1.1) Retrieve the name and address of each employee that works in the Research department.

```
SELECT
    E.fname,
    E.lname,
    E.address
FROM
    EMPLOYEE E,
    DEPARTMENT D
WHERE
    D.dname = 'Research' AND
    E.dno = D.dnumber;
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)	address character varying (30)
1	John	Smith	731 Fondren, Houston TX
2	Franklin	Wong	638 Voss, Houston TX
3	Ramesh	Narayan	975 Fire Oak, Humble TX
4	Joyce	English	5631 Rice, Houston TX

1.2) Retrieve the name and SSN of each employee that either works in department 4 or has a salary lower or equal to $30,000. You can use only one condition term in any WHERE clause; i.e., don't use AND/OR Boolean operations.

Query Editor | Query History

```
SELECT DISTINCT
    E.fname,
    E.lname,
    E.ssn
FROM
    EMPLOYEE E
JOIN
    EMPLOYEE Emp on E.salary <= '30000' OR E.dno= '4'
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)	ssn [PK] character (9)
1	Joyce	English	453453453
2	Alicia	Zelaya	999887777
3	Jennifer	Wallace	987654321
4	John	Smith	123456789
5	Ahmad	Jabbar	987987987

1.3) List the name and SSN of each employee that works on at least one of the projects 1, 2, and 3. You can use only one condition term in any WHERE clause.

Query Editor | Query History

```
1  SELECT DISTINCT
2      E.fname,
3      E.lname,
4      E.ssn
5  FROM
6      WORKS_ON W
7  JOIN
8      EMPLOYEE E on E.ssn = W.essn
9  WHERE
10     W.pno in (1,2,3);
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)	ssn [PK] character (9)
1	Franklin	Wong	333445555
2	John	Smith	123456789
3	Joyce	English	453453453
4	Ramesh	Narayan	666884444

1.4). Retrieve the names of all employees of the Research department who work more than 10 hours per week on the ProductX project.

Query Editor | Query History

```
1  SELECT DISTINCT
2      E.fname,
3      E.lname
4  FROM
5      EMPLOYEE E
6  JOIN
7      WORKS_ON W on W.essn = E.ssn AND E.dno = '5'
8  WHERE
9      W.hours > '10' AND
10     W.pno = '1';
11
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)
1	John	Smith
2	Joyce	English

1.5) Retrieve the names of all employees who work on all projects [every project] located in either Bellaire or Sugarland. That is, if p1, p2, and p3 are in Bellaire; and p4 and p5 are located in Sugarland; then I want an employee who works on p1, p2, p3, p4, and p5.

Query Editor | Query History

```
1  SELECT DISTINCT
2      E.fname,
3      E.lname
4  FROM
5      EMPLOYEE E,
6      PROJECT Proj,
7      PROJECT Pro
8  JOIN
9      WORKS_ON W on W.pno = Pro.pnumber
10 WHERE
11     W.essn = E.ssn AND
12     Pro.plocation = 'Bellaire' AND
13     Proj.plocation = 'Sugarland'
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)
1	John	Smith
2	Joyce	English

1.6) Find the names of all employees who work on at least one project located in Houston but whose department has no location in Houston.

Query Editor | Query History

```
1  SELECT DISTINCT
2      E.fname,
3      E.lname,
4      E.ssn
5  FROM
6      EMPLOYEE E,
7      DEPT_LOCATIONS DL,
8      PROJECT Proj
9  JOIN
10     WORKS_ON W on W.pno = Proj.pnumber AND Proj.plocation = 'Houston'
11 WHERE
12     E.dno != '1' AND
13     E.dno != '5' AND
14     E.ssn = W.essn
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)	ssn [PK] character (9)
1	Jennifer	Wallace	987654321

1.7) For each department whose average employee salary is more than $30,000, retrieve the department name and the number of male employees working for that department.

