```sql
4   CREATE TABLE employee (
5     name TEXT PRIMARY KEY,
6     certifications TEXT[]
7   );
8
9   INSERT INTO employee VALUES ('Bill', '{"CCNA", "ACSP", "CISSP"}');
10
11  SELECT * FROM employee;
12
13  SELECT name FROM employee WHERE certifications @> '{ACSP}';
14
15  SELECT certifications[1] FROM employee;
```

Results   Chart   **Export** ⌄

name	certifications
Bill	["CCNA","ACSP","CISSP"]

```sql
11  SELECT * FROM employee;
12
13  SELECT name FROM employee WHERE certifications @> '{ACSP}';
14
15  SELECT certifications[1] FROM employee;
16
17  SELECT unnest(certifications) FROM employee;
```

Results   Chart   **Export** ⌄

name
Bill

```
11  SELECT * FROM employee;
12
13  SELECT name FROM employee WHERE certifications @> '{ACSP}';
14
15  SELECT certifications[1] FROM employee;
16
17  SELECT unnest(certifications) FROM employee;
18
19  SELECT name, unnest(certifications) FROM employee;
20
```

Results   Chart   Export ∨

certification
CCNA

```
13  SELECT name FROM employee WHERE certifications @> '{ACSP}';
14
15  SELECT certifications[1] FROM employee;
16
17  SELECT unnest(certifications) FROM employee;
18
19  SELECT name, unnest(certifications) FROM employee;
20
21  SELECT DISTINCT relkind FROM pg_class ORDER BY 1;
22
23  SELECT array_agg(DISTINCT relkind) FROM pg_class;
```

Results   Chart   Export ∨

unnest
CCNA
ACSP
CISSP

```sql
17  SELECT unnest(certifications) FROM employee;
18
19  SELECT name, unnest(certifications) FROM employee;
20
21  SELECT DISTINCT relkind FROM pg_class ORDER BY 1;
22
23  SELECT array_agg(DISTINCT relkind) FROM pg_class;
24
25  CREATE TABLE car_rental (
26    id SERIAL PRIMARY KEY,
```

Results   Chart   Export ∨

name	unnest
Bill	CCNA
Bill	ACSP
Bill	CISSP

```sql
15  SELECT certifications[1] FROM employee;
16
17  SELECT unnest(certifications) FROM employee;
18
19  SELECT name, unnest(certifications) FROM employee;
20
21  SELECT DISTINCT relkind FROM pg_class ORDER BY 1;
22
23  SELECT array_agg(DISTINCT relkind) FROM pg_class;
24
25  CREATE TABLE car_rental (
26    id SERIAL PRIMARY KEY,
```

Results   Chart   Export ⌄

relkind
I
S
c
i
p
r
t
v

```sql
21  SELECT DISTINCT relkind FROM pg_class ORDER BY 1;
22
23  SELECT array_agg(DISTINCT relkind) FROM pg_class;
24
25  CREATE TABLE car_rental (
26    id SERIAL PRIMARY KEY,
27    time_span TSTZRANGE
28  );
29
```

Results Chart Export ⌄

array_agg
{I,S,c,i,p,r,t,v}

```sql
31
32  SELECT * FROM car_rental WHERE time_span @> '2016-05-09 00:00:00'::timestamptz;
33
34  SELECT * FROM car_rental WHERE time_span @> '2018-06-09 00:00:00'::timestamptz;
35
36  INSERT INTO car_rental (time_span)
37  SELECT tstzrange(y, y + '1 day')
38  FROM generate_series('2001-09-01 00:00:00'::timestamptz, '2010-09-01 00:00:00'::timestamptz, '1
39
40  SELECT * FROM car_rental WHERE time_span @> '2007-08-01 00:00:00'::timestamptz;
```

Results Chart Export ⌄

id	time_span
1	["2016-05-03 09:00:00+00","2016-05-11 12:00:00+00")

```sql
38  FROM generate_series('2001-09-01 00:00:00'::timestamptz, '2010-09-01 00:00:00'::timestamptz, '1 day') AS x(y);
39
40  SELECT * FROM car_rental WHERE time_span @> '2007-08-01 00:00:00'::timestamptz;
41
42  CREATE INDEX car_rental_idx ON car_rental USING GIST (time_span);
```

