

1)

[Query](#) [Query History](#)

1

2

3

```
CREATE INDEX idx_actual_departure
ON flights (actual_departure);
```

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 117 msec.

Total rows: Query complete 00:00:00.117 CRLF Ln 3, Col 1

2)

[Query](#) [Query History](#)

1

2

3

```
CREATE UNIQUE INDEX idx_unique_flight_no_sched_dep
ON flights (flight_no, scheduled_departure);
```

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 61 msec.

Total rows: Query complete 00:00:00.061 CRLF Ln 3, Col 1

✓ Query returned successfully in 61 msec. ✕

3)

Query

Query History

1

CREATE INDEX idx\_dep\_arr\_airports

2

ON flights (departure\_airport\_id, arrival\_airport\_id);

3

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 97 msec.

✓ Query returned successfully in 97 msec. ✕

Total rows: 0Query complete 00:00:00.097CRLF Ln 3, Col 1

4)

Query

Query History

1

EXPLAIN ANALYZE

2

SELECT \*

3

FROM passengers

4

WHERE country\_of\_citizenship = 'Philippines'

5

AND date\_of\_birth BETWEEN '1984-01-01' AND '1984-12-31';

Data Output

Messages

Notifications

Showing rows: 1 to 5

Page No: 1

of 1

SQL

QUERY PLAN

text

1

Seq Scan on passengers (cost=0.00..2877.00 rows=1 width=57) (actual time=0.028..18.195 rows=1 loops=1)

2

Filter: ((date\_of\_birth >= '1984-01-01'::date) AND (date\_of\_birth <= '1984-12-31'::date) AND ((country\_of\_citizenship)::text = 'Philippines'::te...

3

Rows Removed by Filter: 99999

4

Planning Time: 3.046 ms

5

Execution Time: 18.230 ms

✓ Successfully run. Total query runtime: 84 msec. 5 rows affected. ✕

Total rows: 5Query complete 00:00:00.084CRLF Ln 1, Col 9

Query

Query History

1

```
CREATE INDEX idx_passengers_citizenship_dob ON passengers (country_of_citizenship, date_of_birth);
```

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 471 msec.

✓ Query returned successfully in 471 msec. ✕

Total rows:

Query complete 00:00:00.471

CRLF

Ln 1, Col 99

Query

Query History

1

```
EXPLAIN ANALYZE
```

2

```
SELECT *
```

3

```
FROM passengers
```

4

```
WHERE country_of_citizenship = 'Philippines'
```

5

```
AND date_of_birth BETWEEN '1984-01-01' AND '1984-12-31';
```

Data Output

Messages

Notifications

Showing rows: 1 to 4

Page No: 1 of 1

QUERY PLAN

text

1

Index Scan using idx\_passengers\_citizenship\_dob on passengers (cost=0.29..8.32 rows=1 width=57) (actual time=0.087..0.089 rows=1 loops=1)

2

Index Cond: (((country\_of\_citizenship)::text = 'Philippines'::text) AND (date\_of\_birth >= '1984-01-01'::date) AND (date\_of\_birth <= '1984-12-31'::dat...

3

Planning Time: 1.934 ms

4

Execution Time: 0.113 ms

Total rows: 4

Query complete 00:00:00.107

CRLF

Ln 1, Col 9

5)

Query

Query History

1

EXPLAIN ANALYZE

2

SELECT \* FROM flights

3

WHERE departure\_airport\_id = 1 AND arrival\_airport\_id = 2;

4

Data Output

Messages

Notifications

Showing rows: 1 to 7

Page No: 1 of 1

	QUERY PLAN
1	Bitmap Heap Scan on flights (cost=4.30..9.97 rows=2 width=61) (actual time=0.073..0.079 rows=2 loops=1)
2	Recheck Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))
3	Heap Blocks: exact=2
4	-> Bitmap Index Scan on idx_dep_arr_airports (cost=0.00..4.29 rows=2 width=0) (actual time=0.048..0.048 rows=2 loop...)
5	Index Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))
6	Planning Time: 0.264 ms
7	Execution Time: 0.130 ms

Total rows: 7    Query complete 00:00:00.008

6)

Query

Query History

1

CREATE UNIQUE INDEX idx\_unique\_passport

2

ON passengers (passport\_number);

3

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 208 msec.

Total rows: 0    Query complete 00:00:00.208

✓ Query returned successfully in 208 msec. ✕

CRLF    Ln 2. Col 31

Query

Query History

1

INSERT INTO passengers (

2

passenger\_id, first\_name, last\_name, date\_of\_birth, gender,

3

country\_of\_citizenship, country\_of\_residence, passport\_number,

4

created\_at, update\_at

5

) VALUES (

6

201, 'Айгерим', 'Каримова', '1995-03-15'::DATE, 'Female',

7

'KZ', 'KZ', 'N1234567',

8

CURRENT\_DATE, CURRENT\_DATE

9

);

Data Output

Messages

Notifications

INSERT 0 1

Query returned successfully in 62 msec.

