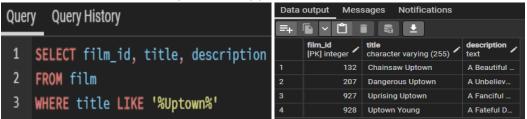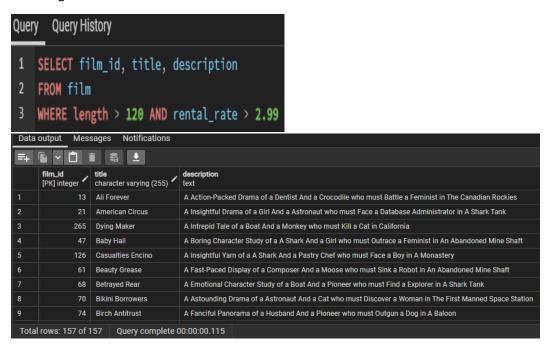# 3.4 Database Querying in SQL

1. **Refining Your Write some SQL queries to return a lists of films that meet the following conditions. Your results tables should include the columns "film_ID," "title," and "description". Download your SQL queries outputs as CSV files using the pgadmin inbuilt functionality. Merge them into one Excel file (.xlsx) and create a separate sheet for each query (label them 1a, 1b, 1c, etc.).**

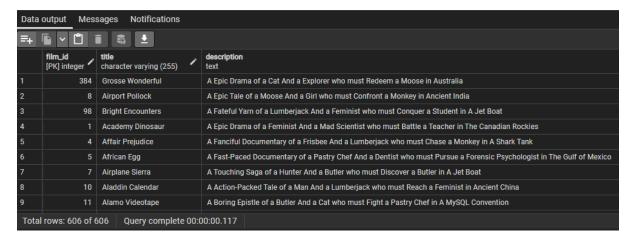   a. Film title contains the word Uptown in any position

   ```
   1  SELECT film_id, title, description
   2  FROM film
   3  WHERE title LIKE '%Uptown%'
   ```

	film_id [PK] integer	title character varying (255)	description text
1	132	Chainsaw Uptown	A Beautiful ...
2	207	Dangerous Uptown	A Unbeliev...
3	927	Uprising Uptown	A Fanciful ...
4	928	Uptown Young	A Fateful D...

   b. Film length is more than 120 minutes and rental rate is more than 2.99

   ```
   1  SELECT film_id, title, description
   2  FROM film
   3  WHERE length > 120 AND rental_rate > 2.99
   ```

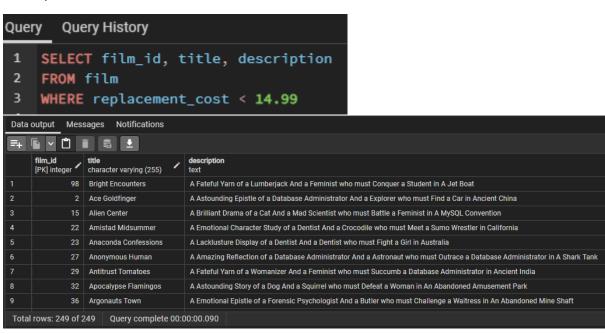 | | film_id [PK] integer | title character varying (255) | description text |
   |---|---|---|---|
   | 1 | 13 | Ali Forever | A Action-Packed Drama of a Dentist And a Crocodile who must Battle a Feminist in The Canadian Rockies |
   | 2 | 21 | American Circus | A Insightful Drama of a Girl And a Astronaut who must Face a Database Administrator in A Shark Tank |
   | 3 | 265 | Dying Maker | A Intrepid Tale of a Boat And a Monkey who must Kill a Cat in California |
   | 4 | 47 | Baby Hall | A Boring Character Study of a A Shark And a Girl who must Outrace a Feminist in An Abandoned Mine Shaft |
   | 5 | 126 | Casualties Encino | A Insightful Yarn of a A Shark And a Pastry Chef who must Face a Boy in A Monastery |
   | 6 | 61 | Beauty Grease | A Fast-Paced Display of a Composer And a Moose who must Sink a Robot in An Abandoned Mine Shaft |
   | 7 | 68 | Betrayed Rear | A Emotional Character Study of a Boat And a Pioneer who must Find a Explorer in A Shark Tank |
   | 8 | 70 | Bikini Borrowers | A Astounding Drama of a Astronaut And a Cat who must Discover a Woman in The First Manned Space Station |
   | 9 | 74 | Birch Antitrust | A Fanciful Panorama of a Husband And a Pioneer who must Outgun a Dog in A Baloon |

