31485 – Ashwin Taras - TE 04 - N4

DBMSL

Assignment 2A: Employee Schema

---

mysql> show databases;

```
+--------------------+
| Database           |
+--------------------+
| information_schema |
| te31485db          |
| test               |
+--------------------+
```

3 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 |
+--------------------+
| student            |
| student1           |
+--------------------+
```

2 rows in set (0.00 sec)

CREATE TABLE - Dept

```
mysql> CREATE TABLE Dept (
    -> Dept_id INT NOT NULL PRIMARY KEY,
    -> Dept_name VARCHAR(20),
    -> Dept_location VARCHAR(20)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> show tables;
```

```
+--------------------+
| Tables_in_te31485db |
+--------------------+
| Dept               |
| student            |
| student1           |
+--------------------+
3 rows in set (0.01 sec)
```

```
mysql> DESCRIBE Dept;
```

```
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| Dept_id       | int(11)     | NO   | PRI | NULL    |       |
| Dept_name     | varchar(20) | YES  |     | NULL    |       |
| Dept_location | varchar(20) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

CREATE TABLE - Employee

```
mysql> CREATE TABLE Employee (
    -> Emp_id INT NOT NULL PRIMARY KEY,
    -> Dept_id INT NOT NULL,
    -> Emp_fname VARCHAR(20),
    -> Emp_lname VARCHAR(20),
    -> Emp_position VARCHAR(30),
    -> Emp_salary INT,
    -> Emp_joinDate DATE,
    -> FOREIGN KEY(Dept_id) REFERENCES Dept(Dept_id) ON DELETE CASCADE
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql> DESCRIBE Employee;
```

```
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| Emp_id       | int(11)     | NO   | PRI | NULL    |       |
| Dept_id      | int(11)     | NO   | MUL | NULL    |       |
| Emp_fname    | varchar(20) | YES  |     | NULL    |       |
| Emp_lname    | varchar(20) | YES  |     | NULL    |       |
| Emp_position | varchar(30) | YES  |     | NULL    |       |
| Emp_salary   | int(11)     | YES  |     | NULL    |       |
| Emp_joinDate | date        | YES  |     | NULL    |       |
```

```
+--------------+-------------+------+-----+---------+-------+
```
7 rows in set (0.00 sec)

CREATE TABLE - Project

mysql> CREATE TABLE Project (
    -> Proj_id IT NOT NULL PRIMARY KEY,
    -> Dept_id INT NOT NULL,
    -> Proj_name VARCHAR(20),
    -> Proj_location VARCHAR(20),
    -> Proj_cost VARCHAR(20),
    -> proj_year YEAR,
    -> FOREIGN KEY (Dept_id) REFERENCES Dept(Dept_id) ON DELETE CASCADE
    ->);

mysql> DESCRIBE Project;

```
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| Proj_id       | int(11)     | NO   | PRI | NULL    |       |
| Dept_id       | int(11)     | NO   | MUL | NULL    |       |
| Proj_name     | varchar(20) | YES  |     | NULL    |       |
| Proj_location | varchar(20) | YES  |     | NULL    |       |
| Proj_cost     | varchar(20) | YES  |     | NULL    |       |
| proj_year     | year(4)     | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
```
6 rows in set (0.00 sec)

mysql> ALTER TABLE Project
    -> MODIFY Proj_cost INT;
Query OK, 0 rows affected (0.08 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESCRIBE Project;

```
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| Proj_id       | int(11)     | NO   | PRI | NULL    |       |
| Dept_id       | int(11)     | NO   | MUL | NULL    |       |
| Proj_name     | varchar(20) | YES  |     | NULL    |       |
| Proj_location | varchar(20) | YES  |     | NULL    |       |
| Proj_cost     | int(11)     | YES  |     | NULL    |       |
| proj_year     | year(4)     | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
```
6 rows in set (0.00 sec)

Query 1: Insert at least 10 records in the Employee table and insert other tables accordingly.

