

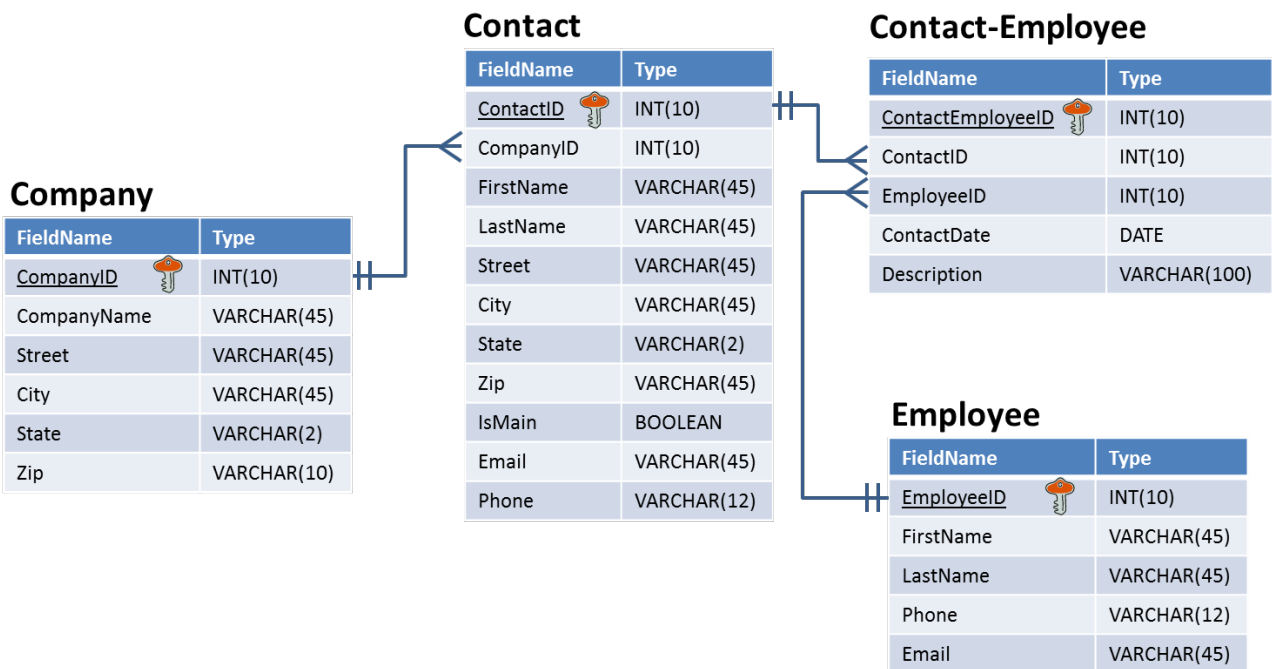
Practice for SQL

Part 1: SQL In-Putting Data into the Data Base

(You don't need to do this in SQL Workbench).

Consider the following schema for a consulting company named MarketCo. The data base helps track the communication between employees of the MarketCo and the contact person of their clients (company). Here is some information that will help you:

- The schema (database) name is **wsDB**;
- The **Company** table contains companies that are clients of the MarketCo.;
- The **Contact** table contains the information of the contact person in client companies;
- The **Employee** table contains the information of the employees working in MarketCo;
- The **Contact-Employee** table contains the contact details between the employee and the contact person of the client company.



Some basic SQL syntax to get you started:

- To create a new table (example with two columns and a foreign key):

```
CREATE TABLE schema_name.table_name (  
  columnName1 datatype [NULL][NOT NULL],  
  columnName2 datatype [NULL][NOT NULL],  
  PRIMARY KEY (KeyName),  
  FOREIGN KEY (ForeignKeyName) REFERENCES reference_table_name(ReferenceKeyName));
```

- To drop a table:
DROP TABLE schema_name.table_name;
- To add a column to the table:
ALTER TABLE schema_name.table_name
ADD COLUMN column_name datatype [NULL][NOT NULL];
- To remove a column from the table:
ALTER TABLE schema_name.table_name
DROP COLUMN column_name;
- To change a column in the table:
ALTER TABLE schema_name.table_name
CHANGE COLUMN old_column_name new_column_name datatype [NULL][NOT NULL];
- To insert a record into a table:
INSERT INTO schema_name.table_name (columnName1, columnName2, columnName3)
VALUES (value1, value2, value3);
- To change data in a row:
UPDATE schema_name.table_name SET columnName1=value1, columnName2=value2
WHERE condition;
- To delete a row from a table:
DELETE FROM schema_name.table_name WHERE condition;

Write the SQL statement (just one for each question) that performs the following tasks.

