



E&I Engineering Consultant Databases

Leading Electrical & Instrumentation cabinet's Provider in a wide range of Process industries

1. INTRODUCTION

The main objective of developing a computerized E&I Engineering Consultant database system is to keep track of all project data between our functions and cross-functional teams, our clients and our vendors. Consequently, we can easily understand what projects we have, which teams are working on them & who will build the product. Thus, we can develop a full-proof strategy for future opportunities, thereby improving productivity and saving time.

Our databases have three modules,

First module is for our employees who are work for us,

Second module is for our clients who give us projects to sell our product to

Third module is for our vendors that support us in building our products according to customer requirements

The Organization foundation is Its Employees & each employee has a unique employee code & name.

The organization is divided into various departments, where employees are responsible for their own tasks according to their designations & Year of experience.

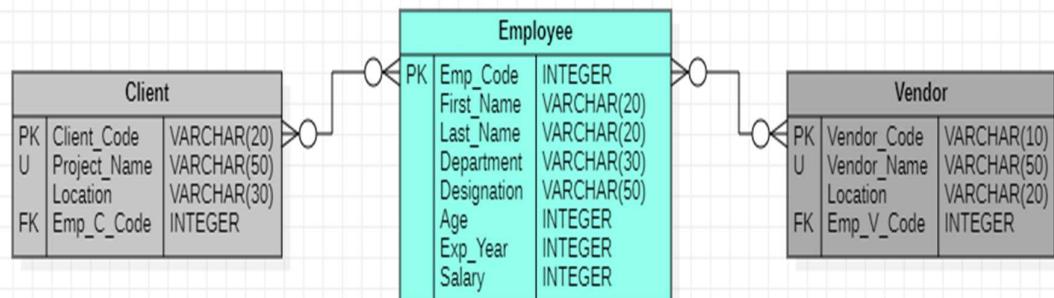
Each client has a name & a Unique Client Code to identify. Our clients give us the project based on their needs and we need to work with vendors to make the product. There are many projects that employees handle for clients. If a client has a large project, a many numbers of employees work on a single project.

Client location is also a very significant part of the table because it will decide where we need to send our employees for commissioning dispatched product.

Vendors are supportive organizations; they are nothing but a cross-functional team with its own unique vendor code & name for our database.

Vendor location is also important because here we have done our factory assistance test of the product.

2. ER DIAGRAM



3. DATABASE WITH THEIR TABLES

DATABASE: Project Management database

Tables:

A. Employee

Emp_Code	First_Name	Last_Name	Department	Designation	Age	Exp_Year	salary
1111	Nikita	Salunkhe	IT	Software_Developer	28	5	50000
1112	Nilesh	Joglekar	EE	Project	25	2	20000
1113	Pradip	Tapate	IT	Service	27	4	40000
1114	Komal	Mane	Inst	Project	28	5	50000
1115	Pallavi	Rane	Inst	Comissioning	25	2	20000
1116	Mayur	Kadam	Inst	Comissioning	29	6	60000
1117	Hiraman	Tambe	EE	Project	25	2	20000
1118	Pooja	Kharate	Inst	Project	28	5	50000
1119	Deepak	late	EE	Project	30	7	70000
1120	Swapnil	Supe	HR	Executive	24	1	10000

B. Client

Client_Code	Project_Name	Location	Emp_C_Code
C_2221	Dorf_Ketal	Gujrat	1114
C_2222	KNPL	Gujrat	1112
C_2223	IDMC	UP	1119
C_2224	Croda	Delhi	1114
C_2225	Godrej	Maharashtra	1116
C_2226	Siemens	Maharashtra	1115
C_2227	Schneider	Maharashtra	1119

C. Vendor

Vendor_Code	vendor_name	Location	Emp_V_Code
V_3331	Electromontage	Vasai	1114
V_3332	Electroscandia	Rabale	1112
V_3333	VSR	Dombivali	1119
V_3334	ABB	Thane	1114
V_3335	Electrotel	Thane	1116

DATA DEFINATION LANGUAGE (DDL)

4. CREATING TABLE:

A. Employee

```
MariaDB [Project_Management]> Create Table Employee (
    -> Emp_Code int Primary key,
    -> Frist_Name Varchar(20),
    -> Last_Name varchar(20),
    -> Department Varchar(30),
    -> Designation Varchar(50),
    -> Ph_No int Unique,
    -> Age int,
    -> Exp_Year int,
    -> Salary Decimal(6,2)
    -> );
Query OK, 0 rows affected (0.022 sec)
```

B. Client

```
MariaDB [Project_Management]> Create Table Client (
    -> Client_Code Varchar(20) Primary Key,
    -> CP_Name Varchar(50),
    -> Location Varchar(30),
    -> Emp_C_Code int,
    -> foreign key(Emp_C_Code) references Employee(Emp_Code));
Query OK, 0 rows affected (0.024 sec)
```

