

```

Server [localhost]:
Database [postgres]:
Port [5432]:
Username [postgres]:
Password for user postgres:
psql (15.1)

```

```
postgres=# \l
```

```

                                List of databases
   Name      | Owner   | Encoding | Collate | Ctype | ICU Locale |
-----+-----+-----+-----+-----+-----+
pgdata       | postgres | UTF8     | C       | C     |             |
libc         |         |          |         |       |             |
postgres     | postgres | UTF8     | C       | C     |             |
libc         |         |          |         |       |             |
template0    | postgres | UTF8     | C       | C     |             |
libc         | =c/postgres |          |         |       |             |
| postgres=CTc/postgres
template1    | postgres | UTF8     | C       | C     |             |
libc         | =c/postgres |          |         |       |             |
| postgres=CTc/postgres
testingdb    | postgres | UTF8     | C       | C     |             |
libc         |         |          |         |       |             |
(5 rows)

```

```
postgres=# \c pgdata
```

```
You are now connected to database "pgdata" as user "postgres".
```

```
pgdata=# \d
```

```

                List of relations
 Schema | Name | Type  | Owner
-----+-----+-----+-----
 public | dept | table | postgres
 public | emp  | table | postgres
(2 rows)

```

```
pgdata=# select * from emp;
```

```

 eid |  ename  | salary | did
-----+-----+-----+-----
 104 | Jaideep |    10  | 1
 101 | SARAV   |    40  | 1
 102 | SARAV   |    50  | 1
 103 | SARAV   |    60  | 1
 105 | Jaideep |    30  | 2
 106 | Jaideep |    20  | 2
 107 | USAF    | 70.003 | 2
 108 | USAF    |     0  | 2
 109 | USAF    |   120  | 3
 110 | TAKUR   |   110  | 3

```

111	TAKUR	100	4
112	TAKUR	90	4
113	JAIDEEP	80	4

(13 rows)

```
pgdata=# select * from dept;
```

did	dname	fnum
1	Matchground	9
2	Practice ground	8
3	Meeting Area	5
4	Management	6
5	resturant	3

(5 rows)

```
pgdata=# select * from emp order by eid DESC;
```

eid	ename	salary	did
113	JAIDEEP	80	4
112	TAKUR	90	4
111	TAKUR	100	4
110	TAKUR	110	3
109	USAF	120	3
108	USAF	0	2
107	USAF	70.003	2
106	Jaideep	20	2
105	Jaideep	30	2
104	Jaideep	10	1
103	SARAV	60	1
102	SARAV	50	1
101	SARAV	40	1

(13 rows)

```
pgdata=# select * from emp;
```

eid	ename	salary	did
104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
106	Jaideep	20	2
107	USAF	70.003	2
108	USAF	0	2
109	USAF	120	3
110	TAKUR	110	3
111	TAKUR	100	4
112	TAKUR	90	4
113	JAIDEEP	80	4

(13 rows)

```
pgdata=# select * from emp order by eid DESC;
```

eid	ename	salary	did
-----	-------	--------	-----

113	JAIDEEP	80	4
112	TAKUR	90	4
111	TAKUR	100	4
110	TAKUR	110	3
109	USAF	120	3
108	USAF	0	2
107	USAF	70.003	2
106	Jaideep	20	2
105	Jaideep	30	2
104	Jaideep	10	1
103	SARAV	60	1
102	SARAV	50	1
101	SARAV	40	1

(13 rows)

```
pgdata=# select * from dept order by did DESC;
```

did	dname	fnum

5	resturant	3
4	Management	6
3	Meeting Area	5
2	Practice ground	8
1	Matchground	9

(5 rows)

```
pgdata=# select (eid,ename,salary) from emp inner join dept on
emp.did=dept.did;
```

```

      row
-----
(104,Jaideep,10)
(101,SARAV,40)
(102,SARAV,50)
(103,SARAV,60)
(105,Jaideep,30)
(106,Jaideep,20)
(107,USAF,70.003)
(108,USAF,0)
(109,USAF,120)
(110,TAKUR,110)
(111,TAKUR,100)
(112,TAKUR,90)
(113,JAIDEEP,80)
(13 rows)
```

```
pgdata=# select (eid,ename,salary) from emp inner join dept on
emp.did=dept.did;
```

```

      row
-----
(104,Jaideep,10)
(101,SARAV,40)
(102,SARAV,50)
(103,SARAV,60)
(105,Jaideep,30)
(106,Jaideep,20)
```

```

(107,USAF,70.003)
(108,USAF,0)
(109,USAF,120)
(110,TAKUR,110)
(111,TAKUR,100)
(112,TAKUR,90)
(113,JAIDEEP,80)
(13 rows)

