

1.a Film Table

Rockbuster/postgres@PostgreSQL 15

Query Query History

```

1 SELECT Film_id, Title, Description, Release_year, Language_id, Rental_duration, Rental_rate,
2 Length, Replacement_cost, rating, Last_update, Special_features, fulltext,
3 COUNT(*)
4 FROM film
5 GROUP BY Film_id, Title, Description, Release_year, Language_id, Rental_duration, Rental_rate,
6 Length, Replacement_cost, rating, Last_update, Special_features, fulltext
7 HAVING COUNT(*) >1
    
```

Data Output Messages Notifications

	film_id [PK] integer	title character varying (255)	description text	release_year integer	language_id smallint	rental_duration smallint	rental_rate numeric (4,2)	length smallint	replacement_cost numeric (5,2)	rating mpaa_ra
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1.a Customer Table

The screenshot displays a PostgreSQL query editor interface. The top bar shows the connection 'Rockbuster/postgres@PostgreSQL 15'. The query editor contains the following SQL query:

```
1 SELECT customer_id, store_id, first_name, last_name, email, address_id, activebool, create_date, last_update, active,
2 COUNT(*)
3 FROM customer
4 GROUP BY customer_id, store_id, first_name, last_name, email, address_id, activebool, create_date, last_update, active
5 HAVING COUNT(*) > 1
```

Below the query editor, the 'Data Output' tab is active, showing a table with the following columns and data types:

customer_id	store_id	first_name	last_name	email	address_id	activebool	create_date	last_update
[PK] integer	smallint	character varying (45)	character varying (45)	character varying (50)	smallint	boolean	date	timestamp without ti

The status bar at the bottom indicates 'Total rows: 0 of 0' and 'Query complete 00:00:00.086'. The bottom right corner shows 'Ln 1, Col 111'.

Below the first screenshot, a second screenshot shows the same interface but with a different query result. The 'Data Output' tab shows a table with the following columns and data types:

first_name	last_name	email	address_id	activebool	create_date	last_update	active	count
character varying (45)	character varying (45)	character varying (50)	smallint	boolean	date	timestamp without time zone	integer	bigint

The status bar at the bottom indicates 'Total rows: 0 of 0' and 'Query complete 00:00:00.086'. The bottom right corner shows 'Ln 1, Col 111'.

There are no duplicate records in either of the tables. Maintaining a viewable table with distinct records is deemed as a preferred approach. This is due to the fact that deleting records may lead to the loss of valuable information.

1.b Film Table

Rockbuster/postgres@PostgreSQL 15

Query

Query History

```
1 SELECT DISTINCT Film_id, Title, Description, Release_year, Language_id, Rental_duration,
2 Rental_rate, Length, Replacement_cost, rating, Last_update, Special_features, fulltext
3 FROM film
4 GROUP BY Film_id, Title, Description, Release_year, Language_id, Rental_duration, Rental_rate,
5 Length, Replacement_cost, rating, Last_update, Special_features, fulltext
6 ORDER BY film_id
```

