

# DBMS - Lab Assignment 5

## Group no - 8

### 1. INNER JOIN

- Query 1

```
SELECT Doctor.Doc_first_name as Doctor_Name, Patient.p_first_name as Patient_Name
FROM Doctor
INNER JOIN Patient
ON Doctor.Doc_id = Patient.Doc_id
order by Doctor_Name ;
```

The screenshot displays the MySQL Workbench interface. The top toolbar includes icons for file operations, query execution, and database management. The main editor window shows a SQL query with line numbers 111 to 126. The query performs an inner join between the Doctor and Patient tables, ordered by Doctor\_Name. Below the editor, the 'Result' tab is active, showing a table with two columns: Doctor\_Name and Patient\_Name. The table contains 10 rows of data. The bottom status bar indicates 'Query Completed'.

```
111
112 • SELECT Doc_id as Doctor_Id, count(P_id) as NumberOfPatients FROM Patient group by Doc_id;
113
114 -- SELECT * From Doctor where
115 -- Doc id = (SELECT P.Doc_id, max(P.NumberOfPatients) from (select Doc_id , count(P_id) as NumberOfPatients from Patient group by Doc_id) P);
116 • use Hospital;
117 • SELECT avg(Doc_salary), Doc_specialization FROM Doctor
118 GROUP BY Doc_specialization;
119
120 • SELECT * from Patient where P_first_name like 'a%';
121
122 • SELECT Doctor.Doc_first_name as Doctor_Name, Patient.p_first_name as Patient_Name
123 FROM Doctor
124 INNER JOIN Patient
125 ON Doctor.Doc_id = Patient.Doc_id
126 order by Doctor_Name;
```

#	Doctor_Name	Patient_Name
1	Ajit	Ramesh
2	Pavan	Rajendra
3	Pavan	Sunil
4	Pavan	Advay
5	Pavan	Akash
6	Pavan	Kahitiz
7	Rajendra	Ramesh
8	Rajendra	Rajesh
9	Rajendra	Mithil
10	Ramesh	Rahul

Result 3

#	Time	Action	Message	Duration / Fetch
3	16:16:11	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	10 row(s) returned	0.053 sec / 0.00001...
4	16:17:56	SELECT Doctor.Doc_first_name as Doctor_Name, Patien...	10 row(s) returned	0.0012 sec / 0.0000...
5	16:19:28	SELECT Doctor.Doc_first_name as Doctor_Name, Patien...	10 row(s) returned	0.00095 sec / 0.000...

Query Completed

- Query 2

```
SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quality as Medicine_Quality, Patient.p_first_name as Patient_Name
FROM Patient
INNER JOIN Medicine
ON Medicine.P_id = Patient.P_id
Order by Medicine_Price desc ;
```

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for file operations, query execution, and database management. The main editor displays a SQL query with line numbers 139 to 155. The query is as follows:

```
139 • SELECT * from Patient where P_first_name like 'a%';
140
141 • SELECT Doctor.Doc_first_name as Doctor_Name, Patient.p_first_name as Patient_Name
142 FROM Doctor
143 INNER JOIN Patient
144 ON Doctor.Doc_id = Patient.Doc_id
145 order by Doctor_Name;
146
147 • SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
148 FROM Patient
149 INNER JOIN Medicine
150 ON Medicine.P_id = Patient.P_id
151 order by Medicine_Price desc;
152
153
154 • SELECT Doctor.Doc_first_name, Patient.p_first_name
155 FROM Doctor
```

Below the query editor, the 'Result Grid' shows the output of the query. It has 4 columns: #, Medicine\_Price, Medicine\_Quantity, and Patient\_Name. The results are as follows:

#	Medicine_Price	Medicine_Quantity	Patient_Name
1	1000	4	Rahul
2	500	3	Sunil
3	200	1	Ramesh
4	100	2	Rahul

The 'Action Output' pane at the bottom shows the execution log. It includes columns for #, Time, Action, Message, and Duration / Fetch. The log shows the execution of the query and the resulting rows returned.

#	Time	Action	Message	Duration / Fetch
12	16:29:22	SELECT * FROM Patient LIMIT 0, 1000	10 row(s) returned	0.00040 sec / 0.000...
13	16:29:55	SELECT * FROM Patient LIMIT 0, 1000	10 row(s) returned	0.00040 sec / 0.000...
14	16:30:01	SELECT * FROM Doctor LIMIT 0, 1000	4 row(s) returned	0.00082 sec / 0.000...
15	16:30:23	select * from Room LIMIT 0, 1000	4 row(s) returned	0.00078 sec / 0.000...
16	16:33:04	Insert into Medicine values (300,4,1000,1), (301,2,1...	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.106 sec
17	16:33:20	select * from Medicine LIMIT 0, 1000	4 row(s) returned	0.00034 sec / 0.000...
18	16:36:59	SELECT Medicine.medi_price as Medicine_Price, Medicin...	4 row(s) returned	0.0012 sec / 0.000...
19	16:37:42	SELECT Medicine.medi_price as Medicine_Price, Medicin...	4 row(s) returned	0.00043 sec / 0.000...