```

```

pgdata=# SELECT (eid,ename,salary) from emp full outer join dept on
emp.did=dept.did;
      row

```

```

-----
(104,Jaideep,10)
(101,SARAV,40)
(102,SARAV,50)
(103,SARAV,60)
(105,Jaideep,30)
(106,Jaideep,20)
(107,USAF,70.003)
(108,USAF,0)
(109,USAF,120)
(110,TAKUR,110)
(111,TAKUR,100)
(112,TAKUR,90)
(113,JAIDEEP,80)
(,,)
(14 rows)

```

```

pgdata=# select (eid,ename,salary) from emp inner join dept on
emp.did=dept.did;
      row

```

```

-----
(104,Jaideep,10)
(101,SARAV,40)
(102,SARAV,50)
(103,SARAV,60)
(105,Jaideep,30)
(106,Jaideep,20)
(107,USAF,70.003)
(108,USAF,0)
(109,USAF,120)
(110,TAKUR,110)
(111,TAKUR,100)
(112,TAKUR,90)
(113,JAIDEEP,80)
(13 rows)

```

```

pgdata=# SELECT (eid,ename,salary) from emp LEFT JOIN dept ON
emp.did=dept.did;
      row

```

```

-----
(104,Jaideep,10)
(101,SARAV,40)

```

```

(102,SARAV,50)
(103,SARAV,60)
(105,Jaideep,30)
(106,Jaideep,20)
(107,USAF,70.003)
(108,USAF,0)
(109,USAF,120)
(110,TAKUR,110)
(111,TAKUR,100)
(112,TAKUR,90)
(113,JAIDEEP,80)
(13 rows)

```

```

pgdata=# SELECT (eid,ename,dname) from emp LEFT JOIN dept ON
emp.did=dept.did;
          row

```

```

-----
(104,Jaideep,Matchground)
(101,SARAV,Matchground)
(102,SARAV,Matchground)
(103,SARAV,Matchground)
(105,Jaideep,"Practice ground")
(106,Jaideep,"Practice ground")
(107,USAF,"Practice ground")
(108,USAF,"Practice ground")
(109,USAF,"Meeting Area")
(110,TAKUR,"Meeting Area")
(111,TAKUR,Management)
(112,TAKUR,Management)
(113,JAIDEEP,Management)
(13 rows)

```

```

pgdata=# select * from emp;
 eid |  ename  | salary | did
-----+-----+-----+----
 104 | Jaideep |    10  |   1
 101 | SARAV   |    40  |   1
 102 | SARAV   |    50  |   1
 103 | SARAV   |    60  |   1
 105 | Jaideep |    30  |   2
 106 | Jaideep |    20  |   2
 107 | USAF    | 70.003 |   2
 108 | USAF    |     0  |   2
 109 | USAF    |   120  |   3
 110 | TAKUR   |   110  |   3
 111 | TAKUR   |   100  |   4
 112 | TAKUR   |    90  |   4
 113 | JAIDEEP |    80  |   4
(13 rows)

```

```

pgdata=# select * from dept;
 did |      dname      | fnum
-----+-----+-----
   1 | Matchground     |    9

```

2	Practice ground	8
3	Meeting Area	5
4	Management	6
5	resturant	3

(5 rows)

```
pgdata=# insert into emp values(114,'Rohith',16);
INSERT 0 1
```

```
pgdata=# select * from emp;
```

eid	ename	salary	did
104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
106	Jaideep	20	2
107	USAF	70.003	2
108	USAF	0	2
109	USAF	120	3
110	TAKUR	110	3
111	TAKUR	100	4
112	TAKUR	90	4
113	JAIDEEP	80	4
114	Rohith	16	

(14 rows)

```
pgdata=# select * from dept;
```

did	dname	fnum
1	Matchground	9
2	Practice ground	8
3	Meeting Area	5
4	Management	6
5	resturant	3

