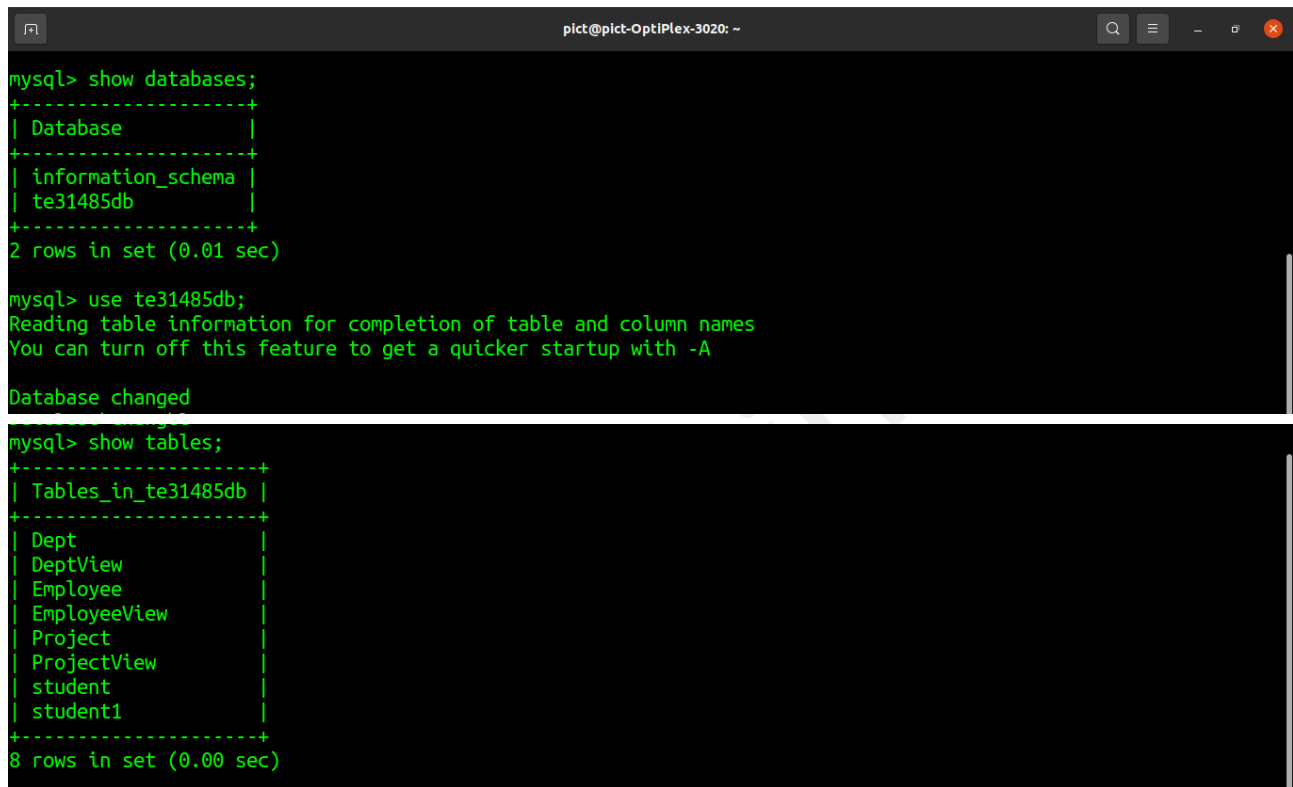


31485 – Ashwin Taras - TE 04 - N4

DBMSL

Assignment 3: SQL Queries – all types of Join, Sub-Query and View



The screenshot shows a terminal window with a dark background and green text. The window title is 'pict@pict-OptiPlex-3020: ~'. The terminal displays the following commands and output:

```
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| te31485db |
+-----+
2 rows in set (0.01 sec)

mysql> use te31485db;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed

mysql> show tables;
+-----+
| Tables_in_te31485db |
+-----+
| Dept |
| DeptView |
| Employee |
| EmployeeView |
| Project |
| ProjectView |
| student |
| student1 |
+-----+
8 rows in set (0.00 sec)
```

A large, light gray watermark '31485' is visible diagonally across the lower half of the image.