Results Chart Export ⌄   ⌨ ♡ ≡ Source Primary

id	time_span
2162	["2007-08-01 00:00:00+00","2007-08-02 00:00:00+00")

```
54
55  SELECT * FROM dart LIMIT 5;
56
57  SELECT * FROM dart WHERE location <@ '<(50, 50), 4>'::circle;
58
59  CREATE INDEX dart_idx ON dart USING GIST (location);
60
61  SELECT * FROM dart ORDER BY location <-> '(50, 50)'::point LIMIT 2;
62
```

Results   Chart   Export ∨

dartno	location
1	(73.2648838060965,57.8477197186317)
2	(99.9465948837428,33.609490711528)
3	(60.8199567824874,5.05279731454296)
4	(50.9837124468302,7.41866395626942)
5	(63.2693883835099,71.662444299611)

```
55  SELECT * FROM dart LIMIT 5;
56
57  SELECT * FROM dart WHERE location <@ '<(50, 50), 4>'::circle;
58
59  CREATE INDEX dart_idx ON dart USING GIST (location);
60
61  SELECT * FROM dart ORDER BY location <-> '(50, 50)'::point LIMIT 2;
62
63  CREATE TABLE printer (
64    doc XML
65  );
```

Results   Chart   Export ∨

dartno	location
166	(50.9662748294752,53.0596320562814)
189	(51.1213735118786,46.939107126083)
269	(48.4426374971227,47.8756993258947)

```sql
60
61   SELECT * FROM dart ORDER BY location <-> '(50, 50)'::point LIMIT 2;
62
63   CREATE TABLE printer (
64     doc XML
65   );
66
67   CREATE TABLE friend (
68     id SERIAL
```
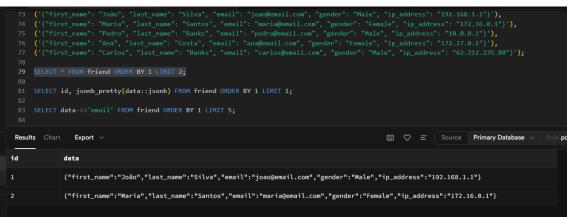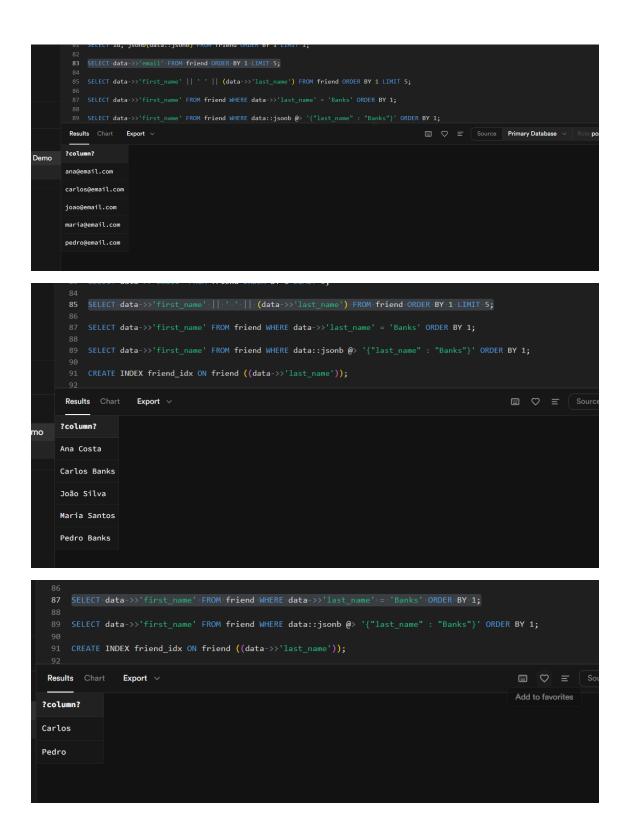
Results | Chart | Export ▾

