SQL PROJECT

DEPARTMENT DATABASE MANAGEMENT REPOSITORY

NAME: **ABHISHEK PRAMOD GURAV**

COURSE: **MASTER IN DATA SCIENCE AND ANALYTICS WITH AI**

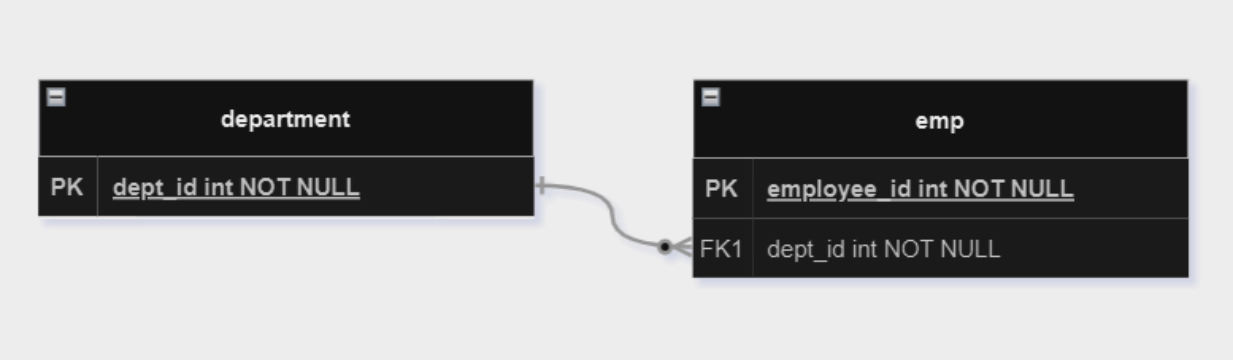
ABOUT DATASET:

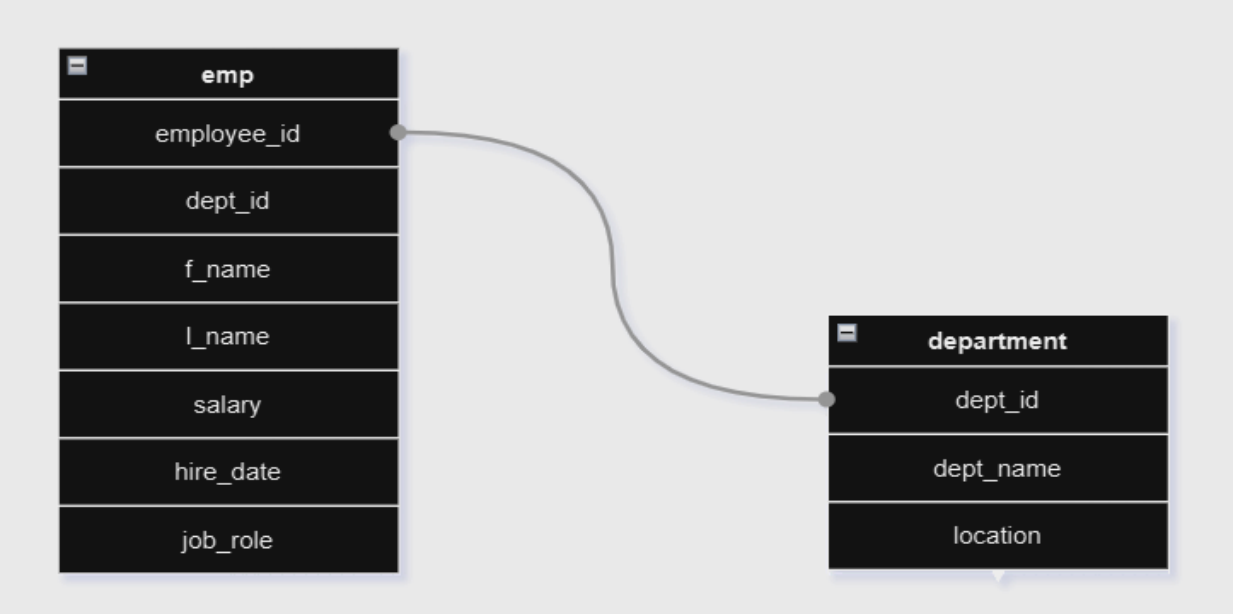
Department Management is very essential in order to maintain all details regarding the fields such as department, employee and other details if required. It includes details such as department with fields such as dept_id, dept_name,location and employee details which will be stored in database.

