

1	--1
---	-----

Query returned successfully in 62 msec.

✓

```
1  --2
2  ✓ create unique index idx_flights_flightno_scheddep
3  on flights(flight_no, scheduled_departure);
```

```
ERROR: could not create unique index "idx_flights_flightno_scheddep"  
Key (flight_no, scheduled_departure)=(US-KS, 2023-09-04) is duplicated.
```

SQL state: 23505

Detail: Key (flight_no, scheduled_departure)=(US-KS, 2023-09-04) is duplicated.

```
1  --3
2  ✓ create index idx_flights_dep_arr_airport
3  on flights(departure_airport_id, arrival_airport_id);
```

```
CREATE INDEX
```

Query returned successfully in 54 msec.


```
1  --4
2  create index idx_flights_actual_departure on flights(actual_departure);
3  explain analyze
4  select * from flights
5  where actual_departure between '2025-01-01' and '2025-01-02';
```

	QUERY PLAN text
1	Index Scan using idx_flights_actual_departure on flights (cost=0.28..8.29 rows=1 width=179) (actual time=0.004..0.004 rows=0 loops=...
2	Index Cond: ((actual_departure >= '2025-01-01'::date) AND (actual_departure <= '2025-01-02'::date))
3	Planning Time: 2.028 ms
4	Execution Time: 0.025 ms

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Lab1ok/postgres@Lab_1

Query Query History

```
--5
1
2 explain analyze
3 select flight_id, actual_departure, actual_arrival
4 from flights
5 where departure_airport_id = 3
6 and arrival_airport_id = 5;
```

Scratch Pad

Data Output Messages Notifications

Showing rows: 1 to 7 Page No: 1 of 1

QUERY PLAN	
	text
1	Bitmap Heap Scan on flights (cost=4.30..9.97 rows=2 width=12) (actual time=0.032..0.034 rows=2 loops=1)
2	Recheck Cond: ((departure_airport_id = 3) AND (arrival_airport_id = 5))
3	Heap Blocks: exact=2
4	-> Bitmap Index Scan on idx_flights_dep_arr_airport (cost=0.00..4.29 rows=2 width=0) (actual time=0.015..0.015 rows=2 loop=1)
5	Index Cond: ((departure_airport_id = 3) AND (arrival_airport_id = 5))
6	Planning Time: 0.100 ms
7	Execution Time: 0.057 ms

Total rows: 7 Query complete 00:00:00.069

Successfully run. Total query runtime: 69 msec. 7 rows affected.

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No limit

Query Query History Scratch Pad

```
--|
1
2 create index idx_passengers_name_dob_country
3 on passengers(first_name, last_name, date_of_birth, country_of_citizenship);
4
5 explain analyze
6 select passenger_id, first_name, last_name, date_of_birth
7 from passengers
8 where country_of_citizenship = 'Philippines'
9 and date_of_birth between '1984-01-01' and '1984-12-31';
10
```

Data Output Messages Notifications

Showing rows: 1 to 5 Page No: 1 of 1

	QUERY PLAN
1	Seq Scan on passengers (cost=0.00..6.50 rows=1 width=23) (actual time=0.018..0.046 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: 199
4	Planning Time: 1.394 ms
5	Execution Time: 0.076 ms

Total rows: 5 Query complete 00:00:00.052 CRLF Ln 1, Col 4

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QueryQuery History

1--8

2select indexname, indexdef

3from pg_indexes

4where tablename = 'passengers';

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Data OutputMessagesNotifications

Showing rows: 1 to 3Page 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_passport_number	CREATE UNIQUE INDEX unique_passport_number ON public.passengers USING btree (passport_number)
3	idx_passengers_name_dob_country	CREATE INDEX idx_passengers_name_dob_country ON public.passengers USING btree (first_name, last_name, date_of_birth, country_of_citizenship)

Total rows: 3Query complete 00:00:00.075

Successfully run. Total query runtime: 75 msec. 3 rows affected.

CRLF Ln 1, Col 4