



MINI PROJECT

- DATAMART

WEEK 4 - GROUP 4E

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WHAT IS DATAMART?

A Datamart is a subset or segment of a data warehouse that contains data that has been processed and organized to meet the analytical and reporting needs of a specific group of users, such as departments, teams, or specific business units within an organization. Datamart is one of the components of a larger data warehouse architecture.

TASK : CREATE A DATAMART

From the DVD rental database that can provide the information below. All information can be viewed by year, month and date.

01

- View rental income from films based on:
- a. Movie title
 - b. Movie Ratings
 - c. Movie Category

02

- Carry out customer segmentation:
- a. Borrowing Frequency
 - b. Total Rental Costs
 - c. Types of films that are often rented (film categories and film ratings)

03

- View rental delay information such as:
- a. Most often films are returned late
 - b. What is the number of returned late in a certain period
- Hint: The formula to check whether the rental is declared late is to compare the rental duration of the film and the distance between the borrowing date and the return date.

01. VIEW RENTAL INCOME FROM FILMS BASED ON:

- Movie title
- Movie Ratings
- Movie Category



CODE 1 (SAKILA)

```
-- No. 1
select fil.film_id, cat.category_id, date(fil.last_update) as film_last_update,
       fil.title as film_title, fil.release_year as film_release_year,
       cat.name as category_name, fil.rating as film_rating, fil.rental_rate
  from film fil
 left join film_category fcat on fcat.film_id = fil.film_id
 left join category cat on cat.category_id = fcat.category_id;
```

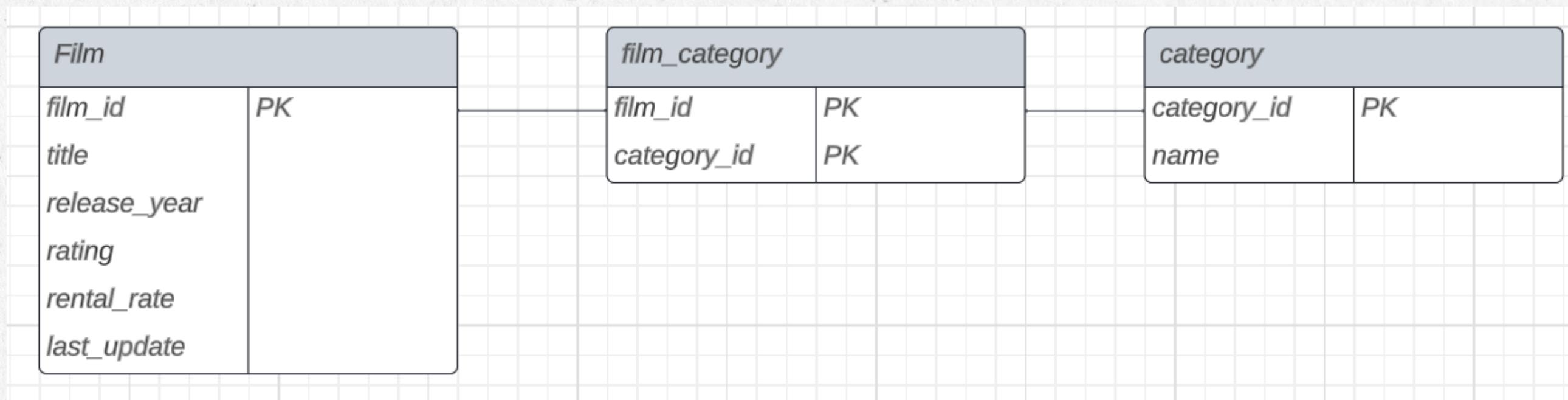
film(+) 1 ×

select fil.film_id, cat.category_id, date(fil.