INSERT IN TABLE - Dept

mysql> INSERT INTO Dept
    -> VALUES
    -> (100, 'HeadOffice', 'Delhi'),
    -> (101, 'Management', 'Mumbai'),
    -> (102, 'Admin', 'Pune'),
    -> (103, 'Computer', 'Pune'),
    -> (104, 'IT', 'Pune'),
    -> (105, 'Finance', 'Ahmedabad'),
    -> (106, 'Emergency', 'Kolkata'),
    -> (107, 'Audit', 'Mumbai'),
    -> (108, 'HR', 'Mumbai'),
    -> (109, 'Health', 'Delhi');
Query OK, 10 rows affected (0.02 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM Dept;

```
+---------+------------+--------------+
| Dept_id | Dept_name  | Dept_location |
+---------+------------+--------------+
|     100 | HeadOffice | Delhi        |
|     101 | Management | Mumbai       |
|     102 | Admin      | Pune         |
|     103 | Computer   | Pune         |
|     104 | IT         | Pune         |
|     105 | Finance    | Ahmedabad    |
|     106 | Emergency  | Kolkata      |
|     107 | Audit      | Mumbai       |
|     108 | HR         | Mumbai       |
|     109 | Health     | Delhi        |
+---------+------------+--------------+
```
10 rows in set (0.01 sec)

INSERT IN TABLE - Employee

mysql> INSERT INTO Employee
    -> VALUES
    -> (435, 100, 'Ashwin', 'Taras', 'CEO', 57000000, '2019-01-27');
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+-----------+--------------+------------+-------------+
| Emp_id | Dept_id | Emp_fname | Emp_lname | Emp_position | Emp_salary | Emp_joinDate |
+--------+---------+-----------+-----------+--------------+------------+-------------+
|    435 |     100 | Ashwin    | Taras     | CEO          |   57000000 | 2019-01-27  |
+--------+---------+-----------+-----------+--------------+------------+-------------+
```

1 row in set (0.00 sec)

mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+-----------+--------------+------------+--------------+
| Emp_id | Dept_id | Emp_fname | Emp_lname | Emp_position | Emp_salary | Emp_joinDate |
+--------+---------+-----------+-----------+--------------+------------+--------------+
|    435 |     100 | Ashwin    | Taras     | CEO          |   57000000 | 2019-01-27   |
+--------+---------+-----------+-----------+--------------+------------+--------------+
```

1 row in set (0.00 sec)

mysql> INSERT INTO Employee
    -> VALUES
    -> (438, 100, 'Aditya', 'More', 'CTO', 43500000, '2019-01-30'),
    -> (441, 100, 'Raj', 'Kolekar', 'CFO', 39000000, '2019-01-30');
Query OK, 2 rows affected (0.02 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+-----------+--------------+------------+--------------+
| Emp_id | Dept_id | Emp_fname | Emp_lname | Emp_position | Emp_salary | Emp_joinDate |
+--------+---------+-----------+-----------+--------------+------------+--------------+
|    435 |     100 | Ashwin    | Taras     | CEO          |   57000000 | 2019-01-27   |
|    438 |     100 | Aditya    | More      | CTO          |   43500000 | 2019-01-30   |
|    441 |     100 | Raj       | Kolekar   | CFO          |   39000000 | 2019-01-30   |
+--------+---------+-----------+-----------+--------------+------------+--------------+
```

3 rows in set (0.00 sec)

mysql> INSERT INTO Employee
    -> VALUES
    -> (657, 102, 'Chirag', 'Siroya', 'Overall Admin', 9650000, '2019-02-07'),
    -> (365, 107, 'Avni', 'Ambekar', 'Chief Auditor', 5637000, '2019-05-19'),
    -> (921, 103, 'Mahesh', 'Vaswani', 'Web Developer', 2345000, '2019-07-26'),
    -> (387, 107, 'Abhay', 'Shanbhag', 'Co-Auditor', 473000, '2019-12-24'),
    -> (258, 103, 'Yash', 'Tiwari', 'App Developer', 2880000, '2019-10-05'),
    -> (199, 106, 'Sumit', 'Suryavanshi', 'Emrgency Officer', 1090000, '2020-03-18');
Query OK, 6 rows affected (0.01 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+-------------+------------------+------------+--------------+
| Emp_id | Dept_id | Emp_fname | Emp_lname   | Emp_position     | Emp_salary | Emp_joinDate |
+--------+---------+-----------+-------------+------------------+------------+--------------+
|    199 |     106 | Sumit     | Suryavanshi | Emrgency Officer |    1090000 | 2020-03-18   |
|    258 |     103 | Yash      | Tiwari      | App Developer    |    2880000 | 2019-10-05   |
|    365 |     107 | Avni      | Ambekar     | Chief Auditor    |    5637000 | 2019-05-19   |
|    387 |     107 | Abhay     | Shanbhag    | Co-Auditor       |     473000 | 2019-12-24   |
|    435 |     100 | Ashwin    | Taras       | CEO              |   57000000 | 2019-01-27   |
|    438 |     100 | Aditya    | More        | CTO              |   43500000 | 2019-01-30   |
|    441 |     100 | Raj       | Kolekar     | CFO              |   39000000 | 2019-01-30   |
|    657 |     102 | Chirag    | Siroya      | Overall Admin    |    9650000 | 2019-02-07   |
|    921 |     103 | Mahesh    | Vaswani     | Web Developer    |    2345000 | 2019-07-26   |
+--------+---------+-----------+-------------+------------------+------------+--------------+
```
9 rows in set (0.00 sec)