C. Vendor

```
MariaDB [Project_Management]> Create Table Vendor (
    -> Vendor_Code Varchar(10) Primary Key,
    -> Vendor_Name Varchar(50) Unique,
    -> Location Varchar(20),
    -> Emp_V_Code int,
    -> Foreign key(Emp_V_Code) references employee(Emp_Code));
Query OK, 0 rows affected (0.012 sec)
```

5. TABLES IN DATABASES:

```
MariaDB [Project_Management]> Show tables;
+-----+
| Tables_in_project_management |
+-----+
| client
| employee
| vendor
+-----+
3 rows in set (0.010 sec)
```

6. DESCRIBE TABLES:

A. Employee:

```
MariaDB [Project_Management]> desc Employee;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| Emp_Code | int(11) | NO | PRI | NULL |
| Frist_Name | varchar(20) | YES | | NULL |
| Last_Name | varchar(20) | YES | | NULL |
| Department | varchar(30) | YES | | NULL |
| Designation | varchar(50) | YES | | NULL |
| Ph_No | int(11) | YES | UNI | NULL |
| Age | int(11) | YES | | NULL |
| Exp_Year | int(11) | YES | | NULL |
| Salary | decimal(6,2) | YES | | NULL |
+-----+-----+-----+-----+-----+
9 rows in set (0.008 sec)
```

B. Client:

```
MariaDB [Project_Management]> desc client;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| Client_Code | varchar(20) | NO | PRI | NULL |
| C_P_Name | varchar(50) | YES | UNI | NULL |
| Location | varchar(30) | YES | | NULL |
| Emp_C_Code | int(11) | YES | MUL | NULL |
+-----+-----+-----+-----+
4 rows in set (0.011 sec)
```

C. Vendor:

```
MariaDB [Project_Management]> desc vendor;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| Vendor_Code | varchar(10) | NO | PRI | NULL |
| Vendor_Name | varchar(50) | YES | UNI | NULL |
| Location | varchar(20) | YES | | NULL |
| Emp_V_Code | int(11) | YES | MUL | NULL |
+-----+-----+-----+-----+
4 rows in set (0.011 sec)
```

7. ALTER TABLE:

7.1: ADD

```
MariaDB [Project_Management]> alter table employee add gender varchar(10);
Query OK, 0 rows affected (0.016 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

7.2: DROP

```
MariaDB [Project_Management]> alter table employee drop gender;
Query OK, 0 rows affected (0.016 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [project_management]> alter table employee drop Ph_No;
Query OK, 0 rows affected (0.020 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

7.3: MODIFY

```
MariaDB [Project_Management]> alter table vendor modify vendor_name varchar(100);
Query OK, 0 rows affected (0.054 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [Project_Management]> alter table employee modify salary int;
Query OK, 10 rows affected (0.039 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

7.4: CHANGE

```
MariaDB [Project_Management]> alter table client change C_P_Name Project_Name Varchar(50);
Query OK, 0 rows affected (0.009 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

7.5: RENAME

```
MariaDB [Project_Management]> alter table employee rename EI_Employee;
Query OK, 0 rows affected (0.019 sec)
```

```
MariaDB [Project_Management]> alter table EI_Employee rename Employee;
Query OK, 0 rows affected (0.015 sec)
```

8. TRUNCATE TABLE:

```
MariaDB [project_management]> Truncate test;  
Query OK, 0 rows affected (0.020 sec)  
  
MariaDB [project_management]> select * from test;  
Empty set (0.001 sec)
```

9. DROP TABLE:

```
MariaDB [project_management]> drop table test;  
Query OK, 0 rows affected (0.010 sec)
```

DATA MANIPULATION LANGUAGE (DML)

10. INSERT:

10.1 EMPLOYEE

```
MariaDB [Project_Management]> Insert into Employee(Emp_Code,First_name,Last_name,Department,Designation,Age,Exp_Year,Salary) Values
-> (1111,'Nikita','Salunkhe','IT','Software Devloper',28,5,50000.00),
-> (1112,'Nilesh','Joglekar','EE','Project',25,2,20000.00),
-> (1113,'Pradip','Tapate','IT','Service',27,4,40000.00),
-> (1114,'Komal','Mane','Inst','Project',28,5,50000.00),
-> (1115,'Pallavi','Rane','Inst','Comissioning',25,2,20000.00),
-> (1116,'Mayuri','Kadam','Inst','Commissioning',29,6,60000.00),
-> (1117,'Hiraman','Tambe','EE','Project',25,2,20000.00),
-> (1118,'Pooja','Kharate','Inst','Project',28,5,50000.00),
-> (1119,'Deepak','late','EE','Project',30,7,70000.00),
-> (1120,'Swapnil','Supe','HR','Executive',24,1,10000.00);
Query OK, 10 rows affected, 10 warnings (0.008 sec)
Records: 10 Duplicates: 0 Warnings: 10
```

