

## Exercise 3.5 - Filtering Data

Q1: 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”.

1a: Film title contains the word Uptown in any position.

The screenshot shows a database query interface with a sidebar on the left listing 'Databases (2)', 'Rockbuster', 'postgres', 'Login/Group Roles', and 'Tablespaces'. The main area has tabs for 'Query', 'Query History', and 'Scratch Pad'. The 'Query' tab is active, displaying the following SQL query:

```
1 SELECT Film_id, Title, Description
2 FROM Film
3 WHERE Title Like '%Uptown%';
```

Below the query editor, there are tabs for 'Data Output', 'Messages', and 'Notifications'. The 'Data Output' tab is active, showing a table with the following data:

	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 Amusement P...

An 'Activate Windows' watermark is visible in the bottom right corner.

1b: Film length is more than 120 minutes and rental rate is more than 2.99.

The screenshot shows a database query interface with a sidebar on the left listing 'Rockbuster/postgres@PostgreSQL 15'. The main area has tabs for 'Query', 'Query History', and 'Scratch Pad'. The 'Query' tab is active, displaying the following SQL query:

```
1 SELECT Film_id, Title, Description
2 FROM Film
3 WHERE Length > 120 AND Rental_rate > 2.99;
```

Below the query editor, there are tabs for 'Data Output', 'Messages', and 'Notifications'. The 'Data Output' tab is active, showing a table with the following data:

	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

1c: Rental duration is between 3 and 7 days (where 3 and 7 aren't inclusive)

The screenshot shows the DBeaver SQL editor interface. The top menu bar includes Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, and Processes. The current connection is 'Rockbuster/postgres@PostgreSQL 15\*'. The query editor contains the following SQL:

```
1 SELECT Film_id, Title, Description
2 FROM Film
3 WHERE Rental_duration > 3 AND Rental_duration < 7;
```

The 'Data Output' tab is active, displaying a table with 11 rows of results. The table has three columns: 'film\_id' (integer), 'title' (character varying), and 'description' (text). The status bar at the bottom indicates 'Total rows: 606 of 606' and 'Query complete 00:00:00.177'.

	film_id	title	description
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
10	12	Alaska Phantom	A Fanciful Saga of a Hunter And a Pastry Chef who must Vanquish a Boy in Australia
11	213	Date Speed	A Touching Saga of a Composer And a Moose who must Discover a Dentist in A MySQL Convention

1d: Film replacement cost is less than 14.99.

The screenshot shows the DBeaver SQL editor interface. The top menu bar includes Dashboard, Properties, SQL, Statistics, Dependencies, Dependents, and Processes. The current connection is 'Rockbuster/postgres@PostgreSQL 15\*'. The query editor contains the following SQL:

```
1 SELECT Film_id, Title, Description
2 FROM Film
3 WHERE Replacement_cost < 14.99;
```

The 'Data Output' tab is active, displaying a table with 7 rows of results. The table has three columns: 'film\_id' (integer), 'title' (character varying), and 'description' (text). The status bar at the bottom indicates 'Total rows: 606 of 606' and 'Query complete 00:00:00.177'.

	film_id	title	description
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 Lacklustre 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	Artful Transience	A Fateful Yarn of a Monks And a Feminist who must Conquer a Database Administrator in Ancient India

1e: Film rating is either PG or G.

Dashboard Properties SQL Statistics Dependencies Dependents Processes Rockbuster/postgres@PostgreSQL 15\*

Rockbuster/postgres@PostgreSQL 15

No limit

Query Query History Scratch Pad x

```
1 SELECT Film_id, Title, Description
2 FROM Film
3 WHERE Rating='PG' OR Rating='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	Alli 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
10	22	Amistad Midsummer	A Emotional Character Study of a Dentist And a Crocodile who must Meet a Sumo Wrestler in California
11	25	Angels Life	A Thoughtful Display of a Woman And a Astronaut who must Battle a Robot in Berlin

Q3. 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

Query Query History

```
1 SELECT Rating,
2 COUNT(title) ,
3 AVG(Rental_rate),
4 MAX(Rental_duration),
5 MIN(Rental_duration)
6 FROM Film
7 WHERE Rating='PG' OR Rating='G'
8 GROUP BY Rating;
```

Data Output Messages Notifications

	rating mpaa_rating	count bigint	avg numeric	max smallint	min smallint
1	G	178	2.888876404494382	7	3
2	PG	194	3.0518556701030928	7	3

Q4: 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.

QueryQuery History

```
1 SELECT Rating,
2 COUNT(title) AS Count_Title,
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='PG' OR Rating='G'
8 GROUP BY Rating;
```

Data OutputMessagesNotifications

	rating mpaa_rating	count_title bigint	average_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