

Lab13

SID: 12310401

Name: 王子恒

1.

Run | New Tab | JSON

✓ 2

select * from flights where duration = 505;

34ms

flights

🔍 搜索结果集

⚙️

📧 1

👤

+

+

🗑️

🔄

🕒

⬆️

导出

departure

varchar(5)

⬆️⬆️

arrival

varchar(5)

⬆️⬆️

day_op

varchar(5)

⬆️⬆️

dep_time

varchar(5)

⬆️⬆️

		Filter	Filter	Filter	Filter
<input type="checkbox"/>	>	AMS	DTW	1234567	07:55
<input type="checkbox"/>	>	AMS	DTW	1234567	07:55
<input type="checkbox"/>	>	ATL	MAN	3457	18:55
<input type="checkbox"/>	>	ATL	MAN	3457	18:55
<input type="checkbox"/>	>	ATL	MAN	3457	18:55
<input type="checkbox"/>	>	ATL	MAN	3457	18:55
<input type="checkbox"/>	>	BOM	ZRH	1234567	01:20

2 / 6

```
conn1=#
```

```
[lab1=# select pg_size_pretty(pg_table_size('flights'));
pg_size_pretty
-----
5000 kB
(1 行记录)
```

```
[lab1=# select pg_size_pretty(pg_indexes_size('flights'));
ERROR:  relation "flights" does not exist
第1行select pg_size_pretty(pg_indexes_size('flights'));
^
```

```
[lab1=# select pg_size_pretty(pg_table_size('flights'));
pg_size_pretty
-----
5000 kB
(1 行记录)
```

```
[lab1=# select pg_size_pretty(pg_indexes_size('flights'));
pg_size_pretty
-----
536 kB
(1 行记录)
```

```
[lab1=# select pg_size_pretty(pg_total_relation_size('flights'));
pg_size_pretty
-----
5536 kB
(1 行记录)
```

2.

```
conn1=#
```

```
[lab1=# explain select * from movies;
               QUERY PLAN
```

```
-----
Seq Scan on movies  (cost=0.00..164.04 rows=9204 width=31)
(1 行记录)
```

```
[lab1=# explain select * from movies where movieid<6000;
               QUERY PLAN
```

```
-----
Seq Scan on movies  (cost=0.00..187.05 rows=6000 width=31)
  Filter: (movieid < 6000)
(2 行记录)
```

3.

```
[lab1=# explain select * from movies where movieid<200;
                                QUERY PLAN
```

```
-----
Index Scan using movies_pkey on movies  (cost=0.29..12.75 rows=198 width=31)
  Index Cond: (movieid < 200)
(2 行记录)
```

4.

^

```
[lab1=# explain select * from flights where duration = 105;
                                QUERY PLAN
```

```
-----
Seq Scan on flights  (cost=0.00..1549.36 rows=1626 width=36)
  Filter: (duration = 105)
(2 行记录)
```

5.

```
lab1=# explain select *
from movies m
join
countries c2 on m.country = c2.country_code
[where c2.country_code = 'cn';
                                QUERY PLAN
```

```
-----
Nested Loop  (cost=0.00..193.36 rows=200 width=49)
-> Seq Scan on countries c2  (cost=0.00..4.31 rows=1 width=18)
    Filter: (country_code = 'cn'::bpchar)
-> Seq Scan on movies m  (cost=0.00..187.05 rows=200 width=31)
    Filter: (country = 'cn'::bpchar)
(5 行记录)
```

6.

```
lab1=# explain select *
from movies m
join credits c
on m.movieid = c.movieid
where c.credited_as = 'D' and m.movieid < 200;
                                QUERY PLAN
```

```
-----
Nested Loop  (cost=0.57..664.03 rows=188 width=41)
->  Index Scan using movies_pkey on movies m  (cost=0.29..12.75 rows=198 width=31)
     Index Cond: (movieid < 200)
->  Index Only Scan using credits_pkey on credits c  (cost=0.29..3.28 rows=1 width=10)
     Index Cond: ((movieid = m.movieid) AND (credited_as = 'D'::bpchar))
(5 行记录)
```

7.

```
lab1=# create table my_movies
as
select *
from movies;
SELECT 9204
lab1=# create index movies_multi_index on my_movies(movieid,year_released, runtime);
CREATE INDEX
lab1=# explain select * from my_movies where movieid=20;
                                QUERY PLAN
```

```
-----
Bitmap Heap Scan on my_movies  (cost=4.64..72.01 rows=46 width=242)
  Recheck Cond: (movieid = 20)
->  Bitmap Index Scan on movies_multi_index  (cost=0.00..4.63 rows=46 width=0)
      Index Cond: (movieid = 20)
(4 行记录)
```

```
lab1=# explain select * from my_movies where movieid<100 and year_released=2000;
                                QUERY PLAN
```

```
-----
Bitmap Heap Scan on my_movies  (cost=82.97..120.67 rows=15 width=242)
  Recheck Cond: ((movieid < 100) AND (year_released = 2000))
->  Bitmap Index Scan on movies_multi_index  (cost=0.00..82.97 rows=15 width=0)
      Index Cond: ((movieid < 100) AND (year_released = 2000))
(4 行记录)
```

```
lab1=# explain select * from my_movies where year_released=2000;
                                QUERY PLAN
```

```
-----
Seq Scan on my_movies  (cost=0.00..187.05 rows=46 width=242)
  Filter: (year_released = 2000)
(2 行记录)
```

```
lab1=# explain select * from my_movies where runtime=200;
                                QUERY PLAN
```

```
-----
Seq Scan on my_movies  (cost=0.00..187.05 rows=4 width=31)
  Filter: (runtime = 200)
(2 行记录)
```

8.

```
[lab1=# create index movies_title_index on my_movies(title);
CREATE INDEX
[lab1=# explain select * from my_movies where title = 'Armaan';
QUERY PLAN
```

```
-----
Bitmap Heap Scan on my_movies (cost=4.30..11.33 rows=2 width=31)
  Recheck Cond: ((title)::text = 'Armaan'::text)
    -> Bitmap Index Scan on movies_title_index (cost=0.00..4.30 rows=2 width=0)
        Index Cond: ((title)::text = 'Armaan'::text)
(4 行记录)
```

```
[lab1=# explain select * from my_movies where upper(title) = 'ARMAAN';
QUERY PLAN
```

```
-----
Seq Scan on my_movies (cost=0.00..210.06 rows=46 width=31)
  Filter: (upper((title)::text) = 'ARMAAN'::text)
(2 行记录)
```

```
[lab1=# create index movies_upper_title_index on my_movies(upper(title));
CREATE INDEX
[lab1=# explain select * from my_movies where upper(title) = 'ARMAAN';
QUERY PLAN
```

```
-----
Bitmap Heap Scan on my_movies (cost=4.64..72.12 rows=46 width=31)
  Recheck Cond: (upper((title)::text) = 'ARMAAN'::text)
    -> Bitmap Index Scan on movies_upper_title_index (cost=0.00..4.63 rows=46 width=0)
        Index Cond: (upper((title)::text) = 'ARMAAN'::text)
(4 行记录)
```