

## ASINGMENT NO - 2 FILTERING

Note : Create the following dummy table in MySQL Workbench using CREATE FUNCTION-

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

- Navigator:** Shows the schema `company_db` which contains tables like `employees`, `departments`, and `salaries`.
- Query Grid:** Displays a query that inserts data into the `employees` table and then selects all rows from it.

```
49 values
50 (108,'Simran Kaur','Finance','Mumbai','58000','2021-08-03');
51 • select * from employees;
52
53 • insert into employees
54 values
55 (109,'Arjun Reddy','IT','Hyderabad','70000','2022-02-18');
56 • select * from employees;
```

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
101	Rahul Mehra	Sales	Delhi	55000	2020-04-12
102	Priya Sharma	HR	Mumbai	62000	2019-09-25
103	Aman Singh	IT	bengaluru	72000	2021-03-10
104	Neha Patel	Sales	Delhi	45000	2022-01-14
105	Karan Joshi	Marketing	Pune	45000	2018-07-14
106	Divya Nair	IT	Chennai	81000	2019-12-11
107	Raj Kumar	HR	Delhi	60000	2020-05-28
108	Simran Kaur	Finance	Mumbai	58000	2021-08-03
109	Arjun Reddy	IT	Hyderabad	70000	2022-02-18
110	Anjali Das	Sales	Kolkata	51000	2023-01-15

- Output Grid:** Shows the execution history and performance metrics for the queries.

#	Time	Action	Message	Duration / Fetch
19	23:26:39	select * from employees	8 row(s) returned	0.000 sec / 0.000 sec
20	23:28:52	insert into employees values (109,'Arjun Reddy','IT','Hyderabad','70000','2022-02-18')	1 row(s) affected	0.000 sec
21	23:29:00	select * from employees	9 row(s) returned	0.000 sec / 0.000 sec
22	23:30:44	insert into employees values (110,'Anjali Das','Sales','Kolkata','51000','2023-01-15')	1 row(s) affected	0.016 sec
23	23:30:56	select * from employees	10 row(s) returned	0.000 sec / 0.000 sec

<b>QUESTION 1</b>	<b>: Show employees working in either the 'IT' or 'HR' departments.</b>																																																																							
<b>ANSWER</b>	<p>The screenshot shows the MySQL Workbench interface. The SQL editor window contains the following code:</p> <pre> MySQL Workbench File Edit View Query Database Server Tools Scripting Help Navigator : Assignment no 2 SQL* Schemas company_db Tables Views Stored Procedures Functions company_md employee mitesh orders pw_skills pwskills sakila sys world  53 • insert into employees 54 values 55 (109,'Arjun Reddy','IT','Hyderabad','70000','2022-02-18'); 56 • select * from employees; 57 58 • insert into employees 59 values 60 (110,'Anjali Das','Sales','Kolkata','51000','2023-01-15'); 61 • select * from employees; 62 63 • select * from employees 64 where department in ('IT','HR'); 65 • select * from employees 66 67 </pre> <p>The Results Grid shows the following data:</p> <table border="1"> <thead> <tr> <th>Emp_Id</th> <th>Emp_Name</th> <th>Department</th> <th>City</th> <th>Salary</th> <th>Hire_Date</th> </tr> </thead> <tbody> <tr> <td>102</td> <td>Priya Sharma</td> <td>HR</td> <td>Mumbai</td> <td>62000</td> <td>2019-09-25</td> </tr> <tr> <td>103</td> <td>Aman Singh</td> <td>IT</td> <td>bengaluru</td> <td>72000</td> <td>2021-03-10</td> </tr> <tr> <td>106</td> <td>Divya Nair</td> <td>IT</td> <td>Chennai</td> <td>81000</td> <td>2019-12-11</td> </tr> <tr> <td>107</td> <td>Raj Kumar</td> <td>HR</td> <td>Delhi</td> <td>60000</td> <td>2020-05-28</td> </tr> <tr> <td>109</td> <td>Arjun Reddy</td> <td>IT</td> <td>Hyderabad</td> <td>70000</td> <td>2022-02-18</td> </tr> </tbody> </table> <p>The Action Output log shows the following activity:</p> <table border="1"> <thead> <tr> <th>#</th> <th>Time</th> <th>Action</th> <th>Message</th> <th>Duration / Fetch</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>23:28:52</td> <td>insert into employees values (109,'Arjun Reddy','IT','Hyderabad','70000','2022-02-18')</td> <td>1 row(s) affected</td> <td>0.000 sec</td> </tr> <tr> <td>21</td> <td>23:29:00</td> <td>select * from employees</td> <td>9 row(s) returned</td> <td>0.000 sec / 0.000 sec</td> </tr> <tr> <td>22</td> <td>23:30:44</td> <td>insert into employees values (110,'Anjali Das','Sales','Kolkata','51000','2023-01-15')</td> <td>1 row(s) affected</td> <td>0.016 sec</td> </tr> <tr> <td>23</td> <td>23:30:56</td> <td>select * from employees</td> <td>10 row(s) returned</td> <td>0.000 sec / 0.000 sec</td> </tr> <tr> <td>24</td> <td>23:54:01</td> <td>select * from employees where department in ('IT','HR')</td> <td>5 row(s) returned</td> <td>0.000 sec / 0.000 sec</td> </tr> </tbody> </table>						Emp_Id	Emp_Name	Department	City	Salary	Hire_Date	102	Priya Sharma	HR	Mumbai	62000	2019-09-25	103	Aman Singh	IT	bengaluru	72000	2021-03-10	106	Divya Nair	IT	Chennai	81000	2019-12-11	107	Raj Kumar	HR	Delhi	60000	2020-05-28	109	Arjun Reddy	IT	Hyderabad	70000	2022-02-18	#	Time	Action	Message	Duration / Fetch	20	23:28:52	insert into employees values (109,'Arjun Reddy','IT','Hyderabad','70000','2022-02-18')	1 row(s) affected	0.000 sec	21	23:29:00	select * from employees	9 row(s) returned	0.000 sec / 0.000 sec	22	23:30:44	insert into employees values (110,'Anjali Das','Sales','Kolkata','51000','2023-01-15')	1 row(s) affected	0.016 sec	23	23:30:56	select * from employees	10 row(s) returned	0.000 sec / 0.000 sec	24	23:54:01	select * from employees where department in ('IT','HR')	5 row(s) returned	0.000 sec / 0.000 sec
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**QUESTION 2**