Enter a SQL expression to filter results (use Ctrl+Space)

Grid	film_id	category_id	film_last_update	film_title	film_release_year	category_name	film_rating	rental_rate
1	1	6	2023-08-24	ACADEMY DINOSAUR	2006	Documentary	PG	1.99
2	2	11	2006-02-15	ACE GOLDFINGER	2006	Horror	G	4.99
3	3	6	2006-02-15	ADAPTATION HOLES	2006	Documentary	NC-17	2.99
4	4	11	2006-02-15	AFFAIR PREJUDICE	2006	Horror	G	2.99
5	5	8	2006-02-15	AFRICAN EGG	2006	Family	G	2.99
6	6	9	2023-08-24	AGENT TRUMAN	2006	Foreign	PG	1.99
7	7	5	2006-02-15	AIRPLANE SIERRA	2006	Comedy	PG-13	4.99
8	8	11	2006-02-15	AIRPORT POLLOCK	2006	Horror	R	4.99
9	9	11	2006-02-15	ALABAMA DEVIL	2006	Horror	PG-13	2.99
10	10	15	2006-02-15	ALADDIN CALENDAR	2006	Sports	NC-17	4.99
11	11	9	2006-02-15	ALAMO VIDEOTAPE	2006	Foreign	G	0.99

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After determining the data you want to display in the query results table above, the next step is to EXPORT DATA into the mini_project database. These steps are the same in tasks 2 and 3

CODE 1 (MINI PROJECT)

```
select date(film_last_update) as film_last_update,  
       film_id,  
       film_title,  
       film_rating,  
       category_name,  
       sum(rental_rate) as total_rental_rate  
  from film  
 group by 1,2,3,4,5  
 order by 6 desc;
```

film 1

select date(film_last_update) as film_last_update, film | Enter a SQL expression to filter results (use Ctrl+Space)

	film_last_update	film_id	film_title	film_rating	category_name	total_rental_rate
Grid	2006-02-15	588	MODEL FISH	NC-17	Children	4.99
Text	2006-02-15	2	ACE GOLDFINGER	G	Horror	4.99
Text	2006-02-15	648	OUTLAW HANKY	PG-13	Travel	4.99
Text	2006-02-15	556	MALTESE HOPE	PG-13	Games	4.99
Text	2006-02-15	398	HANOVER GALAXY	NC-17	Music	4.99
Text	2006-02-15	307	FELLOWSHIP AUTUMN	NC-17	Travel	4.99
Text	2006-02-15	7	AIRPLANE SIERRA	PG-13	Comedy	4.99
Text	2006-02-15	8	AIRPORT POLLOCK	R	Horror	4.99
Record	2006-02-15	570	MERMAID INSECTS	NC-17	Sports	4.99
Record	2006-02-15	10	ALADDIN CALENDAR	NC-17	Sports	4.99
Record	2006-02-15	334	FREDDY STORM	NC-17	Horror	4.99

02. CARRY OUT CUSTOMER SEGMENTATION:

- Borrowing Frequency
- Total Rental Costs
- Types of films that are often rented (film categories and film ratings)



CODE 2 (SAKILA)

