The *Blockbuster* database
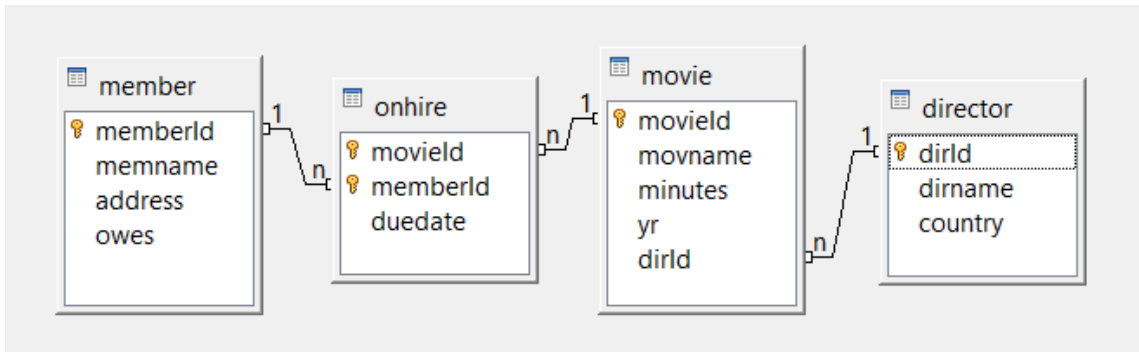
This activity contains additional SQL exercises for practice. The questions are based on the following database for a classic movie hire franchise.

    Movie   (*movieId*, movname, minutes, yr, dirId)

    Director   (*dirId*, dirname, country)

    Member   (*memberId*, memname, address, owes)

    Onhire   (*movieId, memberId*, duedate)

In *Movie*: *minutes* is the length of the movie in minutes, *yr* is the year the picture was made. In *Director*: *country* is the country of origin of the director. In *Member*: *owes* is the amount not yet paid for movie hire.

All fields are text except *length* and *year* (number), *owes* (currency) and *duedate* (dateTime).

Write queries for each of the following based on the *Blockbuster* database.

1. List all details about club members.

   select *
   from member

2. Which movies (id) are currently on hire?

   select distinct movieId
   from onhire

3. What are the names of the movies and in which year were they made.

   select movname, yr
   from movie

4. List the members (ids) who currently have a movie out (no repeats).

   select distinct memberId
   from onhire

5. What country does the director *David Lean* come from?

   select country
   from director
   where dirname = 'Lean, David'

6. In what year was *Star Wars* made?

   select yr
   from movie
   where movname = 'Star Wars'

7. What is the name and address of member number *5045*?

   select name, address
   from member
   where memberId = '5045'

8. Which members owe more than $50?

   select memberId, name
   from member
   where owes > 50

9. List the non American directors.

   select dirname
   from director
   where country <> 'US'

10. What is the id and title of the movies less than 180 minutes in length?

    select movieId, movname
    from movie
    where minutes < 180

11. Which members currently do not owe anything?

    select memname
    from member
    where owes =0

12. Which movies were made in the 1970s?

<pre>
select movname
from movie
where year between 1970 and 1979
</pre>

oddly, where year like '197%' also works

13. List the movie (id) hired by member *5034* and due back on 14th of September.

<pre>
select movieId
from onhire
where memberId = '5034'
and duedate = '2017-09-14'
</pre>

14. List members who owe between $50 and $100.

<pre>
select memberId
from members
where owes between 50 and 100
</pre>

15. Which movie by director *107* does not run for *137* minutes?

<pre>
select movname
from movies
where directorId = '107'
and length <> 137
</pre>

16. Which movie(s) over 200 minutes were made before 1960?

<pre>
select movname
from movies
where minutes > 200
and yr < 1960
</pre>

17. List the north American (US and Canada) directors.

<pre>
select dirnamr
from director
where country = 'US'
or country = 'Canada'
</pre>

18. Use *in* in a query to list the English, German and French directors.

<pre>
select dirname
from director
where country in ('England','Germany','France')
</pre>

19. List the members whose name begins with an *F*.

<pre>
select memname
from members
where memname like 'F%'
</pre>

20. Which members live at addresses that are streets (end in *St*)?

<pre>
select memname
from members
where address like '%St'
</pre>

21. List the directors called *John*.

<pre>
select dirname
from director
where dirname like 'John%'
</pre>

22. Which movies made after 1990 begin with *M*?

<pre>
select movname
from movie
where yr > 1990
and movname like 'M%'
</pre>

Use subqueries to complete the following:

1. What country is the director of *Casablanca* from?

<pre>
select country
from director
where dirId in
  (select dirId
   from movie
   where movname = 'Casablanca')
</pre>

2. What is the name and address of the member hiring movie *1015*?

<pre>
select memname, address
from members
where memberId in
  (select memberId
   from onhire
   where movieId = 1015)
</pre>

3. How much is owed by the member with videos due on 6th of September?

<pre>
select owes
from member
where memberId in
  (select memberId
   from onhire
   where duedate = '2017-07-06')
</pre>

4. Who directed *Glory*?

<pre>
select dirname
from director
where movieId in
  (select movieId
   from movie
   where movname = 'Glory')
</pre>

5. Which movies (numbers) are on hire to members who do *not* owe anything?

```
select movieId
from onhire
where memberId in
  (select memberId
   from member
   where owes = 0)
```

6. What movies (names) are being hired by R Miller?

```
select movname
from movie
where movieId in
  (select movieId
   from onhire
   where memberId in
    (select memberId
     from member
     where memname = 'Miller, R'))
```

7. What is the address of the member who has *Full Metal Jacket* on hire?

```
select address
from member
where memberId in
  (select memberId
   from onhire
   where movieId in
    (select movieId
     from movie
     where movname = 'Full Metal Jacket'))
```