   Total rows: 157 of 157   Query complete 00:00:00.115

   c. Rental duration is between 3 and 7 days (where 3 and 7 aren't inclusive)

   ```
   1  SELECT film_id, title, description
   2  FROM film
   3  WHERE rental_duration > 3 AND rental_duration < 7
   ```
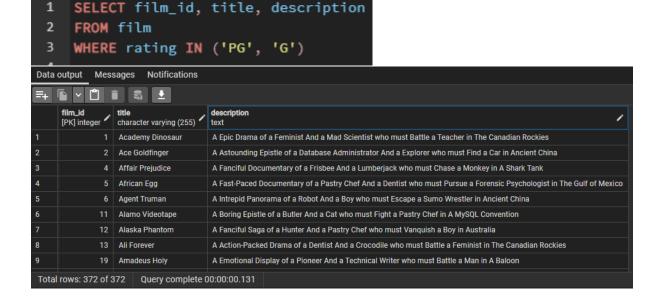
film_id [PK] integer	title character varying (255)	description text
1	384 Grosse Wonderful	A Epic Drama of a Cat And a Explorer who must Redeem a Moose in Australia
2	8 Airport Pollock	A Epic Tale of a Moose And a Girl who must Confront a Monkey in Ancient India
3	98 Bright Encounters	A Fateful Yarn of a Lumberjack And a Feminist who must Conquer a Student in A Jet Boat
4	1 Academy Dinosaur	A Epic Drama of a Feminist And a Mad Scientist who must Battle a Teacher in The Canadian Rockies
5	4 Affair Prejudice	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank
6	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
7	7 Airplane Sierra	A Touching Saga of a Hunter And a Butler who must Discover a Butler in A Jet Boat
8	10 Aladdin Calendar	A Action-Packed Tale of a Man And a Lumberjack who must Reach a Feminist in Ancient China
9	11 Alamo Videotape	A Boring Epistle of a Butler And a Cat who must Fight a Pastry Chef in A MySQL Convention

Total rows: 606 of 606   Query complete 00:00:00.117

d. Film replacement cost is less than 14.99

```
1  SELECT film_id, title, description
2  FROM film
3  WHERE replacement_cost < 14.99
```

Data output   Messages   Notifications

film_id [PK] integer	title character varying (255)	description text
1	98 Bright Encounters	A Fateful Yarn of a Lumberjack And a Feminist who must Conquer a Student in A Jet Boat
2	2 Ace Goldfinger	A Astounding Epistle of a Database Administrator And a Explorer who must Find a Car in Ancient China
3	15 Alien Center	A Brilliant Drama of a Cat And a Mad Scientist who must Battle a Feminist in A MySQL Convention
4	22 Amistad Midsummer	A Emotional Character Study of a Dentist And a Crocodile who must Meet a Sumo Wrestler in California
5	23 Anaconda Confessions	A Lacklusture Display of a Dentist And a Dentist who must Fight a Girl in Australia
6	27 Anonymous Human	A Amazing Reflection of a Database Administrator And a Astronaut who must Outrace a Database Administrator in A Shark Tank
7	29 Antitrust Tomatoes	A Fateful Yarn of a Womanizer And a Feminist who must Succumb a Database Administrator in Ancient India
8	32 Apocalypse Flamingos	A Astounding Story of a Dog And a Squirrel who must Defeat a Woman in An Abandoned Amusement Park
9	36 Argonauts Town	A Emotional Epistle of a Forensic Psychologist And a Butler who must Challenge a Waitress in An Abandoned Mine Shaft

