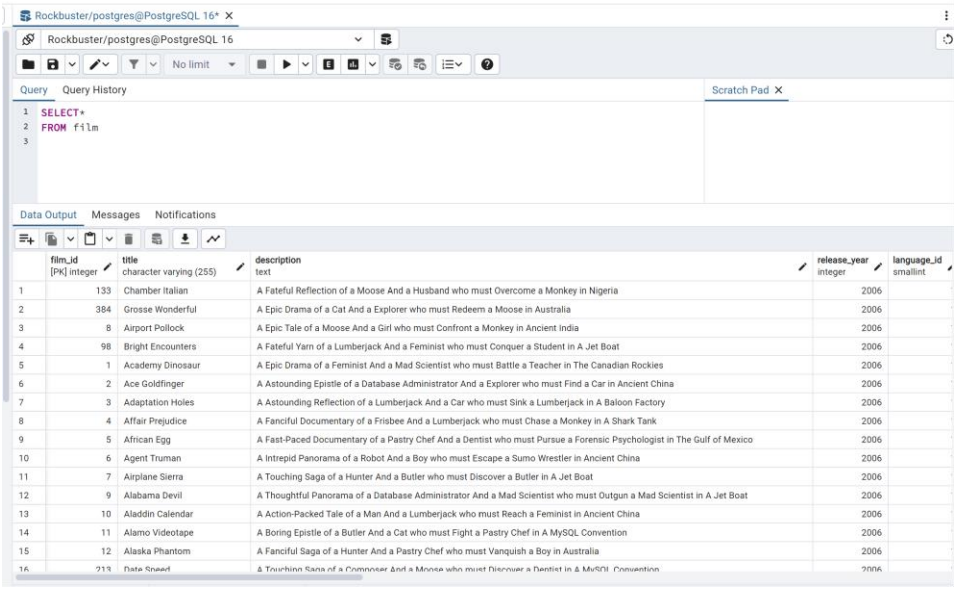
Directions

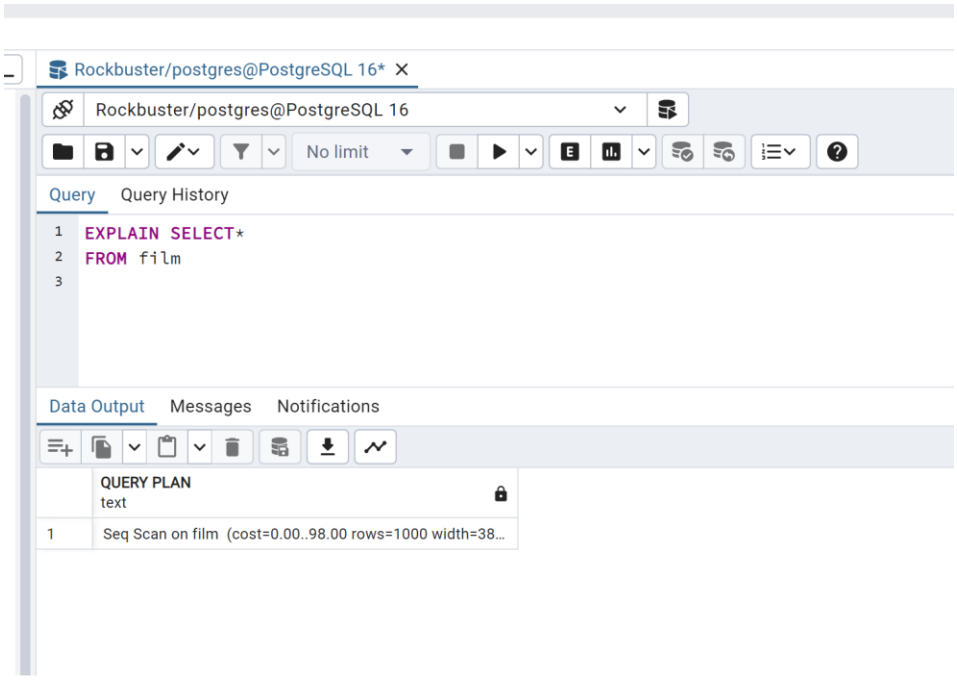
As you've done for previous tasks, create a new text document for your answers and call it "Answers 3.4." Make sure to include screenshots of your answers as you work through each step.