Query 1: Find Employee details and Department details using NATURAL JOIN.

```
mysql> SELECT * FROM Employee;
```

Emp_id	Dept_id	Emp_fname	Emp_lname	Emp_position	Emp_salary	Emp_joinDate	Proj_id
199	106	Sumit	Suryavanshi	Emergency Officer	1199000	2020-03-18	10171
234	104	Harshita	Alibagkar	App Developer	6758900	2023-01-23	10347
258	103	Yash	Tiwari	App Developer	3168000	2019-10-05	NULL
344	103	Prathamesh	Bedarkar	Web Developer	4791600	2020-12-14	10908
435	100	Ashwin	Taras	CEO	62700000	2019-01-27	NULL
438	100	Aditya	More	CTO	47850000	2019-01-30	NULL
441	100	Raj	Kolekar	CFO	42900000	2019-01-30	NULL
657	102	Chirag	Siroya	Overall Admin	10615000	2019-02-07	NULL
717	104	Pallavi	Joshi	App Developer	4339000	2022-02-19	10279
800	105	Sarthik	Bangroo	CA	4568000	2022-10-14	NULL
921	103	Mahesh	Vaswani	Web Developer	2579500	2019-07-26	NULL

11 rows in set (0.00 sec)

```
mysql> SELECT * FROM Dept;
```

Dept_id	Dept_name	Dept_location
100	HeadOffice	Delhi
102	Admin	Pune
103	Computer	Pune
104	IT	Pune
105	Finance	Ahmedabad
106	Emergency	Kolkata
109	Health	Delhi

7 rows in set (0.00 sec)

```
mysql> SELECT * FROM Employee AS E NATURAL JOIN Dept AS D;
```

```
mysql> SELECT * FROM Employee AS E NATURAL JOIN Dept AS D;
```

Dept_id	Emp_id	Emp_fname	Emp_lname	Emp_position	Emp_salary	Emp_joinDate	Proj_id	Dept_name	Dept_location
106	199	Sumit	Suryavanshi	Emergency Officer	1199000	2020-03-18	10171	Emergency	Kolkata
104	234	Harshita	Alibagkar	App Developer	6758900	2023-01-23	10347	IT	Pune
103	258	Yash	Tiwari	App Developer	3168000	2019-10-05	NULL	Computer	Pune
103	344	Prathamesh	Bedarkar	Web Developer	4791600	2020-12-14	10908	Computer	Pune
100	435	Ashwin	Taras	CEO	62700000	2019-01-27	NULL	HeadOffice	Delhi
100	438	Aditya	More	CTO	47850000	2019-01-30	NULL	HeadOffice	Delhi
100	441	Raj	Kolekar	CFO	42900000	2019-01-30	NULL	HeadOffice	Delhi
102	657	Chirag	Siroya	Overall Admin	10615000	2019-02-07	NULL	Admin	Pune
104	717	Pallavi	Joshi	App Developer	4339000	2022-02-19	10279	IT	Pune
105	800	Sarthik	Bangroo	CA	4568000	2022-10-14	NULL	Finance	Ahmedabad
103	921	Mahesh	Vaswani	Web Developer	2579500	2019-07-26	NULL	Computer	Pune

11 rows in set (0.00 sec)

OR

```
mysql> SELECT * FROM Employee AS E INNER JOIN Dept AS D ON E.Dept_id = D.Dept_id;
```

```
mysql> SELECT * FROM Employee AS E INNER JOIN Dept AS D ON E.Dept_id = D.Dept_id;
```

