

IS 456 IT Database Systems Management

Programming Exercise 7

4/13/2021 Developed by Farzin Bahadori

School of Technology & Computing @ City University of Seattle (CityU)

Database:

Type: SQLite

Name: Chinook

- You may have to join multiple tables in order to solve these tasks

NOTE: You may find these tasks a little challenging

Task 1

- Build a query that returns the *person* who has spent the most *money*
- [use *Invoice*, *InvoiceLine*, and *Customer* tables]

```
SELECT SUM(i.Total), c.CustomerId, (c.FirstName || " " || c.LastName) AS Customer
FROM invoices i
JOIN customers c
    ON c.CustomerId = i.CustomerId
GROUP BY 2
ORDER BY 1 DESC
LIMIT 5
;
```

```
sqlite> SELECT
...>     SUM(i.Total),
...>     c.CustomerId,
...>     (c.FirstName || " " || c.LastName) AS Customer
...>     FROM invoices i
...>     JOIN customers c
...>         ON c.CustomerId = i.CustomerId
...>     GROUP BY 2
...>     ORDER BY 1 DESC;
sqlite> 
```

SUM(i.Total)	CustomerId	Customer
49.62	6	Helena Holý
47.62	26	Richard Cunningham
46.62	57	Luis Rojas

SUM(i.Total)	CustomerId	Customer
45.62	45	Ladislav Kovács
45.62	46	Hugh O'Reilly

Task 2

- Use your query to return the **email**, **first name**, **last name**, and **Genre** of all **Rock Music listeners**.
- Return your list *ordered alphabetically* by **email address** starting with **A**.
- [**Customer**, **Invoice**, **InvoiceLine**, **Track**, and **Genre** tables]

```
SELECT DISTINCT c.email,
                (c.FirstName || " " || c.LastName) AS Customer,
                g.GenreId,
                g.Name
FROM customers c
JOIN invoices i      ON c.CustomerId = i.CustomerId
JOIN invoice_items ii ON ii.InvoiceId = i.InvoiceId
JOIN tracks t        ON ii.TrackId = t.TrackId
JOIN genres g
  ON t.GenreId = g.GenreId
WHERE g.Name = 'Rock'
ORDER BY c.email ASC;
```

```
sqlite> .output task2.txt
sqlite> SELECT DISTINCT c.email,
...>                (c.FirstName || " " || c.LastName) AS Customer,
...>                g.GenreId,
...>                g.Name
...> FROM customers c
...> JOIN invoices i      ON c.CustomerId = i.CustomerId
...> JOIN invoice_items ii ON ii.InvoiceId = i.InvoiceId
...> JOIN tracks t        ON ii.TrackId = t.TrackId
...> JOIN genres g
...>   ON t.GenreId = g.GenreId
...> WHERE g.Name = 'Rock'
...> ORDER BY c.email ASC;
```

email	Customer	GenreId	Genre
aaronmitchell@yahoo.ca	Aaron Mitchell	1	Rock
alero@uol.com.br	Alexandre Rocha	1	Rock
astrid.gruber@apple.at	Astrid Gruber	1	Rock
bjorn.hansen@yahoo.no	Bjørn Hansen	1	Rock

email	Customer	Genreid	Genre
camille.bernard@yahoo.fr	Camille Bernard	1	Rock
daan_peeters@apple.be	Daan Peeters	1	Rock
diego.gutierrez@yahoo.ar	Diego Gutiérrez	1	Rock
dmiller@comcast.com	Dan Miller	1	Rock
dominiquelefebvre@gmail.com	Dominique Lefebvre	1	Rock
edfrancis@yahoo.ca	Edward Francis	1	Rock
eduardo@woodstock.com.br	Eduardo Martins	1	Rock
ellie.sullivan@shaw.ca	Ellie Sullivan	1	Rock
emma_jones@hotmail.com	Emma Jones	1	Rock
enrique_munoz@yahoo.es	Enrique Muñoz	1	Rock
fernadaramos4@uol.com.br	Fernanda Ramos	1	Rock
fharris@google.com	Frank Harris	1	Rock
fralston@gmail.com	Frank Ralston	1	Rock
frantisekw@jetbrains.com	František Wichterlová	1	Rock
ftremblay@gmail.com	François Tremblay	1	Rock
fzimmermann@yahoo.de	Fynn Zimmermann	1	Rock
hannah.schneider@yahoo.de	Hannah Schneider	1	Rock
hholy@gmail.com	Helena Holý	1	Rock
hleacock@gmail.com	Heather Leacock	1	Rock
hughoreilly@apple.ie	Hugh O'Reilly	1	Rock
isabelle_mercier@apple.fr	Isabelle Mercier	1	Rock
jacksmith@microsoft.com	Jack Smith	1	Rock
jenniferp@rogers.ca	Jennifer Peterson	1	Rock
jfernandes@yahoo.pt	João Fernandes	1	Rock
joakim.johansson@yahoo.se	Joakim Johansson	1	Rock
johavanderberg@yahoo.nl	Johannes Van der Berg	1	Rock
johngordon22@yahoo.com	John Gordon	1	Rock
jubarnett@gmail.com	Julia Barnett	1	Rock
kachase@hotmail.com	Kathy Chase	1	Rock
kara.nielsen@jubii.dk	Kara Nielsen	1	Rock