Total rows:

Query complete 00:00:00.062

CRLF

Ln 6, Col 10

1

INSERT INTO passengers (

2

passenger\_id, first\_name, last\_name, date\_of\_birth, gender,

3

country\_of\_citizenship, country\_of\_residence, passport\_number,

4

created\_at, update\_at

5

) VALUES (

6

202, 'Айгерим', 'Каримова', '1995-03-15'::DATE, 'Female',

7

'KZ', 'KZ', 'N1234567',

8

CURRENT\_DATE, CURRENT\_DATE

9

);

Data Output

Messages

Notifications

ERROR: повторяющееся значение ключа нарушает ограничение уникальности "unique\_name"

Ключ "(last\_name, first\_name, date\_of\_birth)=(Каримова, Айгерим, 1995-03-15)" уже существует.

ОШИБКА: повторяющееся значение ключа нарушает ограничение уникальности "unique\_name"

SQL state: 23505

Detail: Ключ "(last\_name, first\_name, date\_of\_birth)=(Каримова, Айгерим, 1995-03-15)" уже существует.

7)

Query

Query History

1

2

3

CREATE INDEX idx\_passenger\_details

ON passengers (first\_name, last\_name, date\_of\_birth, country\_of\_citizenship);

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 73 msec.

Total rows:

Query complete 00:00:00.073

✓ Query returned successfully in 73 msec. ✕

CRLF

Ln 3, Col 1

Query

Query History

1

SET enable\_seqscan = OFF;

2

3

EXPLAIN ANALYZE

4

SELECT \* FROM passengers

5

WHERE country\_of\_citizenship = 'PH'

6

AND date\_of\_birth BETWEEN '1984-01-01' AND '1984-12-31';

Data Output

Messages

Notifications

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SQL

Sh

QUERY PLAN

text

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1

Bitmap Heap Scan on passengers (cost=10.16..13.28 rows=1 width=64) (actual time=0.053..0.054 rows=0 loops=1)

2

Recheck Cond: ((date\_of\_birth >= '1984-01-01'::date) AND (date\_of\_birth <= '1984-12-31'::date))

3

Filter: ((country\_of\_citizenship)::text = 'PH'::text)

4

Rows Removed by Filter: 6

5

Heap Blocks: exact=2

6

-> Bitmap Index Scan on unique\_name (cost=0.00..10.15 rows=7 width=0) (actual time=0.030..0.030 rows=6 loop...

7

Index Cond: ((date\_of\_birth >= '1984-01-01'::date) AND (date\_of\_birth <= '1984-12-31'::date))

8

Planning Time: 0.318 ms

9

Execution Time: 0.080 ms

8)

Query

Query History

1

SELECT

indexname,

indexdef

2

FROM

pg\_indexes

3

WHERE

tablename = 'passengers';

4

Data Output

Messages

Notifications

Showing rows: 1 to 5

Page No: 1

of 1

	indexname name	indexdef text
1	passengers_pkey	CREATE UNIQUE INDEX passengers_pkey ON public.passengers USING btree (passenger_id)
2	unique_passenger_email	CREATE UNIQUE INDEX unique_passenger_email ON public.passengers USING btree (passenger_email)
3	unique_name	CREATE UNIQUE INDEX unique_name ON public.passengers USING btree (last_name, first_name, date_of_birth)
4	idx_unique_passport	CREATE UNIQUE INDEX idx_unique_passport ON public.passengers USING btree (passport_number)
5	idx_passenger_details	CREATE INDEX idx_passenger_details ON public.passengers USING btree (first_name, last_name, date_of_birth, country_of_citizenship)

✓ Successfully run. Total query runtime: 200 msec. 5 rows affected.

Total rows: 5    Query complete 00:00:00.200    CRLF    Ln 4, Col 1

Query

Query History

1

DROP INDEX IF EXISTS

idx\_actual\_departure;

2

DROP INDEX IF EXISTS

idx\_unique\_flight\_no\_sched\_dep;

3

DROP INDEX IF EXISTS

idx\_dep\_arr\_airports;

4

DROP INDEX IF EXISTS

idx\_unique\_passport;

5

DROP INDEX IF EXISTS

idx\_passenger\_details;

6

Data Output

Messages

Notifications

DROP INDEX

Query returned successfully in 83 msec.

Total rows:    Query complete 00:00:00.083    CRLF    Ln 6, Col 1