Emp_id	Dept_id	Emp_fname	Emp_lname	Emp_position	Emp_salary	Emp_joinDate	Proj_id	Dept_id	Dept_name	Dept_location
199	106	Sumit	Suryavanshi	Emergency Officer	1199000	2020-03-18	10171	106	Emergency	Kolkata
234	104	Harshita	Alibagkar	App Developer	6758900	2023-01-23	10347	104	IT	Pune
258	103	Yash	Tiwari	App Developer	3168000	2019-10-05	NULL	103	Computer	Pune
344	103	Prathamesh	Bedarkar	Web Developer	4791600	2020-12-14	10908	103	Computer	Pune
435	100	Ashwin	Taras	CEO	62700000	2019-01-27	NULL	100	HeadOffice	Delhi
438	100	Aditya	More	CTO	47850000	2019-01-30	NULL	100	HeadOffice	Delhi
441	100	Raj	Kolekar	CFO	42900000	2019-01-30	NULL	100	HeadOffice	Delhi
657	102	Chirag	Siroya	Overall Admin	10615000	2019-02-07	NULL	102	Admin	Pune
717	104	Pallavi	Joshi	App Developer	4339000	2022-02-19	10279	104	IT	Pune
800	105	Sarthik	Bangroo	CA	4568000	2022-10-14	NULL	105	Finance	Ahmedabad
921	103	Mahesh	Vaswani	Web Developer	2579500	2019-07-26	NULL	103	Computer	Pune

11 rows in set (0.00 sec)

QUERY 2 : Find the Emp_fname, Emp_position, location, Emp_joinDate who have the same Dept id.

```
mysql> SELECT Emp_fname, Emp_position, Dept_location, Emp_joinDate FROM Employee AS E  
INNER JOIN Dept AS D ON E.Dept_id = D.Dept_id WHERE D.Dept_id = 100;
```

```
mysql> SELECT Emp_fname, Emp_position, Dept_location, Emp_joinDate FROM Employee AS E INNER JOIN Dept AS D ON E.  
Dept_id = D.Dept_id WHERE D.Dept_id = 100;  
+-----+-----+-----+-----+  
| Emp_fname | Emp_position | Dept_location | Emp_joinDate |  
+-----+-----+-----+-----+  
| Ashwin    | CEO          | Delhi         | 2019-01-27   |  
| Aditya    | CTO          | Delhi         | 2019-01-30   |  
| Raj       | CFO          | Delhi         | 2019-01-30   |  
+-----+-----+-----+-----+  
3 rows in set (0.00 sec)  
  
mysql>
```

```
mysql> SELECT Emp_fname, Emp_position, Dept_location, Emp_joinDate FROM Employee AS E  
INNER JOIN Dept AS D ON E.Dept_id = D.Dept_id;
```

```
mysql> SELECT Emp_fname, Emp_position, Dept_location, Emp_joinDate FROM Employee AS E INNER JOIN Dept AS D ON E.  
Dept_id = D.Dept_id;  
+-----+-----+-----+-----+  
| Emp_fname | Emp_position | Dept_location | Emp_joinDate |  
+-----+-----+-----+-----+  
| Sumit     | Emergency Officer | Kolkata      | 2020-03-18   |  
| Harshita  | App Developer   | Pune         | 2023-01-23   |  
| Yash      | App Developer   | Pune         | 2019-10-05   |  
| Prathamesh | Web Developer  | Pune         | 2020-12-14   |  
| Ashwin    | CEO             | Delhi        | 2019-01-27   |  
| Aditya    | CTO             | Delhi        | 2019-01-30   |  
| Raj       | CFO             | Delhi        | 2019-01-30   |  
| Chirag    | Overall Admin   | Pune         | 2019-02-07   |  
| Pallavi   | App Developer   | Pune         | 2022-02-19   |  
| Sarthik   | CA              | Ahmedabad    | 2022-10-14   |  
| Mahesh    | Web Developer   | Pune         | 2019-07-26   |  
+-----+-----+-----+-----+  
11 rows in set (0.00 sec)  
  
mysql>
```

QUERY 3 : Find the Employee details, Proj_id, Project cost who does not have Project location as 'Hyderabad'.

```
mysql> SELECT Emp_id, Emp_fname, Emp_position, P.Proj_id, Proj_cost FROM Employee AS E LEFT JOIN Project AS P ON E.Proj_id = P.Proj_id WHERE P.Proj_location <> 'Hyderabad';
```