mysql> INSERT INTO Employee
    -> VALUES (800, 105, 'Sarthik', 'Bangroo', 'CA', 4568000, '2022-10-14');
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+-------------+------------------+------------+--------------+
| Emp_id | Dept_id | Emp_fname | Emp_lname   | Emp_position     | Emp_salary | Emp_joinDate |
+--------+---------+-----------+-------------+------------------+------------+--------------+
|    199 |     106 | Sumit     | Suryavanshi | Emrgency Officer |    1090000 | 2020-03-18   |
|    258 |     103 | Yash      | Tiwari      | App Developer    |    2880000 | 2019-10-05   |
|    365 |     107 | Avni      | Ambekar     | Chief Auditor    |    5637000 | 2019-05-19   |
|    387 |     107 | Abhay     | Shanbhag    | Co-Auditor       |     473000 | 2019-12-24   |
|    435 |     100 | Ashwin    | Taras       | CEO              |   57000000 | 2019-01-27   |
|    438 |     100 | Aditya    | More        | CTO              |   43500000 | 2019-01-30   |
|    441 |     100 | Raj       | Kolekar     | CFO              |   39000000 | 2019-01-30   |
|    657 |     102 | Chirag    | Siroya      | Overall Admin    |    9650000 | 2019-02-07   |
|    800 |     105 | Sarthik   | Bangroo     | CA               |    4568000 | 2022-10-14   |
|    921 |     103 | Mahesh    | Vaswani     | Web Developer    |    2345000 | 2019-07-26   |
+--------+---------+-----------+-------------+------------------+------------+--------------+
```
10 rows in set (0.00 sec)

INSERT IN TABLE - Project

mysql> INSERT INTO Project VALUES (10120, 103, 'Payment Gateway', 'Pune', 312000, 2023);
Query OK, 1 row affected (0.09 sec)

mysql> INSERT INTO Project VALUES (10345, 107, 'Finance Audit 22', 'Ahmedabad', 478000, 2022);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Project VALUES (10278, 104, 'eCommerce Website', 'Pune', 689000, 2023);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Project VALUES (10171, 106, 'Production Breakdown', 'Kolkata', 20100, 2020);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Project VALUES (10908, 103, 'Blog Site', 'Mumbai', 340900, 2022);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Project VALUES (10978, 103, 'Dating App', 'Mumbai', 450100, 2023);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Project VALUES (10347, 104, 'Music Recommendation', 'Mumbai', 367000, 2022);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Project VALUES (10279, 104, 'Movie Recommendation', 'Pune', 109000, 2021);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Project VALUES (10999, 105, 'Yearly Budget', 'Ahmedabad', 290300, 2022);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Project VALUES (10722, 109, 'Monthly Checkup', 'Pune', 490200, 2023);
Query OK, 1 row affected (0.03 sec)

mysql> SELECT * FROM Project;
```
+---------+---------+----------------------+---------------+-----------+-----------+
| Proj_id | Dept_id | Proj_name            | Proj_location | Proj_cost | proj_year |
+---------+---------+----------------------+---------------+-----------+-----------+
|   10120 |     103 | Payment Gateway      | Pune          |    312000 |      2023 |
|   10171 |     106 | Production Breakdown | Kolkata       |     20100 |      2020 |
|   10278 |     104 | eCommerce Website    | Pune          |    689000 |      2023 |
```