1. Refining Your Query: You need to get some data from the "film" table and decide to use the query SELECT * FROM film.

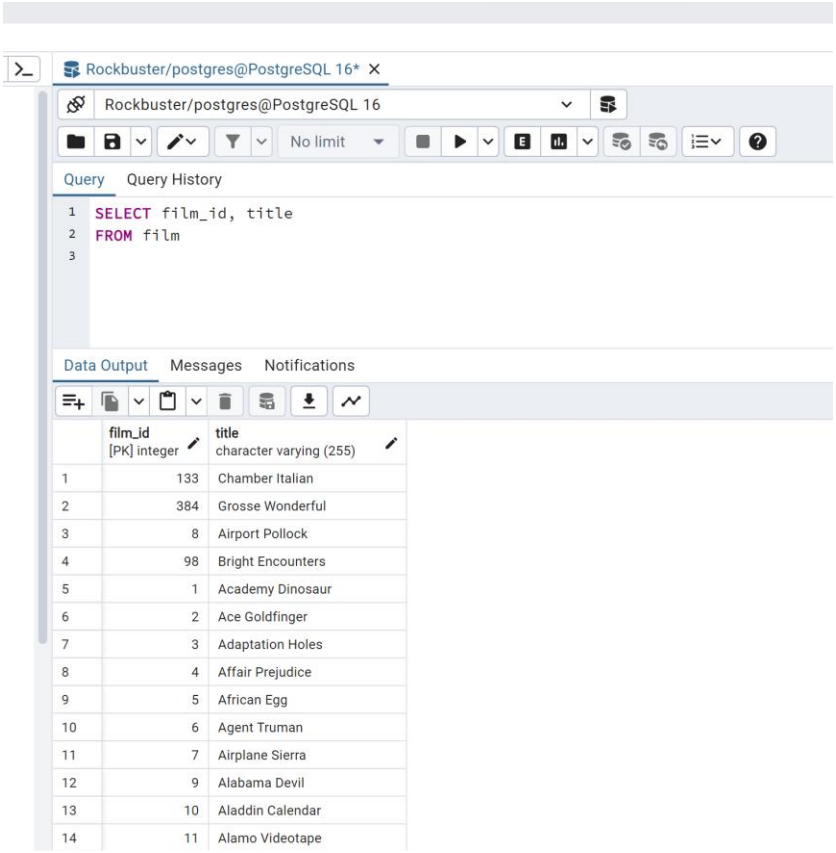
- You realize that only the "film_id" and "title" columns are needed. Write a new query that selects only those 2 columns.
  First query:



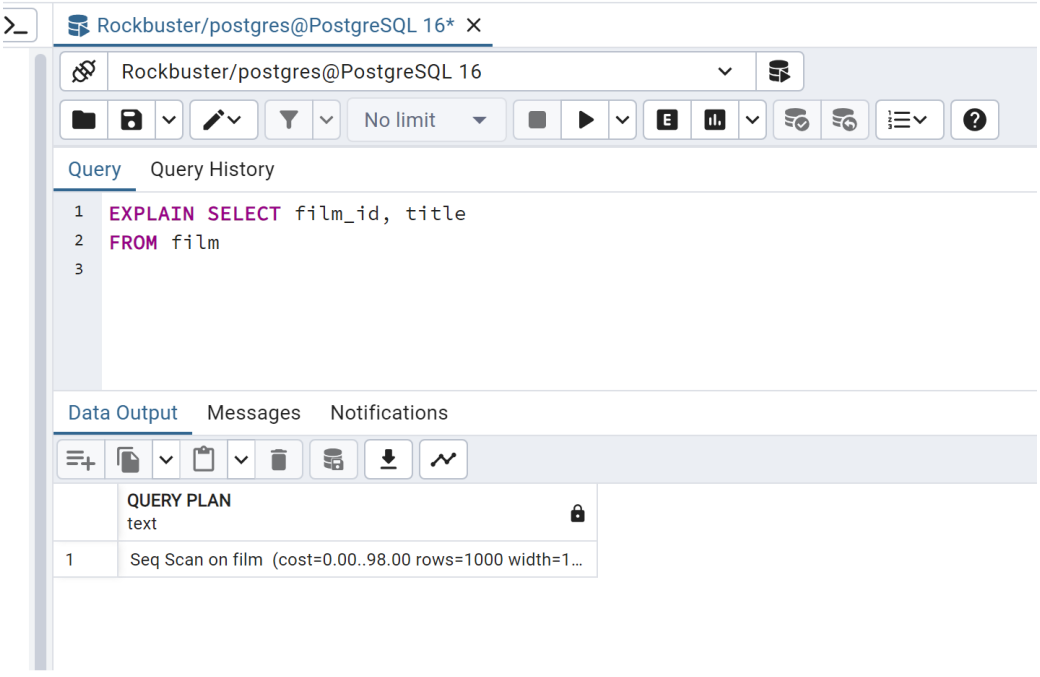
Cost of the first query:



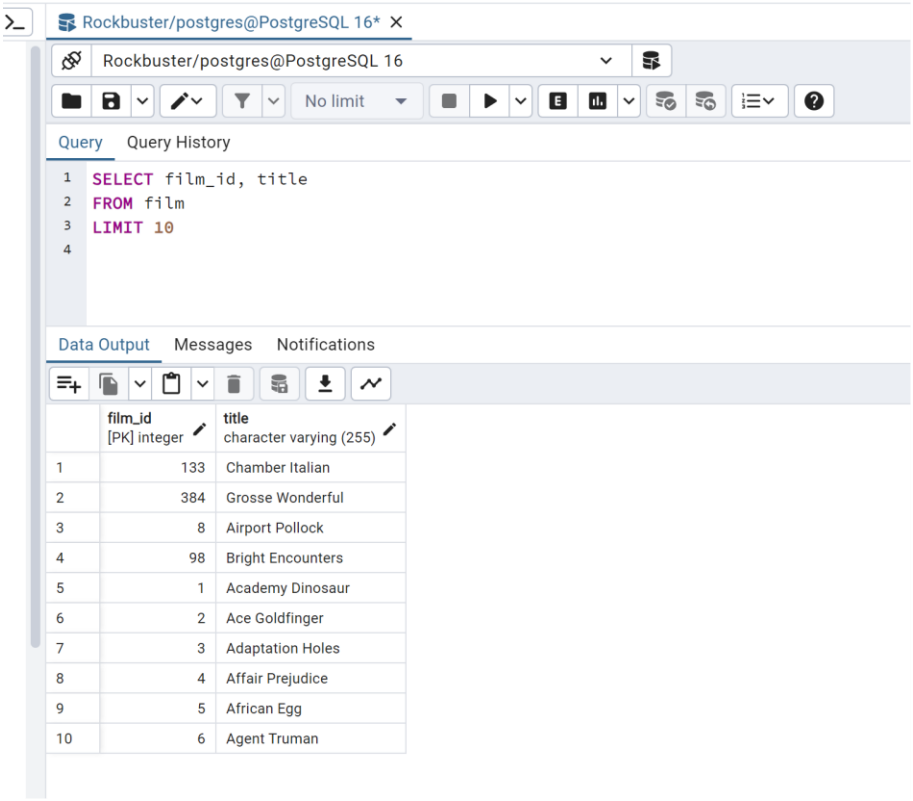
Second query:



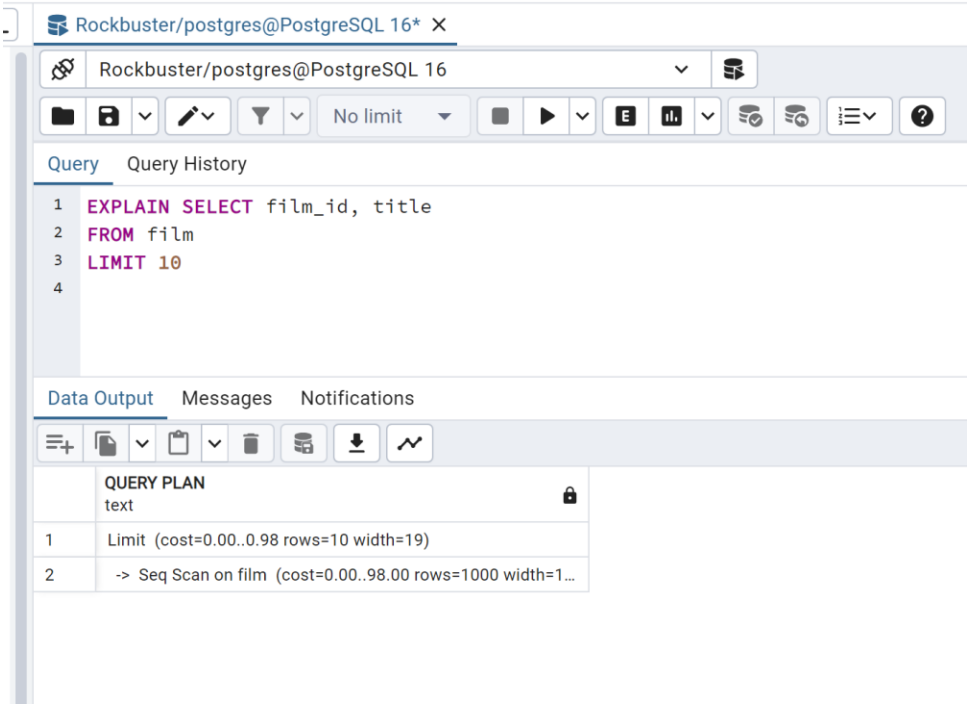
Cost of the second query:



Third query:



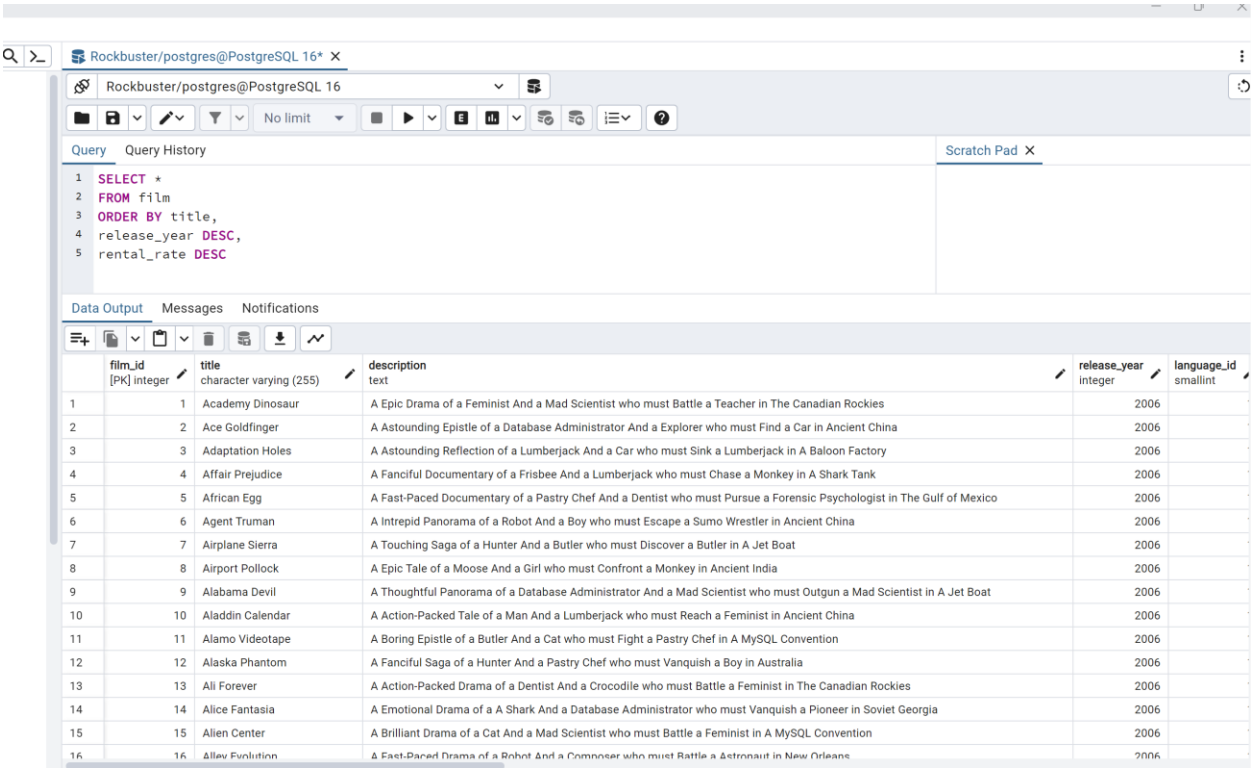
Cost of third query:



- Compare the cost of the original query and the revised query, and write a few sentences explaining the comparison. Can you suggest any ways to optimize this query?
  I thought the first query would be the fastest because it had the most columns, but it turned out the first one (the most columns), the second one (less columns), and the third one (the least records) had the same cost. I assumed the data set was large enough to cause the processing speed to slow down. If the data set was larger, they probably would not have had the same cost.

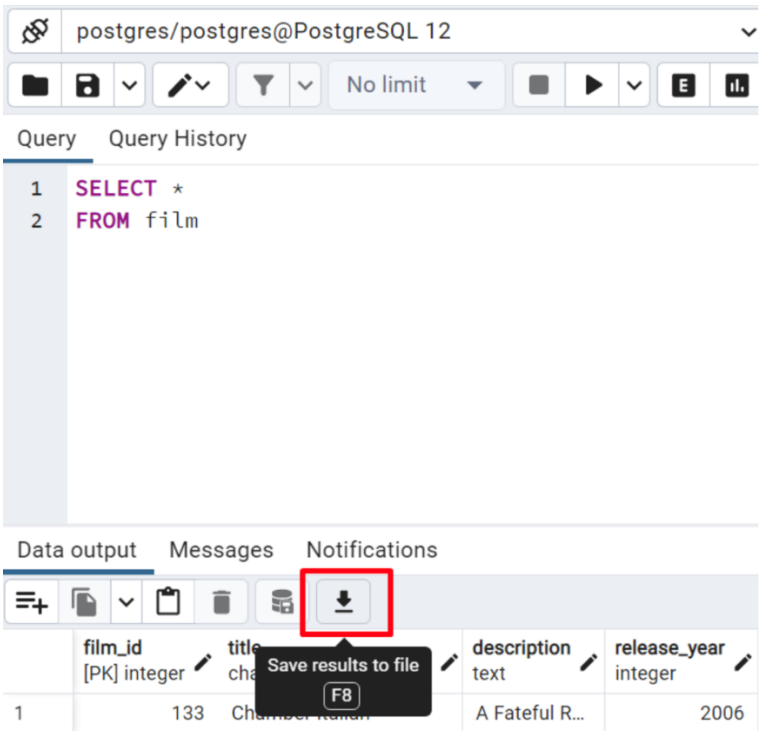
2. Ordering the Data:

- In the pgAdmin Query Tool, run a query that selects every film from the “film” table, with the movies sorted by title from A to Z, then by most recent release year, and then by highest to lowest rental rate.



