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Exercise 3.5: Filtering Data

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.). You'll use this file for all further questions in this Task too.

- Film title contains the word *Uptown* in any position

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Query Editor | Query History

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

Data Output | Explain | Messages | Notifications

	film_id [PK] integer	title character varying (255)	description text
1	132	Chainsaw Uptown	A Beautiful Documentary of a Boy And a Robot who must Discover a Squirrel in Australia
2	207	Dangerous Uptown	A Unbelieveable Story of a Mad Scientist And a Woman who must Overcome a Dog in California
3	927	Uprising Uptown	A Fanciful Reflection of a Boy And a Butler who must Pursue a Woman in Berlin
4	928	Uptown Young	A Fateful Documentary of a Dog And a Hunter who must Pursue a Teacher in An Abandoned Amusement Park

- Film length is more than 120 minutes and rental rate is more than 2.99

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Query Editor | Query History

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

Data Output | Explain | Messages | Notifications

	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
10	75	Bird Independence	A Thrilling Documentary of a Car And a Student who must Sink a Hunter in The Canadian Rockies
11	86	Boogie Amelie	A Lacklusture Character Study of a Husband And a Sumo Wrestler who must Succumb a Technical Writer in The Gulf of Mexico
12	88	Born Spinal	A Touching Epistle of a Frisbee And a Husband who must Pursue a Student in Nigeria
13	93	Brannigan Sunrise	A Amazing Epistle of a Moose And a Crocodile who must Outrace a Dog in Berlin

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

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Query Editor | Query History

```
1  SELECT film_id,
2         title,
3         description
4  FROM film
5  WHERE rental_duration > 3 AND rental_duration < 7
6  ORDER BY rental_duration ASC
```

Data Output | Explain | Messages | Notifications

	film_id [PK] integer	title character varying (255)	description text
1	315	Finding Anaconda	A Fateful Tale of a Database Administrator And a Girl who must Battle a Squirrel in New Orleans
2	852	Strangelove Desire	A Awe-Inspiring Panorama of a Lumberjack And a Waitress who must Defeat a Crocodile in An Abandoned Amusement Park
3	317	Fireball Philadelphia	A Amazing Yarn of a Dentist And a A Shark who must Vanquish a Madman in An Abandoned Mine Shaft
4	319	Fish Opus	A Touching Display of a Feminist And a Girl who must Confront a Astronaut in Australia
5	320	Flamingos Connecticut	A Fast-Paced Reflection of a Composer And a Composer who must Meet a Cat in The Sahara Desert
6	989	Working Microcosmos	A Stunning Epistle of a Dentist And a Dog who must Kill a Madman in Ancient China
7	601	Moulin Wake	A Astounding Story of a Forensic Psychologist And a Cat who must Battle a Teacher in An Abandoned Mine Shaft
8	596	Moonshine Cabin	A Thoughtful Display of a Astronaut And a Feminist who must Chase a Frisbee in A Jet Boat
9	329	Forrest Sons	A Thrilling Documentary of a Forensic Psychologist And a Butler who must Defeat a Explorer in A Jet Boat
10	588	Model Fish	A Beautiful Panorama of a Boat And a Crocodile who must Outrace a Dog in Australia
11	586	Mockingbird Hollywood	A Thoughtful Panorama of a Man And a Car who must Sink a Composer in Berlin
12	85	Bonnie Holocaust	A Fast-Paced Story of a Crocodile And a Robot who must Find a Moose in Ancient Japan
13	843	Steel Santa	A Fast-Paced Yarn of a Composer And a Frisbee who must Face a Moose in Nigeria

