SEQUEL PREMIERE FILMS

ADVANCED SQL FINAL PROJECT

Instructions:

Welcome to the Advanced SQL Course final project!

This time you will be working in the movie industry! Sequel Premiere Films specializes in reboots, remakes, and...unsurprisingly...sequels. They need your help to manage their database. You will be working with the existing Sakila sample database in MySQL Workbench, so there is no need to upload a new database schema.

See you on the silver screen!

Somewhere in Hollywood...

Later on the 112th floor...

Hey kid! Nice to meet you! I'm Dante Database and I'm one of the executives at Sequel Premiere Films.

Our regular data professional is in Alaska on the set of our next movie. Unfortunately, they have very limited internet access and haven't been able to access our database for several weeks.

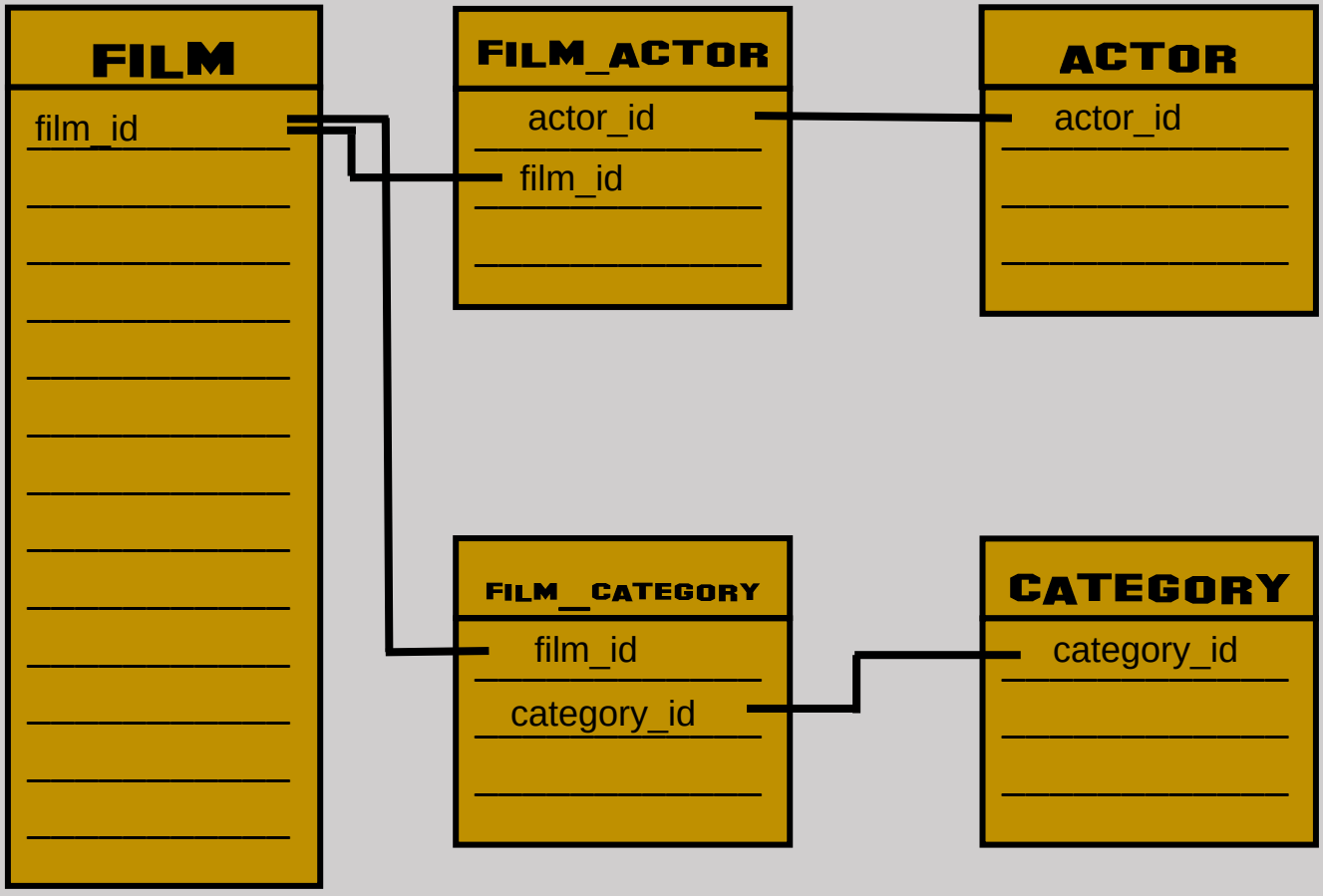
I'm Dalia Database. I'm the other executive at Sequel Premiere Films. We need your help to improve the ways we store and manage data. Think you can handle it?

Your first task concerns database schemas. The last data person started it but left before it could be complete.

TASK 1: DATABASE SCHEMAS

PART 1:

Below is a small portion of the database schema for Sakila. Each box represents a table, and each line represents a column. The lines connecting the tables show how the tables are related. Record the missing table names and identify the relationships between tables. Make sure that the lines connect the correct two columns.