AVAILABLE TABLES:

- DEPARTMENT
- EMPLOYEE

ER Diagram:


department
PK
dept_id int NOT NULL
emp
PK
employee_id int NOT NULL
FK1
dept_id int NOT NULL


emp
employee_id
dept_id
f_name
l_name
salary
hire_date
job_role
department
dept_id
dept_name
location

1) WRITE A QUERY TO CREATE A NEW DATABASE.

```
mysql> create database project;
Query OK, 1 row affected (0.01 sec)
```

2) WRITE A QUERY TO USE DATABASE.

```
mysql> use project;
Database changed
```

3) WRITE A QUERY TO CREATE A NEW TABLE.

```
mysql> create table department(dept_id int primary key not null,dept_name
varchar(20) not null,location varchar(20));
Query OK, 0 rows affected (0.01 sec)
```

4) WRITE A QUERY TO SEE THE SCHEMA (STRUCTURE) OF THE TABLE.

```
mysql> desc department;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| dept_id   | int         | NO   | PRI | NULL    |       |
| dept_name | varchar(20) | NO   |     | NULL    |       |
| location  | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

5) WRITE A QUERY TO INSERT VALUES INTO THE TABLE.

```
mysql> insert into department values(102,"accounting","delhi"),
    -> (103,"hr","pune"),
    -> (104,"research","mumbai"),
    -> (105,"sales","surat");
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

6) WRITE A QUERY TO SEE THE CONTENT OF THE TABLE.

```
mysql> select * from department;
+---------+------------+----------+
| dept_id | dept_name  | location |
+---------+------------+----------+
|     102 | accounting | delhi    |
|     103 | hr         | pune     |
|     104 | research   | mumbai   |
|     105 | sales      | surat    |
+---------+------------+----------+
4 rows in set (0.00 sec)

mysql> create table employee(emp_id int not null,dept_id int,f_name
varchar(20),l_name varchar(20),salary int,hire_date varchar(20) not
null,job_role varchar(20),primary key(emp_id),foreign key(dept_id)
references department(dept_id));
Query OK, 0 rows affected (0.02 sec)

mysql> desc employee;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| emp_id    | int         | NO   | PRI | NULL    |       |
| dept_id   | int         | YES  | MUL | NULL    |       |
| f_name    | varchar(20) | YES  |     | NULL    |       |
| l_name    | varchar(20) | YES  |     | NULL    |       |
| salary    | int         | YES  |     | NULL    |       |
| hire_date | varchar(20) | NO   |     | NULL    |       |
| job_role  | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)

mysql> insert into employee values(01,102,"abhishek","gurav",50000,"10-
09-2023","manager"),
    -> (02,103,"sneha","shinde",35000,"01-01-2024","accountant"),
    -> (03,104,"sai","lavate",25000,"08-11-2020","salesman"),
    -> (04,105,"kajal","rawat",10000,"29-05-2024","accountant");
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select * from employee;
+--------+---------+----------+--------+--------+------------+------------+
| emp_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   |
+--------+---------+----------+--------+--------+------------+------------+
|      1 |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    |
|      2 |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant |
|      3 |     104 | sai      | lavate |  25000 | 08-11-2020 | salesman   |
|      4 |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant |
+--------+---------+----------+--------+--------+------------+------------+
4 rows in set (0.00 sec)
```