```
| 10279 |     104 | Movie Recommendation | Pune        |    109000 |      2021 |
| 10345 |     107 | Finance Audit 22     | Ahmedabad   |    478000 |      2022 |
| 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 |
+---------+---------+----------------------+--------------+-----------+-----------+
```
10 rows in set (0.00 sec)

QUERY 2 : Display all Employee details with Department 'Computer' and 'IT' and Employee first name starting with 'p' or 'h'.

mysql> INSERT INTO Employee
   -> VALUES
   -> (344, 103, 'Prathamesh', 'Bedarkar', 'Web Developer', 4356000, '2020-12-14', 10908);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Employee
   -> VALUES
   -> (717, 104, 'Pallavi', 'Joshi', 'App Developer', 4339000, '2022-02-19', 10279);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO Employee
   -> VALUES
   -> (234, 104, 'Harshita', 'Alibagkar', 'App Developer', 6758900, '2023-01-23', 10347);
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Employee E WHERE Dept_id IN (SELECT Dept_id FROM Dept WHERE Dept_name IN ('Computer', 'IT')) AND Emp_fname LIKE 'p%' OR Emp_fname LIKE 'h%';

```
mysql> SELECT * FROM Employee E WHERE Dept_id IN (SELECT Dept_id FROM Dept WHERE Dept_name IN ('Computer',
 'IT')) AND Emp_fname LIKE 'p%' OR Emp_fname LIKE 'h%';
+--------+---------+------------+-----------+---------------+------------+--------------+---------+
| Emp_id | Dept_id | Emp_fname  | Emp_lname | Emp_position  | Emp_salary | Emp_joinDate | Proj_id |
+--------+---------+------------+-----------+---------------+------------+--------------+---------+
|    234 |     104 | Harshita   | Alibagkar | App Developer |    6758900 | 2023-01-23   |   10347 |
|    344 |     103 | Prathamesh | Bedarkar  | Web Developer |    4791600 | 2020-12-14   |   10908 |
|    717 |     104 | Pallavi    | Joshi     | App Developer |    4339000 | 2022-02-19   |   10279 |
+--------+---------+------------+-----------+---------------+------------+--------------+---------+
3 rows in set (0.00 sec)
```

QUERY 3 : lists the number of different Employee Positions.

mysql> SELECT COUNT(DISTINCT Emp_position) FROM Employee;

```
+------------------------------+
| COUNT(DISTINCT  Emp_position) |
+------------------------------+
|                          10 |
+------------------------------+
```

QUERY 4 : Give 10% increase in Salary of the Employee whose joinDate before 2021.

BEFORE:
mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+------------+-----------------+------------+--------------+---------+
| Emp_id | Dept_id | Emp_fname | Emp_lname  | Emp_position    | Emp_salary | Emp_joinDate | Proj_id |
+--------+---------+-----------+------------+-----------------+------------+--------------+---------+
|    199 |     106 | Sumit     | Suryavanshi| Emrgency Officer |    1090000 | 2020-03-18   |   10171 |
|    234 |     104 | Harshita  | Alibagkar  | App Developer   |    6758900 | 2023-01-23   |   10347 |
|    258 |     103 | Yash      | Tiwari     | App Developer   |    2880000 | 2019-10-05   |    NULL |
|    344 |     103 | Prathamesh| Bedarkar   | Web Developer   |    4356000 | 2020-12-14   |   10908 |
|    365 |     107 | Avni      | Ambekar    | Chief Auditor   |    5637000 | 2019-05-19   |    NULL |
|    387 |     107 | Abhay     | Shanbhag   | Co-Auditor      |     473000 | 2019-12-24   |    NULL |
|    435 |     100 | Ashwin    | Taras      | CEO             |   57000000 | 2019-01-27   |    NULL |
|    438 |     100 | Aditya    | More       | CTO             |   43500000 | 2019-01-30   |    NULL |
|    441 |     100 | Raj       | Kolekar    | CFO             |   39000000 | 2019-01-30   |    NULL |
|    657 |     102 | Chirag    | Siroya     | Overall Admin   |    9650000 | 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   |    2345000 | 2019-07-26   |    NULL |
+--------+---------+-----------+------------+-----------------+------------+--------------+---------+
```
13 rows in set (0.00 sec)