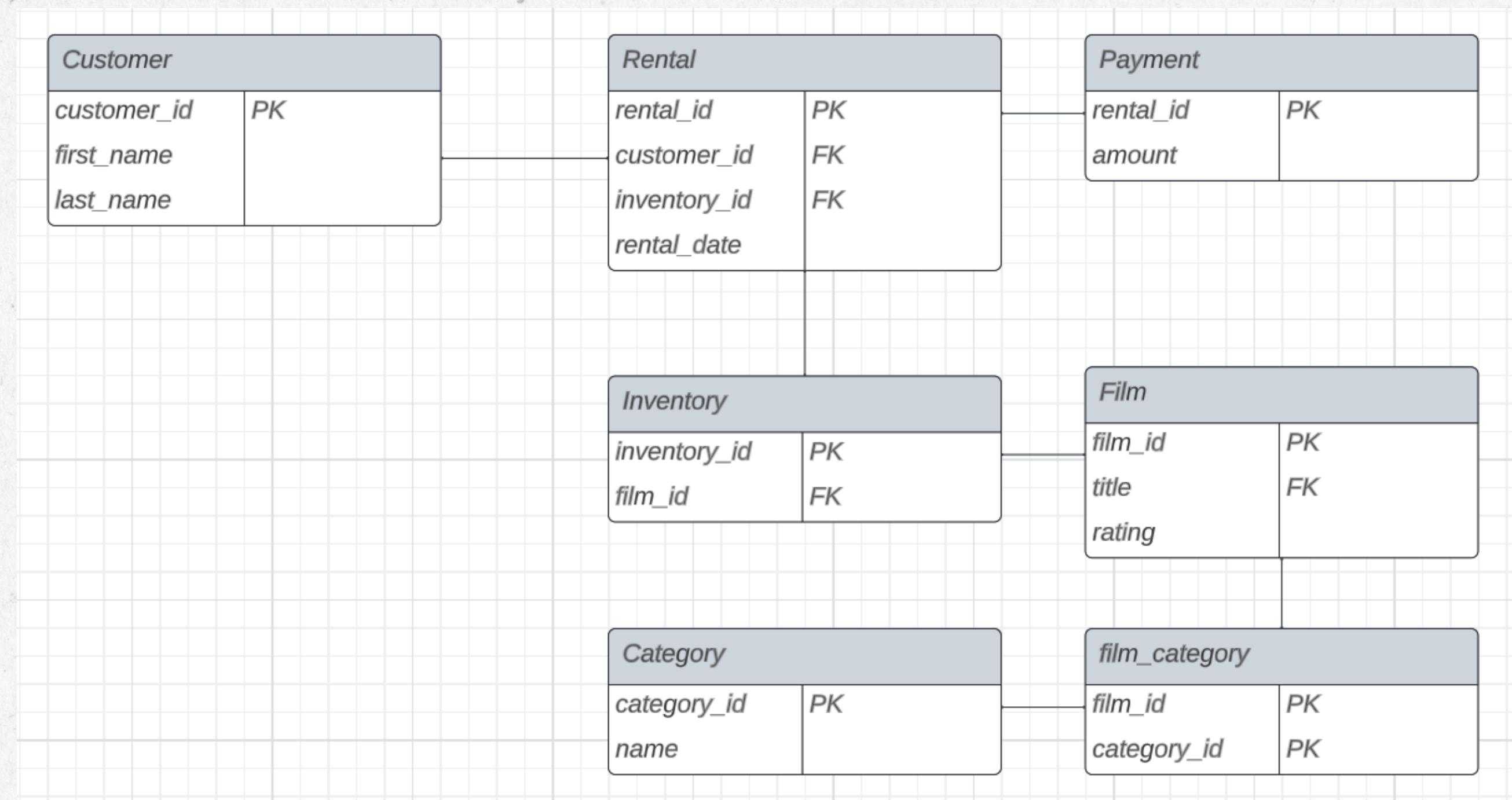
```
-- No. 2
select cust.customer_id, r.rental_id, pay.amount,
       concat(cust.first_name, ' ', cust.last_name) as customer_name,
       fil.title as film_title,
       fil.rating as film_rating,
       cat.name as category_name,
       date(r.rental_date) as rental_date
  from customer cust
 left join rental r on r.customer_id = cust.customer_id
 left join payment pay on pay.rental_id = r.rental_id
 left join inventory inv on inv.inventory_id = r.inventory_id
 left join film fil on fil.film_id = inv.film_id
 left join film_category fc on fc.film_id = fil.film_id
 left join category cat on fc.category_id = cat.category_id
```

customer(+) 1 ×

select cust.customer_id, r.rental_id, pay.amount, cor | Enter a SQL expression to filter results (use Ctrl+Space)