Data Output

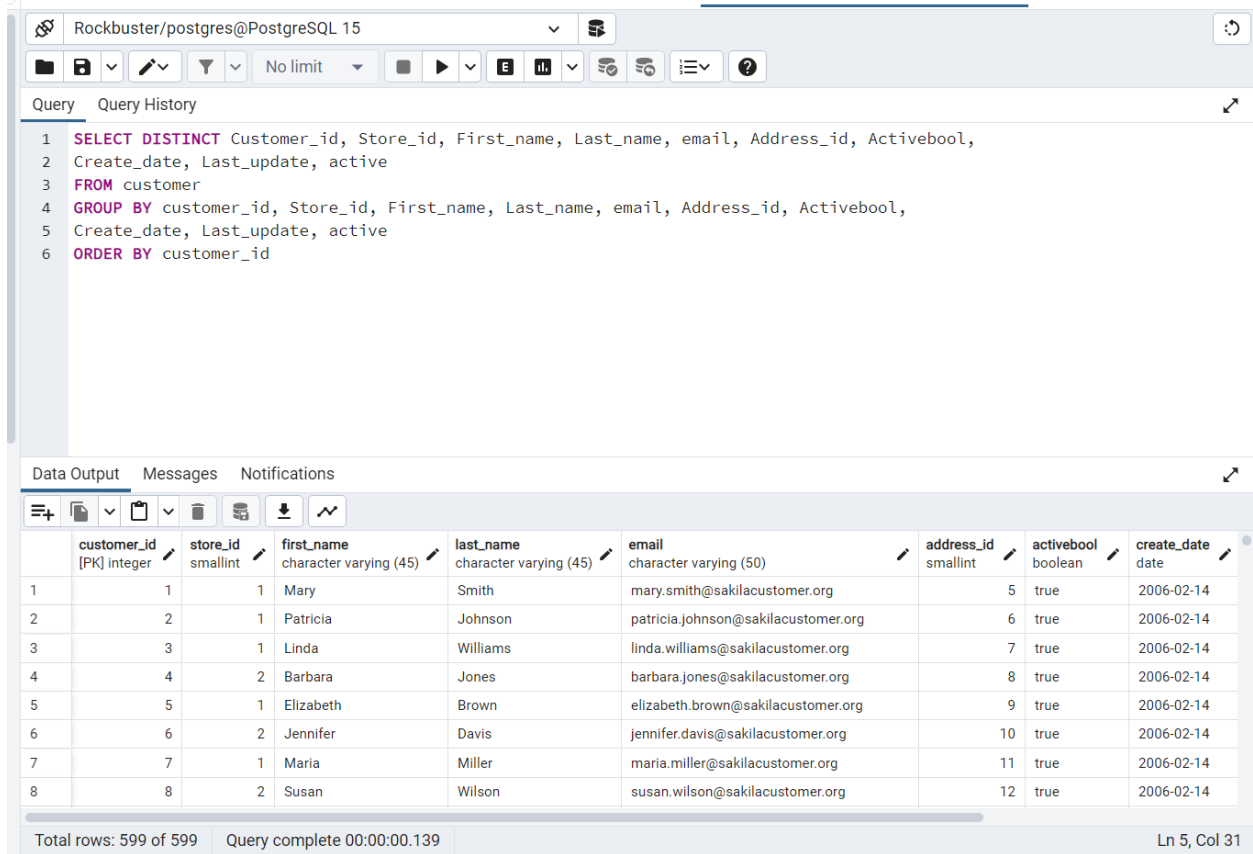
Messages

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	3	Adaptation Holes	A Astounding Reflection of a Lumberjack And a Car who must Sink a Lumberjack in A Baloon Factory
4	4	Affair Prejudice	A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank
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
6	6	Agent Truman	A Intrepid Panorama of a Robot And a Boy who must Escape a Sumo Wrestler in Ancient China
7	7	Airplane Sierra	A Touching Saga of a Hunter And a Butler who must Discover a Butler in A Jet Boat
8	8	Airport Pollock	A Epic Tale of a Moose And a Girl who must Confront a Monkey in Ancient India

Total rows: 1000 of 1000 Query complete 00:00:00.139 Ln 5, Col 31

1.b Customer Table



The screenshot shows a PostgreSQL query editor interface. The top bar indicates the connection is 'Rockbuster/postgres@PostgreSQL 15'. Below the toolbar, the query editor contains the following SQL query:

```
1 SELECT DISTINCT Customer_id, Store_id, First_name, Last_name, email, Address_id, Activebool,  
2 Create_date, Last_update, active  
3 FROM customer  
4 GROUP BY customer_id, Store_id, First_name, Last_name, email, Address_id, Activebool,  
5 Create_date, Last_update, active  
6 ORDER BY customer_id
```

The 'Data Output' tab is selected, displaying the results of the query in a table format. The table has 9 columns: customer_id, store_id, first_name, last_name, email, address_id, activebool, and create_date. The results show 8 distinct rows of customer data.

	customer_id [PK] integer	store_id smallint	first_name character varying (45)	last_name character varying (45)	email character varying (50)	address_id smallint	activebool boolean	create_date date
1	1	1	Mary	Smith	mary.smith@sakilacustomer.org	5	true	2006-02-14
2	2	1	Patricia	Johnson	patricia.johnson@sakilacustomer.org	6	true	2006-02-14
3	3	1	Linda	Williams	linda.williams@sakilacustomer.org	7	true	2006-02-14
4	4	2	Barbara	Jones	barbara.jones@sakilacustomer.org	8	true	2006-02-14
5	5	1	Elizabeth	Brown	elizabeth.brown@sakilacustomer.org	9	true	2006-02-14
6	6	2	Jennifer	Davis	jennifer.davis@sakilacustomer.org	10	true	2006-02-14
7	7	1	Maria	Miller	maria.miller@sakilacustomer.org	11	true	2006-02-14
8	8	2	Susan	Wilson	susan.wilson@sakilacustomer.org	12	true	2006-02-14