PART 2:

List any and all primary and foreign keys for the five tables included in the diagram.

PRIMARY KEYS	FOREIGN KEYS
film_id	title
actor_id	language_id
category_id	original_language_id
	last_name

Sharks on a Bus

By Kyle

1 INT. Nick's Office – Day

Nick is sitting as his desk on the phone. Jack is looking out the window while Nick finishes his conversation.

NICK
That call was from FBI headquarters. It's not good, Jack.

Jack rolls his eyes.

JACK
What is it this time?

NICK
Sharks. Great White Sharks. They have hijacked a bus full of senior citizens.

Jack
Again? They won't get away with it this time.

TASK 2: NORMALIZATION

PART I:

Below is a section of a table stored in the Sakila database showing information about a specific film. The table has not been normalized. Using the premade tables on the next page, normalize the table into 3NF form. You may also choose to create your own tables if you would like to normalize the table a different way.

ID	Title	Length	Genre	Rating	Features
1	ACADEMY DINOSAUR	86	Fantasy	PG	Deleted Scenes, Behind the Scenes
2	ACE GOLDFINGER	48	Action	G	Trailers, Deleted Scenes
3	ADAPTATION HOLES	50	Fantasy	NC-17	Trailers, Deleted Scenes
4	AFFAIR PREJUDICE	117	Action	G	Commentaries, Behind the Scenes
5	AFRICAN EGG	130	Drama	G	Deleted Scenes
6	AFRICAN EGG	130	Drama	G	Deleted Scenes
7	AIRPLANE SIERRA	62	Horror	PG-13	Trailers, Deleted Scenes
8	AIPORT POLLICK	54	Drama	R	Trailers
9	ALABAMA DEVIL	114	Action	PG-13	Trailers, Deleted Scenes
10	ALADDIN CALENDAR	63	Romance	NC-17	Trailers, Deleted Scenes

Name at least 2 issues with how the table is currently organized.

1. multiple values in one cell (under Features column)
2. Same row repeated twice with different ID (rows 5 and 6)

TASK 2: NORMALIZATION

Features	
Feature ID	Feature
1	Deleted Scenes
2	Trailers
3	Commentaries
4	Behind the Scenes

Genre	
Genre ID	Genre
1	Fantasy
2	Action
3	Drama
4	Horror
5	Romance

Films [redacted]					
ID	Title	Length	Genre	Rating	Features
1	ACADEMY DINOSAUR	86	1	PG	1
1	ACADEMY DINOSAUR	86	1	PG	4
2	ACE GOLDFINGER	48	2	G	1
2	ACE GOLDFINGER	48	2	G	2
3	ADAPTATION HOLES	50	1	NC-17	1
3	ADAPTATION HOLES	50	1	NC-17	2
4	AFFAIR PREJUDICE	117	2	G	3
4	AFFAIR PREJUDICE	117	2	G	4
5	AFRICAN EGG	130	3	G	1
6	AIRPLANE SIERRA	62	4	PG-13	1
6	AIRPLANE SIERRA	62	4	PG-13	2
7	AIPORT POLLICK	54	3	R	2
8	ALABAMA DEVIL	114	2	PG-13	1
8	ALABAMA DEVIL	114	2	PG-13	2
9	ALADDIN CALENDAR	63	5	NC-17	1
9	ALADDIN CALENDAR	63	5	NC-17	2

TASK 3: COMPLEX VIEWS

I heard Kyle tried to get you to read his screenplay. I tried to tell him that no one will believe that a shark can drive a bus, but he won't listen. Anyways. Choosing the next movie to remake can be difficult. If a movie flops, then we lose a lot of money. Can you make us a view to help with that these decisions? Thank you!

PART I:

Sequel Premier Films specializes is in sequels and remakes (surprised?). One of the ways we decide which film to remake is by looking at which actors stared in the original. If an actor is still a household name many years later, the film is more likely to be a success. Create a view that contains the following information:

- Film ID
- Film Title
- Film Description
- Film Category
- Actor First Name
- Actor Last Name

Copy the text for your view into the box below.


```
CREATE VIEW Actor_Info AS
Select f.film_id as 'Film ID', f.title as 'Film Title', f.description as 'Film Description', c.name as 'Film Category',
a.first_name as 'Actor First Name', a.last_name as 'Actor Last Name'
From sakila.film as f
Join sakila.film_actor as fa on fa.film_id = f.film_id
Join sakila.actor as a on a.actor_id = fa.actor_id
Join sakila.film_category as fc on fc.film_id = f.film_id
Join sakila.category as c on c.category_id = fc.category_id
;
```

Task 4: Advanced Stored Procedures

Darla and I sometimes disagree on how to pick the next movie to remake. I have my own idea to make this easier for both of us, but I need your help.

Part I:

Create a stored procedure where users can input a keyword ('pirates', 'cowboys', 'space', 'romance', etc.) and get results of all movies whose description contains that word.

For a challenge, order the results from most to least relevant (however, that is not required).