email	Customer	GenreId	Genre
ladislav_kovacs@apple.hu	Ladislav Kovács	1	Rock
leonekohler@surfeu.de	Leonie Köhler	1	Rock
lucas.mancini@yahoo.it	Lucas Mancini	1	Rock
luisg@embraer.com.br	Luís Gonçalves	1	Rock
luisrojas@yahoo.cl	Luis Rojas	1	Rock
manoj.pareek@rediff.com	Manoj Pareek	1	Rock
marc.dubois@hotmail.com	Marc Dubois	1	Rock
mark.taylor@yahoo.au	Mark Taylor	1	Rock
marthasilk@gmail.com	Martha Silk	1	Rock
masampaio@sapo.pt	Madalena Sampaio	1	Rock
michelleb@aol.com	Michelle Brooks	1	Rock
mphilips12@shaw.ca	Mark Philips	1	Rock
nschroder@surfeu.de	Niklas Schröder	1	Rock
patrick.gray@aol.com	Patrick Gray	1	Rock
phil.hughes@gmail.com	Phil Hughes	1	Rock
puja_srivastava@yahoo.in	Puja Srivastava	1	Rock
ricunningham@hotmail.com	Richard Cunningham	1	Rock
robbrown@shaw.ca	Robert Brown	1	Rock
roberto.almeida@riotur.gov.br	Roberto Almeida	1	Rock
stanisław.wójcik@wp.pl	Stanisław Wójcik	1	Rock
steve.murray@yahoo.uk	Steve Murray	1	Rock
terhi.hamalainen@apple.fi	Terhi Hämäläinen	1	Rock
tgoyer@apple.com	Tim Goyer	1	Rock
vstevens@yahoo.com	Victor Stevens	1	Rock
wyatt.girard@yahoo.fr	Wyatt Girard	1	Rock

Task 3

- **First**, find which *artist* has earned the most according to the *InvoiceLines*?
- **Second**, use this *artist* to find which *customer* spent the most on this *artist*.
- [use the *Invoice*, *InvoiceLine*, *Track*, *Customer*, *Album*, and *Artist* tables.]

```
WITH IronMaiden AS (
SELECT a.Name, SUM(ii.UnitPrice) AS earned
  FROM artists a
 JOIN albums al ON a.ArtistId = al.ArtistId
 JOIN tracks t  ON al.AlbumId = t.AlbumId
 JOIN invoice_items ii ON ii.TrackId = t.TrackId
 JOIN invoices i  ON ii.InvoiceId = i.InvoiceId
 GROUP BY 1
 ORDER BY 2 DESC
 LIMIT 10)
```

```
Iron Maiden|138.6
U2|105.93
Metallica|90.08999999999999
Led Zeppelin|86.12999999999999
Lost|81.59
The Office|49.75
Os Paralamas Do Sucesso|44.55
Deep Purple|43.56
Faith No More|41.58
Eric Clapton|39.6
--:--:--
```

```
SELECT (c.CustomerId || "-" || c.FirstName || " " || c.LastName) AS Customer,
SUM(ii.UnitPrice*ii.Quantity) AS Units, i.Total
  FROM invoice_items ii
 JOIN invoices i ON ii.Invoiceid = i.Invoiceid
 JOIN customers c ON c.customerid = i.customerid
 GROUP BY Customer
 ORDER BY Units DESC
 LIMIT 1
;
```

```
44-Terni Hamaiainen|41.62|8.91
sqlite> SELECT (c.CustomerId || "-" || c.FirstName || " " || c.LastName) AS Customer, SUM(ii.UnitPrice*ii.Quantity) AS Units, i.Total
...> FROM invoice_items ii
...> JOIN invoices i ON ii.Invoiceid = i.Invoiceid
...> JOIN customers c ON c.customerid = i.customerid
...> GROUP BY Customer
...> ORDER BY Units DESC
...> LIMIT 1
...> ;
6-Helena Holy|49.62|8.91
sqlite>
```

Task 4

- Count how many *songs* based on **genre** **customer 12** bought
- How much did **customer 13** spent across **genre**?
- How much did each **customer** spend per **genre**?

```
--Query 1
Select SUM(ii.UnitPrice * ii.Quantity) as cust13
FROM invoice_items ii
JOIN invoices i On i.InvoiceId = ii.InvoiceId
WHERE i.customerid = 12;
;
```

--Query 2

```
Select SUM(ii.UnitPrice * ii.Quantity) as cust13
FROM invoice_items ii
JOIN invoices i On i.InvoiceId = ii.InvoiceId
WHERE i.customerid = 13
;
```

--Query 3

```
SELECT (c.FirstName || " " || c.LastName) AS Customer, g.Name, SUM(ii.UnitPrice *
ii.Quantity) AS Money_Spent
FROM genres g, tracks t, invoice_items ii, invoices i, customers c
WHERE g.GenreId=t.GenreId AND t.trackId=ii.trackId AND ii.invoiceid=i.invoiceid
AND i.customerid=c.customerid
GROUP BY 1, 2;
```