mysql> UPDATE Employee SET Emp_salary = Emp_salary + Emp_salary*0.1 WHERE YEAR(Emp_joinDate) < 2021;

Query OK, 10 rows affected (0.02 sec)
Rows matched: 10 Changed: 10 Warnings: 0

mysql> SELECT * FROM Employee;

```
+--------+---------+-----------+------------+-----------------+------------+--------------+---------+
| Emp_id | Dept_id | Emp_fname | Emp_lname  | Emp_position    | Emp_salary | Emp_joinDate | Proj_id |
+--------+---------+-----------+------------+-----------------+------------+--------------+---------+
|    199 |     106 | Sumit     | Suryavanshi| Emrgency 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 |
|    365 |     107 | Avni      | Ambekar    | Chief Auditor   |    6200700 | 2019-05-19   |    NULL |
|    387 |     107 | Abhay     | Shanbhag   | Co-Auditor      |     520300 | 2019-12-24   |    NULL |
|    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 |
+--------+---------+-----------+------------+-----------------+------------+--------------+---------+
```
13 rows in set (0.00 sec)

QUERY 5 : Delete Department details which location is 'Mumbai'.
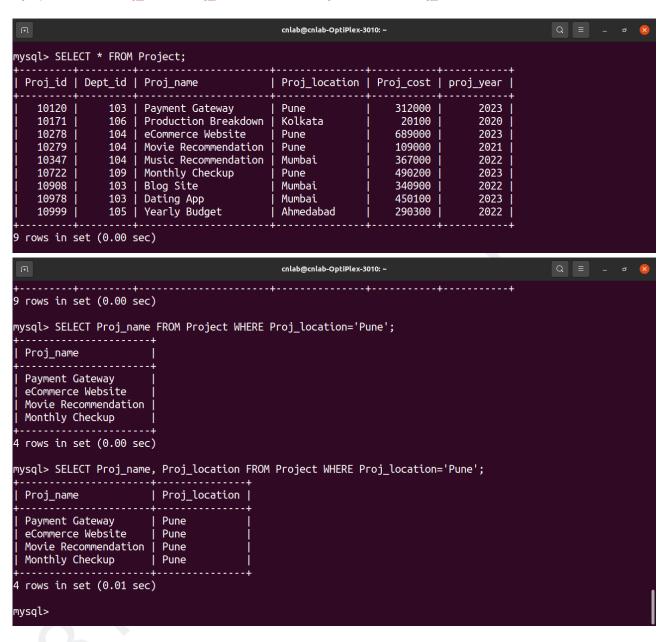
mysql> DELETE FROM Dept WHERE Dept_location='Mumbai';

```
cnlab@cnlab-OptiPlex-3010: ~

mysql> SELECT * FROM Dept;
+---------+-------------+---------------+
| Dept_id | Dept_name   | Dept_location |
+---------+-------------+---------------+
|     100 | HeadOffice  | Delhi         |
|     101 | Management  | Mumbai        |
|     102 | Admin       | Pune          |
|     103 | Computer    | Pune          |
|     104 | IT          | Pune          |
|     105 | Finance     | Ahmedabad     |
|     106 | Emergency   | Kolkata       |
|     107 | Audit       | Mumbai        |
|     108 | HR          | Mumbai        |
|     109 | Health      | Delhi         |
+---------+-------------+---------------+
10 rows in set (0.00 sec)

mysql> DELETE FROM Dept WHERE Dept_location='Mumbai';
Query OK, 3 rows affected (0.02 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)
```

QUERY 6 : Find the names of Projects with location 'Pune'.