Grid	customer_id	rental_id	amount	customer_name	film_title	film_rating	category_name	rental_date
1	1	76	2.99	MARY SMITH	PATIENT SISTER	NC-17	Classics	2005-05-25
2	1	573	0.99	MARY SMITH	TALENTED HOMICIDE	PG	Sports	2005-05-28
3	1	1,185	5.99	MARY SMITH	MUSKeteers WAIT	PG	Classics	2005-06-15
4	1	1,422	0.99	MARY SMITH	DETECTIVE VISION	PG-13	Classics	2005-06-15
5	1	1,476	9.99	MARY SMITH	FERRIS MOTHER	PG	Comedy	2005-06-15
6	1	1,725	4.99	MARY SMITH	CLOSER BANG	R	Comedy	2005-06-16
7	1	2,308	4.99	MARY SMITH	ATTACKS HATE	PG-13	Sci-Fi	2005-06-18
8	1	2,363	0.99	MARY SMITH	SAVANNAH TOWN	PG-13	Drama	2005-06-18
9	1	3,284	3.99	MARY SMITH	YOUTH KICK	NC-17	Music	2005-06-21
10	1	4,526	5.99	MARY SMITH	FIRE WOLVES	R	Games	2005-07-08
11	1	4,611	5.99	MARY SMITH	SATURDAY LAMBS	G	Sports	2005-07-08

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CODE 2A (MINI PROJECT)

```
-- No. 2
-- Frekuensi Peminjaman dan Total Biaya Sewa
select customer_id,
        customer_name,
        count(rental_id) as frekuensi_peminjaman,
        sum(amount) as total
from customer
group by 1,2
```

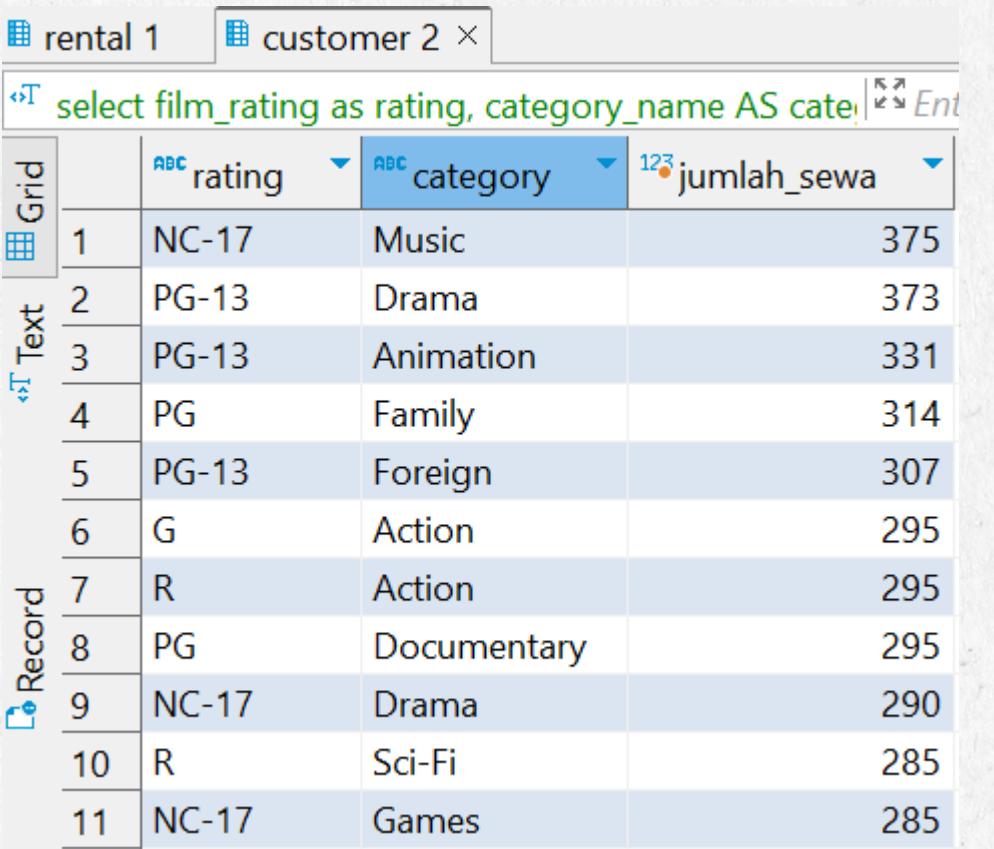
customer 1 ×

select customer_id, customer_name, count(rental_id) Enter a SQL expression to filter results