At the bottom of the interface, a status bar shows 'Total rows: 599 of 599', 'Query complete 00:00:00.139', and 'Ln 5, Col 31'.

The data appears uniform for both tables. If the data was not uniform, I would use the Update function along with the Where and Set functions to resolve this problem.

1.c Film table

Rockbuster/postgres@PostgreSQL 15

Query Query History

```

1 SELECT COUNT(Film_id), COUNT(Title), COUNT(Description), COUNT(Release_year),
2   COUNT(Language_id),
3   COUNT(Rental_duration), COUNT(Rental_rate), COUNT(Length), COUNT(Replacement_cost),
4   COUNT(rating),
5   COUNT>Last_update), COUNT(Special_features), COUNT(fulltext),
6   COUNT(*) AS count_rows
7 FROM film

```

Data Output Messages Notifications

	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint
1	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Total rows: 1 of 1 Query complete 00:00:00.095 Ln 6, Col 23

Data Output Messages Notifications

	int nt	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count bigint	count_rows bigint
1	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Total rows: 1 of 1 Query complete 00:00:00.095 Ln 6, Col 23

1.c Customer Table

The screenshot displays a PostgreSQL query editor interface. At the top, the connection is identified as 'Rockbuster/postgres@PostgreSQL 15'. The query editor shows a SQL query designed to find customers with missing data. The query is as follows:

```
1 SELECT Customer_id, Store_id, First_name, Last_name, email, Address_id, Activebool,  
2 Create_date, Last_update, active,  
3 COUNT(*)  
4 FROM customer  
5 GROUP BY Customer_id, Store_id, First_name, Last_name, email, Address_id, Activebool,  
6 Create_date, Last_update, active  
7 HAVING COUNT(*) <1 OR COUNT(*) = (null)
```

Below the query editor, the 'Data Output' tab is active, showing the results of the query. The results are presented in a table with the following columns and data types:

customer_id	store_id	first_name	last_name	email	address_id	activebool	create_date	last_update
[PK] integer	smallint	character varying (45)	character varying (45)	character varying (50)	smallint	boolean	date	timestamp without ti

The status bar at the bottom indicates 'Total rows: 0 of 0' and 'Query complete 00:00:00.104'. The cursor is positioned at 'Ln 6, Col 31'.

Below the first screenshot, a second 'Data Output' tab is shown, displaying a different set of columns and data types:

first_name	last_name	email	address_id	activebool	create_date	last_update	active	count
character varying (45)	character varying (45)	character varying (50)	smallint	boolean	date	timestamp without time zone	integer	bigint

The status bar for this second output also shows 'Total rows: 0 of 0' and 'Query complete 00:00:00.104', with the cursor at 'Ln 6, Col 31'.

There appears to be no missing data. If there were missing data you could use the Update, Where, Set functions could be used to impute the average value for a small amount of missing data. However, you can also disregard a column or row that has a significant proportion of missing data.

2.a Film Table Numerical

Rockbuster/postgres@PostgreSQL 15

```

6 MIN(replacement_cost) AS min_replacement,
7 MAX(replacement_cost) AS max_replacement,
8 AVG(replacement_cost) AS avg_replacement,
9 COUNT(replacement_cost) AS count_replacement_values,
10 MIN(rental_duration) AS min_duration,
11 MAX(rental_duration) AS rental_duration,
12 AVG(rental_duration) AS rental_duration,
13 COUNT(rental_duration) AS count_duration,
14 MIN(length) AS min_length,
15 MAX(length) AS max_length,
16 AVG(length) AS avg_length,
17 COUNT(length) AS count_length,
18 COUNT(*) AS row_number
19 FROM film
    
```

	min_rental numeric	max_rental numeric	avg_rental numeric	count_rental bigint	count_rows bigint	min_replacement numeric	max_replacement numeric	avg_replacement numeric	count_replacement bigint
1	0.99	4.99	2.9800000000000000	1000	1000	9.99	29.99	19.984000000000000	

