

Task 3.5 Filtering Data

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Now that you know how to filter data using the WHERE and HAVING clauses, the customer team, the inventory team and the management board have sent you a list of questions and they want answers ASAP.

Directions:

1. Write some SQL Queries to return a list 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 will use this file for all further questions in this Task too.

Hint: These queries are not building upon each other, there are separate. Hence, when running the query for 1b you don't need to take into account 1a, for example. That refers to all the sub-steps here.

- Film title contains the word Uptown in any position

The screenshot shows the PgAdmin interface for a PostgreSQL database. The top navigation bar includes Dashboard, Properties, SQL, Statistics, Dependencies, and Dependents. The current connection is 'Rockbuster/postgres@PostgreSQL 14*'. The SQL editor contains the following query:

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

The 'Data output' tab is active, displaying the results of the query in a table with 4 rows and 3 columns: film_id, title, and description.

	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 Unbelievable 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 Amusem...

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

Dashboard Properties SQL Statistics Dependencies Dependents Rockbuster/postgres@PostgreSQL 14*

Rockbuster/postgres@PostgreSQL 14

Query Query History Scratch Pad

```

1 SELECT film_ID,
2       title,
3       description,
4       length,
5       rental_rate
6 FROM film
7 WHERE length > 120 AND rental_rate > 2.99

```

Data output Messages Explain X Notifications

	film_id [PK] integer	title character varying (255)	description text	length smallint	rental_rate numeric (4,2)
1	13	Ali Forever	A Action-Packed Drama of a Dentist And a Crocodile who must Battle a Feminist in The Canadian Rockies	150	4.99
2	21	American Circus	A Insightful Drama of a Girl And a Astronaut who must Face a Database Administrator in A Shark Tank	129	4.99
3	265	Dying Maker	A Intrepid Tale of a Boat And a Monkey who must Kill a Cat in California	168	4.99
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	153	4.99
5	126	Casualties Encino	A Insightful Yarn of a A Shark And a Pastry Chef who must Face a Boy in A Monastery	179	4.99
6	61	Beauty Grease	A Fast-Paced Display of a Composer And a Moose who must Sink a Robot in An Abandoned Mine Shaft	175	4.99
7	68	Betrayed Rear	A Emotional Character Study of a Boat And a Pioneer who must Find a Explorer in A Shark Tank	122	4.99
8	70	Bikini Borrowers	A Astounding Drama of a Astronaut And a Cat who must Discover a Woman in The First Manned Space Station	142	4.99
9	74	Birch Antitrust	A Fanciful Panorama of a Husband And a Pioneer who must Outgun a Dog in A Baloon	162	4.99
10	75	Bird Independence	A Thrilling Documentary of a Car And a Student who must Sink a Hunter in The Canadian Rockies	163	4.99
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	121	4.99
12	88	Born Spinal	A Touching Epistle of a Frisbee And a Husband who must Pursue a Student in Nigeria	179	4.99
13	93	Brannigan Sunrise	A Amazing Epistle of a Moose And a Crocodile who must Outrace a Dog in Berlin	121	4.99
14	95	Breakfast Goldfinger	A Beautiful Reflection of a Student And a Student who must Fight a Moose in Berlin	123	4.99
15	100	Brooklyn Desert	A Beautiful Drama of a Dentist And a Composer who must Battle a Sumo Wrestler in The First Manned Space Station	161	4.99
16	103	Bucket Brotherhood	A Amazing Display of a Girl And a Womanizer who must Succumb a Lumberjack in A Baloon Factory	133	4.99
17	117	Candies Grapes	A Fanciful Character Study of a Monkey And a Explorer who must Build a Astronaut in An Abandoned Fun House	135	4.99
18	124	Casper Dragonfly	A Intrepid Documentary of a Boat And a Crocodile who must Chase a Robot in The Sahara Desert	163	4.99
19	131	Center Dinosaur	A Beautiful Character Study of a Sumo Wrestler And a Dentist who must Find a Don in California	152	4.99

Total rows: 157 of 157 Query complete 00:00:00.092 Ln 7, Col 7

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

Dashboard Properties SQL Statistics Dependencies Dependents Rockbuster/postgres@PostgreSQL 14*

Rockbuster/postgres@PostgreSQL 14

Query Query History Scratch Pad

```

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

