

SQL DB Assignment

->Create table Employeeinfo.

```
create table Employeeinfo (  
    EmpID serial primary key,  
    EmpFname varchar(15) not null,  
    EmpLname varchar(15) not null,  
    Department varchar(15),  
    Project varchar(5),  
    Address varchar(25),  
    DOB date,  
    Gender char);
```

-> Create table EmployeePosition.

```
create table EmployeePosition (  
    EmpID serial primary key,  
    EmpPosition varchar(15),  
    DateOfJoining date not null,  
    salary int ,  
    foreign key(EmpID) references Employeeinfo(EmpId));
```

Data Output	Messages	Notifications
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CREATE TABLE

Query returned successfully in 48 msec.

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->Insert values into Employeeinfo table and show the all records of Employeeinfo table.

```

1 create table Employeeinfo(
2   Data Output Messages Notifications
3   empid [PK] integer,
4   empfname character varying (15),
5   emplname character varying (15),
6   department character varying (15),
7   project character varying (15),
8   address character varying (15),
9   dob date,
10  gender character(1),
11  primary key (empid),
12  foreign key (empid) references Employeeinfo(empid));
13
14 insert into Employeeinfo(empid,empfname,emplname,department,project,address,dob,gender)
15 values (1,'Sanjay','Mehra','HR','P1','Hyderabad(HYD)','01/12/1976','M');
16
17 insert into Employeeinfo(empid,empfname,emplname,department,project,address,dob,gender)
18 values (2,'Ananya','Mishra','Admin','P2','Delhi(DEL)','02/05/1968','F');
19
20 insert into Employeeinfo(empid,empfname,emplname,department,project,address,dob,gender)
21 values (3,'Rohan','Diwan','Account','P3','Mumbai(BOM)','01/01/1980','M');
22
23 insert into Employeeinfo(empid,empfname,emplname,department,project,address,dob,gender)
24 values (4,'Sonia','Kulkarni','HR','P1','Hyderabad(HYD)','02/05/1992','F');
25
26 insert into Employeeinfo(empid,empfname,emplname,department,project,address,dob,gender)
27 values (5,'Ankit','Kapoor','Admin','P2','Delhi(DEL)','03/07/1994','M');
28
29 select * from Employeeinfo;

```

->Insert values into EmployeePosition table and show the all records of EmployeePosition table.

VALUES (1, 'Manager', '01/05/2022', 500000);

Data Output Messages Notifications

	empid [PK] integer	empposition character varying (15)	dateofjoining date	salary integer
1	1	Manager	2022-05-01	500000
2	2	Executive	2022-05-02	75000
3	3	Manager	2022-05-01	90000
4	4	Lead	2022-05-02	85000
5	5	Executive	2022-05-01	300000

```

insert into EmployeePosition(EmpID,EmpPosition,DateOfJoining,salary)
values (1,'Manager','01/05/2022',500000);

insert into EmployeePosition(EmpID,EmpPosition,DateOfJoining,salary)
values (2,'Executive','02/05/2022',75000);

insert into EmployeePosition(EmpID,EmpPosition,DateOfJoining,salary)
values (3,'Manager','01/05/2022',90000);

insert into EmployeePosition(EmpID,EmpPosition,DateOfJoining,salary)
values (4,'Lead','02/05/2022',85000);

insert into EmployeePosition(EmpID,EmpPosition,DateOfJoining,salary)
values (5,'Executive','01/05/2022',300000);

select * from EmployeePosition;

```

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

```
-- 1 query
```

```
select count(*) from Employeeinfo where Department='Admin';
```

Data Output Messages Notifications

	count bigint
1	2

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

-- 2 query

```
select substring(EmplName,1,4) as "1st 4 characters of EmplName" from Employeeinfo;
```

Data Output		Messages	Notifications
1st 4 characters of EmplName text			
1	Mehr		
2	Mish		
3	Diwa		
4	Kulk		
5	Kapo		

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

-- 3 query

```
select e.EmpID,e.EmpFname,e.EmplName,ep.EmpPosition,ep.salary from Employeeinfo e inner join EmployeePosition ep using(EmpID)
where ep.salary between 50000 and 100000;
-- >=50000 and <=100000
```

Data Output		Messages	Notifications
empid integer			
1	2	Ananya	Mishra
2	3	Rohan	Diwan
3	4	Sonia	Kulkarni

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

-- 4 query

```
select EmpFname from Employeeinfo where EmpFname like 'S%';
```

Data Output		Messages	Explain	Notifications
empfname character varying (15)				
1	Sanjay			
2	Sonia			

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

```
-- 5 query
```

```
select * from EmployeePosition order by salary desc limit 5;  
-- select * from EmployeePosition order by salary desc fetch first 5 rows only;
```

Data Output Messages Notifications

	empid [PK] integer	empposition character varying (15)	dateofjoining date	salary integer
1	1	Manager	2022-05-01	500000
2	5	Executive	2022-05-01	300000
3	3	Manager	2022-05-01	90000
4	4	Lead	2022-05-02	85000
5	2	Executive	2022-05-02	75000

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

```
-- 6 query
```

```
select * from Employeeinfo where EmpFname!='Sanjay' and EmpFname!='Sonia';
```

Data Output Messages Explain X Notifications

	empid [PK] integer	empfname character varying (15)	empline character varying (15)	department character varying (15)	project character varying (5)	address character varying (25)	dob date	gender character (1)
1	2	Ananya	Mishra	Admin	P2	Delhi(DEL)	1968-05-02	F
2	3	Rohan	Diwan	Account	P3	Mumbai(BOM)	1980-01-01	M
3	5	Ankit	Kapoor	Admin	P2	Delhi(DEL)	1994-07-03	M

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

-- 7 query

```
select Department,count(*) as "no_of_employee" from Employeeinfo group by Department order by no_of_employee;
```

Data Output Messages Explain × Notifications			
	department character varying (15)	no_of_employee bigint	
1	Account	1	
2	HR	2	
3	Admin	2	

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

->Before Indexing query run timing is 0.01 ms.

-- 8 query

```
select Department from Employeeinfo where EmpID=1;
```

```
create index department_index on Employeeinfo(Department);
```

1 rows: 1 of 1 Query complete 00:00:00.059

Data Output Messages Explain × Notifications								
Graphical Analysis Statistics								
#	Node	Timings		Rows			Loops	
		Exclusive	Inclusive	Rows X	Actual	Plan		
1.	→ Seq Scan on employeeinfo as employeeinfo (cost=0..1.06 rows=1 w... Filter: (empid = 1) Rows Removed by Filter: 4	0.01 ms	0.01 ms	1	1	1	1	1

Hence after indexing query run time is decreasing.

Total rows: 1 of 1 Query complete 00:00:00.041