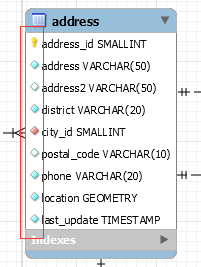
实验一报告

# 回答问题

请一边熟悉sakila数据库，一边回答以下问题：

1. sakila.mwb模型中，表结构里每个字段前面的小标记分别表示什么意思？



|  |  |
| --- | --- |
| 标记 | 意义 |
|  | 主键 |
|  | 不能为空 |
|  | 可以为空 |
|  | 外码 |

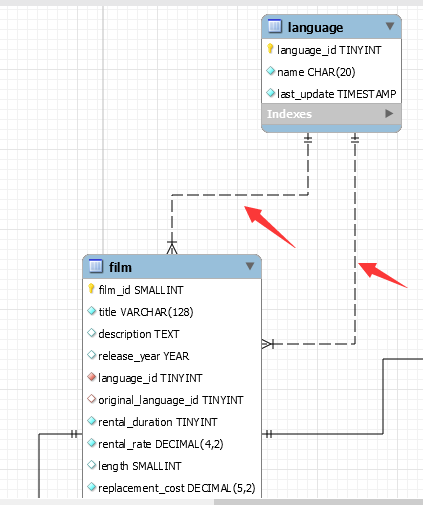
2. 图中哪部分体现影片-演员关系？换句话说，如果要找出演某个影片的演员名字，访问哪几张表可以获得信息？

访问film,film\_actor,actor，通过film表的film\_id可以与film\_actor表进行连接，通过film\_actor的actor\_id与actor连接即可。

3. 如果已知某个顾客姓名，要找到他租借的所有影片名，需要访问哪几张表？

customer,inventory,rental,film四张表

4. 为什么film和language表间会有2条线？



可以通过film表中的language\_id和original\_language\_id都可以访问language表。

# 实验截图

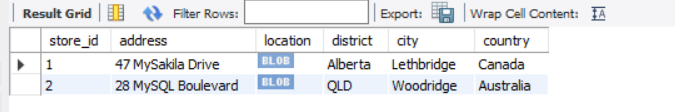
*注意截图清晰，截图时需要体现SQL语句（可复制粘贴）、执行结果、Output窗口*

1. 请列出所有商店的详细地址，显示商店id，商店地址，所在区域，所在城市，所在国家；

SELECT store.store\_id,address.address,address.location,address.district,city.city,country.country

FROM store,address,city,country

WHERE store.address\_id = address.address\_id AND address.city\_id = city.city\_id AND city.country\_id = country.country\_id;



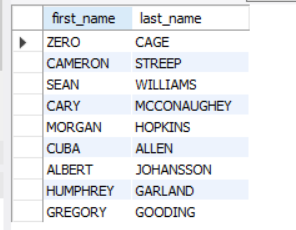


1. 哪些演员出演过影片《WEST LION》？请列出他的姓名；

SELECT actor.first\_name,actor.last\_name

FROM film,film\_actor,actor

WHERE film.film\_id = film\_actor.film\_id AND actor.actor\_id = film\_actor.actor\_id and film.title = 'WEST LION';





1. 找出租DVD花费最高的前3名，请列出他们的first\_name, last\_name和每个人花费的金额；

SELECT first\_name,last\_name,SUM(amount)

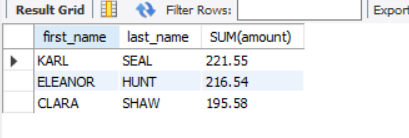
FROM customer,payment

WHERE customer.customer\_id = payment.customer\_id

GROUP BY customer.customer\_id

ORDER BY SUM(amount) DESC

LIMIT 3;





1. 哪个影片获得了总体最高的租金？请列出影片id、影片名、总租金；

SELECT film.film\_id,film.title,sum(payment.amount)

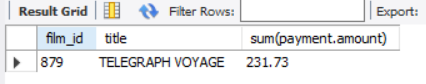
FROM film,inventory,rental,payment

WHERE film.film\_id = inventory.film\_id AND inventory.inventory\_id = rental.inventory\_id AND rental.rental\_id = payment.rental\_id

GROUP BY film.film\_id

ORDER BY sum(payment.amount) DESC

LIMIT 1;





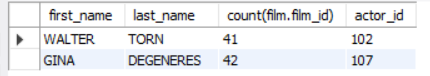
1. 哪个演员出演的电影超过40部？ 请列出演员id、演员名、出演的电影数；

SELECT actor.first\_name,actor.last\_name,count(film.film\_id),actor.actor\_id

FROM actor,film\_actor,film

WHERE actor.actor\_id = film\_actor.actor\_id AND film\_actor.film\_id = film.film\_id

GROUP BY actor.actor\_id HAVING count(film.film\_id) > 40;





