

## SQL ASSIGNMENT

### QUERY-1

**1. Write a query to fetch the number of employees working in the department 'Admin'.**

Code:-

```
select Count(*) from EmployeeInfoTable where department='Admin';
```

Output:-

| Count(*) |
|----------|
| 2        |

### QUERY-2

**2. Write a query to retrieve the first four characters of EmpLname from the EmployeeInfo table.**

Code:-

```
SELECT SUBSTRING(EmpLname,1,4) FROM EmployeeInfoTable;
```

Output:-

| SUBSTRING(EmpLname,1,4) |
|-------------------------|
| Meth                    |
| Mish                    |
| Diwa                    |
| Kulk                    |
| Kapo                    |

### QUERY-3

**3. Write a query to find all the employees whose salary is between 50000 to 100000.**

CODE:-

```
select * from EmployeePosition where salary between 50000 and 100000
```

| EmpID | EmpPosition | DateOfJoining | Salary |
|-------|-------------|---------------|--------|
| 2     | Executive   | 2022-05-02    | 75000  |
| 3     | Manager     | 2022-05-01    | 90000  |
| 4     | Lead        | 2022-05-02    | 85000  |

### QUERY-4:

**4. Write a query to find the names of employees that begin with 'S'**

Code:-

```
SELECT * FROM EmployeeInfoTable WHERE EmpFname like 'S%'
```

OUTPUT:-

| EmpID | EmpFname | EmpLname | Department | Project | Address        | DOB        | Gender |
|-------|----------|----------|------------|---------|----------------|------------|--------|
| 1     | Sanjay   | Metha    | HR         | PI      | Hyderabad(HYD) | 1996-12-01 | M      |
| 4     | Sonia    | Kulkarni | HR         | PI      | Hyderabad(HYD) | 1992-05-02 | F      |

### QUERY-5:-

**5. Write a query to fetch top N records order by salary. (ex. top 5 records)**

CODE:-

```
SELECT * FROM EmployeePosition ORDER BY Salary LIMIT 5;
```

OUTPUT:-

| EmpID | EmpPosition | DateOfJoining | Salary |
|-------|-------------|---------------|--------|
| 2     | Executive   | 2022-05-02    | 75000  |
| 4     | Lead        | 2022-05-02    | 85000  |
| 3     | Manager     | 2022-05-01    | 90000  |
| 5     | Executive   | 2022-05-01    | 300000 |
| 1     | Manager     | 2022-05-01    | 500000 |

### QUERY-6

**6. Write a query to fetch details of all employees excluding the employees with first names, “Sanjay” and “Sonia” from the EmployeeInfo table.**

CODE:-

```
SELECT * FROM EmployeeInfoTable WHERE EmpFname NOT IN ('sanjay','Sonia');
```

OUTPUT:-

| EmpID | EmpFname | EmpLname | Department | Project | Address        | DOB        | Gender |
|-------|----------|----------|------------|---------|----------------|------------|--------|
| 1     | Sanjay   | Metha    | HR         | P1      | Hyderabad(HYD) | 1996-12-01 | M      |
| 2     | Ananya   | Mishra   | Admin      | P2      | Delhi(DEL)     | 1968-05-02 | F      |
| 3     | Rohan    | Diwan    | Account    | P3      | Mumbai(BOM)    | 1980-01-01 | M      |
| 5     | Ankit    | Kapoor   | Admin      | P2      | Delhi(DEL)     | 1994-07-03 | M      |

## QUERY-7

**7. Write a query to fetch the department-wise count of employees sorted by department's count in ascending order.**

CODE:-

```
SELECT Department, count(EmpID) AS EmpDeptCount
FROM EmployeeInfoTable GROUP BY Department
ORDER BY EmpDeptCount ASC;
```

OUTPUT:-

| Department | EmpDeptCount |
|------------|--------------|
| Account    | 1            |
| Admin      | 2            |
| HR         | 2            |