Retrieve employees whose department is in ‘Sales’, ‘IT’, or ‘Finance’.

**ANSWER**

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

- Navigator:** Shows the schema `company_db` which contains tables like `employees`, `departments`, etc.
- Query Editor:** Displays the following SQL code:

```
62
63  ## QUESTION NO 1
64 •  select * from employees
65  where department in ('IT','HR');
66 •  select * from employees;
67
68  ## QUESTION NO 2
69 •  SELECT *FROM employees
70 WHERE department IN ('Sales', 'IT', 'Finance');
71
72
73
```
- Result Grid:** Shows the results of the query in the `employees` table:

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
101	Rahul Mehra	Sales	Delhi	55000	2020-04-12
103	Aman Singh	IT	bengaluru	72000	2021-03-10
104	Neha Patel	Sales	Delhi	48000	2022-01-14
106	Divya Nair	IT	Chennai	81000	2019-12-11
108	Simran Kaur	Finance	Mumbai	58000	2021-08-03
109	Arjun Reddy	IT	Hyderabad	70000	2022-02-18
110	Anjali Das	Sales	Kolkata	51000	2023-01-15
- Action Output:** Shows the history of actions taken in the session:

#	Time	Action	Message	Duration / Fetch
22	23:30:44	insert into employees values (110,'Anjali Das','Sales','Kolkata','51000','2023-01-15')	1 row(s) affected	0.016 sec
23	23:30:56	select * from employees	10 row(s) returned	0.000 sec / 0.000 sec
24	23:54:01	select * from employees where department in ('IT','HR')	5 row(s) returned	0.000 sec / 0.000 sec
25	23:59:02	select * from employees	10 row(s) returned	0.000 sec / 0.000 sec
26	00:00:25	SELECT 'FROM employees WHERE department IN ('Sales', 'IT', 'Finance')	7 row(s) returned	0.000 sec / 0.000 sec

**QUESTION 3****Display employees whose salary is between ₹50,000 and ₹70,000****ANSWER**

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

- SQL Editor:** The "Assingment no 2 SQL\*" tab contains the following SQL code:

```
67
68    ## QUESTION NO 2
69 •   SELECT *FROM employees
70 WHERE department IN ('Sales', 'IT', 'Finance');
71 •   SELECT *FROM employees;
72
73    ## QUESTION NO 3
74 •   SELECT *FROM employees
75 WHERE salary BETWEEN 50000 AND 70000;
76
77
78
```
- Result Grid:** The results of the last query are displayed in a grid:

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
101	Rahul Mehra	Sales	Delhi	55000	2020-04-12
102	Priya Sharma	HR	Mumbai	62000	2019-09-25
107	Raj Kumar	HR	Delhi	60000	2020-05-28
108	Simran Kaur	Finance	Mumbai	58000	2021-08-03
109	Arjun Reddy	IT	Hyderabad	70000	2022-02-18
110	Anjali Das	Sales	Kolkata	51000	2023-01-15
- Session Output:** The "Action Output" section shows the execution history of the queries:

#	Time	Action	Message	Duration / Fetch
28	00:12:20	Select * from employees where salary between 50000 and 70000	0 row(s) returned	0.016 sec / 0.000 sec
29	00:12:32	SELECT *FROM employees	10 row(s) returned	0.000 sec / 0.000 sec
30	00:12:59	Select * from employees where salary between 50000 and 70000	0 row(s) returned	0.000 sec / 0.000 sec
31	00:13:30	Select * from employees where salary between '50000' and '70000'	0 row(s) returned	0.000 sec / 0.000 sec
32	00:14:31	SELECT *FROM employees WHERE salary BETWEEN 50000 AND 70000	6 row(s) returned	0.000 sec / 0.000 sec

**QUESTION 4****List employees whose names start with the letter 'A'.****ANSWER**

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

- SQL Editor:** The query window titled "Assignment no.2 SQL\*" contains the following code:

```
75 WHERE salary BETWEEN 50000 AND 70000;
76 • SELECT *FROM employees;
77
78 ## QUESTION NO 4
79 • SELECT * FROM employees
80 WHERE Emp_Name LIKE 'A%';
```
- Result Grid:** Below the editor, the result grid displays the following data from the "employees" table:

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
103	Aman Singh	IT	bengaluru	72000	2021-03-10
109	Arjun Reddy	IT	Hyderabad	70000	2022-02-18
110	Anjali Das	Sales	Kolkata	51000	2023-01-15
- Action Output:** The output log shows the following actions:

#	Time	Action	Message	Duration / Fetch
3	13:46:02	SELECT * FROM employees WHERE name LIKE 'A%'	Error Code: 1054. Unknown column 'name' in 'where clause'	0.000 sec
4	13:46:13	SELECT *FROM employees	10 row(s) returned	0.000 sec / 0.000 sec
5	13:46:49	SELECT * FROM employees WHERE Emp_Name LIKE 'A%'	3 row(s) returned	0.000 sec / 0.000 sec

**QUESTION 5**

: Find employees whose names contain the substring 'an'

**ANSWER**

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

- Navigator:** Shows the **company\_db** schema with tables like **employees**, **dept**, **dept\_manager**, **dept\_emp**, **titles**, **salaries**, **dept\_name**, **dept\_id**, **emp\_no**, **first\_name**, **last\_name**, **middle\_name**, **hire\_date**, **salary**, **from\_date**, **to\_date**, **job\_id**, **dept\_no**, and **dept\_name**.
- SQL Editor:** Contains the following SQL code:

```
## QUESTION NO 3
SELECT * FROM employees
WHERE salary BETWEEN 50000 AND 70000;
## QUESTION NO 4
SELECT * FROM employees
WHERE Emp_Name LIKE 'A%';
## QUESTION NO 5
SELECT * FROM employees
WHERE Emp_Name LIKE 'An%';
```
- Result Grid:** Displays the result of the last query:

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
110	Anjali Das	Sales	Kolkata	51000	2023-01-15
- Output:** Shows the action history:

#	Time	Action	Message	Duration / Fetch
7	13:51:07	SELECT * FROM employees WHERE Emp_Name LIKE 'An%'	1 row(s) returned	0.000 sec / 0.000 sec
8	13:51:19	SELECT * FROM employees	10 row(s) returned	0.000 sec / 0.000 sec
9	13:51:26	SELECT * FROM employees WHERE Emp_Name LIKE 'An%'	1 row(s) returned	0.000 sec / 0.000 sec

**QUESTION 6**

Show employees who are from 'Delhi' or 'Mumbai' and earn more than ₹55,000.