7) WRITE A QUERY TO ADD AGE & EMAIL COLUMNS IN TABLE EMPLOYEE.

```
mysql> alter table employee
    -> add column age int,
    -> add column email varchar(20);
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc employee;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| emp_id    | int         | NO   | PRI | NULL    |       |
| dept_id   | int         | YES  | MUL | NULL    |       |
| f_name    | varchar(20) | YES  |     | NULL    |       |
| l_name    | varchar(20) | YES  |     | NULL    |       |
| salary    | int         | YES  |     | NULL    |       |
| hire_date | varchar(20) | NO   |     | NULL    |       |
| job_role  | varchar(20) | YES  |     | NULL    |       |
| age       | int         | YES  |     | NULL    |       |
| email     | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
9 rows in set (0.00 sec)
```

8) WRITE A QUERY TO DELETE AGE COLUMN FROM TABLE EMPLOYEE.

```
mysql> alter table employee
    -> drop column age ;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc employee;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| emp_id    | int         | NO   | PRI | NULL    |       |
| dept_id   | int         | YES  | MUL | NULL    |       |
| f_name    | varchar(20) | YES  |     | NULL    |       |
| l_name    | varchar(20) | YES  |     | NULL    |       |
| salary    | int         | YES  |     | NULL    |       |
| hire_date | varchar(20) | NO   |     | NULL    |       |
| job_role  | varchar(20) | YES  |     | NULL    |       |
| email     | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

9) WRITE A QUERY TO M0DIFY DATATYPE OF COLUMN EMP_ID FROM TABLE EMPLOYEE.

```
mysql> alter table employee
    -> modify column emp_id varchar(20);
Query OK, 4 rows affected (0.05 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> desc employee;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| emp_id    | varchar(20) | NO   | PRI | NULL    |       |
| dept_id   | int         | YES  | MUL | NULL    |       |
| f_name    | varchar(20) | YES  |     | NULL    |       |
| l_name    | varchar(20) | YES  |     | NULL    |       |
| salary    | int         | YES  |     | NULL    |       |
| hire_date | varchar(20) | NO   |     | NULL    |       |
| job_role  | varchar(20) | YES  |     | NULL    |       |
| email     | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

10) WRITE A QUERY TO CHANGE NAME OF COLUMN EMP_ID TO EMPLOYEE_ID FROM TABLE EMPLOYEE.

```
mysql> alter table employee
    -> rename column emp_id to employee_id;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc employee;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| employee_id | varchar(20) | NO   | PRI | NULL    |       |
| dept_id     | int         | YES  | MUL | NULL    |       |
| f_name      | varchar(20) | YES  |     | NULL    |       |
| l_name      | varchar(20) | YES  |     | NULL    |       |
| salary      | int         | YES  |     | NULL    |       |
| hire_date   | varchar(20) | NO   |     | NULL    |       |
| job_role    | varchar(20) | YES  |     | NULL    |       |
| email       | varchar(20) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

11) WRITE A QUERY TO CHANGE NAME OF TABLE EMPLOYEE TO EMP FROM TABLE EMPLOYEE.

```
mysql> alter table employee
    -> rename to emp;
Query OK, 0 rows affected (0.02 sec)

mysql> desc emp;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| employee_id | varchar(20) | NO   | PRI | NULL    |       |
| dept_id     | int         | YES  | MUL | NULL    |       |
| f_name      | varchar(20) | YES  |     | NULL    |       |
| l_name      | varchar(20) | YES  |     | NULL    |       |
| salary      | int         | YES  |     | NULL    |       |
| hire_date   | varchar(20) | NO   |     | NULL    |       |
| job_role    | varchar(20) | YES  |     | NULL    |       |
| email       | varchar(20) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

12) WRITE A QUERY TO UPDATE SALARY OF ROW 3 FROM TABLE EMP.

```
mysql> update emp
    -> set salary=30000
    -> where employee_id=3;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from emp;
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
| 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
| 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
4 rows in set (0.00 sec)
```

13) WRITE A QUERY TO INSERT A NEW RECORD IN TABLE DEPARTMENT.

```
mysql> insert into department values(106,"hr","chennai");
Query OK, 1 row affected (0.00 sec)

mysql> select * from department;
+---------+------------+----------+
| dept_id | dept_name  | location |
+---------+------------+----------+
|     102 | accounting | delhi    |
|     103 | hr         | pune     |
|     104 | research   | mumbai   |
|     105 | sales      | surat    |
|     106 | hr         | chennai  |
+---------+------------+----------+
5 rows in set (0.00 sec)
```

