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675-01/775-01 (Friday section)

Course project phase 2 – SQL statements

Prepared by:

Amelia Rawlings (amelia.rawlings@gmail.com),
Benjamin Mayer (bmayer@mail.sfsu.edu),
Ilya Kopyl (ikopyl@mail.sfsu.edu)

```
CREATE TABLE FilmProductionStudio (
       StudioID INTEGER,
       Name VARCHAR(255) NOT NULL,
       PRIMARY KEY (StudioID));
CREATE TABLE FilmIndustryWorker (
       SSN CHAR(11),
       FirstName VARCHAR(255) NOT NULL,
       LastName VARCHAR(255) NOT NULL.
       Gender VARCHAR(10),
       MemberOfScreenActorsGuild CHAR(1) NOT NULL,
       PRIMARY KEY (SSN));
CREATE TABLE HasContract (
       ContractID INTEGER,
       StudioID INTEGER NOT NULL,
       SSN CHAR(11) NOT NULL,
       Compensation DOUBLE NOT NULL,
       DateSigned DATETIME NOT NULL.
       PRIMARY KEY (ContractID),
       FOREIGN KEY (StudioID) REFERENCES FilmProductionStudio,
       FOREIGN KEY (SSN) REFERENCES FilmIndustryWorker
       ON DELETE SET NULL);
CREATE TABLE Movie (
       MovieID INTEGER.
       StudioID INTEGER NOT NULL,
       DirectorSSN CHAR(11) NOT NULL.
       Title VARCHAR(255) NOT NULL,
       Budget DOUBLE.
       PRIMARY KEY (MovieID),
       FOREIGN KEY (StudioID) REFERENCES FilmProductionStudio,
       FOREIGN KEY (DirectorSSN) REFERENCES FilmIndustryWorker
       ON DELETE SET NULL);
CREATE TABLE Actor (
       SSN CHAR(11) NOT NULL.
       MovieID INTEGER NOT NULL,
       PRIMARY KEY (SSN, MovieID),
       FOREIGN KEY (SSN) REFERENCES FilmIndustryWorker,
       FOREIGN KEY (MovieID) REFERENCES Movie
       ON DELETE CASCADE);
CREATE TABLE Location (
       LocationID INTEGER,
       Name VARCHAR(255) NOT NULL,
       City VARCHAR(255),
       State VARCHAR(255),
       Country VARCHAR(255),
       PRIMARY KEY (LocationID));
```

StudioID	Name	
10001	Columbia Pictures	
10002	Miramax Films	
10003	The Walt Disney Company	
10004	Warner Bros.	
10005	Paramount Pictures	
10006	Universal Pictures	
10007	20th Century Fox	
10008	Lionsgate	
10009	DreamWork Studios	
10010	Metro-Goldwyn-Mayer	
10011	Sony Pictures	
10012	LucasFilm	
10013	Marvel Studios	

```
/* 02 - inserting FilmIndustryWorker records here */
/*____*/
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1001', 'Stanley', 'Kubrick', 'Male', 0);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1002', 'Quentin', 'Tarantino', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1003', 'Peter', 'Sellers', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1004', 'Sterling', 'Hayden', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1005', 'John', 'Travolta', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1006', 'Uma', 'Thurman', 'Female', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1007', 'Bruce', 'Willis', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1008', 'Samuel L', 'Jackson', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1009', 'Amanda', 'Plummer', 'Female', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1010', 'Harvey', 'Keitel', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1011', 'Tim', 'Roth', 'Male', 1);
INSERT INTO FilmIndustryWorker(SSN, FirstName, LastName, Gender,
MemberOfScreenActorsGuild) VALUES('123-45-1012', 'Christopher', 'Walken', 'Male', 1);
```