Total rows: 249 of 249   Query complete 00:00:00.090

e. Film rating is either PG or G

```
1  SELECT film_id, title, description
2  FROM film
3  WHERE rating IN ('PG', 'G')
```

Data output   Messages   Notifications

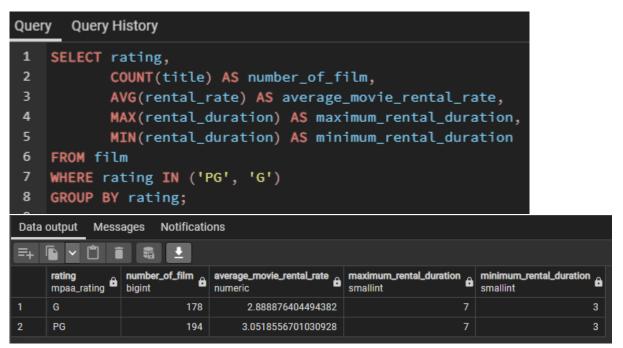| film_id [PK] integer	title character varying (255)	description text
1	1 Academy Dinosaur	A Epic Drama of a Feminist And a Mad Scientist who must Battle a Teacher in The Canadian Rockies
2	2 Ace Goldfinger	A Astounding Epistle of a Database Administrator And a Explorer who must Find a Car in Ancient China
3	4 Affair Prejudice	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank
4	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
5	6 Agent Truman	A Intrepid Panorama of a Robot And a Boy who must Escape a Sumo Wrestler in Ancient China
6	11 Alamo Videotape	A Boring Epistle of a Butler And a Cat who must Fight a Pastry Chef in A MySQL Convention
7	12 Alaska Phantom	A Fanciful Saga of a Hunter And a Pastry Chef who must Vanquish a Boy in Australia
8	13 Ali Forever	A Action-Packed Drama of a Dentist And a Crocodile who must Battle a Feminist in The Canadian Rockies
9	19 Amadeus Holy	A Emotional Display of a Pioneer And a Technical Writer who must Battle a Man in A Baloon

Total rows: 372 of 372   Query complete 00:00:00.131

2. **The query you wrote in step 1e returned a list of movies that meet certain criteria (film rating is either PG or G). The inventory team has asked for the following information about this list:**

- Count of the movies
- Average rental rate
- Maximum rental duration and minimum rental duration

```
SELECT rating,
     COUNT(title) AS number_of_film,
     AVG(rental_rate) AS average_movie_rental_rate,
     MAX(rental_duration) AS maximum_rental_duration,
     MIN(rental_duration) AS minimum_rental_duration
FROM film
WHERE rating IN ('PG', 'G')
GROUP BY rating;
```

Query   Query History

```
1  SELECT rating,
2        COUNT(title) AS number_of_film,
3        AVG(rental_rate) AS average_movie_rental_rate,
4        MAX(rental_duration) AS maximum_rental_duration,
5        MIN(rental_duration) AS minimum_rental_duration
6  FROM film
7  WHERE rating IN ('PG', 'G')
8  GROUP BY rating;
```

Data output   Messages   Notifications

	rating mpaa_rating	number_of_film bigint	average_movie_rental_rate numeric	maximum_rental_duration smallint	minimum_rental_duration smallint
1	G	178	2.888876404494382	7	3
2	PG	194	3.0518556701030928	7	3

3. **To make the output easier for your coworkers to understand, give your aggregate columns the following aliases: "count of movies," "average movie rental rate," "maximum rental duration", and "minimum rental duration". Run the query and transfer the result into your Excel file on a new sheet as well as the code you used to get there.**

Done in number 2.

4. **The customer team would like to see the fields you calculated in step 3 grouped by rating. The totals in your results table should look the same as in step 3, but broken down by the rating column. Copy-paste your query and its output in your answers on a new sheet.**

Done in number 2.