14) WRITE A QUERY TO DELETE ROW FROM TABLE DEPARTMENT.

```
mysql> delete from department
    -> where dept_id=106;
Query OK, 1 row affected (0.00 sec)

mysql> select * from department;
+---------+------------+----------+
| dept_id | dept_name  | location |
+---------+------------+----------+
|     102 | accounting | delhi    |
|     103 | hr         | pune     |
|     104 | research   | mumbai   |
|     105 | sales      | surat    |
+---------+------------+----------+
4 rows in set (0.00 sec)

mysql> select * from emp;
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
| 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
| 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
4 rows in set (0.00 sec)
```

15) WRITE A QUERY TO FETCH DEPT_ID,F_NAME,HIRE_DATE,JOB_ROLE FROM TABLE EMP WHERE SALARY=50000.

```
mysql> select dept_id,f_name,hire_date,job_role from emp
    -> where salary = 50000;
+---------+----------+------------+----------+
| dept_id | f_name   | hire_date  | job_role |
+---------+----------+------------+----------+
|     102 | abhishek | 10-09-2023 | manager  |
+---------+----------+------------+----------+
1 row in set (0.00 sec)
```

16) WRITE A QUERY TO FETCH F_NAME,L_NAME,SALARY FROM TABLE EMP WHERE SALARY!=35000.

```
mysql> select f_name,l_name,salary from emp where salary!=35000;
+----------+--------+--------+
| f_name   | l_name | salary |
+----------+--------+--------+
| abhishek | gurav  |  50000 |
| sai      | lavate |  30000 |
| kajal    | rawat  |  10000 |
+----------+--------+--------+
3 rows in set (0.00 sec)
```

[LOGICAL OPERATORS :-(AND,OR,NOT)]

17) AND OPERATOR :-

```
mysql> select * from emp where job_role="accountant" and salary=10000;
+-------------+---------+--------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+--------+--------+--------+------------+------------+-------+
| 4           |     105 | kajal  | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+-------------+---------+--------+--------+--------+------------+------------+-------+
1 row in set (0.00 sec)
```

18) OR OPERATOR :-

```
mysql> select * from emp where job_role="manager" or salary>10000;
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
| 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
3 rows in set (0.00 sec)
```

19) NOT OPERATOR :-

```
mysql> select * from emp where not job_role="manager";
+-------------+---------+--------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+--------+--------+--------+------------+------------+-------+
| 2           |     103 | sneha  | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai    | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
| 4           |     105 | kajal  | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+-------------+---------+--------+--------+--------+------------+------------+-------+
3 rows in set (0.00 sec)
```

[BETWEEN OPERATOR :-]

20) SELECT EMPLOYEE_ID,F_NAME FROM EMP WHERE SALARY RANGES BETWEEN 30000-50000.

```
mysql> select employee_id,f_name from emp where salary between 30000 and
50000;
+-------------+----------+
| employee_id | f_name   |
+-------------+----------+
| 1           | abhishek |
| 2           | sneha    |
| 3           | sai      |
+-------------+----------+
3 rows in set (0.00 sec)
```

[IN OPERATOR :-]

21) SELECT * FROM EMP WHERE DEPT_ID IS 102,105.

```
mysql> select * from emp where dept_id in(102,105);
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
| 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
2 rows in set (0.00 sec)
```

[LIKE OPERATOR :-]

22) SELECT * FROM EMP WHERE F_NAME STARTS WITH S.

```
mysql> select * from emp where f_name like's%';
+-------------+---------+--------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+--------+--------+--------+------------+------------+-------+
| 2           |     103 | sneha  | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai    | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
+-------------+---------+--------+--------+--------+------------+------------+-------+
2 rows in set (0.01 sec)
```

23) SELECT * FROM EMP WHERE L_MANE ENDS WITH V.

```
mysql> select * from emp where l_name like'%v';
+-------------+---------+----------+--------+--------+------------+----------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role | email |
+-------------+---------+----------+--------+--------+------------+----------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager  | NULL  |
+-------------+---------+----------+--------+--------+------------+----------+-------+
1 row in set (0.00 sec)
```

