Exercises — Music Renting Compan

version #

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Contents

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1 Music Renting Company - 0

Files to submit:

- music_renting_company/level_0/procs.sql
- music_renting_company/level_0/req01.sql
- music_renting_company/level_0/req02.sql
- music_renting_company/level_0/req03.sql
- music_renting_company/level_0/req04.sql
- music_renting_company/level_0/req05.sql
- music_renting_company/level_0/req06.sql
- music_renting_company/level_0/req07.sql
- music_renting_company/level_0/req08.sql
- music_renting_company/level_0/req09.sql
- music_renting_company/level_0/views.sql

Provided files:

- music_renting_company/init_database.sql

1.1 Introduction

This project is about writing requests and creating views, for a music renting company.

We give you the SQL script that creates each table of the database.

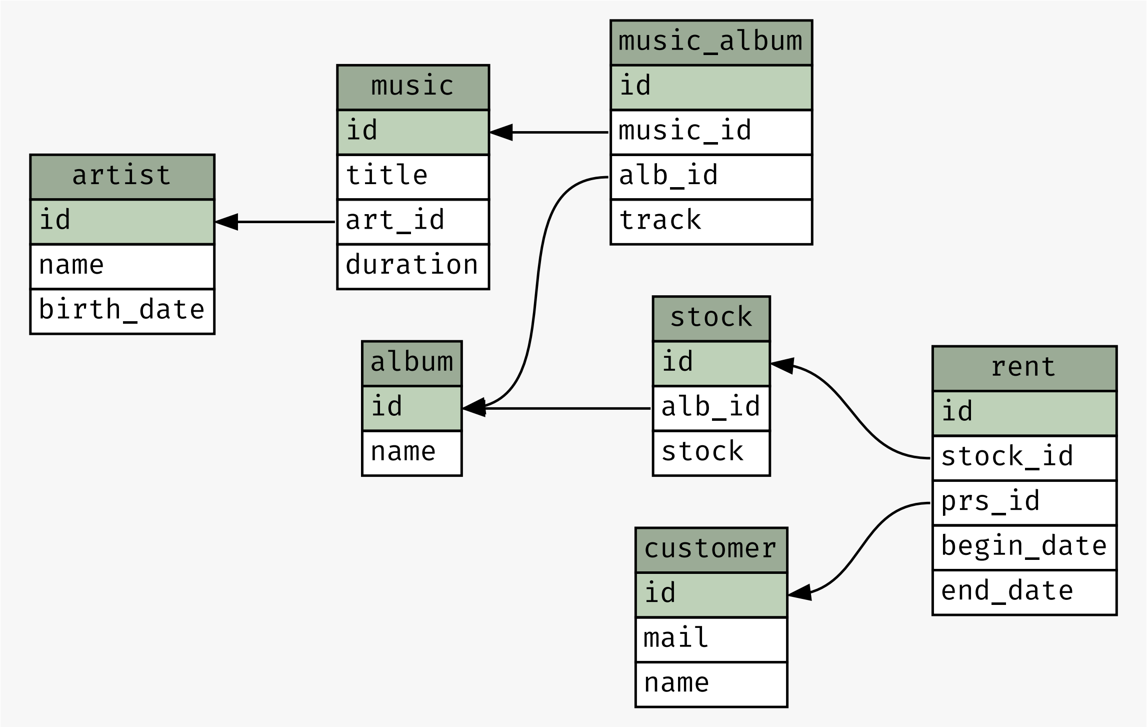
Here are some tips you should keep in mind:

- Take the time to **read over** the subject for each threshold to make sure your code meets our expectations. For the views, you **must** respect the columns' names given in example, or the tests will fail.
- Do not hesitate to ask any technical questions to the assistants in charge of the project. You are invited to use the newsgroup as mush as possible.
- Test your views: when you create one, only the grammar is checked. You will discover logic errors, such as invalid column names, only when executing the part of the request that is involved. So make sure every code path is checked in your tests.
- By default, when you are asked to sort by a column, it will be in ascending order.
- Durations will be displayed in the format "minutes:seconds", but will be stored as an integer of seconds. For example, a duration of 3 minutes and 42 seconds will be displayed as "3:42", but will be stored as "222".
- Your code can return notices, but not any warnings nor exceptions.

Compare your views' results with ours, and be sure they are exactly the same. Watch out the columns' names and their order.

1.2 Threshold 0

We give you the schema of tables' relationships and the SQL script that represents those tables.



This threshold is about albums, music and artists management. The files you will create must be in the `level_0` directory. First, you will have to write some requests that add and delete special values with special conditions in the database. You will have a file per request. Then, you will be asked to create some views. They should all be in the file `views.sql`.

Note that the validity of those requests will be checked using your views. In order to help you with the views, you are also asked to write one stored procedure in the file `procs.sql`.

