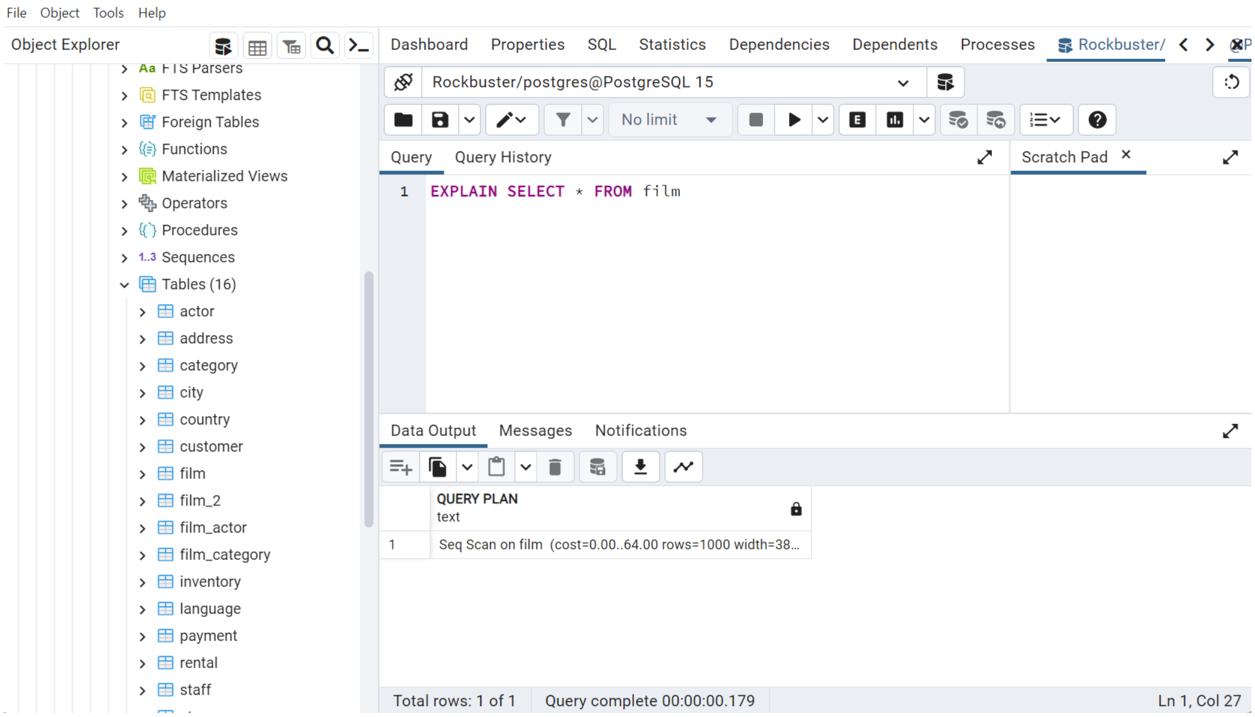
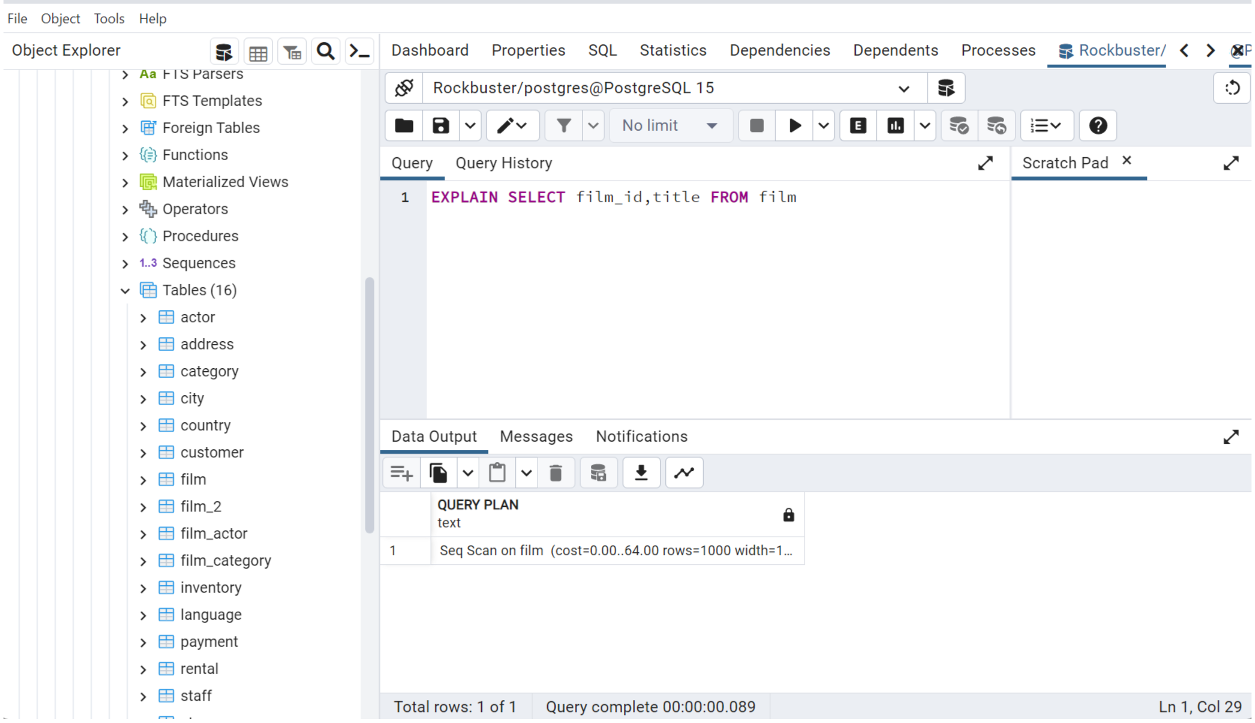
STEP 1:



```sql
EXPLAIN SELECT * FROM film
```