1). Create the Company table using SQL.

```
CREATE TABLE wsDB.Company (
  CompanyID INT(10) NOT NULL,
  CompanyName VARCHAR(45) NULL,
  Street VARCHAR(45) NULL,
  City VARCHAR(45) NULL,
  State VARCHAR(2) NULL,
  Zip VARCHAR(10) NULL,
  PRIMARY KEY (CompanyID));
```

2). Now we think 45 characters for City is not necessary. Let's change it to 15 characters.

```
ALTER TABLE wsDB.Company
CHANGE COLUMN City
City VARCHAR(15);
```

3). Let's add two companies to the table:

CompanyID	CompanyName	Street	City	State	Zip
101	Comcast	1701 JFK Blvd.	Philadelphia	PA	19103
102	Verizon	140 West St.	New York	NY	10007

```
INSERT INTO wsDB.Company  
(CompanyID, CompanyName, Street, City, State, Zip)  
VALUES (101,'Comcast','1701 JFK Blvd.','Philadelphia','PA','19103');
```

```
INSERT INTO wsDB.Company  
(CompanyID, CompanyName, Street, City, State, Zip)  
VALUES (102,'Verizon','140 West St.','New York','NY','10007');
```

4). Now let's change the CompanyName of Verizon to Verizon Communications and the Zip code to 10007-1111:

```
UPDATE wsDB.Company  
SET CompanyName='Verizon Communications', Zip='10007-1111'  
WHERE CompanyID=102;
```

5). You forgot to add the description column in **Contact-Employee** table. Please add this column.

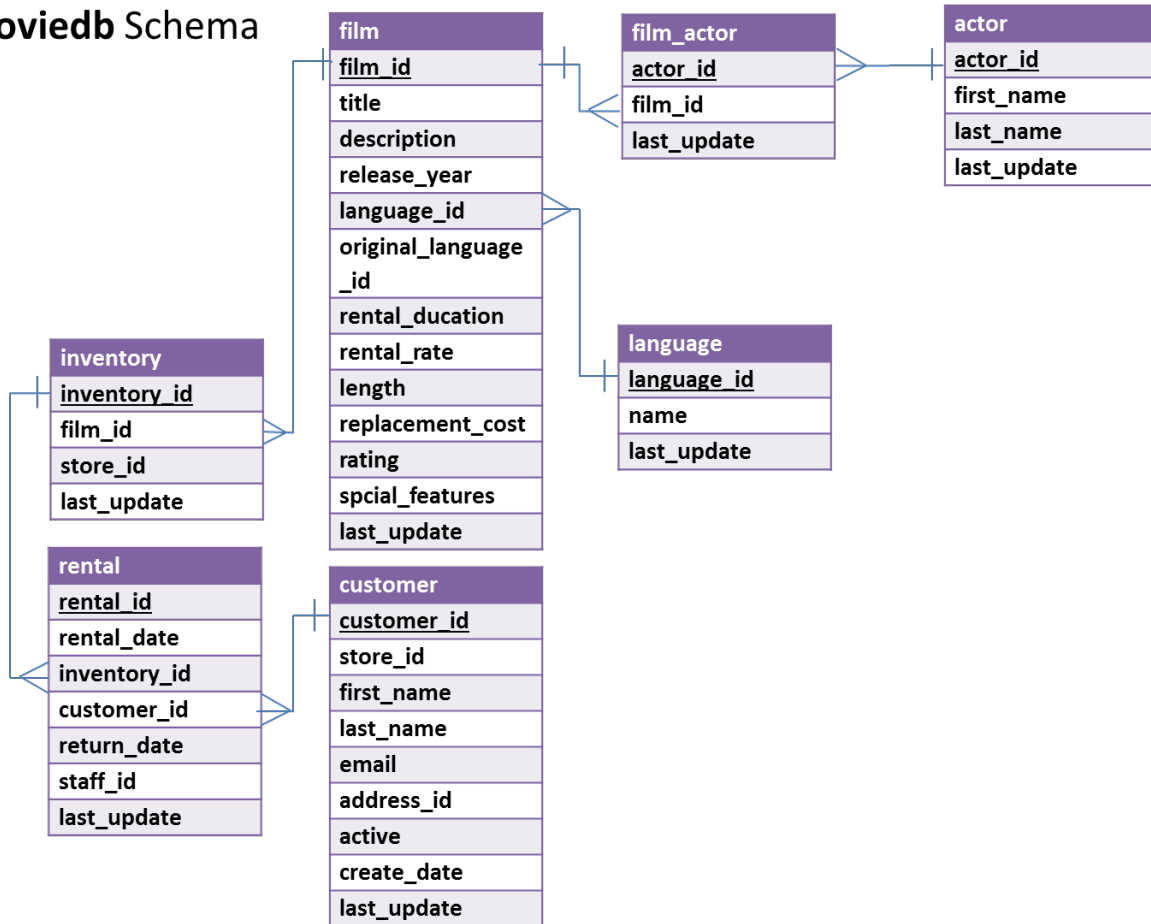
```
ALTER TABLE wsDB.`Cotact-Employee`  
ADD COLUMN Description VARCHAR(100) NULL;
```

