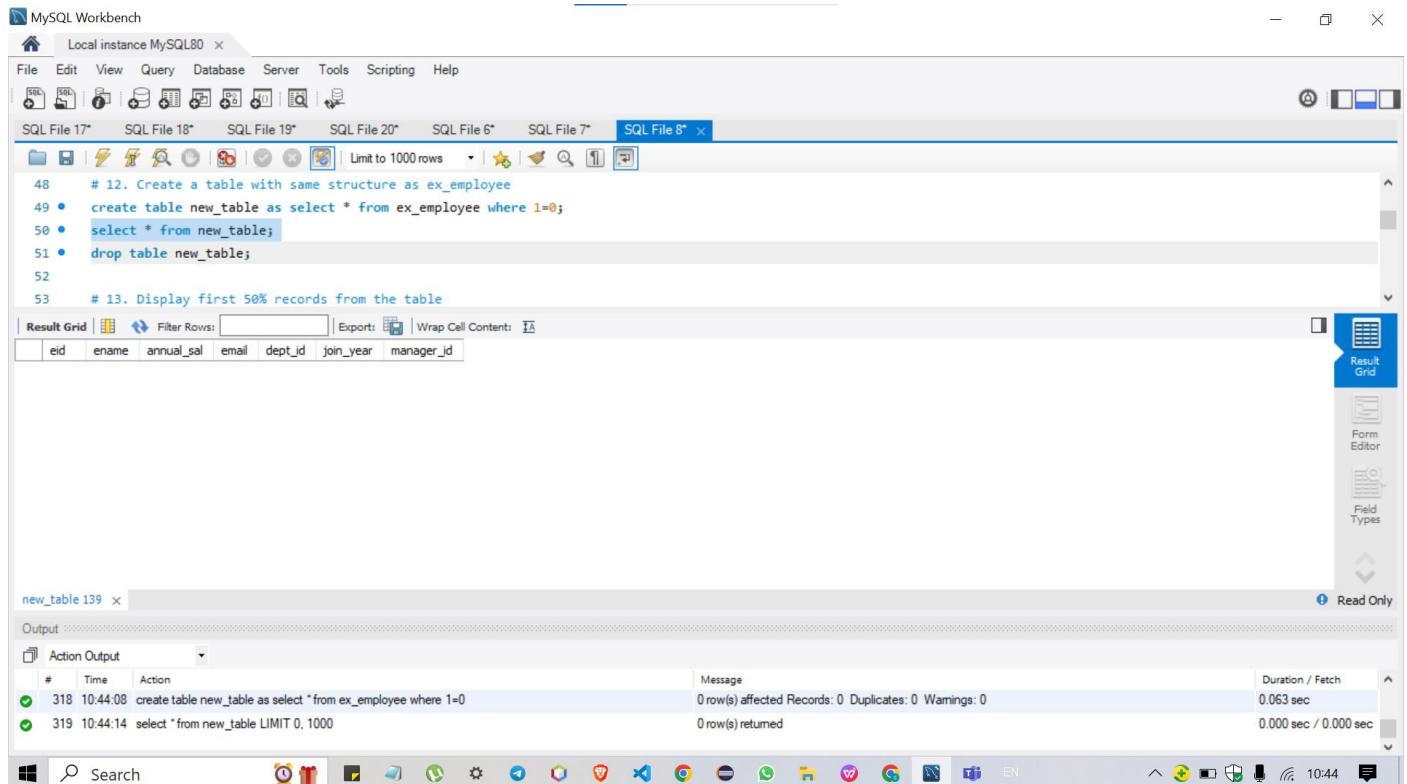
11. How to fetch 3rd highest salary using Rank Function?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:

```
45 # 11. Fetch 3rd highest salary from the table using rank function().
46 • SELECT eid, ename, annual_sal FROM (SELECT eid,ename, annual_sal, RANK() OVER (ORDER BY annual_sal DESC) AS salary_rank FROM ex_employee) AS ranked_salaries WHERE
47 salary_rank = 3;
48
49 # 12. Create a table with same structure as ex_employee
49 • create table new_table as select * from ex_employee where 1=0;
```
- Result Grid:** Displays the results of the query, showing 1 row of data with columns: eid, ename, and annual_sal.
- Action Output:** Shows two log entries for the executed queries.
- System Bar:** Includes standard Windows-style icons for search, taskbar, and system status.