dartno	location
269	(48.4426374971227,47.8756993258947)
166	(50.9662748294752,53.0596320562814)

```sql
73   ('{"first_name": "João", "last_name": "Silva", "email": "joao@email.com", "gender": "Male", "ip_address": "192.168.1.1"}'),
74   ('{"first_name": "Maria", "last_name": "Santos", "email": "maria@email.com", "gender": "Female", "ip_address": "172.16.0.1"}'),
75   ('{"first_name": "Pedro", "last_name": "Banks", "email": "pedro@email.com", "gender": "Male", "ip_address": "10.0.0.1"}'),
76   ('{"first_name": "Ana", "last_name": "Costa", "email": "ana@email.com", "gender": "Female", "ip_address": "172.17.0.1"}'),
77   ('{"first_name": "Carlos", "last_name": "Banks", "email": "carlos@email.com", "gender": "Male", "ip_address": "62.212.235.80"}');
78
79   SELECT * FROM friend ORDER BY 1 LIMIT 2;
80
81   SELECT id, jsonb_pretty(data::jsonb) FROM friend ORDER BY 1 LIMIT 1;
82
83   SELECT data->>'email' FROM friend ORDER BY 1 LIMIT 5;
84
```

Results | Chart | Export ▾   Source | Primary Database ▾ | Role po

id	data
1	{"first_name":"João","last_name":"Silva","email":"joao@email.com","gender":"Male","ip_address":"192.168.1.1"}
2	{"first_name":"Maria","last_name":"Santos","email":"maria@email.com","gender":"Female","ip_address":"172.16.0.1"}

```sql
77   ('{"first_name": "Carlos", "last_name": "Banks", "email": "carlos@email.com", "gender": "Male", "ip_address": "62.212.235.80"}');
78
79   SELECT * FROM friend ORDER BY 1 LIMIT 2;
80
81   SELECT id, jsonb(data::jsonb) FROM friend ORDER BY 1 LIMIT 1;
82
83   SELECT data->>'email' FROM friend ORDER BY 1 LIMIT 5;
84
85   SELECT data->>'first_name' || ' ' || (data->>'last_name') FROM friend ORDER BY 1 LIMIT 5;
86
```

Results | Chart | Export ▾   Source | Primary Database ▾

id	jsonb
1	{"email":"joao@email.com","gender":"Male","last_name":"Silva","first_name":"João","ip_address":"192.168.1.1"}

```sql
81  SELECT id, jsonb(data::jsonb) FROM friend ORDER BY 1 LIMIT 1;
82
83  SELECT data->>'email' FROM friend ORDER BY 1 LIMIT 5;
84
85  SELECT data->>'first_name' || ' ' || (data->>'last_name') FROM friend ORDER BY 1 LIMIT 5;
86
87  SELECT data->>'first_name' FROM friend WHERE data->>'last_name' = 'Banks' ORDER BY 1;
88
89  SELECT data->>'first_name' FROM friend WHERE data::jsonb @> '{"last_name" : "Banks"}' ORDER BY 1;
```

Results Chart Export ⌄   Source Primary Database ⌄ Role po

?column?

ana@email.com

carlos@email.com

joao@email.com

maria@email.com

pedro@email.com

```sql
84
85  SELECT data->>'first_name' || ' ' || (data->>'last_name') FROM friend ORDER BY 1 LIMIT 5;
86
87  SELECT data->>'first_name' FROM friend WHERE data->>'last_name' = 'Banks' ORDER BY 1;
88
89  SELECT data->>'first_name' FROM friend WHERE data::jsonb @> '{"last_name" : "Banks"}' ORDER BY 1;
90
91  CREATE INDEX friend_idx ON friend ((data->>'last_name'));
92
```

Results Chart Export ⌄   Source

?column?

Ana Costa

Carlos Banks

João Silva

Maria Santos

Pedro Banks

```sql
86
87  SELECT data->>'first_name' FROM friend WHERE data->>'last_name' = 'Banks' ORDER BY 1;
88
89  SELECT data->>'first_name' FROM friend WHERE data::jsonb @> '{"last_name" : "Banks"}' ORDER BY 1;
90
91  CREATE INDEX friend_idx ON friend ((data->>'last_name'));
92
```

Results Chart Export ⌄   Sou

                                                        Add to favorites

?column?