Total rows: 1 of 1 Query complete 00:00:00.103 Ln 19, Col 10

min_rental	max_rental	avg_rental	count_rental	count_rows	min_replacement	max_replacement
0.99	4.99	2.98	1000	1000	9.99	29.99
avg_replacement	count_replacement_values	min_duration	rental_duration	rental_duration-2	count_duration	min_length
19.984	1000	3	7	4.985	1000	46
max_length	avg_length	count_length	row_number			
185	115.272	1000	1000			

2.a Film Table Non-Numerical

Rockbuster/postgres@PostgreSQL 15

Query Query History

```

1 SELECT MODE() WITHIN GROUP (ORDER BY title ) AS mode_title,
2 MODE() WITHIN GROUP (ORDER BY description) AS mode_description,
3 MODE() WITHIN GROUP (ORDER BY release_year) AS mode_release_year,
4 MODE() WITHIN GROUP (ORDER BY language_id) AS mode_language,
5 MODE() WITHIN GROUP (ORDER BY rating) AS mode_rating,
6 MODE() WITHIN GROUP (ORDER BY last_update) AS mode_last_update,
7 MODE() WITHIN GROUP (ORDER BY special_features) AS mode_special_features,
8 MODE() WITHIN GROUP (ORDER BY fulltext) AS mode_fulltext
9 FROM film

```

Data Output Messages Notifications

	mode_title character varying	mode_description text	mode_release_year integer	mode_language smallint	mode_rating real	mode_last_update timestamp without time zone	mode_special_features text	mode_fulltext text
1	Academy Dinosaur	A Action-Packed Character Study of a Astronaut And a Explorer who must Reach a Monkey in A MySQL Convent...	2006	1	PG-13	2006-02-10 12:00:00	None	PG-13 Academy Dinosaur A Action-Packed Character Study of a Astronaut And a Explorer who must Reach a Monkey in A MySQL Convent... PG-13

Total rows: 1 of 1 Query complete 00:00:00.110 Ln 5, Col 51

mode_title	mode_description	mode_release_year	mode_language
Academy Dinosaur	A Action-Packed Character Study of a Astronaut And a Explorer who must Reach a Monkey in A MySQL Convention	2006	1
mode_rating	mode_last_update	mode_special_features	mode_fulltext
PG-13	50:59.0	{Trailers,Commentaries,"Behind the Scenes"}	'baloon':19 'confront':14 'documentari':5 'feminist':8,11,16 'mile':2 'must':13 'spi':1 'thrill':4

Rockbuster/postgres@PostgreSQL 15

Query Query History

```

1 SELECT MODE() WITHIN GROUP (ORDER BY first_name) AS mode_first_name,
2    MODE() WITHIN GROUP (ORDER BY last_name) AS mode_last_name,
3    MODE() WITHIN GROUP (ORDER BY email) AS mode_email,
4    MODE() WITHIN GROUP (ORDER BY activebool) AS mode_activebool,
5    MODE() WITHIN GROUP (ORDER BY create_date) AS mode_create_date,
6    MODE() WITHIN GROUP (ORDER BY last_update) AS mode_last_update,
7    MODE() WITHIN GROUP (ORDER BY active) AS mode_active
8 FROM customer

```

Data Output Messages Notifications

	mode_title character varying	mode_description text	mode_release_year integer	mode_language smallint	mode_rating real
1	Academy Dinosaur	A Action-Packed Character Study of a Astronaut And a Explorer who must Reach a Monkey in A MySQL Convent...	2006	1	P

Total rows: 1 of 1 Query complete 00:00:00.110 Ln 7, Col 51

mode_title	mode_description	mode_release_year	mode_language
Academy Dinosaur	A Action-Packed Character Study of a Astronaut And a Explorer who must Reach a Monkey in A MySQL Convention	2006	1
mode_rating	mode_last_update	mode_special_features	mode_fulltext
PG-13	50:59.0	{Trailers,Commentaries,"Behind the Scenes"}	'baloon':19 'confront':14 'documentari':5 'feminist':8,11,16 'mile':2 'must':13 'spi':1 'thrill':4