12. How Can i create table with same structure of Employee table?



```
48 # 12. Create a table with same structure as ex_employee
49 • create table new_table as select * from ex_employee where 1=0;
50 • select * from new_table;
51 • drop table new_table;
52
53 # 13. Display first 50% records from the table
```

eid	ename	annual_sal	email	dept_id	join_year	manager_id

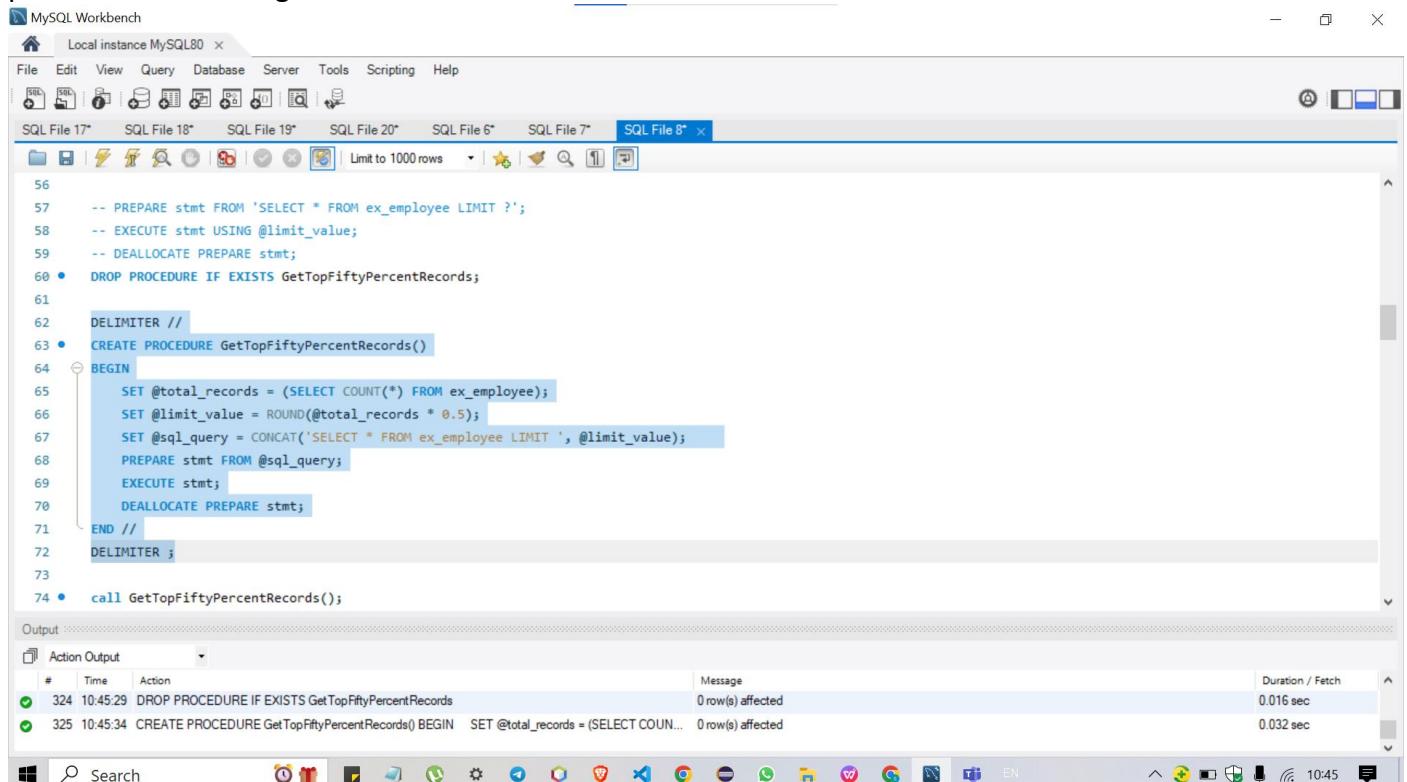
new_table 139 x

Output

#	Time	Action	Message	Duration / Fetch
318	10:44:08	create table new_table as select * from ex_employee where 1=0	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.063 sec
319	10:44:14	select * from new_table LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec

13. Display first 50% records from Employee table?

I have created a STORED PROCEDURE first and then called the procedure. The query execution of the procedure is following:



```
56
57 -- PREPARE stmt FROM 'SELECT * FROM ex_employee LIMIT ?';
58 -- EXECUTE stmt USING @limit_value;
59 -- DEALLOCATE PREPARE stmt;
60 • DROP PROCEDURE IF EXISTS GetTopFiftyPercentRecords;
61
62 DELIMITER //
63 • CREATE PROCEDURE GetTopFiftyPercentRecords()
64 BEGIN
65     SET @total_records = (SELECT COUNT(*) FROM ex_employee);
66     SET @limit_value = ROUND(@total_records * 0.5);
67     SET @sql_query = CONCAT('SELECT * FROM ex_employee LIMIT ', @limit_value);
68     PREPARE stmt FROM @sql_query;
69     EXECUTE stmt;
70     DEALLOCATE PREPARE stmt;
71 END //
72 DELIMITER ;
73
74 • call GetTopFiftyPercentRecords();
```

Output

#	Time	Action	Message	Duration / Fetch
324	10:45:29	DROP PROCEDURE IF EXISTS GetTopFiftyPercentRecords	0 row(s) affected	0.016 sec
325	10:45:34	CREATE PROCEDURE GetTopFiftyPercentRecords() BEGIN SET @total_records = (SELECT COUN... 0 row(s) affected		0.032 sec

And then the query for fetching first 50% of record is as follows:

The screenshot shows the MySQL Workbench interface with the following details:

- SQL File 8*** tab is selected.
- SQL code:

```

71  END //;
72  DELIMITER ;
73
74 • call GetTopFiftyPercentRecords();
75
76 # 14. Display last 50% records from the table
    
```
- Result Grid** pane displays the results of the query:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
1	Sunil	350000	sunil@hexaware.com	52	2019	111
2	Susil	450000	susil@hexaware.com	53	2019	112
3	Suraj	650000	suraj@hexaware.com	23	2023	121
4	Praveen	150000	praveen@hexaware.com	55	2021	116
6	subodh	440000	subodh@hexaware.com	34	2023	131
7	Sonu	350000	Sonu@hexaware.com	69	2022	141
8	Soni	450000	Soni@hexaware.com	42	2019	152
9	Sheshank	380000	Sheshank@hexaware.com	53	2010	151
10	Sher	205000	Sher@hexaware.com	58	2011	109
15	Samos	3150000	Samosa@hexaware.com	19	2017	112
16	Shayri	310000	Shayri@hexaware.com	75	2019	162
19	Shekhar	380000	Shekhar@hexaware.com	22	2012	172
- Output** pane shows the execution log:

```

# Time Action
322 10:44:56 CREATE PROCEDURE GetTopFiftyPercentRecords() BEGIN SET @total_records = (SELECT COUNT(*)
FROM ex_employee);
0 row(s) affected
Duration / Fetch 0.016 sec

323 10:45:01 call GetTopFiftyPercentRecords()
13 row(s) returned
Duration / Fetch 0.015 sec / 0.000 sec
    
```

14. Display last 50% records from Employee table?

Similarly , I have created the STORED PROCEDURE for fetching the last 50% record as well.

The screenshot shows the MySQL Workbench interface with the following details:

- SQL File 8*** tab is selected.
- SQL code:

```

76 # 14. Display last 50% records from the table
77 • Df Execute the selected portion of the script or everything, if there is no selection
78
79 DELIMITER //
80 • CREATE PROCEDURE GetBottomFiftyPercentRecords()
81 BEGIN
82     SET @total_records = (SELECT COUNT(*) FROM ex_employee);
83     SET @limit_value = ROUND(@total_records * 0.5);
84     SET @offset_value = @total_records - @limit_value;
85     SET @sql_query = CONCAT('SELECT * FROM ex_employee LIMIT ', @offset_value, ', ', @limit_value);
86     PREPARE stmt FROM @sql_query;
87     EXECUTE stmt;
88     DEALLOCATE PREPARE stmt;
89 END //
90 DELIMITER ;
91 • call GetBottomFiftyPercentRecords();
92
93
94
    
```
- Output** pane shows the execution log:

```

# Time Action
326 10:45:59 DROP PROCEDURE IF EXISTS GetBottomFiftyPercentRecords
0 row(s) affected, 1 warning(s): 1305 PROCEDURE hexaware.GetBottomFiftyPercentRecords does not e...
Duration / Fetch 0.015 sec

327 10:46:04 CREATE PROCEDURE GetBottomFiftyPercentRecords() BEGIN SET @total_records = (SELECT CO... 0 row(s) affected
Duration / Fetch 0.015 sec
    
```