(5 rows)

```
pgdata=# SELECT (ename,dname,salary) from emp LEFT JOIN dept ON
emp.did=dept.did;
```

```
row
```

```
(Jaideep,Matchground,10)
(SARAV,Matchground,40)
(SARAV,Matchground,50)
(SARAV,Matchground,60)
(Jaideep,"Practice ground",30)
(Jaideep,"Practice ground",20)
(USAF,"Practice ground",70.003)
(USAF,"Practice ground",0)
(USAF,"Meeting Area",120)
(TAKUR,"Meeting Area",110)
(TAKUR,Management,100)
(TAKUR,Management,90)
```

```
(JAIDEEP,Management,80)
(Rohith,,16)
(14 rows)
```

```
pgdata=# SELECT (ename,dname,salary) from emp RIGHT JOIN dept ON
emp.did=dept.did;
```

```
row
-----
(Jaideep,Matchground,10)
(SARAV,Matchground,40)
(SARAV,Matchground,50)
(SARAV,Matchground,60)
(Jaideep,"Practice ground",30)
(Jaideep,"Practice ground",20)
(USAF,"Practice ground",70.003)
(USAF,"Practice ground",0)
(USAF,"Meeting Area",120)
(TAKUR,"Meeting Area",110)
(TAKUR,Management,100)
(TAKUR,Management,90)
(JAIDEEP,Management,80)
(,resturant,)
(14 rows)
```

```
pgdata=# SELECT * from emp e inner join dept d on e.did <> d.did;
```

eid	ename	salary	did	did	dname	fnum
105	Jaideep	30	2	1	Matchground	9
106	Jaideep	20	2	1	Matchground	9
107	USAF	70.003	2	1	Matchground	9
108	USAF	0	2	1	Matchground	9
109	USAF	120	3	1	Matchground	9
110	TAKUR	110	3	1	Matchground	9
111	TAKUR	100	4	1	Matchground	9
112	TAKUR	90	4	1	Matchground	9
113	JAIDEEP	80	4	1	Matchground	9
104	Jaideep	10	1	2	Practice ground	8
101	SARAV	40	1	2	Practice ground	8
102	SARAV	50	1	2	Practice ground	8
103	SARAV	60	1	2	Practice ground	8
109	USAF	120	3	2	Practice ground	8
110	TAKUR	110	3	2	Practice ground	8
111	TAKUR	100	4	2	Practice ground	8
112	TAKUR	90	4	2	Practice ground	8
113	JAIDEEP	80	4	2	Practice ground	8
104	Jaideep	10	1	3	Meeting Area	5
101	SARAV	40	1	3	Meeting Area	5
102	SARAV	50	1	3	Meeting Area	5
103	SARAV	60	1	3	Meeting Area	5
105	Jaideep	30	2	3	Meeting Area	5
106	Jaideep	20	2	3	Meeting Area	5
107	USAF	70.003	2	3	Meeting Area	5
108	USAF	0	2	3	Meeting Area	5
111	TAKUR	100	4	3	Meeting Area	5

112	TAKUR	90	4	3	Meeting Area	5
113	JAIDEEP	80	4	3	Meeting Area	5
104	Jaideep	10	1	4	Management	6
101	SARAV	40	1	4	Management	6
102	SARAV	50	1	4	Management	6
103	SARAV	60	1	4	Management	6
105	Jaideep	30	2	4	Management	6
106	Jaideep	20	2	4	Management	6
107	USAF	70.003	2	4	Management	6
108	USAF	0	2	4	Management	6
109	USAF	120	3	4	Management	6
110	TAKUR	110	3	4	Management	6
104	Jaideep	10	1	5	resturant	3
101	SARAV	40	1	5	resturant	3
102	SARAV	50	1	5	resturant	3
103	SARAV	60	1	5	resturant	3
105	Jaideep	30	2	5	resturant	3
106	Jaideep	20	2	5	resturant	3
107	USAF	70.003	2	5	resturant	3
108	USAF	0	2	5	resturant	3
109	USAF	120	3	5	resturant	3
110	TAKUR	110	3	5	resturant	3
111	TAKUR	100	4	5	resturant	3
112	TAKUR	90	4	5	resturant	3
113	JAIDEEP	80	4	5	resturant	3