	QUERY PLAN text
1	Seq Scan on film (cost=0.00..64.00 rows=1000 width=38...

Total rows: 1 of 1   Query complete 00:00:00.179   Ln 1, Col 27



```sql
EXPLAIN SELECT film_id,title FROM film
```

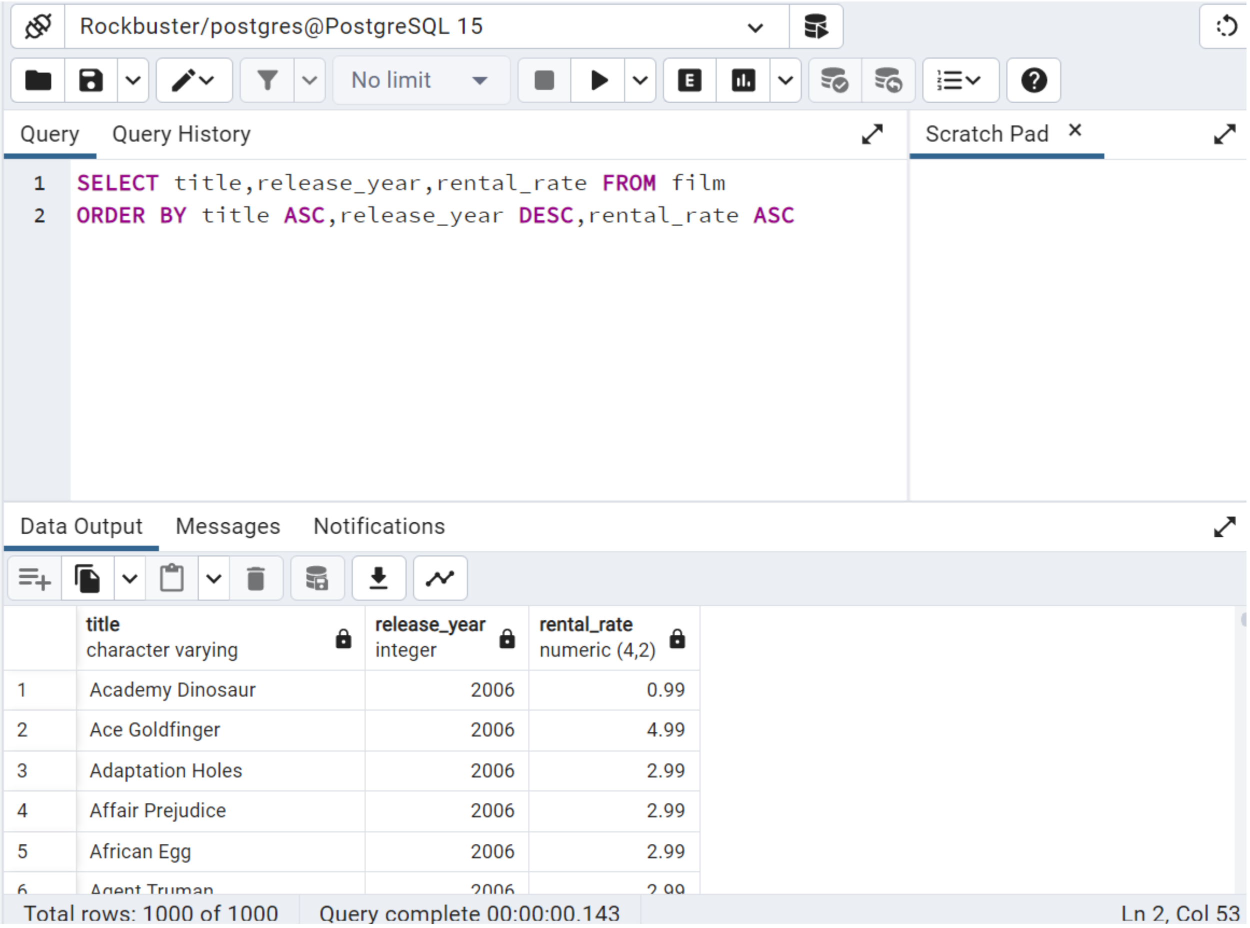
	QUERY PLAN text
1	Seq Scan on film (cost=0.00..64.00 rows=1000 width=1...

Total rows: 1 of 1   Query complete 00:00:00.089   Ln 1, Col 29

The cost of the original Query and revised query both are same, however, the columns returned are different in both queries.

I think, the revised query is already optimized as compared to original query. However, we can use LIMIT to limit the number of rows returned. We can also use WHERE clause to improve the query performance by reducing the number of rows.

Step2:

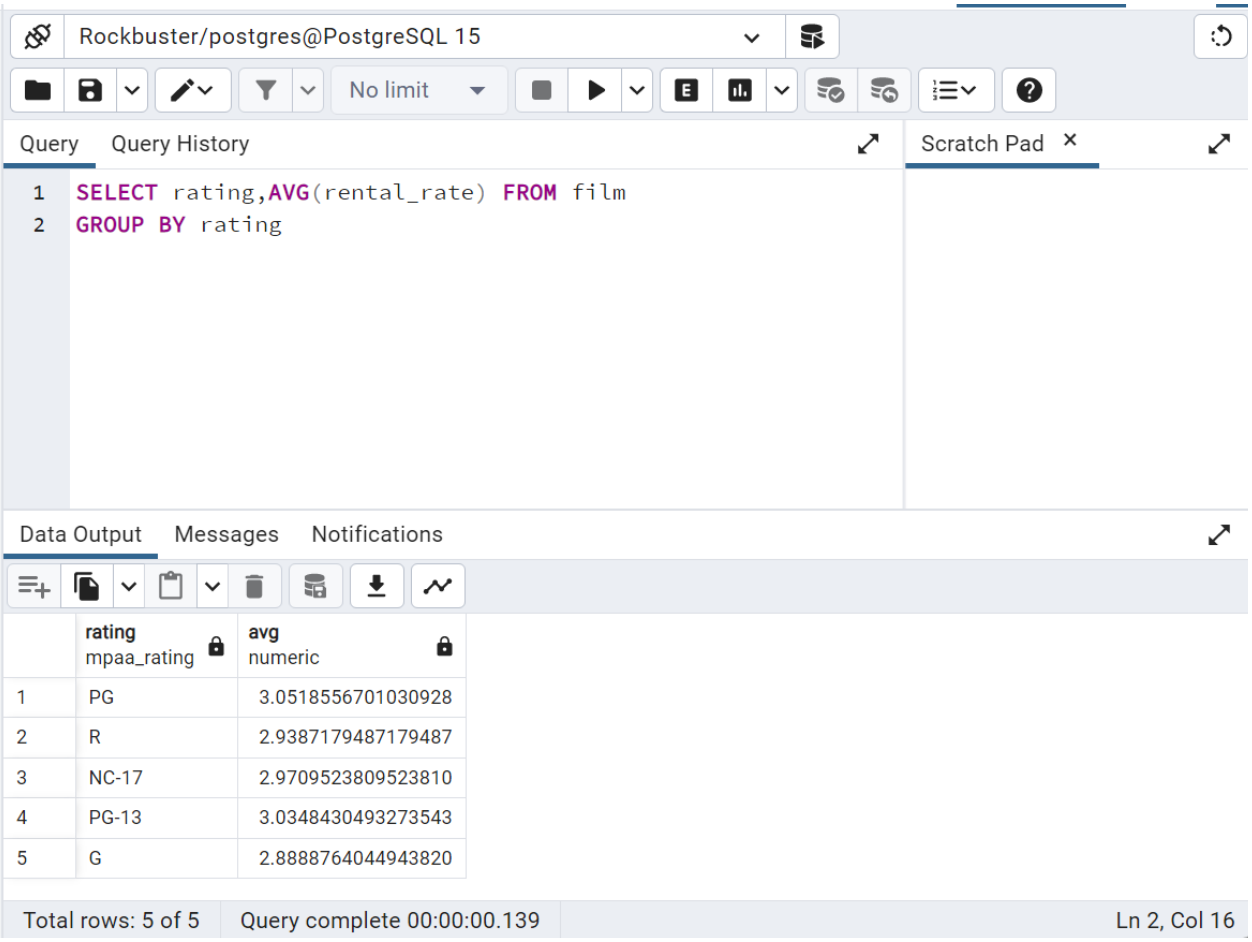


```
SELECT title,release_year,rental_rate FROM film
ORDER BY title ASC,release_year DESC,rental_rate ASC
```

	title character varying	release_year integer	rental_rate numeric (4,2)
1	Academy Dinosaur	2006	0.99
2	Ace Goldfinger	2006	4.99
3	Adaptation Holes	2006	2.99
4	Affair Prejudice	2006	2.99
5	African Egg	2006	2.99
6	Agent Truman	2006	2.99