The status bar at the bottom indicates 'Query Completed'.

- Query 3

```
SELECT Room.room_type, Patient.p_first_name as Patient_Name
FROM Patient
INNER JOIN Room
ON Room.P_id = Patient.P_id;
```

The screenshot shows the MySQL Workbench interface with three queries executed. The first query selects doctor and patient names. The second query selects medicine price and quantity. The third query, highlighted in blue, is the one specified in the text above: it selects room type and patient name from the Patient and Room tables joined on P\_id.

**Result 26**

#	room_type	Patient_Name
2	ICU	Rahul
3	Single Bed	Ramesh
1	Isolation Room	Rajendra
4	ICU	Ramesh

**Action Output**

#	Time	Action	Message	Duration / Fetch
32	17:01:15	SELECT Medicine.medi_price as Medicine_Price, Medicin...	7 row(s) returned	0.00086 sec / 0.000...
33	17:01:31	SELECT Medicine.medi_price as Medicine_Price, Medicin...	11 row(s) returned	0.0014 sec / 0.0000...
34	17:01:44	SELECT Medicine.medi_price as Medicine_Price, Medicin...	4 row(s) returned	0.00074 sec / 0.000...
35	17:07:05	SELECT Room.room_type, Patient.p_first_name as Patie...	4 row(s) returned	0.00081 sec / 0.000...

Query Completed

## 2. LEFT OUTER JOIN

- Query 1

```
SELECT Doctor.Doc_first_name, Patient.p_first_name
FROM Doctor
Left JOIN Patient
ON Doctor.Doc_id = Patient.Doc_id
Order by Patient.p_first_name ;
```

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The main editor window displays a SQL query for 'Query 1' (assignment\_4\*). The query is as follows:

```
151
152 • SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
153 FROM Patient
154 INNER JOIN Medicine
155 ON Medicine.P_id = Patient.P_id
156 order by Medicine_Price desc;
157
158
159 • SELECT Doctor.Doc_first_name, Patient.p_first_name
160 FROM Doctor
161 Left JOIN Patient
162 ON Doctor.Doc_id = Patient.Doc_id
163 order by Patient.p_first_name;
164
```

Below the query editor, the 'Result 14' tab shows the output of the query. The results are displayed in a table with two columns: 'Doc\_first\_name' and 'p\_first\_name'. The table contains 12 rows of data.

#	Doc_first_name	p_first_name
1	John	HAL
2	Iron	HAL
3	Pavan	Advay
4	Pavan	Akash
5	Pavan	Kshitiz
6	Rajendra	Mithil
7	Ramesh	Rahul
8	Pavan	Rajendra
9	Rajendra	Rajesh
10	Ajt	Ramesh
11	Rajendra	Ramesh
12	Pavan	Sunil

At the bottom, the 'Action Output' tab shows the execution details of the query. The output is as follows:

#	Time	Action	Message	Duration / Fetch
21	16:39:20	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	10 row(s) returned	0.00061 sec / 0.000...
22	16:45:17	INSERT INTO Doctor VALUES ('105','John','Wick', 0123456...	2 row(s) affected Records: 2 Duplicates: 0 Warnings: 0	0.058 sec
23	16:45:38	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	12 row(s) returned	0.00057 sec / 0.000...

The status bar at the bottom indicates 'Query Completed'.

- Query 2

```
SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quality as Medicine_Quality, Patient.p_first_name as Patient_Name
FROM Patient
LEFT JOIN Medicine
ON Medicine.P_id = Patient.P_id
where Medicin.P_id is null
order by Medicine_Price desc ;
```