Copy the text for the stored procedure in the box below.


```
Delimiter $$
Create Procedure Get_Movie (in keyword varchar(255))
Begin
 Select title
   From sakila.film
   Where description like keyword;
End$$
Delimiter ;
```

```
call get_movie('%space%');
```

LATER THAT NIGHT...

THE FOLLOWING MORNING...

TO: [ALL EMPLOYEES]

FROM: executive@sequelpremiere.com

SUBJECT: Security Alert

REPLY REPLY ALL

Greetings,

This email is regarding the security alert we received last night.

As many of you heard, Kyle the PA has accepted an offer from a competing studio after we rejected his latest screenplay. We have been given information from an inside source that Kyle is actively trying to break into the database to figure out which movie is going to be made next. We don't have proof...yet.

We are taking a number of steps to improve our cyber security to prevent another attack.

Stay safe!

Darla and Dante

TASK 5: ENCRYPTION

PART 1:

To increase security, we are going to create a new table to keep track of who has access to the database. Run the MySQL script below to create the table.

```
CREATE table employee_records
        (employee_id smallint NOT NULL AUTO_INCREMENT,
        f_name VARCHAR(20) NOT NULL,
          l_name VARCHAR(30) NOT NULL,
        job_title VARCHAR(20),
        username VARCHAR(20),
         password BINARY,
        PRIMARY KEY(employee_ID));
```

PART 2:

You will need to write two insert statements for Dalia and Dante. Remember to use the SHA1(string) to encrypt the password. After the insert statements are complete, copy the code into the box below.

employee_id	f_name	l_name	job_title	username	password
1	Dalia	Database	Executive	dalia_d	movielover1
2	Dante	Database	Executive	dante_d	Bossman99

```
Insert into employee_records (f_name, l_name, job_title, username, password)
Values
('Dalia', 'Database', 'Executive', 'dalia_d', SHA2('movielover1', 256)),
('Dante', 'Database', 'Executive', 'dante_d', SHA2('Bossman99', 256))
;
```

Wow! Thank you so much for helping get everything in order. You've gone above and beyond.

We're promoting you to an executive data manager position and would like you to work on the set of our next movie.

Doctor Kangaroo 2 begins filming next month in the Australian Outback! Unfortunately, the filming location has very limited internet access, so we will need to hire a new data analyst.

We have a few things to do before you go to ensure a smooth transition.

TASK 6: DOCUMENTATION

PART I:

Before you leave to go film Doctor Kangaroo 2 in the Australian Outback, we want to make sure that there is a smooth transition between you and the new data analyst who is taking your place.

The new data analyst has already received the database schema.

Add comments to both the view and stored procedure that you wrote earlier in the project. If you commented your code as you wrote it, then this will be a piece of cake!

Copy the code and your comments from the view and stored procedure in the boxes below.

VIEW:

```
CREATE VIEW Actor_Info AS  /*Creating a view called Actor_Info */
/*select the required columns and rename them to make things more clear in the new View table*/
Select f.film_id as 'Film ID', f.title as 'Film Title', f.description as 'Film Description',
c.name as 'Film Category', a.first_name as 'Actor First Name', a.last_name as 'Actor Last Name'
From sakila.film as f
/*We need date from Film, Category and Actor Tables, therefore we need to link these three tables using
two junction tables (film_actor and film_category)*/
Join sakila.film_actor as fa
 on fa.film_id = f.film_id
Join sakila.actor as a
 on a.actor_id = fa.actor_id
Join sakila.film_category as fc
 on fc.film_id = f.film_id
Join sakila.category as c
 on c.category_id = fc.category_id
;
```

STORED PROCEDURE:

```
Delimiter $$
/*create a procedure called Get_Movie where users can input a keyword ('pirates',
'space', 'romance', etc.) and get results of all movies whose description contains that word*/
Create Procedure Get_Movie (in keyword varchar(255))
Begin
 Select title
    From sakila.film
    Where description like keyword;
End$$
Delimiter ;
/*When calling the procedure you need to write the keyword between %,
For example, when using 'space' as keyword do the following: call get_movie('%space%')*/
```

EPILOGUE...

VOLUME 34 ISSUE 29

GENERIC HOLLYWOOD NEWS

DOCTOR KANGAROO 2 IS A SURPRISE HIT

Sequel Premiere Films has done it again! Many remember the original film Doctor Kangaroo which followed a young Kangaroo on his journey through medical school. In this next installment, Doctor Kangaroo is at risk of losing her medical license in a malpractice case… [continued on page 2]

SHARKS ON A BUS LOSES MILLIONS

Can Sharks drive a bus? No, they cannot, but this film seems to think they can. In this wildly ludicrous movie, a group of great white sharks end up taking a group of senior citizens hostage. At an almost 4 hour runtime, this film is way too long. This studio could learn a thing or two from Sequel Premiere Films.

STUDIO EMPLOYEE UNDER INVESTIGATION FOR CYBERATTACK

A studio employee is under investigation for a cyber attack against a competing movie studio. Authorities allege that the employee tried to regain access to sensitive information from his former employer.