Grid	customer_id	customer_name	frekuensi_peminjaman	total
1	1	MARY SMITH	32	118.68
2	2	PATRICIA JOHNSON	27	128.73
3	3	LINDA WILLIAMS	26	135.74
4	4	BARBARA JONES	22	81.78
5	5	ELIZABETH BROWN	38	144.62
6	6	JENNIFER DAVIS	28	93.72
7	7	MARIA MILLER	33	151.67
8	8	SUSAN WILSON	24	92.76
9	9	MARGARET MOORE	23	89.77
10	10	DOROTHY TAYLOR	25	99.75
11	11	LISA ANDERSON	24	106.76

CODE 2B (MINI PROJECT)

```
-- Jenis film yang sering disewa (kategori film dan rating film)
select film_rating as rating,
       category_name AS category,
       count(rental_id) AS jumlah_sewa
from customer
group by film_rating, category_name
order by jumlah_sewa desc
```



The screenshot shows the results of the SQL query in a MySQL Workbench interface. The results are displayed in a table titled 'rental 1' with two tabs: 'Grid' and 'Text'. The table has four columns: 'rating', 'category', and 'jumlah_sewa'. The 'rating' column uses abbreviations like NC-17, PG-13, PG, R, G, and PG-13. The 'category' column lists various movie genres. The 'jumlah_sewa' column shows the count of rentals for each category.

	rating	category	jumlah_sewa
1	NC-17	Music	375
2	PG-13	Drama	373
3	PG-13	Animation	331
4	PG	Family	314
5	PG-13	Foreign	307
6	G	Action	295
7	R	Action	295
8	PG	Documentary	295
9	NC-17	Drama	290
10	R	Sci-Fi	285
11	NC-17	Games	285

03. VIEW RENTAL DELAY INFORMATION SUCH AS:

- A. Most often films are returned late
- B. What is the number of returned late in a certain period

Hint: The formula to check whether the rental is declared late is to compare the rental duration of the film and the distance between the borrowing date and the return date.



CODE 3 (SAKILA)

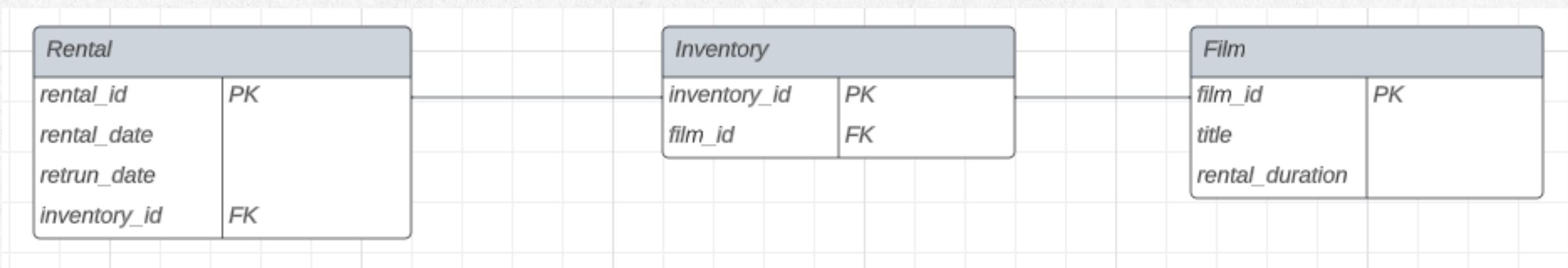
```
-- no 3
select r.rental_id,
       f.title,
       f.rental_duration,
       date(r.rental_date) as tanggal_peminjaman,
       date(r.return_date) as tanggal_pengembalian
from rental r
left join inventory i on i.inventory_id = r.inventory_id
left join film f on f.film_id = i.film_id
```

rental(+) 1 X

select r.rental_id, f.title, f.rental_duration, date(r.r Enter a SQL expression to filter results (use Ctrl+Space)

