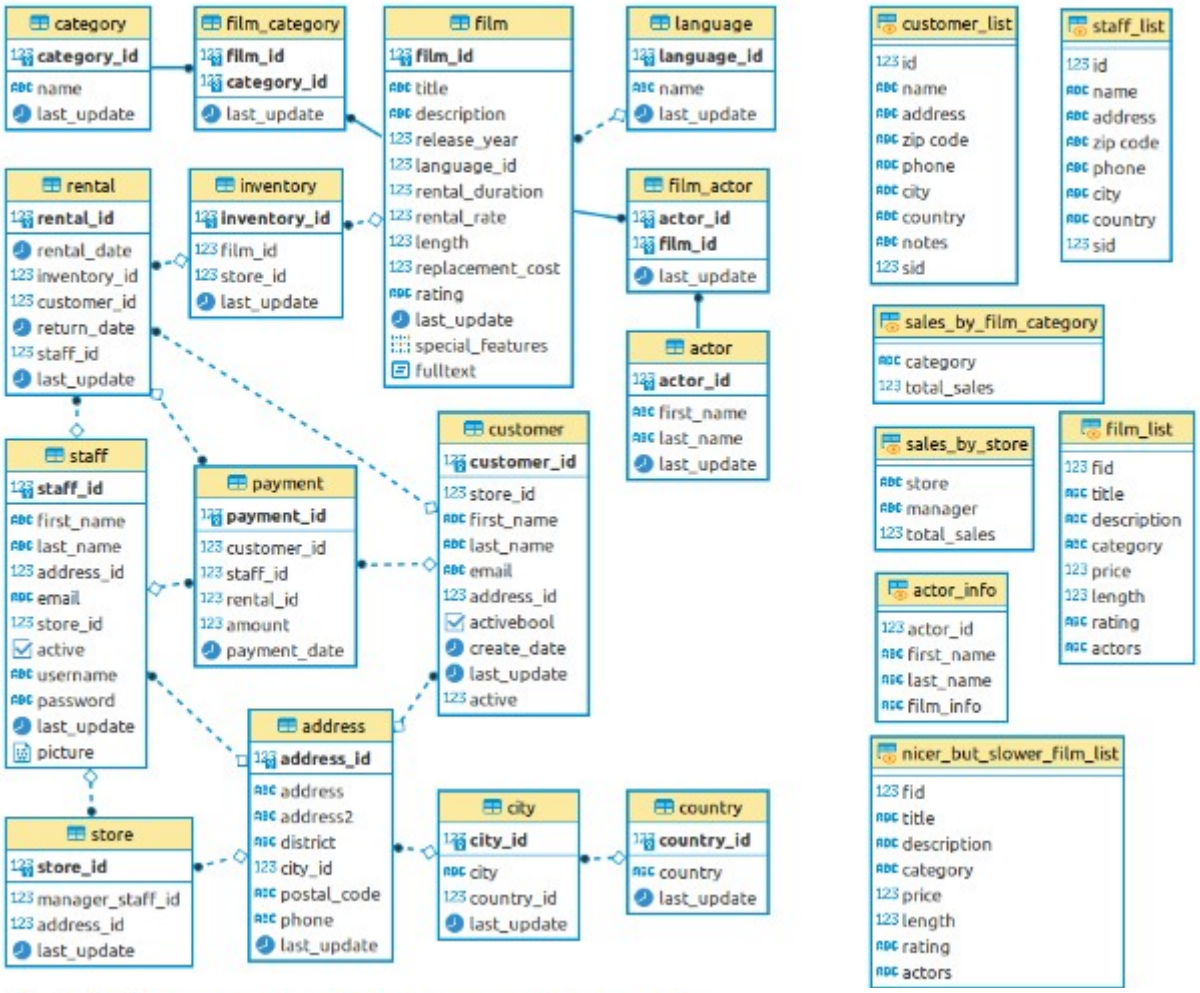
1. ER диаграмма базы данных DVD RENTAL



2. Таблицы и первичные ключи

Название таблицы	Первичный ключ
category	category_id
film_category	film_id category_id
film	film_id
inventory	inventory_id
rental	rental_id
staff	staff_id
payment	payment_id
store	store_id
address	address_id
city	city_id
country	country_id
customer	customer_id
language	language_id
film_actor	actor_id film_id
actor	actor_id

```
# таблица - первичный ключ
query('''
SELECT
    ccu.table_name AS "Название таблицы",
    ccu.column_name AS "Первичный ключ"
FROM information_schema.table_constraints tco
JOIN information_schema.constraint_column_usage ccu
    ON ccu.constraint_name = tco.constraint_name
WHERE tco.constraint_type = 'PRIMARY KEY'
ORDER BY ccu.table_name;
''')
```

	Название таблицы	Первичный ключ
0	actor	actor_id
1	address	address_id
2	category	category_id
3	city	city_id
4	customer	customer_id
5	film	film_id
6	film_actor	actor_id
7	film_actor	film_id
8	film_category	film_id
9	film_category	category_id
10	inventory	inventory_id
11	payment	payment_id
12	rental	rental_id
13	staff	staff_id
14	store	store_id

```
# схема - таблица - первичные ключи
query('''
SELECT kcu.table_schema AS "Название схемы",
       kcu.table_name AS "Название таблицы",
       tco.constraint_name AS "Ограничение",
       kcu.ordinal_position AS position,
       kcu.column_name AS "Ключевое поле"
FROM information_schema.table_constraints tco
JOIN information_schema.key_column_usage kcu
     ON kcu.constraint_name = tco.constraint_name
     AND kcu.constraint_schema = tco.constraint_schema
     AND kcu.constraint_name = tco.constraint_name
WHERE tco.constraint_type = 'PRIMARY KEY'
ORDER BY kcu.table_schema,
         kcu.table_name,
         position;
''')
```

