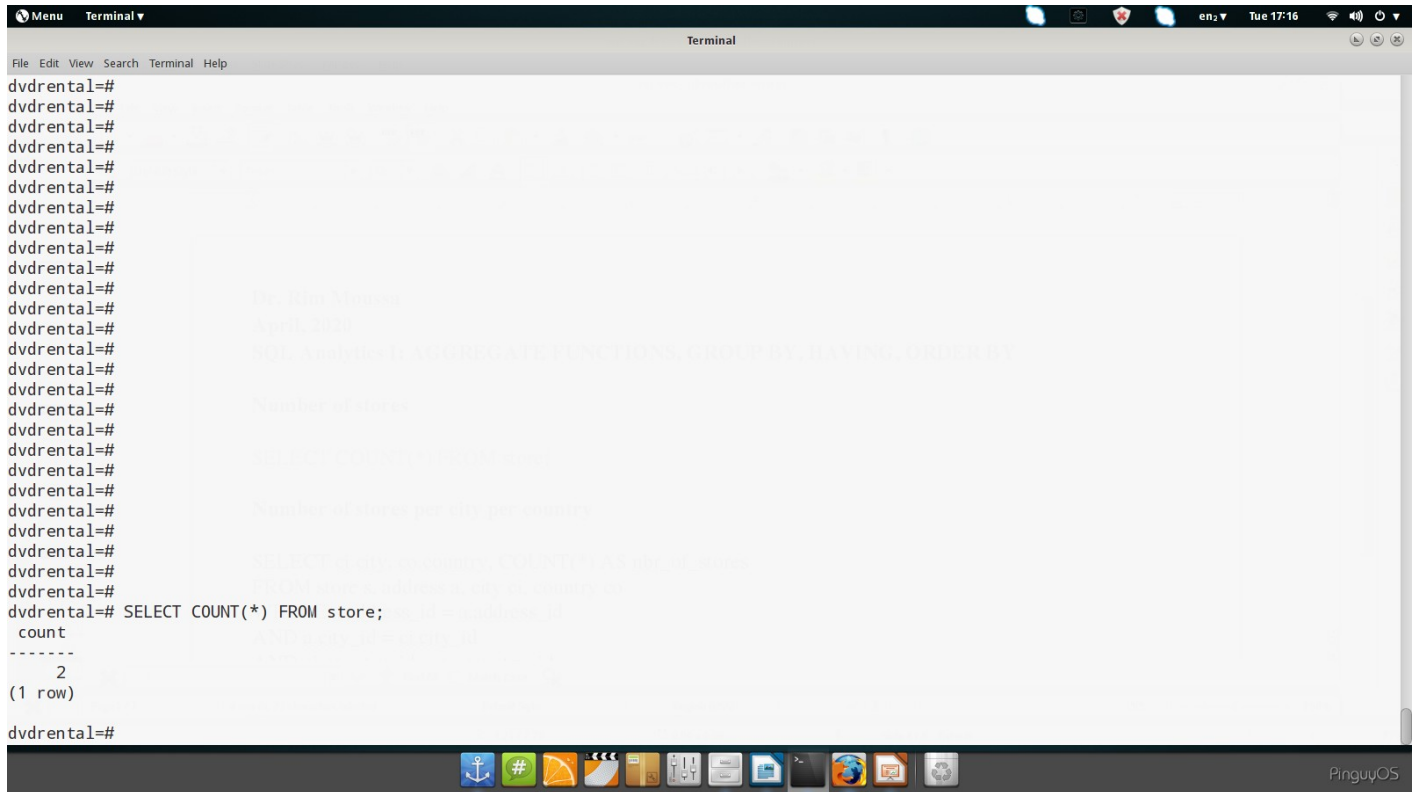


Q1: Number of stores

```
SELECT COUNT(*) FROM store;
```



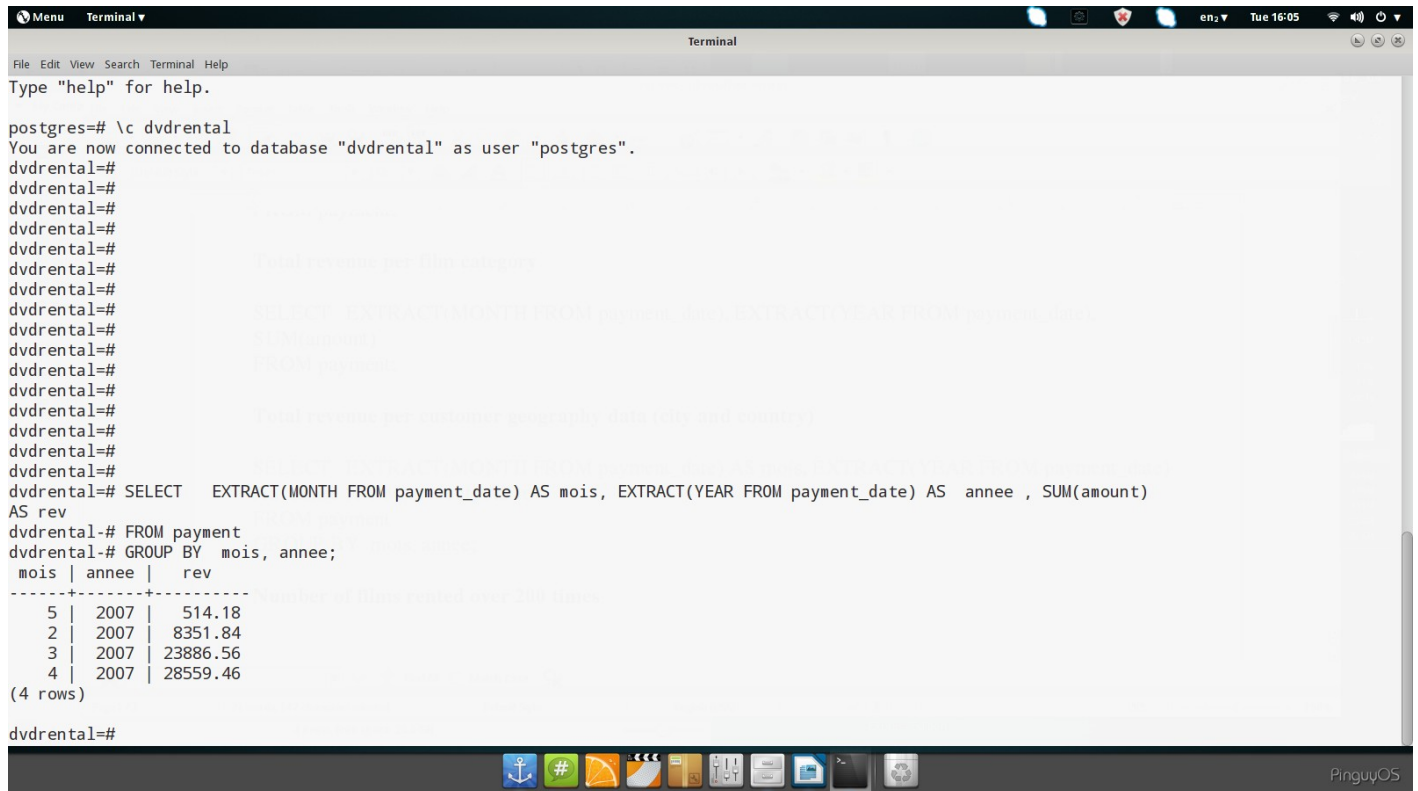
The screenshot shows a terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help). The prompt is 'dvdrental=#'. The query 'SELECT COUNT(*) FROM store;' is entered and executed. The output is '2' followed by '(1 row)' on the next line. The prompt 'dvdrental=#' is visible again at the bottom. The terminal has a light gray background with a dark gray title bar and a dark gray dock at the bottom containing various application icons. The system status bar at the top right shows 'Tue 17:16' and other system icons.

Q2: Number of stores per city per country

```
SELECT ci.city, co.country, COUNT(*) AS nbr_of_stores
FROM store s, address a, city ci, country co
WHERE s.address_id = a.address_id
AND a.city_id = ci.city_id
AND ci.country_id = co.country_id
GROUP BY ci.city, co.country;
```


Q4: Total revenue per month and year

```
SELECT  EXTRACT(MONTH FROM payment_date) AS mois, EXTRACT(YEAR FROM payment_date)
AS annee , SUM(amount) AS rev
FROM payment
GROUP BY mois, annee;
```



```
Menu Terminal
File Edit View Search Terminal Help
Type "help" for help.

postgres=# \c dvdrental
You are now connected to database "dvdrental" as user "postgres".
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=# SELECT  EXTRACT(MONTH FROM payment_date) AS mois, EXTRACT(YEAR FROM payment_date) AS annee , SUM(amount)
AS rev
dvdrental=# FROM payment
dvdrental=# GROUP BY mois, annee;
  mois | annee |      rev
-----+-----+-----
      5 | 2007 |    514.18
      2 | 2007 |   8351.84
      3 | 2007 |  23886.56
      4 | 2007 | 28559.46
(4 rows)

dvdrental=#
```