OR

```
mysql> SELECT Emp_id, Emp_fname, Emp_position, P.Proj_id, Proj_cost FROM Employee AS E LEFT JOIN Project AS P ON E.Proj_id = P.Proj_id WHERE P.Proj_location != 'Hyderabad';
```

```
pict@pict-OptiPlex-3020: ~  
mysql> UPDATE Project  
-> SET Proj_location = 'Hyderabad'  
-> WHERE Proj_id IN (10278, 10120);  
Query OK, 2 rows affected (0.02 sec)  
Rows matched: 2 Changed: 2 Warnings: 0  
  
mysql> select * from Project;  
+-----+-----+-----+-----+-----+-----+  
| Proj_id | Dept_id | Proj_name          | Proj_location | Proj_cost | proj_year |  
+-----+-----+-----+-----+-----+-----+  
| 10120 | 103 | Payment Gateway    | Hyderabad     | 312000    | 2023      |  
| 10171 | 106 | Production Breakdown | Kolkata       | 20100     | 2020      |  
| 10278 | 104 | eCommerce Website  | Hyderabad     | 689000    | 2023      |  
| 10279 | 104 | Movie Recommendation | Pune          | 109000    | 2021      |  
| 10347 | 104 | Music Recommendation | Mumbai        | 367000    | 2022      |  
| 10722 | 109 | Monthly Checkup     | Pune          | 490200    | 2023      |  
| 10908 | 103 | Blog Site           | Mumbai        | 340900    | 2022      |  
| 10978 | 103 | Dating App           | Mumbai        | 450100    | 2023      |  
| 10999 | 105 | Yearly Budget        | Ahmedabad     | 290300    | 2022      |  
+-----+-----+-----+-----+-----+-----+  
9 rows in set (0.00 sec)  
  
mysql> SELECT Emp_id, Emp_fname, Emp_position, P.Proj_id, Proj_cost FROM Employee AS E LEFT JOIN Project AS P ON  
E.Proj_id = P.Proj_id WHERE P.Proj_location <> 'Hyderabad';  
+-----+-----+-----+-----+-----+  
| Emp_id | Emp_fname | Emp_position      | Proj_id | Proj_cost |  
+-----+-----+-----+-----+-----+  
| 199 | Sumit | Emergency Officer | 10171 | 20100 |  
| 234 | Harshita | App Developer | 10347 | 367000 |  
| 344 | Prathamesh | Web Developer | 10908 | 340900 |  
| 717 | Pallavi | App Developer | 10279 | 109000 |  
+-----+-----+-----+-----+-----+  
4 rows in set (0.00 sec)
```

QUERY 4 : Find Department Name ,employee name, Emp_position for which project year is 2020.

```
mysql> SELECT Dept_name, Emp_fname, Emp_position FROM (Dept D INNER JOIN Employee E ON D.Dept_id = E.Dept_id) INNER JOIN Project P ON E.Proj_id = P.Proj_id WHERE P.proj_year = '2020';
```

```
pict@pict-OptiPlex-3020: ~  
9 rows in set (0.00 sec)  
  
mysql> SELECT Dept_name, Emp_fname, Emp_position FROM (Dept D INNER JOIN Employee E ON D.Dept_id = E.Dept_id) INNER JOIN Project P ON E.Proj_id = P.Proj_id WHERE P.proj_year='2020';  
ERROR 1054 (42S22): Unknown column 'P.proj_year' in 'where clause'  
mysql> SELECT Dept_name, Emp_fname, Emp_position FROM (Dept D INNER JOIN Employee E ON D.Dept_id = E.Dept_id) INNER JOIN Project P ON E.Proj_id = P.Proj_id WHERE P.proj_year='2020';  
+-----+-----+-----+  
| Dept_name | Emp_fname | Emp_position |  
+-----+-----+-----+  
| Emergency | Sumit    | Emergency Officer |  
+-----+-----+-----+  
1 row in set (0.00 sec)
```