(52 rows)

```
pgdata=# UPDATE emp set salary =salary * 0.50 WHERE eid IN (SELECT
eid FROM emp where eid >= 110);
UPDATE 5
```

```
pgdata=# select * from emp;
  eid |  ename  | salary | did
-----+-----+-----+----
  104 | Jaideep |    10  |   1
  101 | SARAV   |    40  |   1
  102 | SARAV   |    50  |   1
  103 | SARAV   |    60  |   1
  105 | Jaideep |    30  |   2
  106 | Jaideep |    20  |   2
  107 | USAF    | 70.003 |   2
  108 | USAF    |     0  |   2
  109 | USAF    |   120  |   3
  110 | TAKUR   |    55  |   3
  111 | TAKUR   |    50  |   4
  112 | TAKUR   |    45  |   4
  113 | JAIDEEP |    40  |   4
  114 | Rohith  |     8  |
```

(14 rows)

```
pgdata=# SELECT * from emp e where salary>(select AVG(salary) from
emp where did=e.did);
  eid |  ename  | salary | did
-----+-----+-----+----
```


102	SARAV	50	1
103	SARAV	60	1
107	USAF	70.003	2
109	USAF	120	3
111	TAKUR	50	4

(5 rows)

```
pgdata=# SELECT * from emp e where salary>(select AVG(salary) from emp);
```

eid	ename	salary	did
102	SARAV	50	1
103	SARAV	60	1
107	USAF	70.003	2
109	USAF	120	3
110	TAKUR	55	3
111	TAKUR	50	4
112	TAKUR	45	4

(7 rows)

```
pgdata=# select * from emp;
```

eid	ename	salary	did
104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
106	Jaideep	20	2
107	USAF	70.003	2
108	USAF	0	2
109	USAF	120	3
110	TAKUR	55	3
111	TAKUR	50	4
112	TAKUR	45	4
113	JAIDEEP	40	4
114	Rohith	8	

(14 rows)

```
pgdata=# select avg(salary) from emp;
      avg
```

```
-----
42.71449988228934
(1 row)
```

```
pgdata=# begin;
BEGIN
```

```
pgdata=*# delete from emp where eid=109;
DELETE 1
```

```
pgdata=*# select * from emp;
  eid |  ename  | salary | did
```

104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
106	Jaideep	20	2
107	USAF	70.003	2
108	USAF	0	2
110	TAKUR	55	3
111	TAKUR	50	4
112	TAKUR	45	4
113	JAIDEEP	40	4
114	Rohith	8	

(13 rows)

```
pgdata=## delete from emp where eid=108 OR eid=106 OR eid=111 OR
eid=112 OR eid=113;
DELETE 5
```

```
pgdata=## select * from emp;
```

eid	ename	salary	did
104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
107	USAF	70.003	2
110	TAKUR	55	3
114	Rohith	8	

(8 rows)

```
pgdata=## UPDATE emp set eid=106 where ename='USAF';
UPDATE 1
```

```
pgdata=## select * from emp;
```

eid	ename	salary	did
104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
110	TAKUR	55	3
114	Rohith	8	
106	USAF	70.003	2

(8 rows)

```
pgdata=## UPDATE emp set eid=108 where ename='TAKUR';
UPDATE 1
```

```
pgdata=## UPDATE emp set eid=109 where ename='Rohith';
UPDATE 1
```

```
pgdata=# select * from emp;
 eid |  ename  | salary | did
-----+-----+-----+----
 104 | Jaideep |    10  |   1
 101 | SARAV   |    40  |   1
 102 | SARAV   |    50  |   1
 103 | SARAV   |    60  |   1
 105 | Jaideep |    30  |   2
 106 | USAF    |  70.003 |   2
 108 | TAKUR   |    55  |   3
 109 | Rohith  |     8  |
(8 rows)
```

```
pgdata=# INSERT INTO emp values(107,'Getlost',26),
(110,'Byebye',29);
INSERT 0 2
```

```
pgdata=# select * from emp;
 eid |  ename  | salary | did
-----+-----+-----+----
 104 | Jaideep |    10  |   1
 101 | SARAV   |    40  |   1
 102 | SARAV   |    50  |   1
 103 | SARAV   |    60  |   1
 105 | Jaideep |    30  |   2
 106 | USAF    |  70.003 |   2
 108 | TAKUR   |    55  |   3
 109 | Rohith  |     8  |
 107 | Getlost |    26  |
 110 | Byebye  |    29  |
(10 rows)
```

```
pgdata=# COMMIT;
COMMIT
```

```
pgdata=# select * from emp;
 eid |  ename  | salary | did
-----+-----+-----+----
 104 | Jaideep |    10  |   1
 101 | SARAV   |    40  |   1
 102 | SARAV   |    50  |   1
 103 | SARAV   |    60  |   1
 105 | Jaideep |    30  |   2
 106 | USAF    |  70.003 |   2
 108 | TAKUR   |    55  |   3
 109 | Rohith  |     8  |
 107 | Getlost |    26  |
 110 | Byebye  |    29  |
(10 rows)
```

```
pgdata=# EXPLAIN SELECT * FROM emp;
          QUERY PLAN
```

```
Seq Scan on emp (cost=0.00..1.14 rows=14 width=18)
(1 row)
```

```
pgdata=# create index empindex ON emp(eid);
CREATE INDEX
```

```
pgdata=# EXPLAIN SELECT * FROM emp;
QUERY PLAN
```

```
-----
Seq Scan on emp (cost=0.00..1.10 rows=10 width=18)
(1 row)
```

```
pgdata=# select * from emp;
```

