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CSE448
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Mini-Project3

1. Rental totals by store city and film title: use a query as the second argument in the crosstab(not explicit values) to show the actual store locations from the database.

Base Query:

```
select f.title, c.city, count(*)
from film f, store s, address a, city c, inventory i, rental r
where s.store_id = i.store_id
    and i.film_id = f.film_id
    and s.address_id = a.address_id
    and a.city_id = c.city_id
    and r.inventory_id = i.inventory_id
group by 1, 2
order by 1, 2;
```

Data:

Total rows: 1521 rows

title	city	count
AFFAIR PREJUDICE	Lethbridge	1
AFFAIR PREJUDICE	Woodridge	1
AFRICAN EGG	Woodridge	2
ALADDIN CALENDAR	Lethbridge	1
ALIEN CENTER	Lethbridge	2
ALIEN CENTER	Woodridge	2
ALI FOREVER	Woodridge	1
ALONE TRIP	Lethbridge	1
ALTER VICTORY	Woodridge	1
AMADEUS HOLY	Lethbridge	1

Crosstab query:

```
select first.film_title, coalesce("Woodridge", 0) as "Woodridge",
    coalesce("Lethbridge", 0) as "Lethbridge"
from crosstab('select f.title, c.city, count(*)
from film f, store s, address a, city c, inventory i, rental r
where s.store_id = i.store_id
    and i.film_id = f.film_id
    and s.address_id = a.address_id
    and a.city_id = c.city_id
    and r.inventory_id = i.inventory_id
group by 1, 2
order by 1, 2',
```

```
'select c.city
from city c, address a, store s
where s.address_id = a.address_id
      and a.city_id = c.city_id
group by c.city
order by c.city')
as first(film_title text, "Woodridge" integer, "Lethbridge" integer);
```

Data:

Total rows: 958 rows

film_title	Woodridge	Lethbridge
ACADEMY DINOSAUR	12	11
ACE GOLDFINGER	0	7
ADAPTATION HOLES	0	12
AFFAIR PREJUDICE	13	10
AFRICAN EGG	0	12
AGENT TRUMAN	11	10
AIRPLANE SIERRA	6	9
AIRPORT POLLOCK	0	18
ALABAMA DEVIL	8	4
ALADDIN CALENDAR	11	12

2. Rental totals by customer and rating: given customer email instead of customer ID.

Base query:

```
select c.email, f.rating, count(*)
from customer c, rental r, inventory i, film f
where c.customer_id = r.customer_id
      and r.inventory_id = i.inventory_id
      and i.film_id = f.film_id
group by 1, 2
order by 1, 2;
```

Data:

Total rows: 2975 rows

email	rating	count
AARON.SELBY@sakilacustomer.org	G	4
AARON.SELBY@sakilacustomer.org	PG	2
AARON.SELBY@sakilacustomer.org	PG-13	12
AARON.SELBY@sakilacustomer.org	R	2
AARON.SELBY@sakilacustomer.org	NC-17	4
ADAM.GOOCH@sakilacustomer.org	G	2
ADAM.GOOCH@sakilacustomer.org	PG	4
ADAM.GOOCH@sakilacustomer.org	PG-13	4
ADAM.GOOCH@sakilacustomer.org	R	6
ADAM.GOOCH@sakilacustomer.org	NC-17	6

Crosstab Query:

```
select second.customer_email, coalesce("PG-13", 0) as "PG-13",
       coalesce("R", 0) as "R", coalesce("PG", 0) as "PG", coalesce("G", 0) as "G",
       coalesce("NC-17", 0) as "NC-17"
from crosstab(
    select c.email, f.rating, count(*)
    from customer c, rental r, inventory i, film f
    where c.customer_id = r.customer_id
      and r.inventory_id = i.inventory_id
      and i.film_id = f.film_id
    group by 1, 2
    order by 1, 2,
    'select rating from film
    group by rating
    order by rating')
as second(customer_email text, "PG-13" integer,
          "R" integer, "PG" integer, "G" integer, "NC-17" integer);
```