Part 2: SQL Out-Join tables and Subselect

(You can but not need to use SQL Workbench)

Please consider the following schema moviedb. And answer the following question.

moviedb Schema



Some basic SQL syntax to get you started:

- To select fields from a table:
SELECT column_name(s) FROM schema_name.table_name
WHERE condition [AND condition]
- To apply a function (COUNT, SUM, AVG, MIN, MAX) to a column:
SELECT function(column_name) FROM schema_name.table_name
- You may also use some of the following SQL keywords or functions
 - DISTINCT
 - WHERE
 - AND/OR
 - COUNT, AVG, MIN, MAX, SUM
 - GROUP BY
 - ORDER BY (ASC/DESC)
- Here is a full syntax for SELECT
SELECT [DISTINCT] expression(s)
FROM schema_name.table_name(s)

```
[WHERE condition(s)]
[GROUP BY expression(s)]
[ORDER BY expression(s) [ ASC | DESC ]]
[LIMIT number_rows];
```

Questions

#1 Who are the actors of the movie "Flash Wars"?

```
SELECT actor.first_name, actor.last_name
FROM moviedb.actor, moviedb.film, moviedb.film_actor
WHERE actor.actor_id = film_actor.actor_id
AND film.film_id = film_actor.film_id
AND film.title = 'Flash Wars';
```

#2 Please identify the 3 most valuable customers who rented most often.

```
SELECT customer.first_name, customer.last_name, COUNT(*)
FROM moviedb.customer, moviedb.rental
WHERE customer.customer_id=rental.customer_id
GROUP BY rental.customer_id
ORDER BY COUNT(*) DESC
LIMIT 3;
```

#3 For different film ratings (i.e., G, PG, R, NC-17), which rating has the highest average rental rate?

```
SELECT film.rating, AVG(film.rental_rate)
FROM moviedb.film
GROUP BY film.rating
ORDER BY AVG(film.rental_rate) DESC LIMIT 1;
```

#4. What are the title and length for films rated PG and longer than average length?

```
SELECT film.title, film.length
FROM moviedb.film
WHERE film.rating='PG'
AND film.length > (SELECT avg(film.length) from moviedb.film);
```

#5 What's the most expensive (in terms of rental rate) film by Salma Nolte? And waht is the rental rate?

```
SELECT film.title, film.rental_rate
FROM moviedb.actor, moviedb.film, moviedb.film_actor
WHERE actor.actor_id = film_actor.actor_id
AND film.film_id = film_actor.film_id
AND actor.first_name='Salma'
AND actor.last_name='Nolte'
AND film.rental_rate=(SELECT max(film.rental_rate)
FROM moviedb.actor, moviedb.film, moviedb.film_actor
WHERE actor.actor_id = film_actor.actor_id
AND film.film_id = film_actor.film_id
AND actor.first_name='Salma'
AND actor.last_name='Nolte');
```