

SQL Queries and Answers

- Submitted by Aswathy Gopalakrishnan

Q1. Who is the senior most employee based on job title?

```
-- Q1. Who is the senior most employee based on job title?
SELECT employee_id, first_name, last_name, levels FROM employee
WHERE
    CAST(SUBSTRING(levels, 2) AS UNSIGNED) = (
        SELECT MAX(CAST(SUBSTRING(levels, 2) AS UNSIGNED))
        FROM employee
        WHERE levels IS NOT NULL
    );
```

employee_id	first_name	last_name	levels
9	Mohan	Madan	L7

Q2. Which countries have the most Invoices?

```
-- Which countries have the most invoices?
SELECT c.country, COUNT(i.invoice_id) AS invoice_count FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
GROUP BY c.country
ORDER BY invoice_count DESC;
```

country	invoice_count
USA	131
Canada	76
Brazil	61
France	50
Germany	41

Q3. What are top 3 values of total invoice?

```
-- Q3. What are the top 3 values of total invoice?
SELECT total FROM invoice ORDER BY total DESC LIMIT 3;
```

total
23.759999999999998
19.8
19.8

Q4. Which city has the best customers? We would like to throw a promotional Music Festival in the city we made the most money. Write a query that returns one city that has the highest sum of invoice totals. Return both the city name & sum of all invoice totals.

```
-- Q4. Which city has the best (highest total of invoice sums)?
SELECT c.city, SUM(i.total) AS total_revenue FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
GROUP BY c.city ORDER BY total_revenue DESC LIMIT 1;
```

city	total_revenue
Prague	273.24000000000007

Q5. Who is the best customer? The customer who has spent the most money will be declared the best customer.

```
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SELECT c.customer_id, c.first_name, c.last_name, SUM(i.total) AS total_spent FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
GROUP BY c.customer_id, c.first_name, c.last_name
ORDER BY total_spent DESC LIMIT 1;
```

customer_id	first_name	last_name	total_spent
5	Frantiek	Wichterlov	144.54000000000002

Q6. Write a query to return the email, first name, last name, & Genre of all Rock Music listeners. Return your list ordered alphabetically by email starting with A

```
-- Q6. Write a query to return the email, first name, last name, & Genre of all Rock Music listeners
-- Return your list ordered alphabetically by email starting with A
SELECT c.email, c.first_name, c.last_name, g.name AS genre_name FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
JOIN invoice_line il ON i.invoice_id = il.invoice_id
JOIN track t ON il.track_id = t.track_id
JOIN genre g ON t.genre_id = g.genre_id
WHERE g.name LIKE '%Rock%'
GROUP BY c.customer_id, c.email, c.first_name, c.last_name, g.name
ORDER BY c.email ASC;
```

email	first_name	last_name	genre_name
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
alero@uol.com.br	Alexandre	Rocha	Rock
astrid.gruber@apple.at	Astrid	Gruber	Rock
bjorn.hansen@yahoo.no	Bjrn	Hansen	Rock
camille.bernard@yahoo.fr	Camille	Bernard	Rock
daan.peeters@apple.be	Daan	Peeters	Rock
diego.gutierrez@yahoo.ar	Diego	Gutierrez	Rock
dmiller@comcast.com	Dan	Miller	Rock
dominiquelefebvre@gmail.com	Dominique	Lefebvre	Rock
edfrancis@yahoo.ca	Edward	Francis	Rock
eduardo@woodstock.com.br	Eduardo	Martins	Rock
ellie.sullivan@shaw.ca	Ellie	Sullivan	Rock
emma_jones@hotmail.com	Emma	Jones	Rock
enrique_munoz@yahoo.es	Enrique	Muoz	Rock
fernadaramos4@uol.com.br	Fernanda	Ramos	Rock
fharris@google.com	Frank	Harris	Rock
fralston@gmail.com	Frank	Ralston	Rock
frantisek@jetbrains.com	Frantiek	Wichterlov	Rock
ftremblay@gmail.com	Franois	Tremblay	Rock
fzimmermann@yahoo.de	Fynn	Zimmerm...	Rock
hannah.schneider@yahoo.de	Hannah	Schneider	Rock
hholy@gmail.com	Helena	Hol	Rock
hleacock@gmail.com	Heather	Leacock	Rock
hughoreilly@apple.ie	Hugh	O'Reilly	Rock

Q7. Let's invite the artists who have written the most rock music in our dataset. Write a query that returns the Artist name and total track count of the top 10 rock bands.

```
-- Q7. Let's invite the artists who have written the most rock music in our dataset.
-- Write a query that returns the Artist name and total track count of the top 10 rock bands.
SELECT ar.name AS artist_name, COUNT(t.track_id) AS track_count FROM artist ar
JOIN album a ON ar.artist_id = a.artist_id
JOIN track t ON a.album_id = t.album_id
JOIN genre g ON t.genre_id = g.genre_id
WHERE g.name LIKE '%Rock%'
GROUP BY ar.artist_id, ar.name
ORDER BY track_count DESC
LIMIT 10;
```

artist_name	track_count
Led Zeppelin	114
U2	112
Deep Purple	92
Iron Maiden	81
Pearl Jam	54
Van Halen	52
Queen	45
The Rolling Stones	41
Creedence Clearwater Revival	40
Kiss	35