SSN	FirstName	LastName	Gender	MemberOfScreenActorsGuild
123-45-1001	Stanley	Kubrick	Male	0
123-45-1002	Quentin	Tarantino	Male	1
123-45-1003	Peter	Sellers	Male	1
123-45-1004	Sterling	Hayden	Male	1
123-45-1005	John	Travolta	Male	1
123-45-1006	Uma	Thurman	Female	1
123-45-1007	Bruce	Willis	Male	1
123-45-1008	Samuel L	Jackson	Male	1
123-45-1009	Amanda	Plummer	Female	1
123-45-1010	Harvey	Keitel	Male	1
123-45-1011	Tim	Roth	Male	1
123-45-1012	Christopher	Walken	Male	1

```
/*_____*/
/* 03 - insertina HasContract records here */
/*_____*/
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20001, 10001, '123-45-1001', 3000000.00, '1962-07-31');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20002, 10002, '123-45-1002', 1000000.00, '1993-05-20');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20003, 10001, '123-45-1003', 100000.00, '1962-08-15');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20004, 10001, '123-45-1004', 100000.00, '1962-08-15');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20005, 10002, '123-45-1005', 250000.00, '1993-06-15');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20006, 10002, '123-45-1006', 250000.00, '1993-06-15');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20007, 10002, '123-45-1007', 250000.00, '1993-06-15');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20008, 10002, '123-45-1008', 250000.00, '1993-06-15');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20009, 10002, '123-45-1009', 150000.00, '1993-06-17');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20010, 10002, '123-45-1010', 150000.00, '1993-06-17');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20011, 10002, '123-45-1011', 50000.00, '1993-06-17');
INSERT INTO HasContract(ContractID, StudioID, SSN, Compensation, DateSigned)
VALUES(20012, 10002, '123-45-1012', 50000.00, '1993-06-17');
```

ContractID	StudioID	SSN	Compensation	DateSigned
20001	10001	123-45-1001	3000000	7/31/62
20002	10002	123-45-1002	1000000	5/20/93
20003	10001	123-45-1003	100000	8/15/62
20004	10001	123-45-1004	100000	8/15/62
20005	10002	123-45-1005	250000	6/15/93
20006	10002	123-45-1006	250000	6/15/93
20007	10002	123-45-1007	250000	6/15/93
20008	10002	123-45-1008	250000	6/15/93
20009	10002	123-45-1009	150000	6/17/93
20010	10002	123-45-1010	150000	6/17/93
20011	10002	123-45-1011	50000	6/17/93
20012	10002	123-45-1012	50000	6/17/93

MovieID	StudioID	DirectorSSN	Title	Budget
30001	10001	123-45- 1001	Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb	1800000
30002	10002	123-45- 1002	Pulp Fiction	8500000
30003	10002	123-45- 1002	Reservoir Dogs	1500000
30004	10001	123-45- 1001	2001 - A Space Odyssey	10500000

SSN	MovieID
123-45-1002	30002
123-45-1005	30002
123-45-1006	30002
123-45-1007	30002
123-45-1008	30002
123-45-1003	30001
123-45-1004	30001

LocationID	Name	City	State	Country
60001	Shepperton Studios	Shepperton	Surrey	UK
60002	Culver City Warehouse	Culver City	California	USA
60003	Hawthorne Grill	Hawthorne	California	USA

```
/*_____*/
/* 07 - insertina ShootinaSchedule records here */
                                       ----*/
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70001, 30001,
60001, '1962/10/13');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70002, 30001,
60001, '1962/10/14');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70003, 30001,
60001, '1962/10/15');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70004, 30001,
60001, '1962/10/16');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70005, 30001,
60001, '1962/10/17');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70006, 30002,
60002, '1993/09/20');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70007, 30002,
60002, '1993/09/21');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70008, 30002,
60002, '1993/09/22');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70009, 30002,
60002, '1993/09/23');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70010, 30002,
60002, '1993/09/24');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70011, 30002,
60002, '1993/09/25');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70012, 30002,
60003, '1993/11/01');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70013, 30002,
60003, '1993/11/02');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70014, 30002,
60003, '1993/11/03');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70015, 30002,
60003, '1993/11/04');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70016, 30002,
60003, '1993/11/05');
INSERT INTO ShootingSchedule(ScheduleID, MovieID, LocationID, Date) VALUES(70017, 30002,
60003, '1993/11/06');
```

ScheduleID	MovieID	LocationID	Date
70001	30001	60001	10/13/62
70002	30001	60001	10/14/62
70003	30001	60001	10/15/62
70004	30001	60001	10/16/62
70005	30001	60001	10/17/62
70006	30002	60002	9/20/93
70007	30002	60002	9/21/93
70008	30002	60002	9/22/93
70009	30002	60002	9/23/93
70010	30002	60002	9/24/93
70011	30002	60002	9/25/93
70012	30002	60003	11/1/93
70013	30002	60003	11/2/93
70014	30002	60003	11/3/93
70015	30002	60003	11/4/93
70016	30002	60003	11/5/93
70017	30002	60003	11/6/93