The output after calling the procedure is as follows:

MySQL Workbench - Local instance MySQL80

```
82 SET @total_records = (SELECT COUNT(*) FROM ex_employee);
83 SET @limit_value = ROUND(@total_records * 0.5);
84 SET @offset_value = @total_records - @limit_value;
85 SET @sql_query = CONCAT('SELECT * FROM ex_employee LIMIT ', @offset_value, ', ', @limit_value);
86 PREPARE stmt FROM @sql_query;
87 EXECUTE stmt;
88 DEALLOCATE PREPARE stmt;
89 END //
90 DELIMITER ;
91 • call GetBottomFiftyPercentRecords();
92
93
```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid

eid	ename	annual_sal	email	dept_id	join_year	manager_id
31	Saket	3150000	Saket@hexaware.com	82	2014	134
38	System	430000	System@hexaware.com	43	2015	134
39	Systum	790000	Systum@hexaware.com	90	2016	132
49	Sooraj	3050000	Sooraj@hexaware.com	32	2017	125
55	Surbhi	630000	Surbhi@hexaware.com	62	2018	129

Output

Action Output

#	Time	Action	Message	Duration / Fetch
327	10:46:04	CREATE PROCEDURE GetBottomFiftyPercentRecords() BEGIN	SET @total_records = (SELECT CO... 0 row(s) affected	0.015 sec
328	10:46:22	call GetBottomFiftyPercentRecords()	13 row(s) returned	0.016 sec / 0.000 sec

15. How Can i create table with same structure with data of Employe table?

Create table new_table as select * from ex_employee;

MySQL Workbench - Local instance MySQL80

```
92
93
94
95 # 15. Create new table with same structure and the data as ex_employee table;
96 • create table new_table as select * from ex_employee;
97 • select * from new_table;
98 • drop table new_table;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid

eid	ename	annual_sal	email	dept_id	join_year	manager_id
1	Sunil	350000	sunil@hexaware.com	52	2019	111
2	Susil	450000	susil@hexaware.com	53	2019	112
3	Suraj	650000	suraj@hexaware.com	23	2023	121
4	Praveen	150000	praveen@hexaware.com	55	2021	116
6	subodh	440000	subodh@hexaware.com	34	2023	131
7	Sonu	350000	Sonu@hexaware.com	69	2022	141
8	Soni	450000	Soni@hexaware.com	42	2019	152
9	Sheshank	380000	Sheshank@hexaware.com	53	2010	151
10	Sher	205000	Sher@hexaware.com	58	2011	109
15	Samosa	3150000	Samosa@hexaware.com	19	2017	112
16	Chauri	310000	Chauri@hexaware.com	75	2019	162

new_table 142 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
329	10:46:41	create table new_table as select * from ex_employee	26 row(s) affected Records: 26 Duplicates: 0 Warnings: 0	0.078 sec
330	10:46:45	select * from new_table LIMIT 0, 1000	26 row(s) returned	0.000 sec / 0.000 sec

16.How do i fetch only common records between 2 tables.

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:


```
98 • drop table new_table;
99
100
101 # 16. Fetch common records between 2 tables
102 • delete from new_table where eid in(1,3,4,15,19,31,8,9,10,21,11,13);
103 • select t1.* ,t2.* from ex_employee t1 inner join new_table t2 on t1.eid=t2.eid;
```
- Result Grid:** Displays the results of the query, showing 144 rows of employee data from the ex_employee table.
- Action Output:** Shows the log of actions taken:

#	Time	Action	Message	Duration / Fetch
332	10:47:23	delete from new_table where eid in(1,3,4,15,19,31,8,9,10,21,11,13)	9 row(s) affected	0.016 sec
333	10:47:26	select t1.* ,t2.* from ex_employee t1 inner join new_table t2 on t1.eid=t2.eid LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec

17.Find Query to get information of Employee where Employee is not assigned to the department

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:


```
103 • select t1.* ,t2.* from ex_employee t1 inner join new_table t2 on t1.eid=t2.eid;
104
105 # 17. Fetch records of employees who are not assigned to any department
106 • update ex_employee set dept_id = null where eid in(2,22,13,31,19,91,1);
107 • select * from ex_employee;
108 • select * from ex_employee where dept_id is null or dept_id=0;
109
```
- Result Grid:** Displays the results of the query, showing 145 rows of employee data from the ex_employee table, where dept_id is either null or 0.
- Action Output:** Shows the log of actions taken:

#	Time	Action	Message	Duration / Fetch
334	10:47:53	update ex_employee set dept_id = null where eid in(2,22,13,31,19,91,1)	4 row(s) affected Rows matched: 4 Changed: 4 Warnings: 0	0.031 sec
335	10:47:57	select * from ex_employee where dept_id is null or dept_id=0 LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec

18.How to get distinct records from the table without using distinct keyword?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains two queries:


```
108 • select * from ex_employee where dept_id is null or dept_id=0;
109
110 # 18. How to get distinct records from the table without using distinct keyword.
111 • select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
112 • select * from ex_employee group by eid,ename,email,annual_sal,dept_id,manager_id order by eid;
113
114 # 19.Select all records from Employee table whose name is 'Anil and 'Praveen'
```
- Result Grid:** Displays the results of the first query, showing 146 rows of employee data.
- Action Output:** Shows the execution log with two entries:

#	Time	Action	Message	Duration / Fetch
335	10:47:57	select * from ex_employee where dept_id is null or dept_id=0 LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
336	10:48:22	select * from ex_employee group by eid,ename,email,annual_sal,dept_id,manager_id order by eid LIMIT 0, ...	24 row(s) returned	0.000 sec / 0.000 sec

19.Select all records from Employee table whose name is 'Anil and 'Praveen'

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains three queries:


```
113
114 # 19.Select all records from Employee table whose name is 'Anil and 'Praveen'
115 • insert into ex_employee values(39,'Praveen',450000,'praveen@hexaware.com',108,2009,108),(36,'Anil',400000,'anil@hexaware.com',208,2019,100);
116 • Select * from ex_employee where ename in('Anil','Praveen');
117
118 # 20.Select all records from Employee table where name not in 'Anil and 'Praveen'
119 • Select * from ex_employee where ename not in('Anil','Praveen');
```
- Result Grid:** Displays the results of the second query, showing 147 rows of employee data.
- Action Output:** Shows the execution log with two entries:

#	Time	Action	Message	Duration / Fetch
336	10:48:22	select * from ex_employee group by eid,ename,email,annual_sal,dept_id,manager_id order by eid LIMIT 0, ...	24 row(s) returned	0.000 sec / 0.000 sec
337	10:48:44	Select * from ex_employee where ename in('Anil','Praveen') LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

20.Select all records from Employee table where name not in ‘Anil and ‘Praveen’

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the following SQL code:

```
114 # 19.Select all records from Employee table whose name is 'Anil and 'Praveen'
115 • insert into ex_employee values(39,'Praveen',450000,'praveen@hexaware.com',108,2009,108),(36,'Anil',400000,'anil@hexaware.com',208,2019,108);
116 • Select * from ex_employee where ename in('Anil','Praveen');
117
118 # 20.Select all records from Employee table where name not in 'Anil and 'Praveen'
119 • Select * from ex_employee where ename not in('Anil','Praveen');
120
```
- Result Grid:** Displays the results of the query in a tabular format. The columns are eid, ename, annual_sal, email, dept_id, join_year, and manager_id. The data includes 148 rows.
- Output:** Shows the execution log with two entries:

#	Time	Action	Message	Duration / Fetch
337	10:48:44	Select * from ex_employee where ename in('Anil','Praveen') LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
338	10:49:02	Select * from ex_employee where ename not in('Anil','Praveen') LIMIT 0, 1000	21 row(s) returned	0.000 sec / 0.000 sec

21.how to write sql query for the below scenario

I/p:DATABASE

O/p:

D
A
T
A
B
A
S
E

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. Below the menu is a toolbar with various icons. The main area has several tabs open: SQL File 17*, SQL File 18*, SQL File 19*, SQL File 20*, SQL File 6*, SQL File 7*, and SQL File 8*. The SQL File 8* tab is active, displaying the following query:

```

134  SELECT 'A'
135  UNION
136  SELECT 'T'
137  UNION
138  SELECT 'A'
139  UNION
140  SELECT 'B'
141  UNION
142  SELECT 'A'
143  UNION
144  SELECT 'S'

```

Below the query editor is a Result Grid pane showing the output:

Letter
D
A
T
B
S
E

The Result Grid pane also displays "Result 149" and has a "Read Only" option. At the bottom of the interface is a Windows taskbar with various pinned icons.

The above query I used is something like Brute-Force and it is not flexible also. But the same can be done using Stored Procedure and calling the procedure with an IN input. Like as Following:

```

-- DELIMITER //
-- CREATE PROCEDURE SplitStringToRows(IN input_string VARCHAR(255))
-- BEGIN
--   DECLARE i INT DEFAULT 1;
--   DECLARE char_length INT;--
--   SET char_length = LENGTH(input_string);
--   WHILE i <= char_length DO
--     SELECT SUBSTRING(input_string, i, 1) AS Letter;
--     SET i = i + 1;
--   END WHILE;
-- END //
-- DELIMITER ;
-- CALL SplitStringToRows('DATABASE');

```

22.How to fetch all the records from Employee whose joining year is 2017?

The screenshot shows the MySQL Workbench interface. The SQL tab contains the following code:

```
159 -- CALL SplitStringToRows('DATABASE');
160
161
162
163
164 #. 22.How to fetch all the records from Employee whose joining year is 2017?
165 • select * from ex_employee where join_year = 2017;
166
167 # 23.What is SQL Query to find maximum salary of each department?
168 • update ex_employee set annual_sal=null where dept_id is null or 0;
169 • select dept_id, max(annual_sal) as Max_Sal from ex_employee group by dept_id order by annual_sal desc;
```

The Result Grid shows the following data:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
15	Samosa	3150000	Samosa@hexaware.com	19	2017	112
49	Sooraj	3050000	Sooraj@hexaware.com	32	2017	125

The Output tab shows the following log entries:

#	Time	Action	Message	Duration / Fetch
339	10:49:33	SELECT D AS Letter UNION SELECT 'A' UNION SELECT 'T' UNION SELECT 'A' UNION SELECT 'B' ...	6 row(s) returned	0.000 sec / 0.000 sec
340	10:50:09	select * from ex_employee where join_year = 2017 LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec

23.What is SQL Query to find maximum salary of each department?

The screenshot shows the MySQL Workbench interface. The SQL tab contains the following code:

```
164 #. 22.How to fetch all the records from Employee whose joining year is 2017?
165 • select * from ex_employee where join_year = 2017;
166
167 # 23.What is SQL Query to find maximum salary of each department?
168 • update ex_employee set annual_sal=null where dept_id is null or 0;
169 • select dept_id, max(annual_sal) as Max_Sal from ex_employee group by dept_id order by annual_sal desc;
```

The Result Grid shows the following data:

dept_id	Max_Sal
19	3150000
32	3050000
90	790000
62	780000
7	750000
23	650000
42	450000
108	450000
34	440000
43	430000
...	...
Result 151 x	...

The Output tab shows the following log entries:

#	Time	Action	Message	Duration / Fetch
341	10:50:30	update ex_employee set annual_sal=null where dept_id is null or 0	4 row(s) affected Rows matched: 4 Changed: 4 Warnings: 0	0.000 sec
342	10:50:33	select dept_id, max(annual_sal) as Max_Sal from ex_employee group by dept_id order by annual_sal desc... 20 row(s) returned		0.000 sec / 0.000 sec

24.How Do you find all Employees with its managers?(Consider there is manager id also in Employee table)?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains several SQL statements:
 - 169 • select dept_id, max(annual_sal) as Max_Sal from ex_employee group by dept_id order by annual_sal desc;
 - 170
 - 171 # 24.How Do you find all Employees with its managers?(Consider there is manager id also in Employee table)
 - 172 • Select ename as Employee, manager_id as Manager from ex_employee where manager_id is not null or 0;
 - 173
 - 174 # 25.Display the name of employees who have joined in 2016 and salary is greater than 10000?
 - 175 • select * from ex_employee where join_year = 2016;
- Result Grid:** Displays the output of the second query:

Employee	Manager
Sunil	111
Susil	112
Suraj	121
Praveen	116
subodh	131
Sonu	141
Soni	152
Sheshank	151
Sher	109
Samosa	112
- Action Output:** Shows two log entries:

#	Time	Action	Message	Duration / Fetch
342	10:50:33	select dept_id,max(annual_sal) as Max_Sal from ex_employee group by dept_id order by annual_sal desc...	20 row(s) returned	0.000 sec / 0.000 sec
343	10:50:59	Select ename as Employee, manager_id as Manager from ex_employee where manager_id is not null or 0 ...	26 row(s) returned	0.000 sec / 0.000 sec

25.Display the name of employees who have joined in 2016 and salary is greater than 10000?

The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains several SQL statements:
 - 170
 - 171 # 24.How Do you find all Employees with its managers?(Consider there is manager id also in Employee table)
 - 172 • Select ename as Employee, manager_id as Manager from ex_employee where manager_id is not null or 0;
 - 173
 - 174 # 25.Display the name of employees who have joined in 2016 and salary is greater than 10000?
 - 175 • select * from ex_employee where join_year = 2016;
 - 176 • update ex_employee set join_year = 2016 where eid in(4,6,22,13,31);
- Result Grid:** Displays the output of the fourth query:

eid	ename	annual_sal	email	dept_id	join_year	manager_id
39	Sysstum	790000	Systum@hexaware.com	90	2016	132
- Action Output:** Shows two log entries:

#	Time	Action	Message	Duration / Fetch
343	10:50:59	Select ename as Employee, manager_id as Manager from ex_employee where manager_id is not null or 0 ...	26 row(s) returned	0.000 sec / 0.000 sec
344	10:51:15	select * from ex_employee where join_year = 2016 LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

26.How to display following using query?

*
**

The screenshot shows the MySQL Workbench interface with a SQL editor tab titled "SQL File 8*". The query being run is:

```
180 # 26.How to display following using query?
181 -- *
182 -- **
183 -- ***
184 • SELECT LPAD('**', 1, '**') AS pattern
UNION ALL
185 SELECT LPAD('**', 2, '**')
UNION ALL
186 SELECT LPAD('**', 3, '**');
187
188
189
190
191 # 27.How to add the email validation using only one query?
```

The result grid shows the output:

pattern
*
**

The status bar at the bottom indicates "Result 154 x" and "Read Only".

27.How to add the email validation using only one query?

The screenshot shows the MySQL Workbench interface with a SQL editor tab titled "SQL File 8*". The query being run is:

```
185 UNION ALL
186 SE Execute the selected portion of the script or everything, if there is no selection
187 UNION ALL
188 SELECT LPAD('**', 3, '**');
189
190
191 # 27.How to add the email validation using only one query?
192 • alter table ex_employee drop constraint chk_valid_email;
193 • ALTER TABLE ex_employee ADD CONSTRAINT chk_valid_email CHECK (email REGEXP '^[A-Za-z0-9._%-]+@[A-Za-z0-9.-]+\.[A-Z|a-z]{2,4}$');
194
195 # 28.How to display 1 to 100 Numbers with query?
196 • WITH RECURSIVE NumbersCTE AS (SELECT 1 AS Number
UNION
197     SELECT Number + 1 FROM NumbersCTE WHERE Number < 100)SELECT Number FROM NumbersCTE;
198
199
200 # 29.How to remove duplicate rows from table?
201 -- select count(*) as total_records from ex_employee;
202 -- select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
203 • DELETE ex_employee FROM ex_employee JOIN (SELECT eid, ename, dept_id, email FROM ex_employee GROUP BY eid, ename, dept_id, email HAVING COUNT(*) > 1) duplicate_records
```

The status bar at the bottom indicates "Result 154 x" and "Read Only".

28.How to display 1 to 100 Numbers with query?++

The screenshot shows the MySQL Workbench interface with the following details:

- Title Bar:** MySQL Workbench - Local instance MySQL80
- Toolbar:** Standard MySQL Workbench toolbar with icons for file operations, database management, and scripting.
- SQL Editor:** SQL File 8* tab selected. The code is:

```
195 # 28.How to display 1 to 100 Numbers with query?
196 • WITH RECURSIVE NumbersCTE AS (SELECT 1 AS Number
197     UNION
198     SELECT Number + 1 FROM NumbersCTE WHERE Number < 100)SELECT Number FROM NumbersCTE;
199
200 # 29.How to remove duplicate rows from table?
```
- Result Grid:** Shows the output of the query, displaying the first 12 numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12. A message indicates "Result 155" rows returned.
- Action Output:** Shows two log entries:
 - ALTER TABLE ex_employee ADD CONSTRAINT chk_valid_email CHECK (email REGEXP '^[A-Za-z0-9... 26 row(s) affected Records: 26 Duplicates: 0 Warnings: 0 Duration / Fetch: 0.141 sec
 - WITH RECURSIVE NumbersCTE AS (SELECT 1 AS Number UNION SELECT Number + 1 FROM Nu... 100 row(s) returned Duration / Fetch: 0.000 sec / 0.000 sec
- System Tray:** Windows taskbar with various pinned icons like File Explorer, Task View, and Start.

29.How to remove duplicate rows from table?++

The screenshot shows the MySQL Workbench interface with the following details:

- Title Bar:** MySQL Workbench - Local instance MySQL80
- Toolbar:** Standard MySQL Workbench toolbar with icons for file operations, database management, and scripting.
- SQL Editor:** SQL File 8* tab selected. The code is:

```
195 # 28.How to display 1 to 100 Numbers with query?
196 • WITH RECURSIVE NumbersCTE AS (SELECT 1 AS Number
197     UNION
198     SELECT Number + 1 FROM NumbersCTE WHERE Number < 100)SELECT Number FROM NumbersCTE;
199
200 # 29.How to remove duplicate rows from table?
201 -- select count(*) as total_records from ex_employee;
202 -- select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
203 • DELETE ex_employee FROM ex_employee JOIN (SELECT eid, ename, dept_id, email FROM ex_employee GROUP BY eid, ename, dept_id, email HAVING COUNT(*) > 1) duplicate_records
ON ex_employee.eid = duplicate_records.eid;
204
205
206 # 30.How to find count of duplicate rows?
207 -- select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
208 • select ename,count(*) as Total_Dup from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
209
210 # Delete all records
211 • delete from ex_employee;
212
```
- Action Output:** Shows two log entries:
 - WITH RECURSIVE NumbersCTE AS (SELECT 1 AS Number UNION SELECT Number + 1 FROM Nu... 100 row(s) returned Duration / Fetch: 0.000 sec / 0.000 sec
 - DELETE ex_employee FROM ex_employee JOIN (SELECT eid, ename, dept_id, email FROM ex_employee GROUP BY eid, ename, dept_id, email HAVING COUNT(*) > 1) duplicate_records ON ex_employee.eid = duplicate_records.eid; 5 row(s) affected Duration / Fetch: 0.016 sec
- System Tray:** Windows taskbar with various pinned icons like File Explorer, Task View, and Start.

30.How to find count of duplicate rows?

++

The screenshot shows the MySQL Workbench interface with several tabs open. The active tab is 'SQL File 8*'. The SQL code in the editor is as follows:

```
202 -- select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
203 • DELETE ex_employee FROM ex_employee JOIN (SELECT eid, ename, dept_id, email FROM ex_employee GROUP BY eid, ename, dept_id, email HAVING COUNT(*) > 1) duplicate_records
ON ex_employee.eid = duplicate_records.eid;
204
205
206 # 30.How to find count of duplicate rows?
207 -- select eid,ename,annual_sal,email,dept_id,join_year,manager_id from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
208 • insert into ex_employee values(39,'Praveen',450000,'praveen@hexaware.com',108,2009,108),(36,'Anil',400000,'anil@hexaware.com',208,2019,100);
209
210 • select ename,count(*) as Total_Dup from ex_employee group by eid,ename,email,dept_id,manager_id having count(*)>1;
211
212 # Delete all records.
```

The 'Result Grid' pane shows the following data:

ename	Total_Dup
Praveen	2
Anil	2

The 'Output' pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
354	10:55:51	insert into ex_employee values(39,'Praveen',450000,'praveen@hexaware.com',108,2009,108),(36,'Anil',400000,'anil@hexaware.com',208,2019,100);	2 row(s) affected Records: 2 Duplicates: 0 Warnings: 0	0.016 sec
355	10:55:54	select ename,count(*) as Total_Dup from ex_employee group by eid,ename,email,dept_id,manager_id ha...	2 row(s) returned	0.000 sec / 0.000 sec