mysql> SELECT Proj_name FROM Project WHERE Proj_location='Pune';

mysql> SELECT Proj_name, Proj_location FROM Project WHERE Proj_location='Pune';

```
cnlab@cnlab-OptiPlex-3010: ~

mysql> SELECT * FROM Project;
+---------+---------+----------------------+---------------+-----------+-----------+
| Proj_id | Dept_id | Proj_name            | Proj_location | Proj_cost | proj_year |
+---------+---------+----------------------+---------------+-----------+-----------+
|   10120 |     103 | Payment Gateway      | Pune          |    312000 |      2023 |
|   10171 |     106 | Production Breakdown  | Kolkata       |     20100 |      2020 |
|   10278 |     104 | eCommerce Website     | Pune          |    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)
```

```
cnlab@cnlab-OptiPlex-3010: ~

+---------+---------+----------------------+---------------+-----------+-----------+
9 rows in set (0.00 sec)

mysql> SELECT Proj_name FROM Project WHERE Proj_location='Pune';
+----------------------+
| Proj_name            |
+----------------------+
| Payment Gateway      |
| eCommerce Website     |
| Movie Recommendation |
| Monthly Checkup       |
+----------------------+
4 rows in set (0.00 sec)

mysql> SELECT Proj_name, Proj_location FROM Project WHERE Proj_location='Pune';
+----------------------+---------------+
| Proj_name            | Proj_location |
+----------------------+---------------+
| Payment Gateway      | Pune          |
| eCommerce Website     | Pune          |
| Movie Recommendation | Pune          |
| Monthly Checkup       | Pune          |
+----------------------+---------------+
4 rows in set (0.01 sec)

mysql>
```

QUERY 7 : Find the project having cost in between 1,00,000 to 5,00,000.

mysql> SELECT * FROM Project WHERE Proj_cost BETWEEN 100000 AND 500000;

```
mysql> SELECT * FROM Project;
+---------+---------+---------------------+-------------+-----------+-----------+
| Proj_id | Dept_id | Proj_name           | Proj_location | Proj_cost | proj_year |
+---------+---------+---------------------+-------------+-----------+-----------+
|   10120 |     103 | Payment Gateway     | Pune        |    312000 |      2023 |
|   10171 |     106 | Production Breakdown | Kolkata     |     20100 |      2020 |
|   10278 |     104 | eCommerce Website   | Pune        |    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 Project WHERE Proj_cost BETWEEN 100000 AND 500000;
+---------+---------+---------------------+-------------+-----------+-----------+
| Proj_id | Dept_id | Proj_name           | Proj_location | Proj_cost | proj_year |
+---------+---------+---------------------+-------------+-----------+-----------+
|   10120 |     103 | Payment Gateway     | Pune        |    312000 |      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 |
+---------+---------+---------------------+-------------+-----------+-----------+
7 rows in set (0.01 sec)

mysql>
```

QUERY 8 : Find the project having maximum price and find average of Project cost.

mysql> SELECT * FROM Project ORDER BY Proj_cost DESC LIMIT 1;

OR

mysql> SELECT * FROM Project WHERE Proj_cost IN (SELECT MAX(Proj_cost) FROM Project);

```
                                        cnlab@cnlab-OptiPlex-3010: ~

mysql> SELECT * FROM Project;
+----------+----------+----------------------+---------------+-----------+-----------+
| Proj_id  | Dept_id  | Proj_name            | Proj_location | Proj_cost | proj_year |
+----------+----------+----------------------+---------------+-----------+-----------+
|   10120  |     103  | Payment Gateway      | Pune          |    312000 |      2023 |
|   10171  |     106  | Production Breakdown | Kolkata       |     20100 |      2020 |
|   10278  |     104  | eCommerce Website    | Pune          |    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 Project ORDER BY Proj_cost DESC LIMIT 1;
+----------+----------+-------------------+---------------+-----------+-----------+
| Proj_id  | Dept_id  | Proj_name         | Proj_location | Proj_cost | proj_year |
+----------+----------+-------------------+---------------+-----------+-----------+
|   10278  |     104  | eCommerce Website | Pune          |    689000 |      2023 |
+----------+----------+-------------------+---------------+-----------+-----------+
1 row in set (0.00 sec)

mysql> SELECT * FROM Project WHERE Proj_cost IN (SELECT MAX(Proj_cost) FROM Project);
+----------+----------+-------------------+---------------+-----------+-----------+
| Proj_id  | Dept_id  | Proj_name         | Proj_location | Proj_cost | proj_year |
+----------+----------+-------------------+---------------+-----------+-----------+
|   10278  |     104  | eCommerce Website | Pune          |    689000 |      2023 |
+----------+----------+-------------------+---------------+-----------+-----------+
1 row in set (0.00 sec)

mysql>
```

