GROUP NUMBER: 37

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GRADED HOMEWORK NUMBER: 2

COURSE: CS/DSA-4513 - DATABASE

MANAGEMENT

SECTION: 001

SEMESTER: FALL 2023

INSTRUCTOR: LE GRUENWALD

SCORE

Group Questions for Problem 2 (GQ3-GQ5):

Given a relational database that consists of the following relation schemas:

Performer (pid: integer, pname: string, years_of_experience: integer, age: integer)

Movie (mname: string, genre: string, minutes: integer, release_year: integer, did: integer)

Acted (pid: integer, mname: string)

Director (did: integer, dname: string, earnings: real)

GQ3: Use SQL statements to create the relations for the database

```
Database: cs-dsa-4513-sql-db
▶ Run ☐ Cancel & Disconnect ② Change
      DROP TABLE IF EXISTS Performer;
  1
  2
      DROP TABLE IF EXISTS Director;
      DROP TABLE IF EXISTS Acted;
     DROP TABLE IF EXISTS Movie;
  4
  5
  6
     CREATE TABLE Performer(
  7
               pid INT,
  8
               pname VARCHAR(64),
  9
               years_of_experience INT,
 10
               age INT,
               PRIMARY KEY (pid)
 11
 12
       CREATE TABLE Director(
 13
 14
           did INT,
           dname VARCHAR(64),
 15
 16
           earnings REAL,
 17
           PRIMARY KEY (did)
 18
 19
 20
     CREATE TABLE Movie(
 21
           mname VARCHAR(64),
 22
           genre VARCHAR(20),
 23
           minutes INT,
 24
           release_year INT,
 25
           did INT,
 26
           PRIMARY KEY (mname),
 27
           FOREIGN KEY (did) REFERENCES Director
 28
       CREATE TABLE Acted(
 29
 30
           pid INT,
 31
           mname VARCHAR(64),
           PRIMARY KEY (pid, mname),
 32
 33
           FOREIGN KEY (pid) REFERENCES Performer,
           FOREIGN KEY (mname) REFERENCES Movie
 34
 35
```

Messages

20:43:57

Started executing query at Line 1

Commands completed successfully. Total execution time: 00:00:00.141

GQ4: Populate the relations using SQL statements with the given data posted on Canvas.

```
Database: cs-dsa-4513-sql-db
▶ Run □ Cancel & Disconnect ® Change
                                                                          유 Estimated Plan 말 Enable Actual Plan V Parse
 37
       insert into Performer values
 38
                   (1, 'Morgan', 48, 67),
                   (2, 'Curz', 14, 28),
 39
                   (3, 'Adams', 1, 16),
 40
 41
                   (4, 'Perry', 18, 32),
 42
                   (5, 'Hanks', 36, 55),
                   (6, 'Hanks', 15, 24),
 43
                   (7, 'Lewis', 13, 32)
 44
 45
 46
       insert into Director values
 47
                   (1, 'Parker', 580000),
                   (2, 'Black', 2500000),
 48
                   (3, 'Black', 30000),
 49
 50
                   (4, 'Stone', 820000)
 51
 52
       insert into Movie values
 53
           ('Jurassic Park', 'Action', 125, 1984, 2),
 54
            ('Shawshank Redemption', 'Drama', 105, 2001, 2),
           ('Fight Club', 'Drama', 144, 2015, 2),
 55
 56
           ('The Departed', 'Drama', 130, 1969, 3),
           ('Back to the Future', 'Comedy', 89, 2008, 3),
 57
 58
           ('The Lion King', 'Animation', 97, 1990, 1),
 59
           ('Alien', 'Sci-Fi', 115, 2006, 3),
           ('Toy Story', 'Animation', 104, 1978, 1),
 60
           ('Scarface', 'Drama', 124, 2003, 1),
 61
           ('Up', 'Animation', 111, 1999, 4);
 62
 63
 64
       INSERT INTO Acted (pid, mname)
 65
 66
       VALUES
           (4, 'Fight Club'),
 67
           (5, 'Fight Club'),
 68
           (6, 'Shawshank Redemption'),
 69
           (4, 'Up'),
 70
           (5, 'Shawshank Redemption'),
 71
 72
           (1, 'The Departed'),
           (2, 'Fight Club'),
 73
 74
           (3, 'Fight Club'),
 75
           (4, 'Alien');
```

20:46:51

Started executing query at Line 1 (7 rows affected)