10.2 CLIENT

```
MariaDB [Project_Management]> Insert into Client(Client_Code,Project_Name,Location,Emp_C_Code) values
-> ('C_2221','Dorf_Ketal','Gujrat',1114),
-> ('C_2222','KNPL','Gujrat',1112),
-> ('C_2223','IDMC','UP',1119),
-> ('C_2224','Croda','Delhi',1114),
-> ('C_2225','Godrej','Maharashtra',1116),
-> ('C_2226','Siemens','Maharashtra',1115),
-> ('C_2227','Schneider','Maharashtra',1119);
Query OK, 7 rows affected (0.010 sec)
Records: 7 Duplicates: 0 Warnings: 0
```

10.3 VENDOR

```
MariaDB [Project_Management]> insert into vendor(Vendor_Code,Vendor_name,Location,Emp_V_Code) values
-> ('V_3331','Electromontage','Vasai',1114),
-> ('V_3332','Electroscandia','Thane',1112),
-> ('V_3333','VSR','Dombivali',1119),
-> ('V_3334','ABB','Thane',1114),
-> ('V_3335','Electrotel','Thane',1116),
-> ('V_3336','Decton','Vashi',1115);
Query OK, 6 rows affected (0.017 sec)
Records: 6 Duplicates: 0 Warnings: 0
```

10 UPDATE:

```
MariaDB [project_management]> update employee
      -> set department='Human_Res' where Emp_Code=1120;
Query OK, 0 rows affected (0.001 sec)
Rows matched: 1 Changed: 0 Warnings: 0

MariaDB [project_management]> update employee
      -> set department='HR' where Emp_Code=1120;
Query OK, 1 row affected (0.003 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

11 DELETE:

```
MariaDB [Project_Management]> delete from vendor where Vendor_Code='V_3336';
Query OK, 1 row affected (0.010 sec)
```

DATA QUERY LANGUAGE (DQL)

12 SELECT:

12.1 EMPLOYEE

```
MariaDB [Project_Management]> select * from employee;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1117 | Hiraman | Tambe | EE | Project | 25 | 2 | 20000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
| 1120 | Swapnil | Supe | HR | Executive | 24 | 1 | 10000 |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

12.2 CLIENT

```
MariaDB [Project_Management]> select * from client;
+-----+-----+-----+-----+
| Client_Code | Project_Name | Location | Emp_C_Code |
+-----+-----+-----+-----+
| C_2221 | Dorf_Ketal | Gujrat | 1114 |
| C_2222 | KNPL | Gujrat | 1112 |
| C_2223 | IDMC | UP | 1119 |
| C_2224 | Croda | Delhi | 1114 |
| C_2225 | Godrej | Maharashtra | 1116 |
| C_2226 | Siemens | Maharashtra | 1115 |
| C_2227 | Schneider | Maharashtra | 1119 |
+-----+-----+-----+-----+
7 rows in set (0.001 sec)
```

12.3 VENDOR

```
MariaDB [Project_Management]> select * from vendor;
+-----+-----+-----+-----+
| Vendor_Code | vendor_name | Location | Emp_V_Code |
+-----+-----+-----+-----+
| V_3331 | Electromontage | Vasai | 1114 |
| V_3332 | Electroscandia | Thane | 1112 |
| V_3333 | VSR | Dombivali | 1119 |
| V_3334 | ABB | Thane | 1114 |
| V_3335 | Electrotel | Thane | 1116 |
| V_3336 | Decton | Vashi | 1115 |
+-----+-----+-----+-----+
6 rows in set (0.001 sec)
```

13 ORDER BY QUERY ASC:

```
MariaDB [Project_Management]> select * from employee order by salary asc;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1120 | Swapnil | Supe | HR | Executive | 24 | 1 | 10000 |
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1117 | Hiraman | Tambe | EE | Project | 25 | 2 | 20000 |
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.009 sec)
```

14 ORDER BY QUERY DESC:

```
MariaDB [Project_Management]> select * from employee order by salary desc;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1117 | Hiraman | Tambe | EE | Project | 25 | 2 | 20000 |
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1120 | Swapnil | Supe | HR | Executive | 24 | 1 | 10000 |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

15 LIMIT QUERY:

```
MariaDB [Project_Management]> select * from employee limit 5;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)
```

16 SELECT QUERY WITH SPECIFIC COLUMN:

```
MariaDB [Project_Management]> select Emp_Code,First_name,Last_name,Designation,Exp_Year,Salary from employee;
+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_name | Last_name | Designation | Exp_Year | Salary |
+-----+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | Software_Developer | 5 | 50000 |
| 1112 | Nilesh | Joglekar | Project | 2 | 20000 |
| 1113 | Pradip | Tapate | Service | 4 | 40000 |
| 1114 | Komal | Mane | Project | 5 | 50000 |
| 1115 | Pallavi | Rane | Comissioning | 2 | 20000 |
| 1116 | Mayur | Kadam | Comissioning | 6 | 60000 |
| 1117 | Hiraman | Tambe | Project | 2 | 20000 |
| 1118 | Pooja | Kharate | Project | 5 | 50000 |
| 1119 | Deepak | late | Project | 7 | 70000 |
| 1120 | Swapnil | Supe | Executive | 1 | 10000 |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.000 sec)
```

17 SELECT QUERY WITH ALIAS NAME:

```
MariaDB [Project_Management]> select first_name as name,Last_name as surname from employee;
+-----+-----+
| name | surname |
+-----+-----+
| Nikita | Salunkhe |
| Nilesh | Joglekar |
| Pradip | Tapate |
| Komal | Mane |
| Pallavi | Rane |
| Mayur | Kadam |
| Hiramam | Tambe |
| Pooja | Kharate |
| Deepak | late |
| Swapnil | Supe |
+-----+-----+
10 rows in set (0.007 sec)
```

18 DISTINCT QUERY:

```
MariaDB [Project_Management]> select distinct designation from employee;
+-----+
| designation |
+-----+
| Software_Developer |
| Project |
| Service |
| Comissioning |
| Executive |
+-----+
5 rows in set (0.003 sec)
```

19 USING WHERE CLAUSE:

19.1 WITH COMPARISON OPERATOR:

```
MariaDB [Project_Management]> select * from employee where salary>50000;
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.009 sec)
```

19.2 WITH AND LOGICAL OPERATOR:

```
MariaDB [Project_Management]> select * from employee where salary>=50000 and Designation='Project';
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.009 sec)
```

19.3 WITH OR LOGICAL OPERATOR:

```
MariaDB [Project_Management]> select * from employee where salary>=50000 or Designation='Project';
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1117 | Hiramant | Tambe | EE | Project | 25 | 2 | 20000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.001 sec)
```

19.4 WITH NOT OPERATOR:

```
MariaDB [project_management]> select * from employee where not designation='project';
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1120 | Swapnil | Supe | HR | Executive | 24 | 1 | 10000 |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.008 sec)
```

19.5 WITH BETWEEN OPERATOR:

```
MariaDB [Project_Management]> select first_name,Last_name,salary from employee where salary between 25000 and 65000;
+-----+-----+-----+
| first_name | Last_name | salary |
+-----+-----+-----+
| Nikita | Salunkhe | 50000 |
| Pradip | Tapate | 40000 |
| Komal | Mane | 50000 |
| Mayur | Kadam | 60000 |
| Pooja | Kharate | 50000 |
+-----+-----+-----+
5 rows in set (0.009 sec)

MariaDB [Project_Management]>
```

19.6 WITH IN OPERATOR:

```
MariaDB [Project_Management]> select * from employee where Age In(25,26,27);
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1117 | Hiraman | Tambe | EE | Project | 25 | 2 | 20000 |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.009 sec)
```

19.7 WITH LIKE OPERATOR:

```
MariaDB [Project_Management]> select * from employee where department like 'I_s%';
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.001 sec)

MariaDB [Project_Management]>
```

INBUILD FUNCTION

20 STRING:

20.1 CONCAT ():

```
MariaDB [Project_Management]> select Concat(First_name,' ',Last_name) Full_Name from employee;
+-----+
| Full_Name      |
+-----+
| Nikita Salunkhe |
| Nilesh Joglekar |
| Pradip Tapate   |
| Komal Mane     |
| Pallavi Rane    |
| Mayur Kadam     |
| Hiraman Tambe  |
| Pooja Kharate   |
| Deepak Late     |
| Swapnil Supe    |
+-----+
10 rows in set (0.001 sec)
```

20.2 LOWER ():

```
MariaDB [Project_Management]> select Lower(last_name) Lower_case_Name from employee;
+-----+
| Lower_case_Name |
+-----+
| salunkhe        |
| joglekar        |
| tapate          |
| mane            |
| rane            |
| kadam           |
| tambe           |
| kharate         |
| late            |
| supe            |
+-----+
10 rows in set (0.008 sec)
```

20.3 UPPER ():

```
MariaDB [Project_Management]> select Upper(First_name) Upper_case_Name from employee;
+-----+
| Upper_case_Name |
+-----+
| NIKITA          |
| NILESH          |
| PRADIP          |
| KOMAL           |
| PALLAVI         |
| MAYUR           |
| HIRAMAN         |
| POOJA            |
| DEEPAK           |
| SWAPNIL          |
+-----+
10 rows in set (0.008 sec)
```

20.4 REVERSE ():