QUERY 9 : Display all employees with Emp _id and Emp name in decreasing order of Emp_lname.

mysql> SELECT Emp_id, Emp_fname, Emp_lname FROM Employee ORDER BY Emp_lname DESC;

```
mysql> SELECT Emp_id, Emp_fname, Emp_lname FROM Employee ORDER BY Emp_lname DESC;
+--------+-----------+-------------+
| Emp_id | Emp_fname | Emp_lname   |
+--------+-----------+-------------+
|    921 | Mahesh    | Vaswani     |
|    258 | Yash      | Tiwari      |
|    435 | Ashwin    | Taras       |
|    199 | Sumit     | Suryavanshi |
|    657 | Chirag    | Siroya      |
|    438 | Aditya    | More        |
|    441 | Raj       | Kolekar     |
|    717 | Pallavi   | Joshi       |
|    344 | Prathamesh| Bedarkar    |
|    800 | Sarthik   | Bangroo     |
|    234 | Harshita  | Alibagkar   |
+--------+-----------+-------------+
11 rows in set (0.01 sec)

mysql>
```

QUERY 10 : Display Proj_name, Proj_location, Proj_cost of all project started in 2004, 2005, 2007.

Note:- Using 2020, 2021, 2023 instead of 2004, 2005, 2007;

mysql> SELECT Proj_name, Proj_location, Proj_cost FROM Project WHERE proj_year IN ('2020', '2021', '2023');

```
cnlab@cnlab-OptiPlex-3010: ~
mysql> SELECT Proj_name, Proj_location, Proj_cost FROM Project WHERE proj_year IN ('2020', '2021', '2023')
;
+---------------------+---------------+-----------+
| Proj_name           | Proj_location | Proj_cost |
+---------------------+---------------+-----------+
| Payment Gateway     | Pune          |    312000 |
| Production Breakdown | Kolkata      |     20100 |
| eCommerce Website   | Pune          |    689000 |
| Movie Recommendation | Pune         |    109000 |
| Monthly Checkup     | Pune          |    490200 |
| Dating App          | Mumbai        |    450100 |
+---------------------+---------------+-----------+
6 rows in set (0.00 sec)
```

TABLE VIEWS

```
cnlab@cnlab-OptiPlex-3010: ~

mysql> CREATE VIEW ProjectView AS SELECT Proj_id, Proj_name, Proj_location FROM Project;
Query OK, 0 rows affected (0.09 sec)

mysql> SELECT * FROM ProjectView;
+---------+----------------------+---------------+
| Proj_id | Proj_name            | Proj_location |
+---------+----------------------+---------------+
|   10120 | Payment Gateway      | Pune          |
|   10171 | Production Breakdown  | Kolkata       |
|   10278 | eCommerce Website     | Pune          |
|   10279 | Movie Recommendation  | Pune          |
|   10347 | Music Recommendation  | Mumbai        |
|   10722 | Monthly Checkup       | Pune          |
|   10908 | Blog Site             | Mumbai        |
|   10978 | Dating App            | Mumbai        |
|   10999 | Yearly Budget         | Ahmedabad     |
+---------+----------------------+---------------+
9 rows in set (0.01 sec)
```

```
cnlab@cnlab-OptiPlex-3010: ~

mysql> CREATE VIEW DeptView AS SELECT * FROM Dept;
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM DeptView;
+---------+-----------+---------------+
| 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)
```

```
cnlab@cnlab-OptiPlex-3010: ~

mysql> CREATE VIEW EmployeeView AS SELECT Emp_id, Dept_id, Emp_fname, Emp_lname, Emp_position FROM Employee;
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM EmployeeView;
+--------+---------+-----------+-------------+------------------+
| Emp_id | Dept_id | Emp_fname | Emp_lname   | Emp_position     |
+--------+---------+-----------+-------------+------------------+
|    199 |     106 | Sumit     | Suryavanshi | Emrgency Officer |
|    234 |     104 | Harshita  | Alibagkar   | App Developer    |
|    258 |     103 | Yash      | Tiwari      | App Developer    |
|    344 |     103 | Prathamesh| Bedarkar    | Web Developer    |
|    435 |     100 | Ashwin    | Taras       | CEO              |
|    438 |     100 | Aditya    | More        | CTO              |
|    441 |     100 | Raj       | Kolekar     | CFO              |
|    657 |     102 | Chirag    | Siroya      | Overall Admin    |
|    717 |     104 | Pallavi   | Joshi       | App Developer    |
|    800 |     105 | Sarthik   | Bangroo     | CA               |
|    921 |     103 | Mahesh    | Vaswani     | Web Developer    |
+--------+---------+-----------+-------------+------------------+
11 rows in set (0.00 sec)
```