8. List the directors of movies due back on the 12th of September.

```
select dirName
from director
where dirId in
  (select dirId
   from movie
   where movieId in
    (select movieId
     from onhire
     where dueback = '2017-09-12'))
```

In the questions that follow you may or may not need subqueries:

1. Add 10% GST to amounts owing.

```
select owes*1.1 as "Fees (inc GST)"
from member
```

or permanent change

```
update member
set owes = owes*1.1
```

2. How many years ago was each movie made (current year – year made)?

```
select movname, year(now())-yr as "Movie Age"
from movie
```

3. With 12 minutes of trailers (adverts) before each movie, how long would the tape for each run?

```
select movname, minutes+12 as "Total Run Length"
from movie
```

or cleverer still

```
select concat(movname,' including 12 mins of ads runs
for ',(minutes+12)div60,' hours and
',(minutes+1)mod60,' seconds') as "Movie Run Length"
from movie
```

4. There has been a clerical error. In a query reduce each due date by two days.

```
hint:
date_add(date, interval numdaystoadd day);
date_sub(date,interval numdaystoremove day)
 – can do hours, mins on a date time also – cool, hey
```

```
select movieId, memberId, date_sub(duedate, interval 2
day)
from onhire
```

permanent change:

```
update onhire
set duedate = date_sub(duedate, interval 2 day)
```

5. List all movies and length of time in hours.

```
select concat(movname,' runs for ',minutes div 60,'
minutes and ',minutes mod 60,' seconds ')
from movie
```

6. List movies in alphabetical order.

```
select *
from movie
order by movname
```

7. List movies in order, longest first.

```
select *
from movie
order by minutes desc
```

8. List directors by alphabetical order of country and then within each country list the directors in alphabetical order.

```
select dirname, country
from director
order by country,dirname
```

9. List movie names in order of being made. Within each year list the longest movie first.

   select movname, yr, minutes
   from movie
   order by yr asc, minutes desc

10. List members and amounts owing. (Do not list members who do not owe anything.)

    select memberId, memname, owes
    from member
    where owes <> 0

11. List in order of movie number, the number and name of movies on hire.

    select movieId, movname
    from movie
    where movieId in
      (select movieId
       from onhire)
    order by movieId

12. List in order of age, the names of movies due back on the 12th of September.

    select movname, year(now()-yr) as "age"
    from movie
    where movieId in
      (select movieId
       from onhire
       where duedate = '2017-09-12')
    order by 2 desc

13. What is the total amount currently owing?

    select sum(owes) as 'Total Owing'
    from member

14. What is the average length of movies?

    select avg(minutes)
    from movie

15. How many movies were made before 1980?

    select count(*)
    from movie
    where yr < 1980

16. How many members owe money?

    select count(*)
    from member
    where owes > 0

17. What is the name of the longest movie?

    select movname as 'Longest movie on record'
    from movie
    where minutes in
      (select max(minutes)
       from movie)

18. What is the average amount owing by members who owe money?

    select avg(owes) as 'Average debt'
    from member
    where owes > 0

19. What is the shortest movie made by Steven Spielberg?

    select movname, minutes
    from movie
    where dirid in
      (select dirid
       from director
       where dirname='Spielberg, Steven')
    order by minutes desc
    limit 1

20. What movies (names) are on hire to the member who currently owes the most?

    select movname
    from movie
    where movieId in
      (select movieId
       from onhire
       where memberid in
         (select memberid
          from member
          where owes >= all
            (select owes
             from member)))

21. List the members who owe more than the average.

    select *
    from member
    where owes >
      (select avg(owes)
       from member)

22. How many movies are due on each date?

    select duedate, count(*) as 'Num Movies Due'
    from onhire
    group by duedate

23. How many directors are from each country?

    select country, count(*) as 'Num Directors from here'
    from director
    group by country

24. Which year had most movies made?

```
select yr, count(*) as 'num movies made'
from movie
group by yr
order by 2 desc
limit 1
```

Use joins to write the following queries:

1. How much is owed by members who currently have movies on hire? List in order of amount owing.

```
select memberId,  sum(owes)
from member m, onhire o
where m.memberId = o.memberId
group by 1
order by 1
```

2. List directors of movies made in 1986 or 1987.

```
select dirname
from movie, director
where movie.dirId = director.dirId
and yr in (1986,1987)
```

3. What is the name and address of members who have movies due on or before the 8th of September?

```
select memname, address
from member, onhire
where member.memberId = onhire.memberId
and duedate = '2017-09-08'
```

4. Who currently has *Zulu* on hire?

```
select memname
from member, onhire, movie
where member.memberid = onhire.memberId
and onhire.movieId = movie.movieID
and movname = 'Zulu'
```

5. What are the names of the movies on hire to the member who currently owes the most?

```
select movname
from member, onhire, movie
where member.memberid = onhire.memberid
and onhire.movieid = movie.movieid
and owes >= all
   (select max(owes)
    from member)
```

6. Who directed the movie L. Austin has on hire?

```
select dirname
from director, movie,onhire,member
where director.dirid = movie.dirid
and movie.movieid = onhire.movieid
and onhire.memberid = member.memberid
and memname = 'Austin,L'
```

7. List any movies by a director that are the same length in time.

```
select a.movname, b.movname, dirname
from movie a, movie b, director d
where a.dirid = b.dirid
and a.dirid = d.dirid
and a.minutes = b.minutes
and a.movname < b.movname
```

8. What are the names of movies that are rented by members who have more than one movie due on the same day?

```
select movname
from movie, onhire a, onhire b
where movie.movieid = a.movieid
and a.movieid <> b.movieid
and a.memberid = b.memberid
and a.duedate = b.duedate
group by a.duedate
   having count(*) > 1
```