eid	ename	salary	did
104	Jaideep	10	1
101	SARAV	40	1
102	SARAV	50	1
103	SARAV	60	1
105	Jaideep	30	2
106	USAF	70.003	2
108	TAKUR	55	3
109	Rohith	8	
107	Getlost	26	
110	Byebye	29	

(10 rows)

```
pgdata=# explain select * from emp where eid = 109;
QUERY PLAN
```

```
-----
Seq Scan on emp (cost=0.00..1.12 rows=1 width=18)
Filter: (eid = 109)
(2 rows)
```

```
pgdata=# CREATE VIEW didsalary AS SELECT did,salary FROM emp WHERE
did<>emp.did;
CREATE VIEW
```

```
pgdata=# SELECT * FROM didsalary;
```

did	salary
-----	--------

(0 rows)

```
pgdata=# DROP VIEW didsalary;
DROP VIEW
```

```
pgdata=# CREATE VIEW didsalary AS SELECT did,salary FROM emp WHERE
salary>50;
CREATE VIEW
```

```
pgdata=# SELECT * FROM didsalary;
```

did	salary
1	60

```

      2 | 70.003
      3 |      55
(3 rows)

```

```

pgdata=# INSERT INTO emp values(111,'ASHA',130,4);
INSERT 0 1

```

```

pgdata=# SELECT * FROM didsalary;

```

```

 did | salary
-----+-----
    1 |      60
    2 | 70.003
    3 |      55
    4 |     130
(4 rows)

```

```

pgdata=# \d

```

```

      List of relations
 Schema | Name       | Type  | Owner
-----+-----+-----+-----
 public | dept       | table | postgres
 public | didsalary  | view  | postgres
 public | emp       | table | postgres
(3 rows)

```

```

pgdata=# \db

```

```

      List of tablespaces
  Name   | Owner   | Location
-----+-----+-----
 pg_default | postgres |
 pg_global  | postgres |
(2 rows)

```

```

pgdata=# \dv

```

```

      List of relations
 Schema | Name       | Type  | Owner
-----+-----+-----+-----
 public | didsalary  | view  | postgres
(1 row)

```

```

pgdata=# \dv

```

```

      List of relations
 Schema | Name       | Type  | Owner
-----+-----+-----+-----
 public | didsalary  | view  | postgres
(1 row)

```

```

pgdata=# \d

```

```

      List of relations
 Schema | Name       | Type  | Owner
-----+-----+-----+-----
 public | dept       | table | postgres
 public | didsalary  | view  | postgres
 public | emp       | table | postgres

```

(3 rows)

pgdata=# \db

 List of tablespaces
 Name | Owner | Location
-----+-----+-----
 pg_default | postgres |
 pg_global | postgres |
(2 rows)

pgdata=# CREATE TABLE arrtab(snum INT NOT NULL, cmen TEXT,cnum
TEXT[]);
CREATE TABLE

pgdata=# INSERT INTO arrtab
values(1,'DATTTA',array['9100820659','9959070819']);
INSERT 0 1

pgdata=# SELECT * FROM arrtab;
 snum | cmen | cnum
-----+-----+-----
 1 | DATTTA | {9100820659,9959070819}
(1 row)