Q5: Total revenue per film category

```
SELECT  c.name as category, SUM(p.amount)
FROM category c, film_category fc, film f, inventory i, rental r, payment p
WHERE c.category_id = fc.category_id
AND fc.film_id = f.film_id
AND f.film_id = i.film_id
AND i.inventory_id = r.inventory_id
GROUP BY category;
```

```
Menu Terminal
File Edit View Search Terminal Help
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=# SELECT c.name as category, SUM(p.amount)
dvdrental=# FROM category c, film_category fc, film f, inventory i, rental r, payment p
dvdrental=# WHERE c.category_id = fc.category_id
dvdrental=# AND fc.film_id = f.film_id
dvdrental=# AND f.film_id = i.film_id
dvdrental=# AND i.inventory_id = r.inventory_id
dvdrental=# GROUP BY category;
category | sum
-----+-----
Family | 67197995.84
Games | 59411366.76
Animation | 71489838.64
Classics | 57572005.56
Documentary | 64377642.00
Sports | 72286895.16
New | 57633317.60
Children | 57939877.80
Music | 50888993.20
Travel | 51318177.48
Foreign | 63335337.32
Horror | 51869985.84
Drama | 64990762.40
Action | 68178988.48
Comedy | 57694629.64
Sci-Fi | 67504556.04
(16 rows)
dvdrental=#
```

Q6: Total revenue per customer geography data (city and country)

```
SELECT co.country, ci.city, SUM(p.amount)
FROM payment p, customer c, address a, city ci, country co
WHERE p.customer_id = c.customer_id
AND c.address_id = a.address_id
AND a.city_id = ci.city_id
AND ci.country_id = co.country_id
GROUP BY co.country, ci.city;
```

country	city	sum
Mexico	San Juan Bautista Tuxtepec	98.75
Netherlands	Ede	103.78
Germany	Halle/Saale	100.75
Malaysia	Ipoh	104.75
Philippines	Bislig	71.81
India	Bhimavaram	115.72
United States	Bellevue	91.80
India	Ranchi	75.80
India	Halisahar	154.70
Peru	Callao	79.81
Nigeria	Sokoto	97.78
Philippines	Talavera	91.81
Japan	Higashiosaka	98.75
India	Chandrapur	108.71
China	Hohhot	106.68
Mexico	Jurez	69.79
Ukraine	ostka	97.78
Mexico	Atlixco	128.70
Turkey	Tarsus	64.85
Taiwan	Chunggho	100.76
Romania	Botosani	118.69
China	Nanyang	91.79
Hong Kong	Kowloon and New Kowloon	104.76
Nigeria	Ogbomosho	108.76
Cameroon	Yaound	89.71
China	Huaian	77.79
United States	Kansas City	81.81
United States	Cape Coral	208.58
Mozambique	Beira	142.66
Indonesia	Gorontalo	87.81