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for file operations, query execution, and database management. The main editor displays a SQL query with line numbers 159 to 171. The query is a LEFT JOIN between Patient and Medicine tables, filtering for patients who have not purchased any medicines. The results pane shows a table with three columns: Medicine\_Price, Medicine\_Quantity, and Patient\_Name. The data is sorted by Medicine\_Price in descending order. The bottom pane shows the Action Output, which includes the execution time and the number of rows returned for each query.

```
159 • SELECT Doctor.Doc_first_name, Patient.p_first_name
160 FROM Doctor
161 Left JOIN Patient
162 ON Doctor.Doc_id = Patient.Doc_id
163 order by Patient.p_first_name;
164
165 -- Selected those patients who haven't purchased any medicines using left join
166 • SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
167 FROM Patient
168 LEFT JOIN Medicine
169 ON Medicine.P_id = Patient.P_id
170 where Medicine.P_id is null
171 order by Medicine_Price desc;
```

#	Medicine_Price	Medicine_Quantity	Patient_Name
1	NULL	NULL	Rajendra
2	NULL	NULL	Ramesh
3	NULL	NULL	Rajesh
4	NULL	NULL	Advay
5	NULL	NULL	Mithil
6	NULL	NULL	Akash
7	NULL	NULL	Kshiltz

Result 16

#	Time	Action	Message	Duration / Fetch
23	16:45:38	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	Records: 2 Duplicates: 0 Warnings: 0	0.00057 sec / 0.000...
24	16:47:37	SELECT Medicine.medi_price as Medicine_Price, Medicin...	11 row(s) returned	0.0012 sec / 0.000...
25	16:48:42	SELECT Medicine.medi_price as Medicine_Price, Medicin...	7 row(s) returned	0.0016 sec / 0.000...

Query Completed

- Query 3

```
SELECT Room.room_type, Patient.p_first_name
FROM Patient
Left JOIN Room
ON Room.P_id = Patient.P_id
order by Patient.p_first_name;
```

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for file operations, query execution, and database management. The main editor displays a SQL query for Query 1, named 'assignment\_4'. The query is a LEFT JOIN between the Patient and Room tables, ordered by Patient.p\_first\_name. Below the query editor, the 'Filter Rows' section shows the results of the query, with columns 'room\_type' and 'p\_first\_name'. The results are displayed in a table with 10 rows. The bottom panel shows the 'Action Output' tab, which lists the execution of the query and the number of rows returned.

```
168
169 • SELECT Room.room_type, Patient.p_first_name
170 FROM Patient
171 Left JOIN Room
172 ON Room.P_id = Patient.P_id
173 order by Patient.p_first_name;
174
175 -- Selected those patients who haven't purchased any medicines using left join
176 • SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
177 FROM Patient
```

#	room_type	p_first_name
1	HALL	Advay
2	HALL	Akash
3	HALL	Kshitiz
4	HALL	Mithil
5	ICU	Rahul
6	Isolation Room	Rajendra
7	HALL	Rajesh
8	Single Bed	Ramesh
9	ICU	Ramesh
10	HALL	Sunil

Result 27

#	Time	Action	Message	Duration / Fetch
33	17:01:31	SELECT Medicine.medi_price as Medicine_Price, Medicin...	11 row(s) returned	0.0014 sec / 0.0000...
34	17:01:44	SELECT Medicine.medi_price as Medicine_Price, Medicin...	4 row(s) returned	0.00074 sec / 0.000...
35	17:07:05	SELECT Room.room_type, Patient.p_first_name as Pable...	4 row(s) returned	0.00081 sec / 0.000...
36	17:10:01	SELECT Room.room_type, Patient.p_first_name FROM P...	10 row(s) returned	0.00075 sec / 0.000...

Query Completed

### 3. RIGHT OUTER JOINS

- Query 1

```
SELECT Doctor.Doc_first_name, Patient.p_first_name
FROM Patient
right JOIN Doctor
ON Doctor.Doc_id = Patient.Doc_id ;
```

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for file operations, query execution, and database management. The main editor window displays a SQL query for Query 1, which is a right join between the Patient and Doctor tables. The query is as follows:

```
-- Selected those patients who haven't purchased any medicines using left join
166 * SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
167 FROM Patient
168 LEFT JOIN Medicine
169 ON Medicine.P_id = Patient.P_id
170 where Medicine.P_id is null
171 order by Medicine_Price desc;
172
173
174 * SELECT Doctor.Doc_first_name, Patient.p_first_name
175 FROM Patient
176 right JOIN Doctor
177 ON Doctor.Doc_id = Patient.Doc_id;
```

Below the query editor, the results of the query are displayed in a table with two columns: Doc\_first\_name and p\_first\_name. The results are as follows:

#	Doc_first_name	p_first_name
1	Ajit	Ramesh
2	Ramesh	Rahul
3	Pavan	Rajendra
4	Pavan	Sunil
5	Pavan	Advay
6	Pavan	Akash
7	Pavan	Kahiliz
8	Rajendra	Ramesh
9	Rajendra	Rajesh
10	Rajendra	Mithil
11	John	...
12	Iron	...