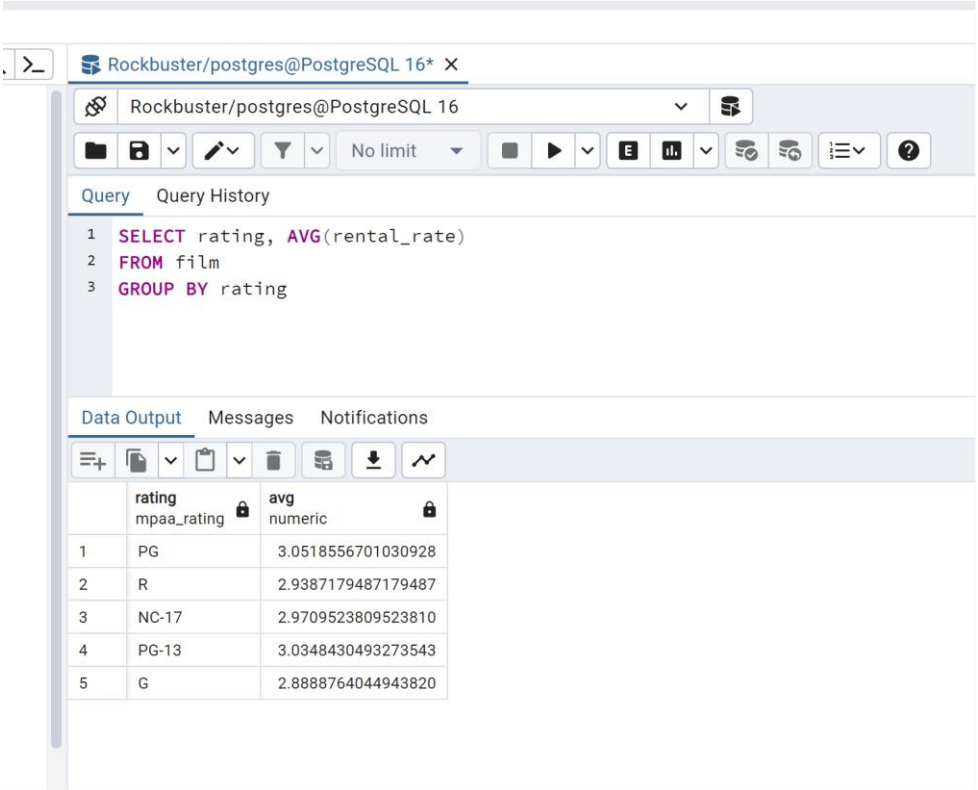
	film_id [PK] integer	title character varying (255)	description text	release_year integer	language_id smallint
1	1	Academy Dinosaur	A Epic Drama of a Feminist And a Mad Scientist who must Battle a Teacher in The Canadian Rockies	2006	
2	2	Ace Goldfinger	A Astounding Epistle of a Database Administrator And a Explorer who must Find a Car in Ancient China	2006	
3	3	Adaptation Holes	A Astounding Reflection of a Lumberjack And a Car who must Sink a Lumberjack in A Baloon Factory	2006	
4	4	Affair Prejudice	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank	2006	
5	5	African Egg	A Fast-Paced Documentary of a Pastry Chef And a Dentist who must Pursue a Forensic Psychologist in The Gulf of Mexico	2006	
6	6	Agent Truman	A Intrepid Panorama of a Robot And a Boy who must Escape a Sumo Wrestler in Ancient China	2006	
7	7	Airplane Sierra	A Touching Saga of a Hunter And a Butler who must Discover a Butler in A Jet Boat	2006	
8	8	Airport Pollock	A Epic Tale of a Moose And a Girl who must Confront a Monkey in Ancient India	2006	
9	9	Alabama Devil	A Thoughtful Panorama of a Database Administrator And a Mad Scientist who must Outgun a Mad Scientist in A Jet Boat	2006	
10	10	Aladdin Calendar	A Action-Packed Tale of a Man And a Lumberjack who must Reach a Feminist in Ancient China	2006	
11	11	Alamo Videotape	A Boring Epistle of a Butler And a Cat who must Fight a Pastry Chef in A MySQL Convention	2006	
12	12	Alaska Phantom	A Fanciful Saga of a Hunter And a Pastry Chef who must Vanquish a Boy in Australia	2006	
13	13	Ali Forever	A Action-Packed Drama of a Dentist And a Crocodile who must Battle a Feminist in The Canadian Rockies	2006	
14	14	Alice Fantasia	A Emotional Drama of a A Shark And a Database Administrator who must Vanquish a Pioneer in Soviet Georgia	2006	
15	15	Alien Center	A Brilliant Drama of a Cat And a Mad Scientist who must Battle a Feminist in A MySQL Convention	2006	
16	16	Alley Evolution	A Fast-Paced Drama of a Robot And a Composer who must Battle a Astronaut in New Orleans	2006	