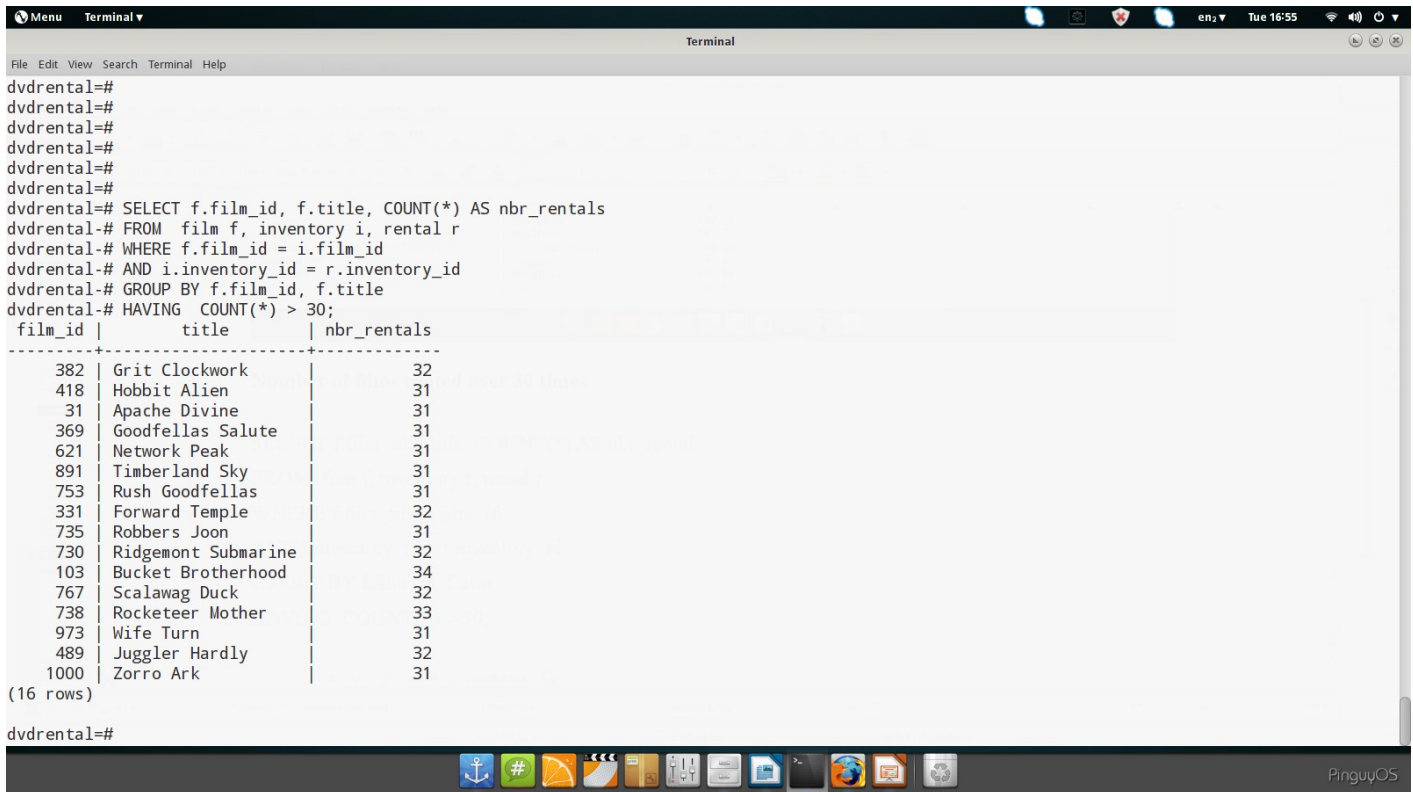
let's sort the resultset on descending revenue

```
SELECT co.country, ci.city, SUM(p.amount) AS rev
FROM payment p, customer c, address a, city ci, country co
WHERE p.customer_id = c.customer_id
AND c.address_id = a.address_id
AND a.city_id = ci.city_id
AND ci.country_id = co.country_id
GROUP BY co.country, ci.city
ORDER BY rev DESC;
```

country	city	rev
Runion	Saint-Denis	211.55
United States	Cape Coral	208.58
Brazil	Santa Brbara dOeste	194.61
Netherlands	Apeldoorn	191.62
Belarus	Molodetno	189.60
Iran	Qomsheh	183.63
United Kingdom	London	174.54
United States	Memphis	167.67
Canada	Richmond Hill	167.62
Philippines	Tanza	166.61
India	Valparai	162.67
Philippines	Santa Rosa	161.68
United States	Aurora	159.58
Spain	Ourense (Orense)	158.65
Yemen	Hodeida	157.69
Philippines	Tanauan	156.66
India	Halisahar	154.70
India	Bijapur	154.66
Russian Federation	Usolje-Sibirskoje	152.69
Indonesia	Probolinggo	152.68
Ukraine	Sumy	151.73
China	Zhoushan	151.69
Algeria	Skikda	151.68
Vietnam	Cam Ranh	149.69
Taiwan	Changhwa	149.61
India	Bhilwara	147.71
Holy See (Vatican City State)	Citt del Vaticano	146.68
Bangladesh	Tangail	146.68
Thailand	Songkhla	146.68
China	Fuyu	146.67

Q7: Number of films rented over 30 times

```
SELECT f.film_id, f.title, COUNT(*) AS nbr_rentals
FROM film f, inventory i, rental r
WHERE f.film_id = i.film_id
AND i.inventory_id = r.inventory_id
GROUP BY f.film_id, f.title
HAVING COUNT(*) > 30;
```