[LIMIT :-]

24) WRITE A QUERY TO FETCH FIRST 2 ROWS FROM TABLE EMP.

```
mysql> select * from emp limit 2;
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
| 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
2 rows in set (0.00 sec)
```

25) WRITE A QUERY TO FETCH 2ND & 3RD ROW FROM TABLE EMP USING LIMIT CLAUSE.

```
mysql> select * from emp limit 1,2;
+-------------+---------+--------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+--------+--------+--------+------------+------------+-------+
| 2           |     103 | sneha  | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai    | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
+-------------+---------+--------+--------+--------+------------+------------+-------+
2 rows in set (0.00 sec)
```

[ORDER BY :-]

26) WRITE A QUERY TO SORT SALARY FROM TABLE EMP IN ASCENDING ORDER.

```
mysql> select * from emp order by salary;
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
| 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
| 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
4 rows in set (0.00 sec)
```

27) WRITE A QUERY TO SORT SALARY FROM TABLE EMP IN DESCENDING ORDER.

```
mysql> select * from emp order by salary desc;
+-------------+---------+----------+--------+--------+------------+------------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+-------------+---------+----------+--------+--------+------------+------------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
| 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
| 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
| 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+-------------+---------+----------+--------+--------+------------+------------+-------+
4 rows in set (0.00 sec)
```

[ALIAS (AS) :-]

28) WRITE A QUERY TO GIVE A TEMPORARY NAME TO COLUMN EMPLOYEE_ID AS ID FROM TABLE EMP.

```
mysql> select employee_id as id from emp;
+----+
| id |
+----+
| 1  |
| 2  |
| 3  |
| 4  |
+----+
4 rows in set (0.00 sec)
```

[STRING FUNCTIONS :-]

29) WRITE A QUERY TO JOIN F_NAME & L_NAME.

```
mysql> select concat("abhishek","gurav");
+----------------------------+
| concat("abhishek","gurav") |
+----------------------------+
| abhishekgurav              |
+----------------------------+
1 row in set (0.00 sec)
```

30) WRITE A QUERY TO CONVERT ALL LETTERS INTO UPPERCASE.

```
mysql> select upper("abhishek") as upper;
+----------+
| upper    |
+----------+
| ABHISHEK |
+----------+
1 row in set (0.00 sec)
```

31) WRITE A QUERY TO CONVERT ALL LETTERS INTO LOWERCASE.

```
mysql> select lower("ABHISHEK") as lower;
+----------+
| lower    |
+----------+
| abhishek |
+----------+
1 row in set (0.00 sec)
```

32) WRITE A QUERY TO REPLACE OLD STRING WITH NEW STRING.

```
mysql> select replace("good morning","good","bad");
+--------------------------------------+
| replace("good morning","good","bad") |
+--------------------------------------+
| bad morning                          |
+--------------------------------------+
1 row in set (0.00 sec)
```

33) WRITE A QUERY TO REVERSE THE STRING.

```
mysql> select reverse("hello") as reverse;
+---------+
| reverse |
+---------+
| olleh   |
+---------+
1 row in set (0.00 sec)
```

34) WRITE A QUERY TO CALCULATE NUMBER OF CHARACTERS OF THE STRING.

```
mysql> select length("royal challengers bengaluru") as length;
+--------+
| length |
+--------+
|     27 |
+--------+
1 row in set (0.00 sec)
```

35) WRITE A QUERY TO RETURN A PARTICULAR PART OF THE STRING.

```
mysql> select substring("royal challengers bengaluru",19,9) as substring;
+-----------+
| substring |
+-----------+
| bengaluru |
+-----------+
1 row in set (0.00 sec)
```

36) WRITE A QUERY TO REMOVE UNWANTED WHITE SPACES FROM BOTH SIDES OF THE STRING.

```
mysql> select trim("   india   ") as trim;
+-------+
| trim  |
+-------+
| india |
+-------+
1 row in set (0.00 sec)
```