(4 rows affected) (10 rows affected) (9 rows affected)

Total execution time: 00:00:00.113

GQ5: Implement the SQL queries for the following

1. Display all the data you store in the database to verify that you have populated the relations correctly.

SELECT * FROM Performer

Output:

Results Messages									
	pid	~	pname	~	years_of_experience	~	age	~	
1	1		Morgan		48		67		
2	2		Curz		14		28		
3	3		Adams		1		16		
4	4		Perry		18		32		
5	5		Hanks		36		55		
6	6		Hanks		15		24		
7	7		Lewis		13		32		

SELECT * FROM Director

Results		Mes	sages			
	did	~	dname	~	earnings	~
1	1		Parker		580000	
2	2		Black		2500000	
3	3		Black		30000	
4	4		Stone		820000	

SELECT * FROM Movie

Output:

Res	Results Messages									
	mname	genre 🗸	minutes 🗸	release_year 🗸	did 🗸					
1	Alien	Sci-Fi	115	2006	3					
2	Back to the Future	Comedy	89	2008	3					
3	Fight Club	Drama	144	2015	2					
4	Jurassic Park	Action	125	1984	2					
5	Scarface	Drama	124	2003	1					
6	Shawshank Redemption	Drama	105	2001	2					
7	The Departed	Drama	130	1969	3					
8	The Lion King	Animation	97	1990	1					
9	Toy Story	Animation	104	1978	1					
10	Up	Animation	111	1999	4					

SELECT * FROM Acted

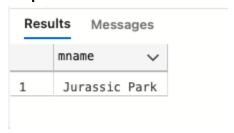
Output:

Resu	ılts	Mes	sages
	pid	~	mname ~
1	1		The Departed
2	2		Fight Club
3	3		Fight Club
4	4		Alien
5	4		Fight Club
6	4		Up
7	5		Fight Club
8	5		Shawshank Redemption
9	6		Shawshank Redemption

2. Find the names of all Action movies.

select mname from Movie where genre='Action'

Output:



3. For each genre, display the genre and the average length (minutes) of movies for that genre.

```
select genre, avg(minutes) as 'average length (minutes)' from Movie group by genre
```

Output:

Results Messages									
	genre 🗸	average length (minutes) 🗸							
1	Action	125							
2	Animation	104							
3	Comedy	89							
4	Drama	125							
5	Sci-Fi	115							

4. Find the names of all performers with at least 20 years of experience who have acted in a movie directed by Black.

```
select distinct pname from Performer where years_of_experience >= 20 and pid in

(select pid from Acted where mname in

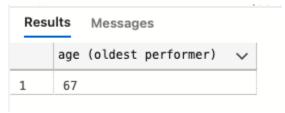
(select mname from Movie where did in

(select did from Director where dname = 'Black')))
```



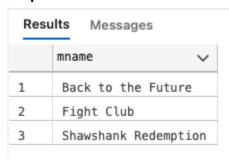
5. Find the age of the oldest performer who is either named "Hanks" or has acted in a movie named "The Departed

Output:

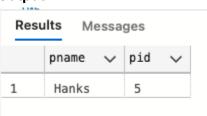


6. Find the names of all movies that are either a Comedy or have had more than one performer act in them.

Output:



7. Find the names and pid's of all performers who have acted in at least two movies that have the same genre



8. Decrease the earnings of all directors who directed "Up" by 10%.

Output:

Results		Mes	sages			
	did	~	dname	~	earnings	~
1	1		Parker		580000	
2	2		Black		2500000	
3	3		Black		30000	
4	4		Stone		664200	

9. Delete all movies released in the 70's and 80's (1970 <= release_year <= 1989).

Results Messages

	pid	~	mname
1	1		The Departed
2	2		Fight Club
3	3		Fight Club
4	4		Alien
5	4		Fight Club
6	4		Up
7	5		Fight Club
8	5		Shawshank Redemption
9	6		Shawshank Redemption

Results grid

	mname ~	genre 🗸	minutes 🗸	release_year 🗸	did 🗸
1	Alien	Sci-Fi	115	2006	3
2	Back to the Future	Comedy	89	2008	3
3	Fight Club	Drama	144	2015	2
4	Scarface	Drama	124	2003	1
5	Shawshank Redemption	Drama	105	2001	2
6	The Departed	Drama	130	1969	3
7	The Lion King	Animation	97	1990	1
8	Up	Animation	111	1999	4