Title		
Pulp Fiction		

```
/* creating INDEX 1, in Oracle DB format: */
CREATE INDEX IndexMovieLocation
ON ShootingSchedule
WITH STRUCTURE = BTREE
INDEX = (MovieID, LocationID);
/* creating INDEX 1, in SQLite 3 format, equivalent to statement above: */
CREATE INDEX IndexMovieLocation
ON ShootingSchedule (MovieID, LocationID);
/* INDEX 1 TEST */
EXPLAIN QUERY PLAN SELECT M. Title
FROM Movie M
WHERE M.MovieID IN (
       SELECT S.MovieID
       FROM ShootingSchedule S
       GROUP BY S.MovieID
       HAVING COUNT(DISTINCT LocationID) >= 2);
```

selectid	order	from	detail
0	0	0	SEARCH TABLE Movie AS M USING INTEGER PRIMARY KEY (rowid=?)
0	0	0	EXECUTE LIST SUBQUERY 1
1	0	0	SCAN TABLE ShootingSchedule AS S USING COVERING INDEX IndexMovieLocation

```
/* query02 - Find for how many days each movie was shot at each location */
SELECT M.Title AS 'Movie Title', L.Name AS 'Shooting Location', COUNT(DISTINCT S.Date) AS
'Days Shot'
FROM Movie M, Location L, ShootingSchedule S
WHERE M.MovieID = S.MovieID
   AND L.LocationID = S.LocationID
GROUP BY M.Title, L.Name;
```

Movie Title	Shooting Location	Days Shot
Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb	Shepperton Studios	5
Pulp Fiction	Culver City Warehouse	6
Pulp Fiction	Hawthorne Grill	6

Name of Production
Studio
The Walt Disney Company
Warner Bros.
Paramount Pictures
Universal Pictures
20th Century Fox
Lionsgate
DreamWork Studios
Metro-Goldwyn-Mayer
Sony Pictures
LucasFilm
Marvel Studios

```
/* query04 - Find Director's name and name of the movie with budget > $2 Million */
SELECT M.Title, FIW.FirstName, FIW.LastName
FROM Movie M, FilmIndustryWorker FIW
WHERE M.DirectorSSN = FIW.SSN
   AND M.budget > 2000000;
```

Title	FirstName	LastName
Pulp Fiction	Quentin	Tarantino
2001 - A Space Odyssey	Stanley	Kubrick

Query result:

FirstName	LastName
Stanley	Kubrick

FirstName	LastName	
Stanley	Kubrick	

```
/* query06 - Calculate a compensation of all actors per each movie */
SELECT M.Title, SUM(H.Compensation) AS 'Total Actors Compensation'
FROM HasContract H, Actor A, Movie M
WHERE H.SSN = A.SSN
   AND A.MovieID = M.MovieID
GROUP BY M.Title;
```

Title	Total Actors Compensation
Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb	200000
Pulp Fiction	2000000

```
/* creating INDEX 2 in Oracle DB format: */
CREATE INDEX WorkersCompensation
On HasContract
WITH STRUCTURE = BTREE
INDEX = (MovieID, LocationID);

/* creating INDEX 2 in SQLite 3 format, equivalent to the statement above: */
CREATE INDEX WorkersCompensation
On HasContract (SSN, Compensation);

/* INDEX 2 TEST */
EXPLAIN QUERY PLAN SELECT M.Title, SUM(H.Compensation) AS 'Total Actors Compensation'
FROM HasContract H, Actor A, Movie M
WHERE H.SSN = A.SSN
   AND A.MovieID = M.MovieID
GROUP BY M.Title;
```

selectid	order	from	detail
0	0	1	SCAN TABLE Actor AS A
0	1	2	SEARCH TABLE Movie AS M USING INTEGER PRIMARY KEY (rowid=?)
0	2	0	SEARCH TABLE HasContract AS H USING COVERING INDEX WorkersCompensation (SSN=?)
0	0	0	USE TEMP B-TREE FOR GROUP BY

FirstName	LastName	Compensation
John	Travolta	250000
Uma	Thurman	250000
Bruce	Willis	250000
Samuel L	Jackson	250000

FirstName	LastName	Compensation
John	Travolta	250000
Uma	Thurman	250000
Bruce	Willis	250000
Samuel L	Jackson	250000

FirstName	LastName	Compensation
Stanley	Kubrick	3000000

FirstName	LastName	Compensation
Stanley	Kubrick	3000000