```

Data output Messages Explain X Notifications

	film_id [PK] integer	title character varying (255)	description text	rental_duration smallint
1	315	Finding Anaconda	A Fateful T...	4
2	852	Strangelove Desire	A Awe-Insp...	4
3	317	Fireball Philadelphia	A Amazing ...	4
4	319	Fish Opus	A Touching...	4
5	320	Flamingos Connecticut	A Fast-Pac...	4
6	989	Working Microcosmos	A Stunning ...	4
7	601	Moulin Wake	A Astoundi...	4
8	596	Moonshine Cabin	A Thoughtf...	4
9	329	Forrest Sons	A Thrilling ...	4
10	588	Model Fish	A Beautiful ...	4
11	586	Mockingbird Hollywood	A Thoughtf...	4
12	85	Bonnie Holocaust	A Fast-Pac...	4
13	843	Steel Santa	A Fast-Pac...	4
14	585	Mob Duffel	A Unbeliev...	4
15	581	Minority Kiss	A Insightful...	4
16	939	Vertigo Northwest	A Unbeliev...	4
17	578	Million Ace	A Brilliant ...	4
18	93	Brannigan Sunrise	A Amazing ...	4
19	577	Mile Mulan	A Lacklust...	4
20	346	Galaxy Sweethearts	A Emotiona...	4
21	349	Gangs Pride	A Taut Char...	4
22	351	Gaslight Crusade	A Amazing ...	4
23	352	Gathering Calendar	A Intrepid T...	4

Total rows: 606 of 606 Query complete 00:00:00.057 Ln 7, Col 26

- Film replacement cost is less than 14.99

DashboardPropertiesSQLStatisticsDependenciesDependentsRockbuster/postgres@PostgreSQL 14*

Rockbuster/postgres@PostgreSQL 14

QueryQuery History

1SELECT film_ID,
2title,
3description,
4replacement_cost
5FROM film
6WHERE replacement_cost < 14.99
7ORDER BY replacement_cost ASC

Scratch Pad

Data outputMessagesExplainNotifications

film_id	title	description	replacement_cost	
[PK] integer	character varying (255)	text	numeric (5,2)	
227	242	Doom Dancing	A Astounding Panorama of a Car And a Mad Scientist who must Battle a Lumberjack in A MySQL Convention	13.99
228	987	Words Hunter	A Action-Packed Reflection of a Composer And a Mad Scientist who must Face a Pioneer in A MySQL Convention	13.99
229	235	Divide Monster	A Intrepid Saga of a Man And a Forensic Psychologist who must Reach a Squirrel in A Monastery	13.99
230	220	Deer Virginian	A Thoughtful Story of a Mad Cow And a Womanizer who must Overcome a Mad Scientist in Soviet Georgia	13.99
231	214	Daughter Madigan	A Beautiful Tale of a Hunter And a Mad Scientist who must Confront a Squirrel in The First Manned Space Station	13.99
232	210	Darke Dorado	A Stunning Reflection of a Frisbee And a Husband who must Redeem a Dog in New Orleans	13.99
233	990	World Leathernecks	A Unbelievable Tale of a Pioneer And a Astronaut who must Overcome a Robot in An Abandoned Amusement Park	13.99
234	174	Confidential Interview	A Stunning Reflection of a Cat And a Woman who must Find a Astronaut in Ancient Japan	13.99
235	767	Scallawag Duck	A Fateful Reflection of a Car And a Teacher who must Confront a Waitress in A Monastery	13.99
236	770	Scissorhands Slums	A Awe-Inspiring Drama of a Girl And a Technical Writer who must Meet a Feminist in The Canadian Rockies	13.99
237	740	Rollercoaster Bringing	A Beautiful Drama of a Robot And a Lumberjack who must Discover a Technical Writer in A Shark Tank	13.99
238	700	Prix Undefeated	A Stunning Saga of a Mad Scientist And a Boat who must Overcome a Dentist in Ancient China	13.99
239	171	Commandments Express	A Fanciful Saga of a Student And a Mad Scientist who must Battle a Hunter in An Abandoned Mine Shaft	13.99
240	107	Bunch Minds	A Emotional Story of a Feminist And a Feminist who must Escape a Pastry Chef in A MySQL Convention	13.99
241	642	Order Betrayed	A Amazing Saga of a Dog And a Shark who must Challenge a Cat in The Sahara Desert	13.99
242	804	Sleeping Suspects	A Stunning Reflection of a Sumo Wrestler And a Explorer who must Sink a Frisbee in A MySQL Convention	13.99
243	162	Clueless Bucket	A Taut Tale of a Car And a Pioneer who must Conquer a Sumo Wrestler in An Abandoned Fun House	13.99
244	605	Mulholland Beast	A Awe-Inspiring Display of a Husband And a Squirrel who must Battle a Sumo Wrestler in A Jet Boat	13.99
245	812	Smoking Barbarella	A Lackluster Saga of a Mad Cow And a Mad Scientist who must Sink a Cat in A MySQL Convention	13.99
246	593	Monterey Labyrinth	A Awe-Inspiring Drama of a Monkey And a Composer who must Escape a Feminist in A U-Boat	13.99
247	152	Circus Youth	A Thoughtful Drama of a Pastry Chef And a Dentist who must Pursue a Girl in A Baloon	13.99
248	84	Boiled Dares	A Awe-Inspiring Story of a Waitress And a Dog who must Discover a Dentist in Ancient Japan	13.99
249	82	Blood Argonauts	A Boring Drama of a Explorer And a Man who must Kill a Lumberjack in A Manhattan Penthouse	13.99