Carlos

Pedro

```sql
87   SELECT data->>'first_name' FROM friend WHERE data->>'last_name' = 'Banks' ORDER BY 1;
88
89   SELECT data->>'first_name' FROM friend WHERE data::jsonb @> '{"last_name":"Banks"}' ORDER BY 1;
90
91   CREATE INDEX friend_idx ON friend ((data->>'last_name'));
92
```

Results   Chart   Export ∨   Source   Primary Database ∨

?column?
Carlos
Pedro

```sql
92
93   SELECT data->>'first_name' || ' ' || (data->>'last_name'), data->>'ip_address'
94   FROM friend
95   WHERE (data->>'ip_address')::inet <<= '172.0.0.0/8'::cidr
96   ORDER BY 1;
97
```

Results   Chart   Export ∨

?column?
172.17.0.1
172.16.0.1

```sql
96   ORDER BY 1;
97
98   SELECT data->>'gender', COUNT(data->>'gender')
99   FROM friend
100  GROUP BY 1
101  ORDER BY 2 DESC;
102
103  SELECT '{"name" : "Jim", "name" : "Andy", "age" : 12}'::json;
104  SELECT '{"name" : "Jim", "name" : "Andy", "age" : 12}'::jsonb;
105
106  CREATE TABLE friend2 (
```

Results   Chart   Export ∨

?column?	count
Male	3
Female	2

```sql
101  ORDER BY 2 DESC;
102
103  SELECT '{"name" : "Jim", "name" : "Andy", "age" : 12}'::json;
104  SELECT '{"name" : "Jim", "name" : "Andy", "age" : 12}'::jsonb;
105
106  CREATE TABLE friend2 (
107    id SERIAL,
108    data JSONB
```

Results Chart Export ⌄

jsonb
{"age":12,"name":"Andy"}

```sql
113  CREATE INDEX friend2_idx ON friend2 USING GIN (data);
114
115  SELECT data->>'first_name'
116  FROM friend2
117  WHERE data @> '{"last_name" : "Banks"}'
118  ORDER BY 1;
119
120  CREATE TYPE drivers_license AS (
```

Results Chart Export ⌄

?column?
Carlos
Pedro

```sql
131  ));
132  INSERT INTO truck_driver VALUES (DEFAULT, 'Jimbo Biggins', ('PA', 175319, '2017-03-12'));
133
134  SELECT * FROM truck_driver;
135
136  SELECT (license).state FROM truck_driver;
137
138  CREATE TABLE fortune (
139    line TEXT
```

Results Chart Export ⌄

id	name	license
1	Jimbo Biggins	(PA,175319,2017-03-12)

```sql
133
134  SELECT * FROM truck_driver;
135
136  SELECT (license).state FROM truck_driver;
137
138  CREATE TABLE fortune (
139    line TEXT
140  );
141
142  INSERT INTO fortune VALUES
143  ('A bird in the hand is worth two in the bush'),
144  ('The early bird catches the worm'),
145  ('Don''t count your chickens before they hatch')
```

Results   Chart   Export ∨

state
PA

Demo

```sql
157  ('So much for the plan we had');
158
159  SELECT * FROM fortune WHERE line = 'underdog';
160  SELECT * FROM fortune WHERE line = 'Underdog';
161  SELECT * FROM fortune WHERE lower(line) = 'underdog';
162
163  CREATE INDEX fortune_idx_text ON fortune (line);
164  CREATE INDEX fortune_idx_lower ON fortune (lower(line));
```

Results   Chart   Export ∨

line
underdog

```sql
154  ('Mop up the mess quickly');
155  ('underdog'),
156  ('Underdog saves the day'),
157  ('So much for the plan we had');
158
159  SELECT * FROM fortune WHERE line = 'underdog';
160  SELECT * FROM fortune WHERE line = 'Underdog';
161  SELECT * FROM fortune WHERE lower(line) = 'underdog';
162
163  CREATE INDEX fortune_idx_text ON fortune (line);
164  CREATE INDEX fortune_idx_lower ON fortune (lower(line));
```