Query Editor | Query History

```
SELECT
    D.dname,
    COUNT(E.sex)
FROM
    EMPLOYEE E,
    DEPARTMENT D
WHERE
    (SELECT CAST(AVG(E.salary) AS DECIMAL(10,2))
    FROM EMPLOYEE E, DEPARTMENT D
    WHERE E.dno = D.dnumber) > '30000'
    AND E.sex = 'M'
    AND E.dno = D.dnumber
GROUP BY D.dname
```

Data Output | Explain | Messages | Notifications

	dname character varying (15)	count bigint
1	Administration	1
2	Headquarters	1
3	Research	3

1.8) Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees.

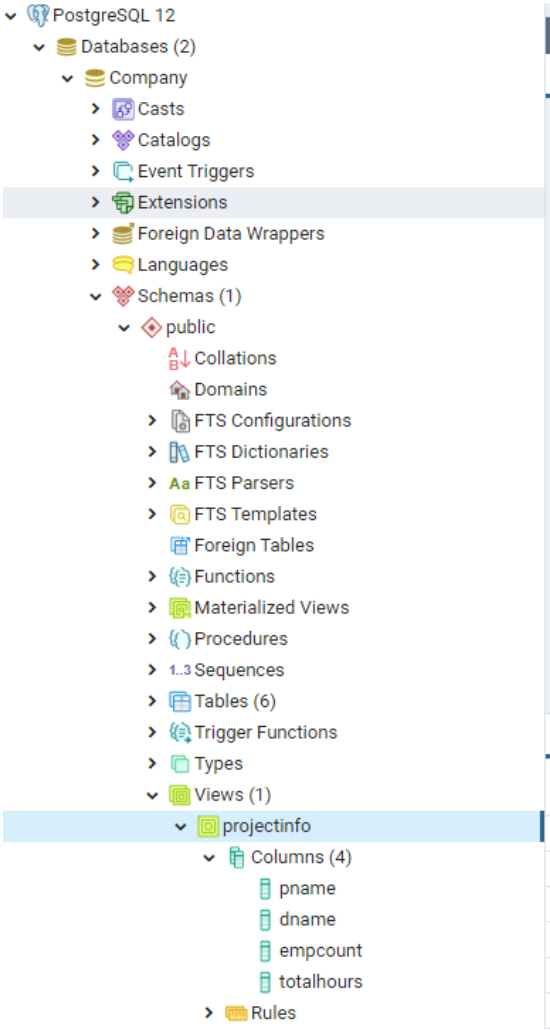
Query Editor | Query History

```
SELECT
    E.fname,
    E.lname
FROM
    EMPLOYEE E
RIGHT JOIN
    DEPARTMENT D on D.dnumber = E.dno
WHERE
    (SELECT MAX(Emp.salary)
    FROM EMPLOYEE Emp, DEPARTMENT Dept
    WHERE E.dno = D.dnumber) = E.salary
```

Data Output | Explain | Messages | Notifications

	fname character varying (10)	lname character varying (20)
1	James	Borg

1.9) [9A] Create a View ProjectInfo that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it. [9B] Show the content of this view.



Company/postgres@PostgreSQL 12

Query Editor | Query History

```
1  CREATE VIEW ProjectInfo AS
2  SELECT
3     proj.pname,
4     d.dname,
5     count(w.essn) AS Empcount,
6     sum(w.hours) AS totalhours
7  FROM
8     department d,
9     project proj
10 JOIN
11    works_on w ON w.pno = proj.pnumber
12 WHERE
13    (SELECT COUNT(Wrk.essn)
14    FROM WORKS_ON Wrk
15    JOIN PROJECT Pro on Pro.pnumber = Wrk.pno
16    GROUP BY Proj.pname) > 1
17    AND D.dnumber = Proj.dnum
18 GROUP BY
19    proj.pname,
20    d.dname
```

Data Output | Explain | Messages | Notifications

	pname character varying (15)	dname character varying (15)	empcount bigint	totalhours numeric
1	Computerization	Administration	3	55.0
2	Newbenefits	Administration	3	55.0
3	ProductX	Research	2	52.5
4	ProductY	Research	3	37.5
5	ProductZ	Research	2	50.0
6	Reorganization	Headquarters	3	41.0

1.10) [10A] Create a View DepartmentInfo that has the department name, manager name for each department. [10B] Show the content of this view.