- Extract the data output of your query into a CSV file for the film collection department to analyze in Excel. To do this, click the button “Save results to file”:

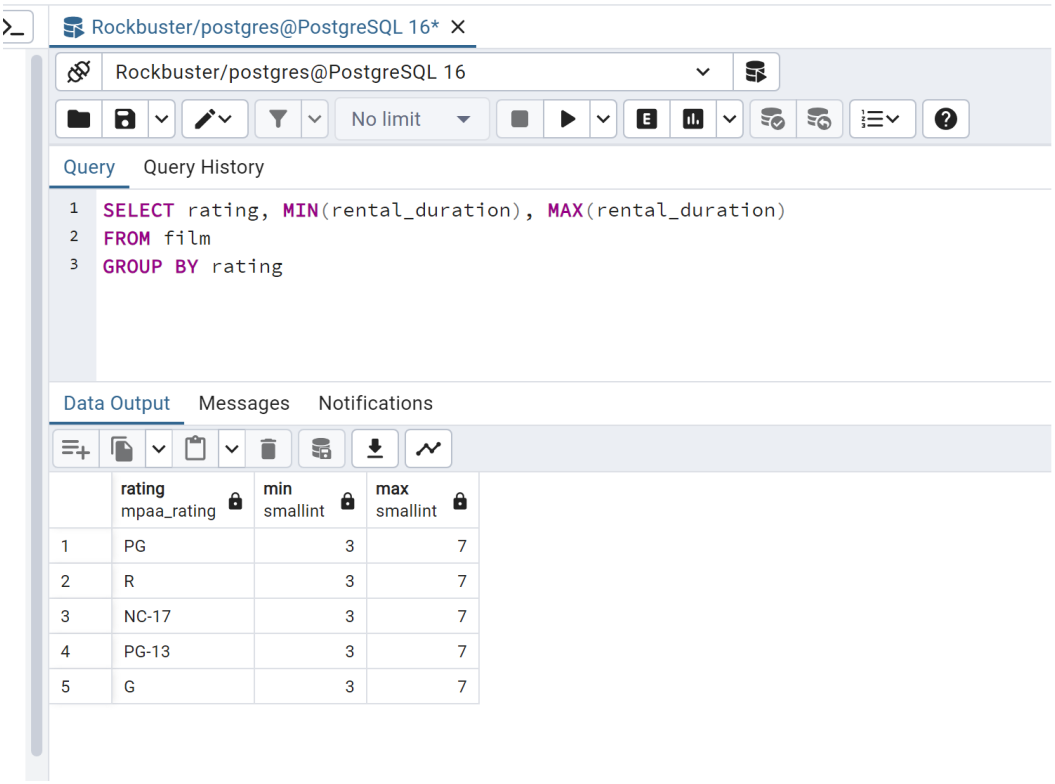
- 

3. Grouping Data: The strategy department has asked you the questions below. Write a SQL query to retrieve the correct answers, then extract your results as a CSV file.

- What is the average rental rate for each rating category?



- What are the minimum and maximum rental durations for each rating category?



4. Database Migration: Your team has decided to use an external tool to collect data on user behavior in the new Rockbuster Android app. Data collected from this new source will need to be loaded into the data warehouse before you can analyze it.

- Can you outline the procedure for migrating the data and who will be responsible for it?
  The team will need to migrate user behavior data into the Rockbuster data warehouse following the Extract, Transform, and Load procedure. The first step is extracting the user behavior data from the android app. The next step is transforming the data into an analyzable format. The third step is loading the newly transformed data into the data warehouse.

- What problems do you foresee if you start analyzing the data before it's been loaded into the data warehouse?
  If we start analyzing the data before it's loaded, a lot of the raw data could be messy and inconsistent because it is not fully transformed and loaded, which could cause the analysis to be inconvenient and unproductive.

5. Save your "Answers 3.4" document as a pdf (with screenshots) and your CSV files as a single .xlsx Excel file and upload it here for your tutor to review.