37) WRITE A QUERY TO REMOVE UNWANTED WHITE SPACES FROM LEFT SIDE OF THE STRING.

```
mysql> select ltrim("   india   ") as ltrim;
+----------+
| ltrim    |
+----------+
| india    |
+----------+
1 row in set (0.00 sec)
```

38) WRITE A QUERY TO REMOVE UNWANTED WHITE SPACES FROM RIGHT SIDE OF THE STRING.

```
mysql> select rtrim("   india   ") as rtrim;
+----------+
| rtrim    |
+----------+
|    india |
+----------+
1 row in set (0.00 sec)
```

[MATH FUNCTIONS :-]

39) WRITE A QUERY TO FIND THE ABSOLUTE VALUE.

```
mysql> select abs(-786) as absolute;
+----------+
| absolute |
+----------+
|      786 |
+----------+
1 row in set (0.00 sec)
```

40) WRITE A QUERY TO FIND THE MODULUS.

```
mysql> select mod(20,3) as remainder;
+-----------+
| remainder |
+-----------+
|         2 |
+-----------+
1 row in set (0.00 sec)
```

41) WRITE A QUERY TO FIND FLOOR VALUE.

```
mysql> select floor(478.832) as floor;
+-------+
| floor |
+-------+
|   478 |
+-------+
1 row in set (0.00 sec)
```

42) WRITE A QUERY TO FIND CEILING VALUE.

```
mysql> select ceiling(478.832) as ceiling;
+---------+
| ceiling |
+---------+
|     479 |
+---------+
1 row in set (0.00 sec)
```

43) WRITE A QUERY TO FIND TRUNCATE VALUE.

```
mysql> select truncate(478.832,2) as truncate;
+----------+
| truncate |
+----------+
|   478.83 |
+----------+
1 row in set (0.00 sec)
```

[AGGREGATE FUNCTIONS :-]

44) WRITE A QUERY TO FIND THE AVERAGE SALARY FROM EMP.

```
mysql> select avg(salary) from emp as average_salary;
+-------------+
| avg(salary) |
+-------------+
|  31250.0000 |
+-------------+
1 row in set (0.01 sec)
```

45) WRITE A QUERY TO FIND THE SUM OF SALARY FROM EMP.

```
mysql> select sum(salary) from emp as sum_of_salary;
+-------------+
| sum(salary) |
+-------------+
|      125000 |
+-------------+
1 row in set (0.00 sec)
```

46) WRITE A QUERY TO FIND THE MINIMUM SALARY FROM EMP.

```
mysql> select min(salary) from emp as min_of_salary;
+-------------+
| min(salary) |
+-------------+
|       10000 |
+-------------+
1 row in set (0.00 sec)
```

47) WRITE A QUERY TO FIND THE MAXIMUM SALARY FROM EMP.

```
mysql> select max(salary) from emp as max_of_salary;
+-------------+
| max(salary) |
+-------------+
|       50000 |
+-------------+
1 row in set (0.00 sec)
```

48) WRITE A QUERY TO FIND THE COUNT OF SALARY FROM EMP.

```
mysql> select count(salary) from emp as count_of_salary;
+---------------+
| count(salary) |
+---------------+
|             4 |
+---------------+
1 row in set (0.00 sec)
```

[AGGREGATE FUNCTIONS WITH GROUP-BY :-]

49) WRITE A QUERY TO FIND THE AVERAGE SALARY FROM EMP USING GROUP-BY JOB_ROLE(COLUMN).

```
mysql> select job_role,avg(salary) from emp
    -> group by job_role;
+------------+-------------+
| job_role   | avg(salary) |
+------------+-------------+
| manager    |  50000.0000 |
| accountant |  22500.0000 |
| salesman   |  30000.0000 |
+------------+-------------+
3 rows in set (0.00 sec)
```