## QUERY-8

**8) Create indexing for any particular field and show the difference in data fetching before and after indexing**

CODE:-

explain analyze select EmpPosition from employeeposition

Before:-

|   | QUERY PLAN   |   |
|---|--|---|
|   | text   |  |
| 1 | Seq Scan on employeeposition (cost=0.00..14.30 rows=430 width=118) (actual time=0.007..0.007 rows=5 loops... |   |
| 2 | Planning Time: 0.028 ms  |   |
| 3 | Execution Time: 0.016 ms   |   |

After:-

CODE:-

- 1)create index emp\_position on employeeposition(empposition);
- 2)explain analyze select EmpPosition from employeeposition;

| QUERY PLAN |   |  |
|------------|---|---|
| text       |   |   |
| 1          | Seq Scan on employeeposition (cost=0.00..1.05 rows=5 width=118) (actual time=0.005..0.007 rows=5 loops... |   |
| 2          | Planning Time: 0.036 ms   |   |
| 3          | Execution Time: 0.015 ms  |   |

## ADDITIONAL INFORMATION FOR CREATING TABLE

### 1. Create table EmployeeInfo Table

Code:-

Create table EmployeeInfoTable (EmpID int Primary Key,EmpFname varchar(50),EmpLname varchar(50),Department varchar(20),Project varchar(20),Address varchar(255),DOB date,Gender varchar(20));

### Inserting values in EmployeeInfo

insert into EmployeeInfoTable values

(1,'Sanjay','Metha','HR','P1','Hyderabad(HYD)','1996-12-01','M'),  
 (2,'Ananya','Mishra','Admin','P2','Delhi(DEL)','1968-05-02','F'),  
 (3,'Rohan','Diwan','Account','P3','Mumbai(BOM)','1980-01-01','M'),  
 (4,'Sonia','Kulkarni','HR','P1','Hyderabad(HYD)','1992-05-02','F'),  
 (5,'Ankit','Kapoor','Admin','P2','Delhi(DEL)','1994-07-03','M');

OUTPUT:-

| EmployeeInfoTable |          |          |            |         |                |            |        |
|-------------------|----------|----------|------------|---------|----------------|------------|--------|
| EmpID             | EmpFname | EmpLname | Department | Project | Address        | DOB        | Gender |
| 1                 | Sanjay   | Metha    | HR         | P1      | Hyderabad(HYD) | 1996-12-01 | M      |
| 2                 | Ananya   | Mishra   | Admin      | P2      | Delhi(DEL)     | 1968-05-02 | F      |
| 3                 | Rohan    | Diwan    | Account    | P3      | Mumbai(BOM)    | 1980-01-01 | M      |
| 4                 | Sonia    | Kulkarni | HR         | P1      | Hyderabad(HYD) | 1992-05-02 | F      |
| 5                 | Ankit    | Kapoor   | Admin      | P2      | Delhi(DEL)     | 1994-07-03 | M      |

## 2. Create Table EmployeePosition Table:

Code:-

Create table EmployeePosition (EmpID int primary key,EmpPosition varchar(50),DateOfJoining Date,Salary numeric);

### Inserting values in EmployeePosition:

```
insert into EmployeePosition  
values(1,'Manager','2022-05-01',500000),  
(2,'Executive','2022-05-02',75000),  
(3,'Manager','2022-05-01',90000),  
(4,'Lead','2022-05-02',85000),  
(5,'Executive','2022-05-01',300000);
```

OUTPUT:-

| EmployeePosition |             |               |        |
|------------------|-------------|---------------|--------|
| EmpID            | EmpPosition | DateOfJoining | Salary |
| 1                | Manager     | 2022-05-01    | 500000 |
| 2                | Executive   | 2022-05-02    | 75000  |
| 3                | Manager     | 2022-05-01    | 90000  |
| 4                | Lead        | 2022-05-02    | 85000  |
| 5                | Executive   | 2022-05-01    | 300000 |