QUERY 5 : Display emp_position, Dept_name who have Project cost > 30,000.

```
mysql> SELECT Emp_position, Dept_name FROM Employee E INNER JOIN Dept D ON E.Dept_id = D.Dept_id INNER JOIN Project P ON E.Proj_id = P.Proj_id WHERE P.Proj_cost > 30000;
```

```
mysql> SELECT * FROM Project;  
+-----+-----+-----+-----+-----+-----+  
| Proj_id | Dept_id | Proj_name          | Proj_location | Proj_cost | proj_year |  
+-----+-----+-----+-----+-----+-----+  
| 10120 | 103 | Payment Gateway   | Hyderabad    | 312000 | 2023 |  
| 10171 | 106 | Production Breakdown | Kolkata      | 20100 | 2020 |  
| 10278 | 104 | eCommerce Website | Hyderabad    | 689000 | 2023 |  
| 10279 | 104 | Movie Recommendation | Pune         | 109000 | 2021 |  
| 10347 | 104 | Music Recommendation | Mumbai       | 367000 | 2022 |  
| 10722 | 109 | Monthly Checkup    | Pune         | 490200 | 2023 |  
| 10908 | 103 | Blog Site          | Mumbai       | 340900 | 2022 |  
| 10978 | 103 | Dating App          | Mumbai       | 450100 | 2023 |  
| 10999 | 105 | Yearly Budget       | Ahmedabad    | 290300 | 2022 |  
+-----+-----+-----+-----+-----+-----+  
9 rows in set (0.00 sec)  
  
mysql> SELECT Emp_position, Dept_name FROM Employee E INNER JOIN Dept D ON E.Dept_id = D.Dept_id INNER JOIN Project P ON E.Proj_id = P.Proj_id WHERE P.Proj_cost > 30000;  
+-----+-----+  
| Emp_position | Dept_name |  
+-----+-----+  
| App Developer | IT        |  
| Web Developer | Computer  |  
| App Developer | IT        |  
+-----+-----+  
3 rows in set (0.00 sec)
```

QUERY 6 : Find the names of all the Projects that started in the year '2015'.

NOTE - Using year - 2023 instead of 2015

mysql> SELECT Proj_name FROM Project WHERE proj_year = 2023;

```
mysql> SELECT Proj_name FROM Project WHERE proj_year = 2023;
+-----+
| Proj_name |
+-----+
| Payment Gateway |
| eCommerce Website |
| Monthly Checkup |
| Dating App |
+-----+
4 rows in set (0.00 sec)

mysql>
```

QUERY 7 : List the Dept_name having no_of_emp=6.

```
mysql> SELECT Dept_name FROM Dept WHERE Dept_id = (SELECT Dept_id FROM (SELECT Dept_id, COUNT(*) AS Emp_count FROM Employee GROUP BY Dept_id) AS CountTable WHERE Emp_count=6);
```

```
mysql> SELECT Dept_id, COUNT(*) FROM Employee GROUP BY Dept_id;
+-----+
| Dept_id | COUNT(*) |
+-----+
| 100     | 3        |
| 102     | 1        |
| 103     | 6        |
| 104     | 2        |
| 105     | 1        |
| 106     | 1        |
+-----+
6 rows in set (0.00 sec)

mysql> SELECT Dept_id FROM (SELECT Dept_id, COUNT(*) AS Emp_count FROM Employee GROUP BY Dept_id) AS CountTable WHERE Emp_count=6;
+-----+
| Dept_id |
+-----+
| 103     |
+-----+
1 row in set (0.00 sec)

mysql> SELECT Dept_name FROM Dept WHERE Dept_id = (SELECT Dept_id FROM (SELECT Dept_id, COUNT(*) AS Emp_count FROM Employee GROUP BY Dept_id) AS CountTable WHERE Emp_count=6);
+-----+
| Dept_name |
+-----+
| Computer  |
+-----+
1 row in set (0.00 sec)

mysql>
```