The bottom section of the screenshot shows the Action Output tab, which displays the execution details of the query. The output is as follows:

#	Time	Action	Message	Duration / Fetch
27	16:52:33	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	10 row(s) returned	0.00091 sec / 0.000...
28	16:54:22	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	12 row(s) returned	0.0014 sec / 0.000...
29	16:55:51	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	10 row(s) returned	0.0012 sec / 0.000...
30	16:56:51	SELECT Doctor.Doc_first_name, Patient.p_first_name FR...	12 row(s) returned	0.0022 sec / 0.000...

The query completed successfully, returning 12 rows.

- Query 2

```
SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity,
Patient.p_first_name as Patient_Name
FROM Medicine
RIGHT JOIN Patient
ON Medicine.P_id = Patient.P_id
where Medicine.P_id is not null
order by Medicine_Price desc;
```

The screenshot shows the MySQL Workbench interface. The top panel displays the SQL query for 'Query1' (assignment\_4\*). The query is as follows:

```
173
174 • SELECT Doctor.Doc_first_name, Patient.p_first_name
175 FROM Patient
176 right JOIN Doctor
177 ON Doctor.Doc_id = Patient.Doc_id;
178
179 -- Selected those patients who have purchased medicines using right join
180 • SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
181 FROM Medicine
182 RIGHT JOIN Patient
183 ON Medicine.P_id = Patient.P_id
184 where Medicine.P_id is not null
185 order by Medicine_Price desc;
```

The bottom panel shows the results of the query, labeled 'Result 25'. The results are displayed in a table with the following columns: Medicine\_Price, Medicine\_Quantity, and Patient\_Name. The data is as follows:

Medicine_Price	Medicine_Quantity	Patient_Name
1000	4	Rahul
500	3	Sunil
200	1	Ramesh
100	2	Rahul

The bottom panel also shows the 'Action Output' section, which displays the execution details of the query. The output shows that the query was executed successfully, returning 4 rows.



- Query 3

```
SELECT Room.room_type, Patient.p_first_name
FROM Room
right JOIN Patient
ON Room.P_id = Patient.P_id
where Patient.P_first_name like 'r%'
order by Patient.p_first_name;
```

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The main editor displays a SQL query with line numbers 187 to 204. The query is as follows:

```
187 ON Doctor.Doc_id = Patient.Doc_id;
188
189 -- Selected those patients who have purchased medicines using right join
190 • SELECT Medicine.medi_price as Medicine_Price, Medicine.medi_quantity as Medicine_Quantity, Patient.p_first_name as Patient_Name
191 FROM Medicine
192 RIGHT JOIN Patient
193 ON Medicine.P_id = Patient.P_id
194 where Medicine.P_id is not null
195 order by Medicine_Price desc;
196
197 • SELECT Room.room_type, Patient.p_first_name
198 FROM Room
199 right JOIN Patient
200 ON Room.P_id = Patient.P_id
201 where Patient.P_first_name like 'r%'
202 order by Patient.p_first_name;
203
204
```

Below the editor, the 'Result' tab shows the output of the query. It displays a table with two columns: 'room\_type' and 'p\_first\_name'. The results are as follows:

#	room_type	p_first_name
1	ICU	Rahul
2	Isolation Room	Rajendra
3	ICU	Rajesh
4	Single Bed	Ramesh
5	ICU	Ramesh

The 'Action Output' tab at the bottom shows the execution log. It includes columns for #, Time, Action, Message, and Duration / Fetch. The log shows the following actions:

#	Time	Action	Message	Duration / Fetch
36	17:10:01	SELECT Room.room_type, Patient.p_first_name FROM P...	10 row(s) returned	0.00075 sec / 0.000...
37	17:11:49	SELECT Room.room_type, Patient.p_first_name FROM R...	10 row(s) returned	0.00064 sec / 0.000...
38	17:13:46	SELECT Room.room_type, Patient.p_first_name FROM R...	2 row(s) returned	0.00076 sec / 0.000...
39	17:14:05	SELECT Room.room_type, Patient.p_first_name FROM R...	5 row(s) returned	0.00061 sec / 0.000...

The status bar at the bottom indicates 'Query Completed'.

## 4. Different types of clauses and operators

We have used different types of clauses and operators in above 3 questions

```
SELECT Room.room_type, Patient.p_first_name  
FROM Room  
right JOIN Patient  
ON Room.P_id = Patient.P_id  
where Patient.P_first_name like 'r%'  
order by Patient.p_first_name;
```