

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

1	SELECT
2	E.fname,
3	E.lname,
4	E.address
5	FROM
6	EMPLOYEE E,
7	DEPARTMENT D
8	WHERE
9	D.dname = 'Research' AND
10	E.dno = D.dnumber;
11	

Data Output	Explain	Messages	Notifications
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	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
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1	SELECT DISTINCT
2	E.fname,
3	E.lname,
4	E.ssn
5	FROM
6	EMPLOYEE E
7	JOIN
8	EMPLOYEE Emp on E.salary <= '30000' OR E.dno= '4'

Data Output	Explain	Messages	Notifications
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	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
	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
	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

```
1  SELECT
2      D.dname,
3      COUNT(E.sex)
4  FROM
5      EMPLOYEE E,
6      DEPARTMENT D
7  WHERE
8      (SELECT CAST(AVG(E.salary) AS DECIMAL(10,2))
9       FROM EMPLOYEE E, DEPARTMENT D
10      WHERE E.dno = D.dnumber) > '30000'
11      AND E.sex = 'M'
12      AND E.dno = D.dnumber
13  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

```
1  SELECT
2      E.fname,
3      E.lname
4  FROM
5      EMPLOYEE E
6  RIGHT JOIN
7      DEPARTMENT D on D.dnumber = E.dno
8  WHERE
9      (SELECT MAX(Emp.salary)
10     FROM EMPLOYEE Emp, DEPARTMENT Dept
11     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.

PostgreSQL 12

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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.

The screenshot displays a PostgreSQL database management interface. On the left, a tree view shows the database structure. The 'Company' database is expanded, and the 'Views (2)' folder is selected, highlighting the 'departmentinfo' view. The 'Columns (3)' for this view are listed as 'dname', 'fname', and 'lname'.

The main area shows the 'Query Editor' with the following SQL code:

```
1 CREATE VIEW DepartmentInfo AS
2 SELECT
3     d.dname,
4     e.fname,
5     e.lname
6 FROM
7     department d
8 JOIN
9     employee e ON e.ssn = d.mgr_ssn
```

Below the query editor, the 'Data Output' tab is active, showing the results of the query. The output is a table with three columns: 'dname', 'fname', and 'lname'. The data is as follows:

	dname character varying (15)	fname character varying (10)	lname character varying (20)
1	Research	Franklin	Wong
2	Administration	Jennifer	Wallace
3	Headquarters	James	Borg