50) WRITE A QUERY TO FIND THE SUM OF SALARY FROM EMP USING GROUP-BY JOB_ROLE(COLUMN).

```
mysql> select job_role,sum(salary) from emp
    -> group by job_role;
+------------+-------------+
| job_role   | sum(salary) |
+------------+-------------+
| manager    |       50000 |
| accountant |       45000 |
| salesman   |       30000 |
+------------+-------------+
3 rows in set (0.00 sec)
```

51) WRITE A QUERY TO FIND THE MINIMUM SALARY FROM EMP USING GROUP-BY JOB_ROLE(COLUMN).

```
mysql> select job_role,min(salary) from emp
    -> group by job_role;
+------------+-------------+
| job_role   | min(salary) |
+------------+-------------+
| manager    |       50000 |
| accountant |       10000 |
| salesman   |       30000 |
+------------+-------------+
3 rows in set (0.00 sec)
```

52) WRITE A QUERY TO FIND THE MAXIMUM SALARY FROM EMP USING GROUP-BY JOB_ROLE(COLUMN).

```
mysql> select job_role,max(salary) from emp
    -> group by job_role;
+------------+-------------+
| job_role   | max(salary) |
+------------+-------------+
| manager    |       50000 |
| accountant |       35000 |
| salesman   |       30000 |
+------------+-------------+
3 rows in set (0.00 sec)
```

53) WRITE A QUERY TO FIND THE COUNT OF SALARY FROM EMP USING GROUP-BY JOB_ROLE(COLUMN).

```
mysql> select job_role,count(salary) from emp
    -> group by job_role;
+------------+---------------+
| job_role   | count(salary) |
+------------+---------------+
| manager    |             1 |
| accountant |             2 |
| salesman   |             1 |
+------------+---------------+
3 rows in set (0.00 sec)
```

[HAVING CLAUSE :-]

54) WRITE A QUERY TO FIND THE SUM OF SALARY FROM EMP USING GROUP-BY JOB_ROLE(COLUMN) HAVING SUM OF SALARY>30000.

```
mysql> select sum(salary),job_role from emp
    -> group by job_role
    -> having sum(salary)>30000;
+-------------+------------+
| sum(salary) | job_role   |
+-------------+------------+
|       50000 | manager    |
|       45000 | accountant |
+-------------+------------+
2 rows in set (0.00 sec)
```

55) WRITE A QUERY TO FIND COUNT OF * FROM EMP WHERE SALARY<50000 USING GROUP-BY JOB_ROLE(COLUMN) HAVING COUNT OF * >=1.

```
mysql> select job_role,count(*) from emp
    -> where salary<50000
    -> group by job_role
    -> having count(*)>=1;
+------------+----------+
| job_role   | count(*) |
+------------+----------+
| accountant |        2 |
| salesman   |        1 |
+------------+----------+
2 rows in set (0.00 sec)
```

[JOINS :-]

56) WRITE A QUERY TO INNER JOIN DEPARTMENT TO EMP.

```
mysql> select * from department
    -> inner join emp
    -> on department.dept_id = emp.dept_id;
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
| dept_id | dept_name | location | employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
|     102 | accounting | delhi    | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     103 | hr         | pune     | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     104 | research   | mumbai   | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     105 | sales      | surat    | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
4 rows in set (0.00 sec)
```

57) WRITE A QUERY TO LEFT JOIN DEPARTMENT TO EMP.

```
mysql> select * from department
    -> left join emp
    -> on department.dept_id = emp.dept_id;
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
| dept_id | dept_name | location | employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
|     102 | accounting | delhi    | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     103 | hr         | pune     | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     104 | research   | mumbai   | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     105 | sales      | surat    | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
|     106 | hr         | chennai  | NULL        |    NULL | NULL     | NULL   |   NULL | NULL       | NULL       | NULL  |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
5 rows in set (0.00 sec)
```

58) WRITE A QUERY TO RIGHT JOIN DEPARTMENT TO EMP.

```
mysql> select * from department
    -> right join emp
    -> on department.dept_id = emp.dept_id;
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
| dept_id | dept_name | location | employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
|     102 | accounting | delhi    | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     103 | hr         | pune     | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     104 | research   | mumbai   | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     105 | sales      | surat    | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
4 rows in set (0.00 sec)
```