	Название схемы	Название таблицы	Ограничение	position	Ключевое поле
0	public	actor	actor_pkey	1	actor_id
1	public	address	address_pkey	1	address_id
2	public	category	category_pkey	1	category_id
3	public	city	city_pkey	1	city_id
4	public	customer	customer_pkey	1	customer_id
5	public	film	film_pkey	1	film_id
6	public	film_actor	film_actor_pkey	1	actor_id
7	public	film_actor	film_actor_pkey	2	film_id
8	public	film_category	film_category_pkey	1	film_id
9	public	film_category	film_category_pkey	2	category_id
10	public	inventory	inventory_pkey	1	inventory_id
11	public	payment	payment_pkey	1	payment_id
12	public	rental	rental_pkey	1	rental_id
13	public	staff	staff_pkey	1	staff_id
14	public	store	store_pkey	1	store_id

```
# схема - таблица - внешние ключи
query('''
SELECT kcu.table_schema AS "Название схемы",
       kcu.table_name AS "Название таблицы",
       tco.constraint_name AS "Внешниий ключ",
       kcu.ordinal_position AS position,
       kcu.column_name AS "Ключевое поле"
FROM information_schema.table_constraints tco
JOIN information_schema.key_column_usage kcu
     ON kcu.constraint_name = tco.constraint_name
     AND kcu.constraint_schema = tco.constraint_schema
     AND kcu.constraint_name = tco.constraint_name
WHERE tco.constraint_type = 'FOREIGN KEY'
ORDER BY kcu.table_schema,
         kcu.table_name,
         position;
''')
```

	Название схемы	Название таблицы	Внешниий ключ	position	Ключевое поле
0	public	address	fk_address_city	1	city_id
1	public	customer	customer_address_id_fkey	1	address_id
2	public	film_actor	film_actor_film_id_fkey	1	film_id
3	public	film_actor	film_actor_actor_id_fkey	1	actor_id
4	public	film_category	film_category_category_id_fkey	1	category_id
5	public	film_category	film_category_film_id_fkey	1	film_id
6	public	inventory	inventory_film_id_fkey	1	film_id
7	public	payment	payment_customer_id_fkey	1	customer_id
8	public	payment	payment_staff_id_fkey	1	staff_id
9	public	payment	payment_rental_id_fkey	1	rental_id
10	public	rental	rental_inventory_id_fkey	1	inventory_id
11	public	rental	rental_customer_id_fkey	1	customer_id
12	public	rental	rental_staff_id_key	1	staff_id
13	public	staff	staff_address_id_fkey	1	address_id
14	public	store	store_manager_staff_id_fkey	1	manager_staff_id
15	public	store	store_address_id_fkey	1	address_id

3. Вывести всех неактивных покупателей

Сведения о покупателях находятся в таблице **customer**. В таблице есть два поля, которые могут говорить об активности покупателя: **activ** и **activbool**.

```
# количество покупателей со значением false в поле activebool
query('''
SELECT COUNT(customer_id)
FROM customer
WHERE activebool = FALSE;
''')
```

	count
0	0

```
# количество покупателей со значением 0 в поле activ
query('''
SELECT COUNT(customer_id)
FROM customer
WHERE active = 0;
''')
```

	count
0	15

```
# список покупателей со значением 0 в поле activ
query('''
SELECT first_name ||' '|| last_name AS customer_name, email
FROM customer
WHERE active = 0;
''')
```

	customer_name	email
0	Sandra Martin	sandra.martin@sakilacustomer.org
1	Judith Cox	judith.cox@sakilacustomer.org
2	Sheila Wells	sheila.wells@sakilacustomer.org
3	Erica Matthews	erica.matthews@sakilacustomer.org
4	Heidi Larson	heidi.larson@sakilacustomer.org
5	Penny Neal	penny.neal@sakilacustomer.org
6	Kenneth Gooden	kenneth.gooden@sakilacustomer.org
7	Harry Arce	harry.arce@sakilacustomer.org
8	Nathan Runyon	nathan.runyon@sakilacustomer.org
9	Theodore Culp	theodore.culp@sakilacustomer.org
10	Maurice Crawley	maurice.crawley@sakilacustomer.org
11	Ben Easter	ben.easter@sakilacustomer.org
12	Christian Jung	christian.jung@sakilacustomer.org
13	Jimmie Eggleston	jimmie.eggleston@sakilacustomer.org
14	Terrance Roush	terrance.roush@sakilacustomer.org

4. Вывести все фильмы, выпущенные в 2006 году

```
# выведем наименование, рейтинг и спец.признаки по году выпуска фильмов
query('''
SELECT title, rating, special_features
FROM film
WHERE release_year = 2006;
''')
```

	title	rating	special_features
0	Chamber Italian	NC-17	[Trailers]
1	Grosse Wonderful	R	[Behind the Scenes]
2	Airport Pollock	R	[Trailers]
3	Bright Encounters	PG-13	[Trailers]
4	Academy Dinosaur	PG	[Deleted Scenes, Behind the Scenes]
...	...	...	...
995	Young Language	G	[Trailers, Behind the Scenes]
996	Youth Kick	NC-17	[Trailers, Behind the Scenes]
997	Zhivago Core	NC-17	[Deleted Scenes]
998	Zoolander Fiction	R	[Trailers, Deleted Scenes]
999	Zorro Ark	NC-17	[Trailers, Commentaries, Behind the Scenes]

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