QUERY 8 : Display the total number of employee who have joined any project before 2022.

mysql> SELECT COUNT(*) FROM Employee AS E Natural join Project AS P Where proj_year<'2022';

```
pict@pict-OptiPlex-9020: ~  
-----+  
1 row in set (0.00 sec)  
mysql> SELECT * FROM Project WHERE proj_year < '2022';  
-----+  
| Proj_id | Dept_id | Proj_name | Proj_location | Proj_cost | proj_year |  
-----+  
| 10171 | 106 | Production Breakdown | Kolkata | 20100 | 2020 |  
| 10279 | 104 | Movie Recommendation | Pune | 109000 | 2021 |  
-----+  
2 rows in set (0.00 sec)  
mysql> SELECT * FROM Project;  
-----+  
| Proj_id | Dept_id | Proj_name | Proj_location | Proj_cost | proj_year |  
-----+  
| 10120 | 103 | Payment Gateway | Hyderabad | 312000 | 2023 |  
| 10171 | 106 | Production Breakdown | Kolkata | 20100 | 2020 |  
| 10278 | 104 | eCommerce Website | Hyderabad | 689000 | 2023 |  
| 10279 | 104 | Movie Recommendation | Pune | 109000 | 2021 |  
| 10347 | 104 | Music Recommendation | Mumbai | 367000 | 2022 |  
| 10722 | 109 | Monthly Checkup | Pune | 490200 | 2023 |  
| 10908 | 103 | Blog Site | Mumbai | 340900 | 2022 |  
| 10978 | 103 | Dating App | Mumbai | 450100 | 2023 |  
| 10999 | 105 | Yearly Budget | Ahmedabad | 290300 | 2022 |  
-----+  
9 rows in set (0.00 sec)  
mysql> SELECT * FROM Employee AS E Natural join Project AS P Where proj_year<'2022';  
-----+  
| Dept_id | Proj_id | Emp_id | Emp_fname | Emp_lname | Emp_position | Emp_salary | Emp_joinDate | Proj_name | Proj_location | Proj_cost | proj_year |  
-----+  
| 106 | 10171 | 199 | Sumit | Suryavanshi | Emergency Officer | 1199000 | 2020-03-18 | Production Breakdown | Kolkata | 20100 | 2020 |  
| 104 | 10279 | 717 | Pallavi | Joshi | App Developer | 4339000 | 2022-02-19 | Movie Recommendation | Pune | 109000 | 2021 |  
-----+  
2 rows in set (0.00 sec)  
mysql> SELECT COUNT(*) FROM Employee AS E Natural join Project AS P Where proj_year<'2022';  
-----+  
| COUNT(*) |  
-----+  
| 2 |  
-----+  
1 row in set (0.00 sec)  
mysql>  
  
mysql> SELECT COUNT(*) FROM Employee AS E Natural join Project AS P Where proj_year<'2022';  
-----+  
| COUNT(*) |  
-----+  
| 2 |  
-----+  
1 row in set (0.00 sec)  
mysql> 
```


QUERY 9 : Create a view showing the Employee and Department details.