The screenshot shows a terminal window titled "Terminal" on a PinguOS desktop. The user has entered a SQL query to find films rented more than 30 times. The query is executed, and the results are displayed in a table format. The table has three columns: film_id, title, and nbr_rentals. There are 16 rows of data. The desktop background is a light blue gradient with a faint Pingu character. The taskbar at the bottom contains several application icons, and the system status bar at the top right shows the time as Tue 16:55.

```
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=#
dvdrental=# SELECT f.film_id, f.title, COUNT(*) AS nbr_rentals
dvdrental=# FROM film f, inventory i, rental r
dvdrental=# WHERE f.film_id = i.film_id
dvdrental=# AND i.inventory_id = r.inventory_id
dvdrental=# GROUP BY f.film_id, f.title
dvdrental=# HAVING COUNT(*) > 30;
 film_id |      title      | nbr_rentals
-----+-----+-----
      382 | Grit Clockwork  |          32
      418 | Hobbit Alien   |          31
        31 | Apache Divine  |          31
      369 | Goodfellas Salute |          31
      621 | Network Peak   |          31
      891 | Timberland Sky  |          31
      753 | Rush Goodfellas |          31
      331 | Forward Temple  |          32
      735 | Robbers Joon    |          31
      730 | Ridgemont Submarine |          32
      103 | Bucket Brotherhood |          34
      767 | Scalawag Duck   |          32
      738 | Rocketeer Mother |          33
      973 | Wife Turn       |          31
      489 | Juggler Hardly  |          32
     1000 | Zorro Ark       |          31
(16 rows)

dvdrental=#
```

Q8: stat rent duration (number of days) per film

```
SELECT MIN(return_date - rental_date) , MAX(return_date - rental_date), AVG(return_date - rental_date)
FROM rental;
```


film_id	title	nbr_rentals
273	Effect Gladiator	25
51	Balloon Homeward	23
951	Voyage Legally	28
70	Bikini Borrowers	17
350	Garden Island	20
176	Congeniality Quest	22
292	Excitement Eve	21
663	Patient Sister	19
22	Amistad Midsummer	21
271	Easy Gladiator	23
417	Hills Neighbors	25
556	Maltese Hope	22
764	Saturday Lambs	28
638	Operation Operation	27
775	Seattle Expecations	24
791	Show Lord	25
578	Million Ace	20
57	Basic Easy	21
19	Amadeus Holy	21
160	Club Graffiti	19
644	Oscar Gold	25
266	Dynamite Tarzan	25
307	Fellowship Autumn	26
366	Goldfinger Sensibility	24
841	Star Operation	21
91	Bound Cheaper	24
803	Slacker Liaisons	17
305	Fatal Haunted	28
54	Banger Pinocchio	22
181	Contact Anonymous	26

Q11: Who are the actors who played in all film categories

Hint: count the number of distinct categories of films that each actor played in, then compare to the total number of categories

```

SELECT a.actor_id, a.last_name, a.first_name, COUNT(DISTINCT fc.category_id)
FROM actor a, film_actor fa, film f, film_category fc
WHERE a.actor_id = fa.actor_id
AND fa.film_id = f.film_id
AND f.film_id = fc.film_id
GROUP BY a.actor_id, a.last_name, a.first_name
HAVING COUNT(DISTINCT fc.category_id) = ANY ( SELECT COUNT(*) FROM category);

```

```
Menu Terminal
File Edit View Search Terminal Help
dvdrental=# SELECT a.actor_id, a.last_name, a.first_name, COUNT(DISTINCT fc.category_id)
dvdrental=# FROM actor a, film_actor fa, film f, film_category fc
dvdrental=# WHERE a.actor_id = fa.actor_id
dvdrental=# AND fa.film_id = f.film_id
dvdrental=# AND f.film_id = fc.film_id
dvdrental=# GROUP BY a.actor_id, a.last_name, a.first_name
dvdrental=# HAVING COUNT(DISTINCT fc.category_id) = ANY ( SELECT COUNT(*) FROM category);
actor_id | last_name | first_name | count
-----+-----+-----+-----
13 | Wood | Uma | 16
72 | Williams | Sean | 16
95 | Wahlberg | Daryl | 16
106 | Dunst | Groucho | 16
107 | Degeneres | Gina | 16
127 | Garland | Kevin | 16
139 | Gooding | Ewan | 16
155 | Tandy | Ian | 16
161 | Hope | Harvey | 16
185 | Bolger | Michael | 16
197 | West | Reese | 16
(11 rows)
dvdrental=#
```

notice that we can replace `fa.film_id = f.film_id AND f.film_id = fc.film_id` by `fa.film_id = fc.film_id`, and we don't need to use `film` table.