1.2.1 Requests

Add Artists

In the file `req01.sql`, you have to write a request adding the following artists:

- Edith PIAF, born on the 19th of December 1915
- France GALL, born on the 9th of October 1947
- Joe DASSIN, born on the 5th of November 1938
- Jean-Jacques GOLDMAN, born on the 11th of October 1951

Duplicate Artists

Write an SQL statement, in the file `req02.sql`, creating duplicates of the artist's table, in a new table named **artist_dup**. Only the data need to be copied, not the constraints.

Add Albums

In the file `req03.sql`, you have to write a request adding the following albums:

- Traces
- France Gall
- Joe Dassin (Les Champs-Élysées)
- Dark Passion Play
- Rammstein
- Tribe of Force
- The Deep & The Dark

Add Songs

In the file `req04.sql`, you have to write the SQL statement that inserts the following songs into the `music` table:

- Le Petit Pain au Chocolat, by Joe DASSIN. Its duration is 3:30;
- Comment lui dire, by France GALL. Its duration is 3:30;
- C'est ta chance, by Jean-Jacques GOLDMAN. Its duration is 6:31;
- Siffler sur la colline, by Joe DASSIN. Its duration is 2:32.

Beware that you must use subqueries in order to get the referenced ids. These must not be hard-coded.

Add Songs to Albums

In the file `req05.sql`, you have to write a request adding multiple songs. Insert the following songs to their albums:

- Le Petit Pain au Chocolat, by Joe DASSIN, from the "Joe Dassin (Les Champs-Élysées)" album, as track number 2
- Comment lui dire, by France GALL, from the "France Gall" album, as track number 1
- C'est ta chance, by Jean-Jacques GOLDMAN, from the "Traces" album, as track number 3

Delete Artists

For this request, in the file req06.sql, you have to delete *France GALL* from the artists' table.

Delete Albums

In the file req07.sql, you are asked to delete every album that has at least one of the following characteristics:

- The name contains exactly two times the character 'P'
- The name contains a double 'm', like in the word "Grammys"
- The name length is a multiple of 7
- The name contains the character '&', whether it is inside a word or a word itself

If you need to use the modulo operation, use MOD(x, y), not x % y.

Delete Songs: first round

For the current request, you have to delete all the songs that last between 1:42 and 3:22, both included.

You must write this request in the file req08.sql.

Delete Songs: second round

For this request, in the file req09.sql, you have to delete all the songs that possess an odd *track* number from their album. You should only delete entries from the music_album table.

If you need to use the modulo operation, use MOD(x, y), not x % y.

1.2.2 Tools

Before you go through the multiple views you have to create, here is a stored procedure you need to write. It is about the display of durations:

```
FUNCTION duration_to_string(duration INT)
RETURNS VARCHAR(16)
```

This function should display a duration in seconds in the format "minutes:seconds". Negative values must return '0:00'. Here are some examples of usage:

```
SELECT duration_to_string(5);
 duration_to_string
--------------------
 0:05
(1 row)
```

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```
SELECT duration_to_string(213);
 duration_to_string
--------------------
 3:33
(1 row)

SELECT duration_to_string(6008);
 duration_to_string
--------------------
 100:08
(1 row)

SELECT duration_to_string(-3);
 duration_to_string
--------------------
 0:00
(1 row)
```

You have to write it in a file named procs.sql.

1.2.3 Views

Each of the following views must be written in the file views.sql.

View Artists

You have to create the **view_artists** view. This view is about getting information about artists. Look carefully at the example, as your columns **must** have the same names. You will have to display artists' name, birth dates, and the number of songs they composed. Results will be sorted by artists' name.

```
SELECT * FROM view_artists;
        artist        | birthdate  | songs
----------------------+------------+-------
 Edith PIAF           | 1915-12-19 |     0
 Jean-Jacques GOLDMAN | 1951-10-11 |     1
 Joe DASSIN           | 1938-11-05 |     1
(3 rows)
```

View Albums

This view has to be named **view_albums**. It will display the album's name, the number of tracks it contains, and the total length of the album, based on every song's duration. The result will be sorted by album name.

```
SELECT * FROM view_albums;
              album              | songs | duration
---------------------------------+-------+----------
```

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```
 France Gall                     |     0 | 0:00
 Joe Dassin (Les Champs-Élysées) |     1 | 3:30
 Traces                          |     0 | 0:00
(3 rows)
```

View Songs

The **view_songs** view will display the name of the songs, the name of the composer, and the duration of the song. Results will be sorted by song title, then by artist.

```
SELECT * FROM view_songs;
           music           |        artist        | duration
---------------------------+----------------------+----------
 C'est ta chance           | Jean-Jacques GOLDMAN | 6:31
 Le Petit Pain au Chocolat | Joe DASSIN           | 3:30
(2 rows)
```

It is my job to make sure you do yours.