Data:

Total rows: 599 rows

customer_email	PG-13	R	PG	G	NC-17
AARON.SELBY@sakilacustomer.org	4	2	12	2	4
ADAM.GOOCH@sakilacustomer.org	2	4	4	6	6
ADRIAN.CLARY@sakilacustomer.org	1	5	5	5	3
AGNES.BISHOP@sakilacustomer.org	4	1	7	6	5
ALAN.KAHN@sakilacustomer.org	3	4	7	3	9
ALBERT.CROUSE@sakilacustomer.org	4	3	4	6	6
ALBERTO.HENNING@sakilacustomer.org	6	1	3	7	4
ALEXANDER.FENNELL@sakilacustomer.org	9	9	6	7	5
ALEX.GRESHAM@sakilacustomer.org	5	5	8	8	7
ALFRED.CASILLAS@sakilacustomer.org	3	5	7	7	4

3. Rental payment amounts by film title and month. Use 3-letter abbreviations for months(e.g., Jan, Feb...)

Base Query:

```
select f.title, EXTRACT(MONTH FROM p.payment_date), count(*)
from film f, rental r, payment p, inventory i
where f.film_id = i.inventory_id
      and r.inventory_id = i.inventory_id
      and r.rental_id = p.rental_id
group by 1, 2
order by 1, 2;
```

Data:

Total rows: 147 rows

title	date_part	count
ALLEY EVOLUTION	4	1
AMERICAN CIRCUS	5	1
ANACONDA CONFESSIONS	2	1
ANGELS LIFE	5	1
BADMAN DAWN	4	1
BIKINI BORROWERS	5	1
BILKO ANONYMOUS	2	1
BILL OTHERS	4	1
BIRCH ANTITRUST	4	1
BIRDCAGE CASPER	2	1

Crosstab Query:

```
select third.film_title, coalesce("Jan", 0) as "Jan", coalesce("Feb", 0) as "Feb",
coalesce("Mar", 0) as "Mar",
coalesce("Apr", 0) as "Apr", coalesce("May", 0) as "May", coalesce("Jun", 0) as "Jun",
coalesce("Jul", 0) as "Jul",
coalesce("Aug", 0) as "Aug", coalesce("Sep", 0) as "Sep", coalesce("Oct", 0) as "Oct",
coalesce("Nov", 0) as "Nov",
coalesce("Dec", 0) as "Dec"
from crosstab(
select f.title, EXTRACT(MONTH FROM p.payment_date), count(*)
from film f, rental r, payment p, inventory i
where f.film_id = i.inventory_id
and r.inventory_id = i.inventory_id
and r.rental_id = p.rental_id
group by 1, 2
order by 1, 2,
'values (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11),(12)'
)
as third(film_title text, "Jan" integer, "Feb" integer, "Mar" integer, "Apr" integer, "May" integer,
"Jun" integer, "Jul" integer, "Aug" integer, "Sep" integer, "Oct" integer, "Nov" integer, "Dec"
integer);
```

Data:

Total rows: 139 rows

film_title	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ALLEY EVOLUTION	0	0	0	1	0	0	0	0	0	0	0	0
AMERICAN CIRCUS	0	0	0	0	1	0	0	0	0	0	0	0
ANACONDA CONFESSIONS	0	1	0	0	0	0	0	0	0	0	0	0
ANGELS LIFE	0	0	0	0	1	0	0	0	0	0	0	0
BADMAN DAWN	0	0	0	1	0	0	0	0	0	0	0	0
BIKINI BORROWERS	0	0	0	0	1	0	0	0	0	0	0	0
BILKO ANONYMOUS	0	1	0	0	0	0	0	0	0	0	0	0
BILL OTHERS	0	0	0	1	0	0	0	0	0	0	0	0
BIRCH ANTITRUST	0	0	0	1	0	0	0	0	0	0	0	0
BIRDCAGE CASPER	0	1	0	0	0	0	0	0	0	0	0	0