Grid	123 rental_id	ABE title	123 rental_duration	tanggal_peminjaman	tanggal_pengembalian
1	1	BLANKET BEVERLY	7	2005-05-24	2005-05-26
2	2	FREAKY POCUS	7	2005-05-24	2005-05-28
3	3	GRADUATE LORD	7	2005-05-24	2005-06-01
4	4	LOVE SUICIDES	6	2005-05-24	2005-06-03
5	5	IDOLS SNATCHERS	5	2005-05-24	2005-06-02
6	6	MYSTIC TRUMAN	5	2005-05-24	2005-05-27
7	7	SWARM GOLD	4	2005-05-24	2005-05-29
8	8	LAWLESS VISION	6	2005-05-24	2005-05-27
9	9	MATRIX SNOWMAN	6	2005-05-25	2005-05-28
10	10	HANGING DEEP	5	2005-05-25	2005-05-31
11	11	WHALE BIKINI	4	2005-05-25	2005-06-02

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CODE 3A (MINI PROJECT)

```
• SELECT
    title,
    rental_duration,
    tanggal_peminjaman,
    tanggal_pengembalian,
    COUNT(rental_id) AS jumlah_terlambat
FROM
    rental
WHERE tanggal_pengembalian > tanggal_peminjaman + rental_duration
GROUP BY
    1,2,3,4
ORDER BY
    jumlah_terlambat desc ;
```

Grid	ABC title	123 rental_duration	⌚ tanggal_peminjaman	⌚ tanggal_pengembalian	123 jumlah_terlambat
1	GREEK EVERYONE	7	2005-08-19	2005-08-27	3
2	ICE CROSSING	5	2005-07-08	2005-07-15	3
3	NETWORK PEAK	5	2005-07-10	2005-07-16	3
4	MALKOVICH PET	6	2005-07-31	2005-08-03	3
5	MALLRATS UNITED	4	2005-08-02	2005-08-11	3
6	GOLDFINGER SENSIBILITY	3	2005-07-30	2005-08-05	3
7	BALLOON HOMeward	5	2005-06-15	2005-06-21	2
8	ALADDIN CALENDAR	6	2005-08-01	2005-08-10	2
9	LOVER TRUMAN	3	2005-07-28	2005-08-03	2
10	MADNESS ATTACKS	4	2005-07-09	2005-07-14	2
11	NIGHTMARE CHILL	3	2005-08-17	2005-08-21	2

CODE 3B (MINI PROJECT)

```
④ SELECT COUNT(rental_id) AS jumlah_Keterlambatan  
      FROM rental  
     WHERE tanggal_pengembalian > tanggal_peminjaman + INTERVAL rental_duration DAY  
       AND tanggal_peminjaman BETWEEN '2005-06-20' AND '2006-06-20';
```

rental 1		Results 2 ×
SELECT COUNT(rental_id) AS jumlah_Keterlambatan FROM rental WHERE tanggal_pengembalian > tanggal_peminjaman + INTERVAL rental_duration DAY AND tanggal_peminjaman BETWEEN '2005-06-20' AND '2006-06-20';		
	123	jumlah_Keterlambatan
1		5,985

COLUMNS

Columns

- 123 rental_id (int)
- abc title (varchar(128))
- 123 rental_duration (tinyint unsigned)
- ⌚ tanggal_peminjaman (date)
- ⌚ tanggal_pengembalian (date)

**THANK
YOU!**