**ANSWER**

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

- SQL Editor:** The "Assignment no 2 SQL\*" tab contains the following code:

```
83 ## QUESTION NO 5
84 • SELECT * FROM employees
85 WHERE Emp_Name LIKE 'An%';
86 • SELECT *FROM employees;
87
88 ## QUESTION NO 6
89 • SELECT * FROM employees
90 WHERE city IN ('Delhi', 'Mumbai')
91 AND salary > 55000;
92
93
94
95
```
- Result Grid:** The results of the last query are displayed in a grid:

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
102	Priya Sharma	HR	Mumbai	62000	2019-09-25
107	Raj Kumar	HR	Delhi	60000	2020-05-28
108	Simran Kaur	Finance	Mumbai	58000	2021-08-03
- Output:** The "Action Output" section shows the execution log:

#	Time	Action	Message	Duration / Fetch
9	13:51:26	SELECT * FROM employees WHERE Emp_Name LIKE 'An%'	1 row(s) returned	0.000 sec / 0.000 sec
10	13:52:48	SELECT 'FROM employees'	10 row(s) returned	0.000 sec / 0.000 sec
11	14:17:22	SELECT * FROM employees WHERE city IN ('Delhi', 'Mumbai') AND salary > 55000	3 row(s) returned	0.000 sec / 0.000 sec

**QUESTION 7**

Display all employees except those from the 'HR' department.

**ANSWER**

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

- Navigator:** Shows the schema `company_db` selected, containing tables like `employees`, `dept`, `dept_manager`, etc.
- SQL Editor:** Displays the following SQL code:

```
91      AND salary > 55000;
92 •  SELECT *FROM employees;
93
94  ## QUESTION NO 7
95 •  select * from employees
96 WHERE department IN ('HR');
97 •  SELECT *FROM employees;
```
- Result Grid:** Shows the results of the query, filtering out employees from the 'HR' department.

Emp_id	Emp_Name	Department	City	Salary	Hire_Date
102	Priya Sharma	HR	Mumbai	62000	2019-09-25
107	Raj Kumar	HR	Delhi	60000	2020-05-28
- Output:** Shows the execution log for the session.

#	Time	Action	Message	Duration / Fetch
13	14:21:09	select * from employees WHERE department IN ('HR')	2 row(s) returned	0.000 sec / 0.000 sec
14	14:21:19	SELECT *FROM employees	10 row(s) returned	0.000 sec / 0.000 sec
15	14:21:28	select *from employees WHERE department IN ('HR')	2 row(s) returned	0.000 sec / 0.000 sec

**QUESTION 8****Get all employees hired between 2019 and 2022, ordered by HireDate (oldest first).****ANSWER**

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

- SQL Editor:** The code entered is:

```
95 • select * from employees
96 WHERE department IN ('HR');
97 • SELECT *FROM employees;
98
99 ## QUESTION NO 8
100 ## Get all employees hired between 2019 and 2022, ordered by HireDate (oldest first).
101 • SELECT * FROM employees
102 WHERE Hire_Date BETWEEN '2019-01-01' AND '2022-12-31'
103 ORDER BY hire_date ASC;
```
- Result Grid:** The results of the query are displayed in a grid format:

Emp_Id	Emp_Name	Department	City	Salary	Hire_Date
102	Priya Sharma	HR	Mumbai	62000	2019-09-25
106	Divya Nair	IT	Chennai	81000	2019-12-11
101	Rahul Mehra	Sales	Delhi	55000	2020-04-12
107	Raj Kumar	HR	Delhi	60000	2020-05-28
103	Aman Singh	IT	bengaluru	72000	2021-03-10
108	Simran Kaur	Finance	Mumbai	58000	2021-08-03
104	Neha Patel	Sales	Delhi	48000	2022-01-14
109	Arjun Reddy	IT	Hyderabad	70000	2022-02-18

- Output:** The output pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
20	14:41:31	SELECT * FROM employees WHERE HireDate BETWEEN '2019-01-01' AND '2022-12-31' ORDER BY Hi...	Error Code: 1054. Unknown column 'HireDate' in 'where clause'	0.000 sec
21	14:43:58	SELECT * FROM employees WHERE Hire_Date BETWEEN '2019-01-01' AND '2022-12-31' ORDER BY Hi...	Error Code: 1054. Unknown column 'HireDate' in 'order clause'	0.000 sec
22	14:45:02	SELECT * FROM employees WHERE Hire_Date BETWEEN '2019-01-01' AND '2022-12-31' ORDER BY Hi... 8 row(s) returned		0.000 sec / 0.000 sec