TABLE INDEX

mysql> CREATE INDEX Emp_fname ON Employee(Emp_fname);

mysql> EXPLAIN SELECT * FROM Employee WHERE Emp_fname LIKE 'A%';

mysql> SHOW INDEXES FROM Employee;

```
mysql> SELECT * FROM Employee;
+--------+---------+-----------+------------+-----------------+-----------+-------------+---------+
| Emp_id | Dept_id | Emp_fname | Emp_lname  | Emp_position    | Emp_salary| Emp_joinDate| Proj_id |
+--------+---------+-----------+------------+-----------------+-----------+-------------+---------+
|    199 |     106 | Sumit     | Suryavanshi| Emrgency 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> EXPLAIN SELECT * FROM Employee WHERE Emp_fname LIKE 'A%';
+----+-------------+----------+------+---------------+------+---------+------+------+-------------+
| id | select_type | table    | type | possible_keys | key  | key_len | ref  | rows | Extra       |
+----+-------------+----------+------+---------------+------+---------+------+------+-------------+
|  1 | SIMPLE      | Employee | ALL  | NULL          | NULL | NULL    | NULL |   11 | Using where |
+----+-------------+----------+------+---------------+------+---------+------+------+-------------+
1 row in set (0.00 sec)

mysql> CREATE INDEX Emp_fname ON Employee(Emp_fname);
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> EXPLAIN SELECT * FROM Employee WHERE Emp_fname LIKE 'A%';
+----+-------------+----------+-------+---------------+-----------+---------+------+------+-----------------------+
| id | select_type | table    | type  | possible_keys | key       | key_len | ref  | rows | Extra                 |
+----+-------------+----------+-------+---------------+-----------+---------+------+------+-----------------------+
|  1 | SIMPLE      | Employee | range | Emp_fname     | Emp_fname | 23      | NULL |    2 | Using index condition |
+----+-------------+----------+-------+---------------+-----------+---------+------+------+-----------------------+
1 row in set (0.00 sec)

mysql>
```

```
mysql> SHOW INDEXES FROM Employee;
+----------+------------+-----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
| Table    | Non_unique | Key_name  | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comment |
+----------+------------+-----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
| Employee |          0 | PRIMARY   |            1 | Emp_id      | A         |          11 |     NULL | NULL   |      | BTREE      |         |               |
| Employee |          1 | Dept_id   |            1 | Dept_id     | A         |          11 |     NULL | NULL   |      | BTREE      |         |               |
| Employee |          1 | Proj_id   |            1 | Proj_id     | A         |          11 |     NULL | NULL   | YES  | BTREE      |         |               |
| Employee |          1 | Emp_fname |            1 | Emp_fname   | A         |          11 |     NULL | NULL   | YES  | BTREE      |         |               |
+----------+------------+-----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
4 rows in set (0.00 sec)

mysql>
```

31485 Ashwin Taras