4. Film totals by actor (full name) and category name.

Base Query:

```
select (a.first_name || ' ' || a.last_name) as fullname, c.name as cate, count(*)
from category c, actor a, film_actor fa, film_category fc, film f
where f.film_id = fc.film_id and fc.category_id = c.category_id
      and f.film_id = fa.film_id and fa.actor_id = a.actor_id
group by a.first_name, a.last_name, c.name
order by a.last_name, a.first_name, c.name;
```

Data:

Total rows: 2596 rows

fullname	cate	count
CHRISTIAN AKROYD	Action	2
CHRISTIAN AKROYD	Animation	2
CHRISTIAN AKROYD	Children	4
CHRISTIAN AKROYD	Classics	1
CHRISTIAN AKROYD	Comedy	4
CHRISTIAN AKROYD	Documentary	2
CHRISTIAN AKROYD	Family	1
CHRISTIAN AKROYD	Foreign	3
CHRISTIAN AKROYD	Games	2
CHRISTIAN AKROYD	Horror	2
CHRISTIAN AKROYD	Music	2
CHRISTIAN AKROYD	New	3

Crosstab query:

```

select fourth.fullname, coalesce("Action", 0) as "Action", coalesce("Animation", 0) as
"Animation", coalesce("Children", 0) as "Children",
    coalesce("Classics", 0) as "Classics", coalesce("Comedy", 0) as "Comedy",
coalesce("Documentary", 0) as "Documentary",
    coalesce("Drama", 0) as "Drama", coalesce("Family", 0) as "Family", coalesce("Foreign", 0)
as "Foreign", coalesce("Games", 0) as "Games",
    coalesce("Horror", 0) as "Horror", coalesce("Music", 0) as "Music", coalesce("New", 0) as
"New", coalesce("Sports", 0) as "Sports",
    coalesce("Travel", 0) as "Travel"
from crosstab('select a.first_name || " " || a.last_name as fullname, c.name as category, count(*)
from category c, actor a, film_actor fa, film_category fc, film f
where f.film_id = fc.film_id and fc.category_id = c.category_id
    and f.film_id = fa.film_id and fa.actor_id = a.actor_id
group by a.first_name, a.last_name, c.name
order by a.last_name, a.first_name, c.name',
'select name from category
order by name')
as fourth(fullname text, "Action" integer, "Animation" integer, "Children" integer,
    "Classics" integer, "Comedy" integer, "Documentary" integer, "Drama" integer,
    "Family" integer, "Foreign" integer, "Games" integer, "Horror" integer,
    "Music" integer, "New" integer, "Sci-Fi" integer, "Sports" integer, "Travel" integer);

```

Data:

Total rows: 199 rows

e1	fullname	Action	Animation	Children	Classics	Comedy	Documentary	Drama	Family	Foreign	Games	Horror	Music	New	Sports	Trav
0	CHRISTIAN AKROYD	2	2	4	1	4	2	0	1	3	2	2	2	3	2	
0	DEBBIE AKROYD	0	1	1	2	2	0	1	5	2	1	2	1	3	2	
3	KIRSTEN AKROYD	5	2	4	1	2	1	3	1	4	2	0	0	3	1	
2	CUBA ALLEN	0	0	3	0	1	1	1	2	4	1	1	1	2	1	
0	KIM ALLEN	2	5	1	1	0	3	1	1	3	0	3	1	2	2	
2	MERYL ALLEN	1	0	1	0	1	0	1	1	3	3	2	2	1	4	
2	ANGELINA ASTAIRE	1	2	2	2	4	1	2	3	0	1	2	0	4	3	
1	RUSSELL BACALL	1	1	1	1	2	0	4	4	1	1	2	0	0	3	
2	AUDREY BAILEY	4	1	1	1	0	2	1	3	2	1	0	5	1	1	
4	JESSICA BAILEY	2	0	0	3	1	2	1	0	1	2	2	2	1	1	