1. 请找出没有租借过电影《WEST LION》的顾客姓名；

SELECT customer.first\_name,customer.last\_name

FROM customer

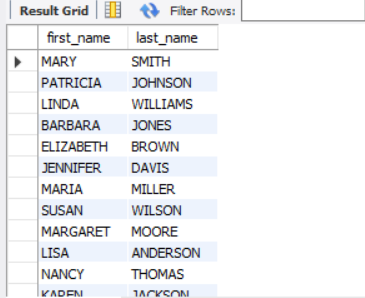
WHERE customer.customer\_id NOT IN

(SELECT c.customer\_id FROM customer c,film,rental,inventory

WHERE c.customer\_id = rental.customer\_id AND rental.inventory\_id = inventory.inventory\_id AND inventory.film\_id = film.film\_id

AND film.title = 'WEST LION'

);





1. 查询演过《FIRE WOLVES》和《JAWBREAKER BROOKLYN》这两部电影的演员，列出其姓名；

SELECT actor.first\_name,actor.last\_name

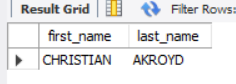
FROM actor,film,film\_actor

WHERE film.film\_id = film\_actor.film\_id AND film\_actor.actor\_id = actor.actor\_id

AND film.title = 'FIRE WOLVES' AND actor.actor\_id in (SELECT actor1.actor\_id FROM film film1,actor actor1,film\_actor film\_actor1

WHERE film1.film\_id = film\_actor1.film\_id AND film\_actor1.actor\_id = actor1.actor\_id AND film1.title = 'JAWBREAKER BROOKLYN'

);





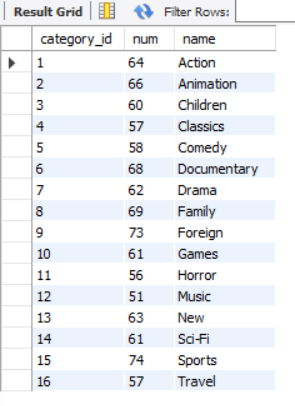
1. 统计每种类型的影片数，显示类型编号、类型名称、该类型影片数；

SELECT category.category\_id,count(category.category\_id) num,category.name

FROM film,film\_category,category

WHERE film.film\_id = film\_category.film\_id AND film\_category.category\_id = category.category\_id

GROUP BY category.category\_id;





1. 有哪些影片是2个商店都有库存的？

SELECT DISTINCT film1.title

FROM film film1,inventory

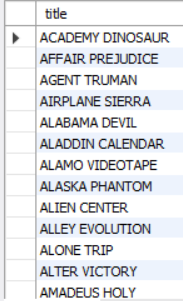
WHERE film1.film\_id = inventory.film\_id AND inventory.store\_id=1 AND inventory.film\_id in (

SELECT inventory1.film\_id

FROM inventory inventory1,film film2

WHERE inventory1.film\_id = film2.film\_id AND inventory1.store\_id=2

);





1. 查询单次租借影片最长时间的3位客户，列出其first\_name、last\_name和当次租借时长；

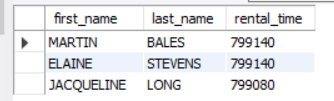
SELECT customer.first\_name,customer.last\_name,unix\_timestamp(rental.return\_date) - unix\_timestamp(rental.rental\_date) rental\_time

FROM customer,rental

WHERE customer.customer\_id = rental.customer\_id

ORDER BY unix\_timestamp(rental.return\_date) - unix\_timestamp(rental.rental\_date) DESC

LIMIT 3;





1. 在customer表中新增一条数据，注意customer表与其他表的关系；

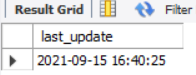
通过查询主键的范围可知customer\_id可设为700不会冲突，根据参照完整性，其外码应选取作为主码所在表的值，store\_id和address\_id可以设置为1,5

INSERT customer VALUES (700,1,'张','三','abc@163.com',5,1,NOW(),NOW());



插入后可以进行一条查询语句

SELECT last\_update FROM customer WHERE customer.first\_name = '张';

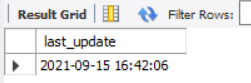


1. 修改刚才在customer表中新增的那条数据；

UPDATE customer SET last\_update=NOW() WHERE customer\_id=700;



再次执行11所述的查询语句

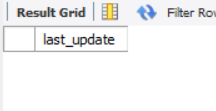


1. 删除第11步新增的那条数据。

DELETE FROM customer WHERE customer\_id=700;



再次执行11所述的查询语句



# 思考题

1. 如果insert一条数据到actor表，但actor\_id和已有数据重复，会发生什么？同学们请自己尝试一下。



会报错，因为主键不能重复。

1. insert语句还用了一个函数NOW()，是做什么的呢？

获取当前系统时间作为插入该数据的更新时间。