Results   Chart   Export ∨   Source   Primary Database ∨   Role postgres ∨   Run CTRL ↵

line
underdog

```sql
163    CREATE INDEX fortune_idx_text ON fortune (line);
164    CREATE INDEX fortune_idx_lower ON fortune (lower(line));
165
166    SELECT line FROM fortune WHERE line LIKE 'Mop%' ORDER BY 1;
167
168    CREATE INDEX fortune_idx_ops ON fortune (line text_pattern_ops);
169    CREATE INDEX fortune_idx_ops_lower ON fortune (lower(line) text_pattern_ops);
```

Results   Chart   Export ∨

line
Mop the floor carefully
Mop up the mess quickly

```sql
169    CREATE INDEX fortune_idx_ops_lower ON fortune (lower(line) text_pattern_ops);
170
171    SELECT to_tsvector('I can hardly wait.');
172    SELECT to_tsquery('hardly & wait');
173
174    SELECT to_tsvector('I can hardly wait.') @@ to_tsquery('hardly & wait');
175
176    CREATE INDEX fortune_idx_ts ON fortune USING GIN (to_tsvector('english', line));
177
178    SELECT line FROM fortune WHERE line ILIKE '%verit%' ORDER BY 1;
```

Results   Chart   Export ∨

to_tsvector
'hard':3 'wait':4

```sql
168    CREATE INDEX fortune_idx_ops ON fortune (line text_pattern_ops);
169    CREATE INDEX fortune_idx_ops_lower ON fortune (lower(line) text_pattern_ops);
170
171    SELECT to_tsvector('I can hardly wait.');
172    SELECT to_tsquery('hardly & wait');
173
174    SELECT to_tsvector('I can hardly wait.') @@ to_tsquery('hardly & wait');
175
176    CREATE INDEX fortune_idx_ts ON fortune USING GIN (to_tsvector('english', line));
177
178    SELECT line FROM fortune WHERE line ILIKE '%verit%' ORDER BY 1;
```

Results   Chart   Export ∨   Source   Primary Database

to_tsquery
'hard' & 'wait'

```sql
172  SELECT to_tsquery('hardly & wait');
173
174  SELECT to_tsvector('I can hardly wait.') @@ to_tsquery('hardly & wait');
175
176  CREATE INDEX fortune_idx_ts ON fortune USING GIN (to_tsvector('english', line));
177
178  SELECT line FROM fortune WHERE line ILIKE '%verit%' ORDER BY 1;
179
180  CREATE INDEX fortune_idx_trgm ON fortune USING GIN (line gin_trgm_ops);
181
```

Results Chart Export ⌄   Source Pri

?column?
true

```sql
179
180  CREATE EXTENSION IF NOT EXISTS pg_trgm;
181  CREATE INDEX fortune_idx_trgm ON fortune
182  USING GIN (line gin_trgm_ops);
183
184
185
186  SELECT show_limit();
187
188  SELECT line, similarity(line, 'So much for the pla
189  FROM fortune
190  WHERE line % 'So much for the plan'
```

Results Chart Export ⌄

show_limit
0.3

```
185
186   SELECT show_limit();
187
188   SELECT line, similarity(line, 'So much for the plan')
189   FROM fortune
190   WHERE line % 'So much for the plan'
191   ORDER BY 2 DESC;
192
193   SELECT line FROM fortune WHERE line ~* '(^|[^a-z])cat' ORDER BY 1;
194
195
```

Results   Chart   Export ⌄

line	similarity
So much for the plan we had	0.75

```
187
188   SELECT line, similarity(line, 'So much for the plan')
189   FROM fortune
190   WHERE line % 'So much for the plan'
191   ORDER BY 2 DESC;
192
193   SELECT line FROM fortune WHERE line ~* '(^|[^a-z])cat' ORDER BY 1;
194
195
```

Results   Chart   Export ⌄

line
Curiosity killed the cat
The cat is out of the bag
The early bird catches the worm