59) WRITE A QUERY TO CROSS JOIN DEPARTMENT TO EMP.

```
mysql> select * from department cross join emp;
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
| dept_id | dept_name | location | employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role   | email |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
|     106 | hr        | chennai  | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     105 | sales     | surat    | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     104 | research  | mumbai   | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     103 | hr        | pune     | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     102 | accounting| delhi    | 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager    | NULL  |
|     106 | hr        | chennai  | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     105 | sales     | surat    | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     104 | research  | mumbai   | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     103 | hr        | pune     | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     102 | accounting| delhi    | 2           |     103 | sneha    | shinde |  35000 | 01-01-2024 | accountant | NULL  |
|     106 | hr        | chennai  | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     105 | sales     | surat    | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     104 | research  | mumbai   | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     103 | hr        | pune     | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     102 | accounting| delhi    | 3           |     104 | sai      | lavate |  30000 | 08-11-2020 | salesman   | NULL  |
|     106 | hr        | chennai  | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
|     105 | sales     | surat    | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
|     104 | research  | mumbai   | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
|     103 | hr        | pune     | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
|     102 | accounting| delhi    | 4           |     105 | kajal    | rawat  |  10000 | 29-05-2024 | accountant | NULL  |
+---------+-----------+----------+-------------+---------+----------+--------+--------+------------+------------+-------+
20 rows in set (0.00 sec)
```

60) WRITE A QUERY TO CROSS JOIN LOCATION FROM DEPARTMENT & F_NAME,SALARY FROM EMP.

```
mysql> select emp.f_name,emp.salary,department.location from department
cross join emp;
+----------+--------+----------+
| f_name   | salary | location |
+----------+--------+----------+
| abhishek |  50000 | chennai  |
| abhishek |  50000 | surat    |
| abhishek |  50000 | mumbai   |
| abhishek |  50000 | pune     |
| abhishek |  50000 | delhi    |
| sneha    |  35000 | chennai  |
| sneha    |  35000 | surat    |
| sneha    |  35000 | mumbai   |
| sneha    |  35000 | pune     |
| sneha    |  35000 | delhi    |
| sai      |  30000 | chennai  |
| sai      |  30000 | surat    |
| sai      |  30000 | mumbai   |
| sai      |  30000 | pune     |
| sai      |  30000 | delhi    |
| kajal    |  10000 | chennai  |
| kajal    |  10000 | surat    |
| kajal    |  10000 | mumbai   |
| kajal    |  10000 | pune     |
| kajal    |  10000 | delhi    |
+----------+--------+----------+
20 rows in set (0.00 sec)
```

[SUBQUERY :-]

61) WRITE A QUERY TO FIND * FROM EMP WHERE SALARY = (SUBQUERY).

```
mysql> select salary from emp where f_name = "abhishek";
+--------+
| salary |
+--------+
|  50000 |
+--------+
1 row in set (0.00 sec)

mysql> select * from emp where salary = (select salary from emp where
f_name = "abhishek");
+-------------+---------+----------+--------+--------+------------+----------+-------+
| employee_id | dept_id | f_name   | l_name | salary | hire_date  | job_role | email |
+-------------+---------+----------+--------+--------+------------+----------+-------+
| 1           |     102 | abhishek | gurav  |  50000 | 10-09-2023 | manager  | NULL  |
+-------------+---------+----------+--------+--------+------------+----------+-------+
1 row in set (0.00 sec)
```

[VIEWS :-]

62) WRITE A QUERY TO CREATE A VIEW.

```
mysql> create view surat_department as
    -> select dept_id,dept_name from department
    -> where location = 'surat';
Query OK, 0 rows affected (0.06 sec)

mysql> select * from surat_department;
+---------+-----------+
| dept_id | dept_name |
+---------+-----------+
|     105 | sales     |
+---------+-----------+
1 row in set (0.01 sec)
```

63) WRITE A QUERY TO DROP A VIEW.

```
mysql> drop view surat_department;
Query OK, 0 rows affected (0.02 sec)
```