- Film replacement cost is less than 14.99

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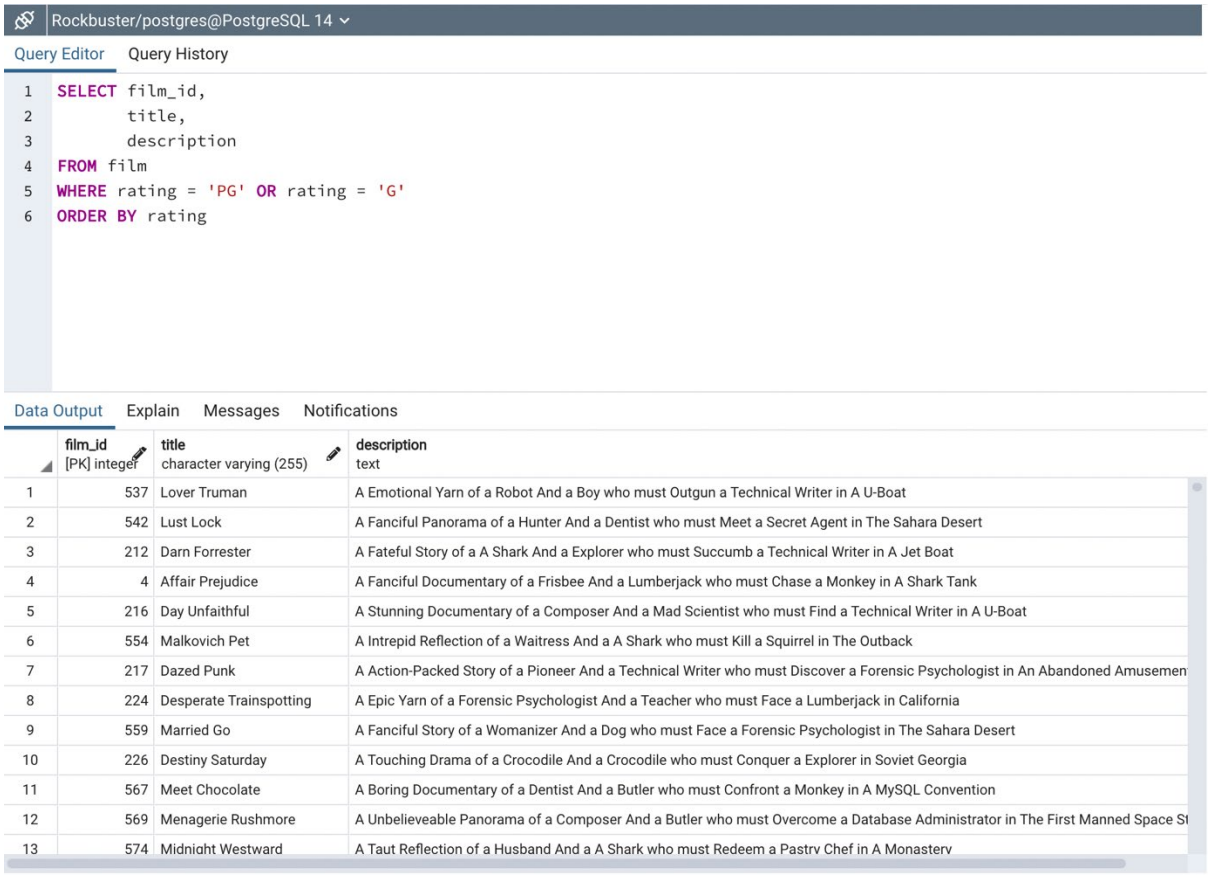
Query Editor | Query History

```
1  SELECT film_id,
2         title,
3         description
4  FROM film
5  WHERE replacement_cost < 14.99
6  ORDER BY replacement_cost DESC
```