Total rows: 1000 of 1000   Query complete 00:00:00.143   Ln 2, Col 53

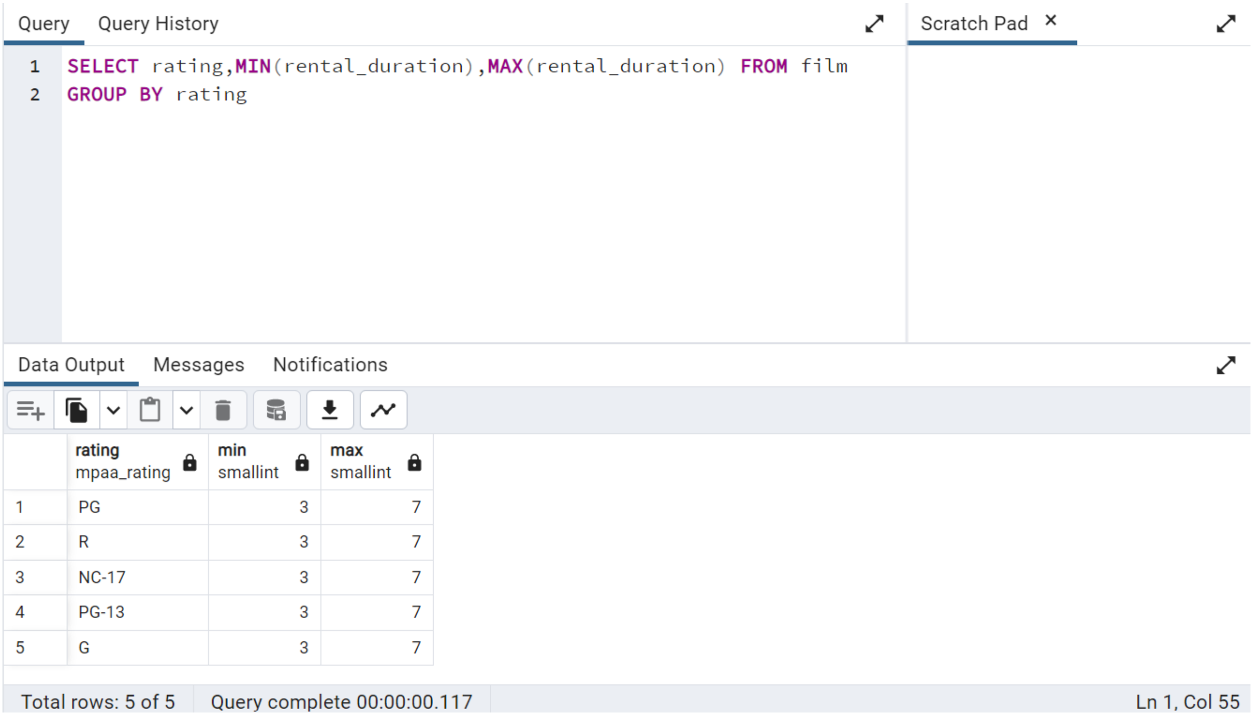
Step3:



```
SELECT rating,AVG(rental_rate) FROM film
GROUP BY rating
```

	rating mpaa_rating	avg numeric
1	PG	3.0518556701030928
2	R	2.9387179487179487
3	NC-17	2.9709523809523810
4	PG-13	3.0348430493273543
5	G	2.8888764044943820

Total rows: 5 of 5 Query complete 00:00:00.139 Ln 2, Col 16



```sql
SELECT rating,MIN(rental_duration),MAX(rental_duration) FROM film
GROUP BY rating
```

	rating mpaa_rating	min smallint	max smallint
1	PG	3	7
2	R	3	7
3	NC-17	3	7
4	PG-13	3	7
5	G	3	7

Total rows: 5 of 5 Query complete 00:00:00.117 Ln 1, Col 55

STEP4:

Procedure:

While the process of migrating the data is generally the responsibility of the data engineer, they would likely use the ETL process. First, the data is Extracted from the relevant data source, which in this case would be the new tool that is collecting data on user behavior in the Android App. This data would then be Transformed which converts the data into the appropriate format. Finally, the data is Loaded into the existing data warehouse for us to analyze.

Potential Issues:

If we analyze the data from this one source before loading it into the data warehouse, we're likely going to be missing some relevant information. For one, it is just one source of information, which may create skewed analysis. If it were in combination with our other available data it would be a more complete. Additionally, we may be less familiar with the format the data is in, or there could be errors in the data