QUERY 10 : Perform Manipulation on simple view-Insert, update, delete, drop view.

```
mysql> CREATE VIEW EmpInfoView AS (SELECT * FROM Emp E Natural Join Dept D);
ERROR 1146 (42S02): Table 'te31485db.Emp' doesn't exist
mysql> CREATE VIEW EmpInfoView AS (SELECT * FROM Employee E Natural Join Dept D);
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM EmpInfoView;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Dept_id | Emp_id | Emp_fname | Emp_lname | Emp_position | Emp_salary | Emp_joinDate | Proj_id | Dept_name | Dept_location |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 100 | 435 | Ashwin | Taras | CEO | 62700000 | 2019-01-27 | NULL | HeadOffice | Delhi |
| 100 | 438 | Aditya | More | CTO | 47850000 | 2019-01-30 | NULL | HeadOffice | Delhi |
| 100 | 441 | Raj | Kolekar | CFO | 42900000 | 2019-01-30 | NULL | HeadOffice | Delhi |
| 102 | 657 | Chirag | Siroya | Overall Admin | 10615000 | 2019-02-07 | NULL | Admin | Pune |
| 103 | 258 | Yash | Tiwari | App Developer | 3168000 | 2019-10-05 | NULL | Computer | Pune |
| 103 | 344 | Prathamesh | Bedarkar | Web Developer | 4791600 | 2020-12-14 | 10908 | Computer | Pune |
| 103 | 921 | Mahesh | Vaswani | Web Developer | 2579500 | 2019-07-26 | NULL | Computer | Pune |
| 103 | 927 | Vaishnavi | Thakur | Web Developer | 3345000 | 2019-07-26 | 10978 | Computer | Pune |
| 103 | 931 | Dhanashree | Gawai | Web Developer | 8989200 | 2019-07-26 | 10908 | Computer | Pune |
| 103 | 999 | Shilvam | Gaikwad | Web Developer | 9705000 | 2019-07-26 | 10278 | Computer | Pune |
| 104 | 234 | Harshita | Alibagkar | App Developer | 6758900 | 2023-01-23 | 10347 | IT | Pune |
| 104 | 717 | Pallavi | Joshi | App Developer | 4339000 | 2022-02-19 | 10279 | IT | Pune |
| 105 | 800 | Sarthik | Bangroo | CA | 4568000 | 2022-10-14 | NULL | Finance | Ahmedabad |
| 106 | 199 | Sumit | Suryavanshi | Emergency Officer | 1199000 | 2020-03-18 | 10171 | Emergency | Kolkata |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql> INSERT INTO EmpInfoView(Dept_id, Emp_id, Emp_fname, Emp_lname, Emp_position, Emp_salary, Emp_joinDate, Proj_id, Dept_name, Dept_location) VALUES (104, 678, 'Maitreyee', 'Joshi', 'App Developer', 1010000, '2021-09-12', 10279, 'IT', 'Pune');
ERROR 1046 (3D000): No database selected
mysql> use te31485db;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> INSERT INTO EmpInfoView(Dept_id, Emp_id, Emp_fname, Emp_lname, Emp_position, Emp_salary, Emp_joinDate, Proj_id, Dept_name, Dept_location) VALUES (104, 678, 'Maitreyee', 'Joshi', 'App Developer', 1010000, '2021-09-12', 10279, 'IT', 'Pune');
ERROR 1393 (HY000): Can not modify more than one base table through a join view 'te31485db.EmpInfoView'
mysql> INSERT INTO EmpInfoView(Dept_id, Emp_id, Emp_fname, Emp_lname, Emp_position, Emp_salary, Emp_joinDate, Proj_id) VALUES (104, 678, 'Maitreyee', 'Joshi', 'App Developer', 1010000, '2021-09-12', 10279);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO EmpInfoView(Dept_id, Dept_name, Dept_location) VALUES (104, 'IT', 'Pune');
ERROR 1393 (HY000): Can not modify more than one base table through a join view 'te31485db.EmpInfoView'
mysql> INSERT INTO EmpInfoView(Dept_name, Dept_location) VALUES (104, 'IT', 'Pune');
ERROR 1136 (21S01): Column count doesn't match value count at row 1
mysql> INSERT INTO EmpInfoView(Dept_name, Dept_location) VALUES ('IT', 'Pune');
Query OK, 1 row affected, 1 warning (0.01 sec)

mysql> ALTER VIEW EmpInfoView AS SELECT Emp_id, Emp_fname, Emp_lname, Dept_location FROM Employee, Dept;
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM EmpInfoView;
+-----+-----+-----+-----+
| Emp_id | Emp_fname | Emp_lname | Dept_location |
+-----+-----+-----+-----+
| 199 | Sumit | Suryavanshi | Pune |
+-----+-----+-----+-----+

mysql> DROP VIEW EmpInfoView;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM EmpInfoView;
ERROR 1146 (42S02): Table 'te31485db.EmpInfoView' doesn't exist
mysql>
```