```
MariaDB [Project_Management]> select Reverse(First_name) Reverse_Name from employee;
+-----+
| Reverse_Name |
+-----+
| atikiN
| hseliN
| pidarP
| lamoK
| ivallaP
| ruyaM
| namariH
| ajoop
| kapeeD
| linpawS
+-----+
10 rows in set (0.001 sec)
```

20.5 REPLACE ():

```
MariaDB [Project_Management]> select replace('Nikita Salunkhe','Nikita','Nikki') Alias_name;
+-----+
| Alias_name |
+-----+
| Nikki Salunkhe |
+-----+
1 row in set (0.000 sec)
```

20.6 LENGTH ():

```
MariaDB [Project_Management]> Select length(First_name) from employee;
+-----+
| length(First_name) |
+-----+
| 6
| 6
| 6
| 5
| 7
| 5
| 7
| 5
| 6
| 7
+-----+
10 rows in set (0.002 sec)
```

20.7 SUBSTRING ():

```
MariaDB [Project_Management]> select substring(First_name,2,6) from employee;
+-----+
| substring(First_name,2,6) |
+-----+
| ikitा
| ilesh
| radip
| omal
| allavi
| ayur
| iraman
| ooja
| eepak
| wapnil
+
10 rows in set (0.008 sec)
```

21 AGGREGATE:

21.1 COUNT ():

```
MariaDB [Project_Management]> select count(Department) from employee;
+-----+
| count(Department) |
+-----+
|          10 |
+-----+
1 row in set (0.010 sec)
```

21.2 MAX ():

```
MariaDB [Project_Management]> select max(salary) from employee where designation='Project';
+-----+
| max(salary) |
+-----+
|      70000 |
+-----+
1 row in set (0.003 sec)
```

21.3 MIN ():

```
MariaDB [Project_Management]> select min(salary) from employee where designation='Comissioning';
+-----+
| min(salary) |
+-----+
|      20000 |
+-----+
1 row in set (0.001 sec)
```

21.4 SUM ():

```
MariaDB [Project_Management]> select sum(salary) from employee where Department='Inst';
+-----+
| Sum(salary) |
+-----+
|     180000 |
+-----+
1 row in set (0.001 sec)
```

21.5 AVG ():

```
MariaDB [Project_Management]> select avg(salary) from employee where Department='EE';
+-----+
| Avg(salary) |
+-----+
| 36666.6667 |
+-----+
1 row in set (0.000 sec)
```

22 GROUP BY CLAUSE:

```
MariaDB [project_management]> select designation,count(*) from employee group by designation;
+-----+-----+
| designation | count(*) |
+-----+-----+
| Comissioning | 2 |
| Executive | 1 |
| Project | 5 |
| Service | 1 |
| Software_Developer | 1 |
+-----+
5 rows in set (0.014 sec)
```

23 WHERE WITH GROUP BY CLAUSE:

```
MariaDB [project_management]> select department,avg(salary) from employee where salary>40000 group by department;
+-----+-----+
| department | avg(salary) |
+-----+-----+
| EE | 70000.0000 |
| Inst | 53333.3333 |
| IT | 50000.0000 |
+-----+
3 rows in set (0.011 sec)
```

24 GROUP BY WITH HAVING CLAUSE:

```
MariaDB [project_management]> select department,sum(salary) from employee group by department having sum(salary)>50000;
+-----+-----+
| department | sum(salary) |
+-----+-----+
| EE | 110000 |
| Inst | 180000 |
| IT | 90000 |
+-----+
3 rows in set (0.001 sec)
```

SUB QUERIES

25 SINGLE ROW SUB QUERY:

```
MariaDB [project_management]> select * from employee where designation=(select designation from employee where First_name='pallavi');
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.001 sec)
```

26 MULTIPLE ROW SUB QUERY:

```
MariaDB [project_management]> select * from employee where designation In(select designation from employee where First_name='Komal' or First_name='Deepak');
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |
| 1117 | Hiraman | Tambe | EE | Project | 25 | 2 | 20000 |
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.009 sec)
```

27 MULTIPLE COLUMN SUB QUERY:

```
MariaDB [project_management]> select * from employee where(Department,Salary)in(select department,Max(salary) from employee group by Department);
+-----+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |
+-----+-----+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |
| 1120 | Swapnil | Supe | HR | Executive | 24 | 1 | 10000 |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.010 sec)
```

JOIN'S WITH TWO TABLE'S

28 INNER JOIN:

```
MariaDB [project_management]> select First_name,Last_name,Department,Designation,Project_Name,Client.Location  
-> from employee join client on employee.Emp_Code=client.Emp_C_Code;  
+-----+-----+-----+-----+-----+-----+  
| First_name | Last_name | Department | Designation | Project_Name | Location |  
+-----+-----+-----+-----+-----+-----+  
| Komal     | Mane      | Inst       | Project    | Dorf_Ketal   | Gujrat  |  
| Nilesh    | Joglekar  | EE         | Project    | KNPL        | Gujrat  |  
| Deepak    | late      | EE         | Project    | IDMC        | UP      |  
| Komal     | Mane      | Inst       | Project    | Croda       | Delhi   |  
| Mayur     | Kadam     | Inst       | Comissioning | Godrej     | Maharashtra |  
| Pallavi   | Rane      | Inst       | Comissioning | Siemens    | Maharashtra |  
| Deepak    | late      | EE         | Project    | Schneider   | Maharashtra |  
+-----+-----+-----+-----+-----+-----+  
7 rows in set (0.001 sec)
```

29 INNER JOIN WITH WHERE CLAUSE:

```
MariaDB [project_management]> select First_name,Last_name,Department,Designation,Project_Name,Client.Location  
-> from employee join client on employee.Emp_Code=client.Emp_C_Code where Location='Maharashtra';  
+-----+-----+-----+-----+-----+-----+  
| First_name | Last_name | Department | Designation | Project_Name | Location |  
+-----+-----+-----+-----+-----+-----+  
| Mayur     | Kadam     | Inst       | Comissioning | Godrej     | Maharashtra |  
| Pallavi   | Rane      | Inst       | Comissioning | Siemens    | Maharashtra |  
| Deepak    | late      | EE         | Project    | Schneider   | Maharashtra |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.010 sec)
```

30 LEFT OUTER JOIN:

```
MariaDB [project_management]> select First_name,Last_name,Department,Designation,Project_Name,Client.Location  
-> from employee left outer join client on employee.Emp_Code=client.Emp_C_Code;  
+-----+-----+-----+-----+-----+-----+  
| First_name | Last_name | Department | Designation | Project_Name | Location |  
+-----+-----+-----+-----+-----+-----+  
| Nikita    | Salunkhe  | IT         | Software_Developer | NULL      | NULL    |  
| Nilesh    | Joglekar  | EE         | Project    | KNPL      | Gujrat  |  
| Pradip    | Tapate    | IT         | Service    | NULL      | NULL    |  
| Komal     | Mane      | Inst       | Project    | Dorf_Ketal | Gujrat  |  
| Komal     | Mane      | Inst       | Project    | Croda     | Delhi   |  
| Pallavi   | Rane      | Inst       | Comissioning | Siemens   | Maharashtra |  
| Mayur     | Kadam     | Inst       | Comissioning | Godrej    | Maharashtra |  
| Hiranam   | Tambe    | EE         | Project    | NULL      | NULL    |  
| Pooja     | Kharate   | Inst       | Project    | NULL      | NULL    |  
| Deepak    | late      | EE         | Project    | IDMC      | UP      |  
| Deepak    | late      | EE         | Project    | Schneider  | Maharashtra |  
| Swapnil   | Supe      | HR         | Executive  | NULL      | NULL    |  
+-----+-----+-----+-----+-----+-----+  
12 rows in set (0.009 sec)
```

31 RIGHT OUTER JOIN:

```
MariaDB [project_management]> select First_name,Last_name,Department,Designation,Project_Name,Client.Location  
-> from employee right outer join client on employee.Emp_Code=client.Emp_C_Code;  
+-----+-----+-----+-----+-----+-----+  
| First_name | Last_name | Department | Designation | Project_Name | Location |  
+-----+-----+-----+-----+-----+-----+  
| Komal     | Mane      | Inst       | Project    | Dorf_Ketal   | Gujrat  |  
| Nilesh    | Joglekar  | EE         | Project    | KNPL        | Gujrat  |  
| Deepak    | late      | EE         | Project    | IDMC        | UP      |  
| Komal     | Mane      | Inst       | Project    | Croda       | Delhi   |  
| Mayur     | Kadam     | Inst       | Comissioning | Godrej     | Maharashtra |  
| Pallavi   | Rane      | Inst       | Comissioning | Siemens    | Maharashtra |  
| Deepak    | late      | EE         | Project    | Schneider   | Maharashtra |  
+-----+-----+-----+-----+-----+-----+  
7 rows in set (0.002 sec)
```

32 FULL JOIN (UNION):