Total rows: 249 of 249Query complete 00:00:00.115Ln 6, Col 32

- Film rating is either PG or G

Dashboard Properties SQL Statistics Dependencies Dependents **Rockbuster/postgres@PostgreSQL 14***

Rockbuster/postgres@PostgreSQL 14

Query Query History

```

1 SELECT film_ID,
2       title,
3       description,
4       rating
5 FROM film
6 WHERE rating IN ('PG',
7                 'G')

```

Data output Messages Explain X Notifications

	film_id [PK] integer	title character varying (255)	description text	rating mpaa_rating
1	1	Academy Dinosaur	A Epic Drama of a Feminist And a Mad Scientist who must Battle a Teacher in The Canadian Rockies	PG
2	2	Ace Goldfinger	A Astounding Epistle of a Database Administrator And a Explorer who must Find a Car in Ancient China	G
3	4	Affair Prejudice	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank	G
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	G
5	6	Agent Truman	A Intrepid Panorama of a Robot And a Boy who must Escape a Sumo Wrestler in Ancient China	PG
6	11	Alamo Videotape	A Boring Epistle of a Butler And a Cat who must Fight a Pastry Chef in A MySQL Convention	G
7	12	Alaska Phantom	A Fanciful Saga of a Hunter And a Pastry Chef who must Vanquish a Boy in Australia	PG
8	13	Ali Forever	A Action-Packed Drama of a Dentist And a Crocodile who must Battle a Feminist in The Canadian Rockies	PG
9	19	Amadeus Holy	A Emotional Display of a Pioneer And a Technical Writer who must Battle a Man in A Baloon	PG
10	22	Amistad Midsummer	A Emotional Character Study of a Dentist And a Crocodile who must Meet a Sumo Wrestler in California	G
11	25	Angels Life	A Thoughtful Display of a Woman And a Astronaut who must Battle a Robot in Berlin	G
12	26	Annie Identity	A Amazing Panorama of a Pastry Chef And a Boat who must Escape a Woman in An Abandoned Amusement Park	G
13	37	Arizona Bang	A Brilliant Panorama of a Mad Scientist And a Mad Cow who must Meet a Pioneer in A Monastery	PG
14	39	Armageddon Lost	A Fast-Paced Tale of a Boat And a Teacher who must Succumb a Composer in An Abandoned Mine Shaft	G
15	41	Arsenic Independence	A Fanciful Documentary of a Mad Cow And a Womanizer who must Find a Dentist in Berlin	PG
16	265	Dying Maker	A Intrepid Tale of a Boat And a Monkey who must Kill a Cat in California	PG
17	43	Atlantis Cause	A Thrilling Yarn of a Feminist And a Hunter who must Fight a Technical Writer in A Shark Tank	G
18	46	Autumn Crow	A Beautiful Tale of a Dentist And a Mad Cow who must Battle a Moose in The Sahara Desert	G
19	50	Baked Cleopatra	A Stunning Drama of a Forensic Psychologist And a Husband who must Overcome a Waitress in A Monastery	G
20	126	Casualties Encino	A Insightful Yarn of a A Shark And a Pastry Chef who must Face a Boy in A Monastery	G
21	52	Ballroom Mockingbird	A Thrilling Documentary of a Composer And a Monkey who must Find a Feminist in California	G
22	55	Barbarella Streetcar	A Awe-Inspiring Story of a Feminist And a Cat who must Conquer a Dog in A Monastery	G
23	56	Barefoot Manchurian	A Intrepid Story of a Cat And a Student who must Vanquish a Girl in An Abandoned Amusement Park	G
24	58	Beak Heathbreakers	A Entail Display of a Womanizer And a Mad Scientist who must Outpace A Shark in Soviet Georgia	G

Total rows: 372 of 372 Query complete 00:00:00.077 Ln 7, Col 19

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

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

Hint: Run the query and transfer the result into your Excel file on a new sheet. Copy and paste the SQL code you used in there as well.

Dashboard Properties SQL Statistics Dependencies Dependents **Rockbuster/postgres@PostgreSQL 14***

Rockbuster/postgres@PostgreSQL 14

Query Query History Scratch Pad

```

1 SELECT rating,
2       COUNT(film_id) AS count_of_movies,
3       AVG(rental_rate) AS average_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',
8                 'G')
9 GROUP BY rating;

```

Data output Messages Explain Notifications

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

Total rows: 2 of 2 Query complete 00:00:00.126 Ln 9, Col 17

- To make the output easier for your co-workers 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. – [see above](#). [Excel file generated](#).
- 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. . – [see above](#). [Excel file generated](#).
- Save all your answers in the Excel file you created in step 1 and upload it here for your tutor for review.