Data Output | Explain | Messages | Notifications

	film_id [PK] integer	title character varying (255)	description text
1	981	Wolves Desire	A Fast-Paced Drama of a Squirrel And a Robot who must Succumb a Technical Writer in A Manhattan Penthouse
2	464	Intentions Empire	A Astounding Epistle of a Cat And a Cat who must Conquer a Mad Cow in A U-Boat
3	437	House Dynamite	A Taut Story of a Pioneer And a Squirrel who must Battle a Student in Soviet Georgia
4	411	Heavenly Gun	A Beautiful Yarn of a Forensic Psychologist And a Frisbee who must Battle a Moose in A Jet Boat
5	405	Haunted Antitrust	A Amazing Saga of a Man And a Dentist who must Reach a Technical Writer in Ancient India
6	392	Hall Cassidy	A Beautiful Panorama of a Pastry Chef And a A Shark who must Battle a Pioneer in Soviet Georgia
7	383	Groove Fiction	A Unbelieveable Reflection of a Moose And a A Shark who must Defeat a Lumberjack in An Abandoned Mine Shaft
8	298	Eyes Driving	A Thrilling Story of a Cat And a Waitress who must Fight a Explorer in The Outback
9	362	Glory Tracy	A Amazing Saga of a Woman And a Womanizer who must Discover a Cat in The First Manned Space Station
10	990	World Leathernecks	A Unbelieveable Tale of a Pioneer And a Astronaut who must Overcome a Robot in An Abandoned Amusement Park
11	357	Gilbert Pelican	A Fateful Tale of a Man And a Feminist who must Conquer a Crocodile in A Manhattan Penthouse
12	308	Ferris Mother	A Touching Display of a Frisbee And a Frisbee who must Kill a Girl in The Gulf of Mexico
13	346	Galaxy Sweethearts	A Emotional Reflection of a Womanizer And a Pioneer who must Face a Squirrel in Berlin

- Film rating is either PG or G



	film_id [PK] integer	title character varying (255)	description text
1	537	Lover Truman	A Emotional Yarn of a Robot And a Boy who must Outgun a Technical Writer in A U-Boat
2	542	Lust Lock	A Fanciful Panorama of a Hunter And a Dentist who must Meet a Secret Agent in The Sahara Desert
3	212	Darn Forrester	A Fateful Story of a A Shark And a Explorer who must Succumb a Technical Writer in A Jet Boat
4	4	Affair Prejudice	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank
5	216	Day Unfaithful	A Stunning Documentary of a Composer And a Mad Scientist who must Find a Technical Writer in A U-Boat
6	554	Malkovich Pet	A Intrepid Reflection of a Waitress And a A Shark who must Kill a Squirrel in The Outback
7	217	Dazed Punk	A Action-Packed Story of a Pioneer And a Technical Writer who must Discover a Forensic Psychologist in An Abandoned Amusemen
8	224	Desperate Trainspotting	A Epic Yarn of a Forensic Psychologist And a Teacher who must Face a Lumberjack in California
9	559	Married Go	A Fanciful Story of a Womanizer And a Dog who must Face a Forensic Psychologist in The Sahara Desert
10	226	Destiny Saturday	A Touching Drama of a Crocodile And a Crocodile who must Conquer a Explorer in Soviet Georgia
11	567	Meet Chocolate	A Boring Documentary of a Dentist And a Butler who must Confront a Monkey in A MySQL Convention
12	569	Menagerie Rushmore	A Unbelieveable Panorama of a Composer And a Butler who must Overcome a Database Administrator in The First Manned Space St
13	574	Midnight Westward	A Taut Reflection of a Husband And a A Shark who must Redeem a Pastry Chef in A Monastery

2. 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.). You'll use this file for all further questions in this Task too.

3.5 – Filtering Data

3. 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

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Query Editor | Query History

```
SELECT
        rating,
        COUNT(film_id) AS count_of_movies,
        AVG(rental_rate) AS avg_rental_rate,
        MIN(rental_duration) AS min_rental_duration,
        MAX(rental_duration) AS max_rental_duration
FROM film
WHERE rating = 'PG' OR rating = 'G'
GROUP BY rating
```

Data Output | Explain | Messages | Notifications

	rating mpaa_rating	count_of_movies bigint	avg_rental_rate numeric	min_rental_duration smallint	max_rental_duration smallint
1	G	178	2.888876404494382	3	7
2	PG	194	3.0518556701030928	3	7

4. 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.

5. 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..

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Query Editor | Query History

```
SELECT
        rating,
        COUNT(film_id) AS count_of_movies,
        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 = 'PG' OR rating = 'G'
GROUP BY rating
```

Data Output | Explain | Messages | Notifications

	rating mpaa_rating	count_of_movies 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

6. Save all of your answers in the Excel file you created in step 1 and upload it here for your tutor to review.

3.5 – Filtering Data