```
MariaDB [project_management]> select First_name,Last_name,Department,Designation,Project_Name,Client.Location  
-> from employee left outer join client on employee.Emp_Code=client.Emp_C_Code  
-> Union  
-> select First_name,Last_name,Department,Designation,Project_Name,Client.Location  
-> from employee right outer join client on employee.Emp_Code=client.Emp_C_Code;  
+-----+-----+-----+-----+-----+-----+  
| First_name | Last_name | Department | Designation | Project_Name | Location |  
+-----+-----+-----+-----+-----+-----+  
| Nikita     | Salunkhe   | IT          | Software_Developer | NULL      | NULL    |  
| Nilesh     | Joglekar   | EE          | Project        | KNPL      | Gujrat  |  
| Pradip     | Tapate     | IT          | Service        | NULL      | NULL    |  
| Komal      | Mane       | Inst        | Project        | Dorf_Ketal | Gujrat  |  
| Komal      | Mane       | Inst        | Project        | Croda     | Delhi   |  
| Pallavi    | Rane       | Inst        | Comissioning  | Siemens   | Maharashtra |  
| Mayur      | Kadam      | Inst        | Comissioning  | Godrej    | Maharashtra |  
| Hiraman    | Tambe      | EE          | Project        | NULL      | NULL    |  
| Pooja      | Kharate    | Inst        | Project        | NULL      | NULL    |  
| Deepak     | late       | EE          | Project        | IDMC     | UP      |  
| Deepak     | late       | EE          | Project        | Schneider | Maharashtra |  
| Swapnil    | Supe       | HR          | Executive     | NULL      | NULL    |  
+-----+-----+-----+-----+-----+-----+  
12 rows in set (0.006 sec)
```

33 CROSS JOIN:

```
MariaDB [project_management]> select Project_name,vendor_name  
-> from client cross join vendor;  
+-----+-----+  
| Project_name | vendor_name |  
+-----+-----+  
| Croda       | ABB         |  
| Croda       | Electromontage |  
| Croda       | Electroscandia |  
| Croda       | Electrotel    |  
| Croda       | VSR         |  
| Dorf_Ketal  | ABB         |  
| Dorf_Ketal  | Electromontage |  
| Dorf_Ketal  | Electroscandia |  
| Dorf_Ketal  | Electrotel    |  
| Dorf_Ketal  | VSR         |  
| Godrej     | ABB         |  
| Godrej     | Electromontage |  
| Godrej     | Electroscandia |  
| Godrej     | Electrotel    |  
| Godrej     | VSR         |  
| IDMC        | ABB         |  
| IDMC        | Electromontage |  
| IDMC        | Electroscandia |  
| IDMC        | Electrotel    |  
| IDMC        | VSR         |  
| KNPL        | ABB         |  
| KNPL        | Electromontage |  
| KNPL        | Electroscandia |  
| KNPL        | Electrotel    |  
| KNPL        | VSR         |  
| Schneider   | ABB         |  
| Schneider   | Electromontage |  
| Schneider   | Electroscandia |  
| Schneider   | Electrotel    |  
| Schneider   | VSR         |  
| Siemens    | ABB         |  
| Siemens    | Electromontage |  
| Siemens    | Electroscandia |  
| Siemens    | Electrotel    |  
| Siemens    | VSR         |  
+-----+-----+  
35 rows in set (0.008 sec)
```

JOIN'S WITH THREE TABLE'S

```
MariaDB [project_management]> select First_name,Last_name,Department,Designation,Project_Name,Client.Location,Vendor_Name,Vendor.Location  
-> from employee join client on employee.Emp_Code=client.Emp_C_Code join vendor on Emp_Code=Emp_V_code;  
+-----+-----+-----+-----+-----+-----+-----+-----+  
| First_name | Last_name | Department | Designation | Project_Name | Location | Vendor_Name | Location |  
+-----+-----+-----+-----+-----+-----+-----+-----+  
| Komal     | Mane      | Inst       | Project    | Dorf_Ketal   | Gujrat    | Electromontage | Vasai    |  
| Komal     | Mane      | Inst       | Project    | Dorf_Ketal   | Gujrat    | ABB           | Thane    |  
| Nilesh    | Joglekar  | EE          | Project    | KNPL        | Gujrat    | Electroscandia | Rabale   |  
| Deepak    | late      | EE          | Project    | IDMC        | UP         | VSR           | Dombivali |  
| Komal     | Mane      | Inst       | Project    | Croda       | Delhi     | Electromontage | Vasai    |  
| Komal     | Mane      | Inst       | Project    | Croda       | Delhi     | ABB           | Thane    |  
| Mayur     | Kadam    | Inst       | Comissioning | Godrej     | Maharashtra | Electrotel    | Thane    |  
| Deepak    | late      | EE          | Project    | Schneider   | Maharashtra | VSR           | Dombivali |  
+-----+-----+-----+-----+-----+-----+-----+-----+  
8 rows in set (0.016 sec)
```

SIMPLE VIEW

34 CREATE VIEW:

```
MariaDB [project_management]> create view View_Employee as select Emp_Code,First_Name,Last_name,Department,Designation from employee;  
Query OK, 0 rows affected (0.017 sec)
```

35 UPDATE VIEW:

```
MariaDB [project_management]> Update view_employee set Department='Human_Res' where Emp_Code=1120;  
Query OK, 1 row affected (0.016 sec)  
Rows matched: 1  Changed: 1  Warnings: 0  
  
MariaDB [project_management]> Select * from View_employee;  
+-----+-----+-----+-----+  
| Emp_Code | First_Name | Last_name | Department | Designation |  
+-----+-----+-----+-----+  
| 1111 | Nikita | Salunkhe | IT | Software_Developer |  
| 1112 | Nilesh | Joglekar | EE | Project |  
| 1113 | Pradip | Tapate | IT | Service |  
| 1114 | Komal | Mane | Inst | Project |  
| 1115 | Pallavi | Rane | Inst | Comissioning |  
| 1116 | Mayur | Kadam | Inst | Comissioning |  
| 1117 | Hiraman | Tambe | EE | Project |  
| 1118 | Pooja | Kharate | Inst | Project |  
| 1119 | Deepak | late | EE | Project |  
| 1120 | Swapnil | Supe | Human_Res | Executive |  
+-----+-----+-----+-----+  
10 rows in set (0.001 sec)  
  
MariaDB [project_management]> Select * from employee;  
+-----+-----+-----+-----+-----+-----+-----+  
| Emp_Code | First_Name | Last_Name | Department | Designation | Age | Exp_Year | salary |  
+-----+-----+-----+-----+-----+-----+-----+  
| 1111 | Nikita | Salunkhe | IT | Software_Developer | 28 | 5 | 50000 |  
| 1112 | Nilesh | Joglekar | EE | Project | 25 | 2 | 20000 |  
| 1113 | Pradip | Tapate | IT | Service | 27 | 4 | 40000 |  
| 1114 | Komal | Mane | Inst | Project | 28 | 5 | 50000 |  
| 1115 | Pallavi | Rane | Inst | Comissioning | 25 | 2 | 20000 |  
| 1116 | Mayur | Kadam | Inst | Comissioning | 29 | 6 | 60000 |  
| 1117 | Hiraman | Tambe | EE | Project | 25 | 2 | 20000 |  
| 1118 | Pooja | Kharate | Inst | Project | 28 | 5 | 50000 |  
| 1119 | Deepak | late | EE | Project | 30 | 7 | 70000 |  
| 1120 | Swapnil | Supe | Human_Res | Executive | 24 | 1 | 10000 |  
+-----+-----+-----+-----+-----+-----+-----+
```

36 SELECT VIEW:

```
MariaDB [project_management]> Select * from View_employee;
+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_name | Department | Designation |
+-----+-----+-----+-----+-----+
| 1111 | Nikita | Salunkhe | IT | Software_Developer |
| 1112 | Nilesh | Joglekar | EE | Project |
| 1113 | Pradip | Tapate | IT | Service |
| 1114 | Komal | Mane | Inst | Project |
| 1115 | Pallavi | Rane | Inst | Comissioning |
| 1116 | Mayur | Kadam | Inst | Comissioning |
| 1117 | Hiramam | Tambe | EE | Project |
| 1118 | Pooja | Kharate | Inst | Project |
| 1119 | Deepak | late | EE | Project |
| 1120 | Swapnil | Supe | HR | Executive |
+-----+-----+-----+-----+-----+
10 rows in set (0.010 sec)
```

COMPLEX VIEW

```
MariaDB [project_management]> create View View_E_C_V as select Emp_Code,First_Name,Last_name,Project_Name,Client.location,Vendor_name
-> from employee join Client on Employee.Emp_Code=Client.Emp_C_Code join Vendor on Employee.Emp_Code=Vendor.Emp_V_Code;
Query OK, 0 rows affected (0.010 sec)

MariaDB [project_management]> Select * from View_E_C_V;
+-----+-----+-----+-----+-----+-----+
| Emp_Code | First_Name | Last_name | Project_Name | location | Vendor_name |
+-----+-----+-----+-----+-----+-----+
| 1114 | Komal | Mane | Dorf_Ketal | Gujrat | Electromontage |
| 1114 | Komal | Mane | Dorf_Ketal | Gujrat | ABB |
| 1112 | Nilesh | Joglekar | KNPL | Gujrat | Electroscandia |
| 1119 | Deepak | late | IDMC | UP | VSR |
| 1114 | Komal | Mane | Croda | Delhi | Electromontage |
| 1114 | Komal | Mane | Croda | Delhi | ABB |
| 1116 | Mayur | Kadam | Godrej | Maharashtra | Electrotel |
| 1119 | Deepak | late | Schneider | Maharashtra | VSR |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.008 sec)
```