Q8. Return all the track names that have a song length longer than the average song length. Return the Name and Milliseconds for each track. Order by the song length with the longest songs listed first.

```
-- Q8. Return all the track names that have a song length longer than the average song length.
-- Return the Name and Milliseconds for each track. Order by the song length with the longest songs listed first.
SELECT t.name, t.milliseconds FROM track t
WHERE t.milliseconds > (SELECT AVG(milliseconds) FROM track)
ORDER BY t.milliseconds DESC;
```

name	milliseconds
Occupation / Precipice	5286953
Through a Looking Glass	5088838
Greetings from Earth, Pt. 1	2960293
The Man With Nine Lives	2956998
Battlestar Galactica, Pt. 2	2956081
Battlestar Galactica, Pt. 1	2952702
Murder On the Rising Star	2935894
Battlestar Galactica, Pt. 3	2927802
Take the Celestra	2927677

Q9. Find how much amount spent by each customer on artists. Write a query to return the customer name, artist name, and total spent.

```
-- Q9. Find how much amount spent by each customer on artists. Write a query to return the customer name, artist name, and total spent.
SELECT c.first_name, c.last_name, ar.name AS artist_name, SUM(il.unit_price * il.quantity) AS total_spent
FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
JOIN invoice_line il ON i.invoice_id = il.invoice_id
JOIN track t ON il.track_id = t.track_id
JOIN album a ON t.album_id = a.album_id
JOIN artist ar ON a.artist_id = ar.artist_id
GROUP BY c.customer_id, c.first_name, c.last_name, ar.artist_id, ar.name
ORDER BY c.first_name, c.last_name, ar.name;
```

first_name	last_name	artist_name	total_spent
Aaron	Mitchell	AC/DC	0.99
Aaron	Mitchell	Aerosmith	0.99
Aaron	Mitchell	Alanis Morissette	0.99
Aaron	Mitchell	Amy Winehouse	0.99
Aaron	Mitchell	Audioslave	0.99
Aaron	Mitchell	Black Sabbath	0.99
Aaron	Mitchell	Chris Cornell	13.860000000000001
Aaron	Mitchell	Creedence Clearwater Revival	1.98
Aaron	Mitchell	Def Leppard	0.99
Aaron	Mitchell	Eric Clapton	0.99
Aaron	Mitchell	Godsmack	0.99
Aaron	Mitchell	Green Day	0.99
Aaron	Mitchell	Guns N' Roses	0.99
Aaron	Mitchell	House Of Pain	0.99
Aaron	Mitchell	James Brown	19.799999999999997
Aaron	Mitchell	JET	0.99
Aaron	Mitchell	Jota Quest	0.99
Aaron	Mitchell	Kiss	0.99

Q10. We want to find out the most popular music Genre for each country. We determine the most popular genre as the genre with the highest amount of purchases. Write a query that returns each

country along with the top Genre. For countries where the maximum number of purchases is shared return all Genres.

```
-- Q10. We want to find out the most popular music Genre for each country.
-- We determine the most popular genre as the genre with the highest amount of purchases.
-- Write a query that returns each country along with the top Genre. For countries where the maximum number of purchases is shared return all Genres.

WITH country_genre_amount AS (
    SELECT c.country, g.genre_id, g.name AS genre_name, SUM(il.unit_price * il.quantity) AS total_amount FROM customer c
    JOIN invoice i ON c.customer_id = i.customer_id JOIN invoice_line il ON i.invoice_id = il.invoice_id
    JOIN track t ON il.track_id = t.track_id JOIN genre g ON t.genre_id = g.genre_id
    GROUP BY c.country, g.genre_id, g.name
),
max_amount_per_country AS (
    SELECT country, MAX(total_amount) AS max_amount FROM country_genre_amount GROUP BY country
)
SELECT cga.country, cga.genre_name, cga.total_amount FROM country_genre_amount cga
JOIN max_amount_per_country mag ON cga.country = mag.country AND cga.total_amount = mag.max_amount;
```

country	genre_name	total_amount
Brazil	Rock	202.95000000000004
Germany	Rock	192.06000000000003
Canada	Rock	329.67000000000015
Norway	Rock	39.599999999999994
Czech Republic	Rock	141.56999999999998
Austria	Rock	39.599999999999994
Belgium	Rock	25.739999999999988
Denmark	Rock	23.759999999999999
USA	Rock	555.39000000000003
Portugal	Rock	106.91999999999998
France	Rock	208.89000000000004
Finland	Rock	45.540000000000006
Hungary	Rock	43.56
Ireland	Rock	71.28
Italy	Rock	34.649999999999984

Q11. Write a query that determines the customer that has spent the most on music for each country. Write a query that returns the country along with the top customer and how much they spent. For countries where the top amount spent is shared, provide all customers who spent this amount.

```
-- Q11. Write a query that determines the customer that has spent the most on music for each country.
-- Write a query that returns the country along with the top customer and how much they spent.
-- For countries where the top amount spent is shared, provide all customers who spent this amount.

WITH country_customer_spent AS (
    SELECT c.country, c.customer_id, c.first_name, c.last_name, SUM(il.unit_price * il.quantity) AS total_spent
    FROM customer c
    JOIN invoice i ON c.customer_id = i.customer_id
    JOIN invoice_line il ON i.invoice_id = il.invoice_id
    GROUP BY c.country, c.customer_id, c.first_name, c.last_name
),
max_spent_per_country AS (
    SELECT country, MAX(total_spent) AS max_spent FROM country_customer_spent GROUP BY country
)
SELECT ccs.first_name, ccs.last_name, ccs.country, ccs.total_spent FROM country_customer_spent ccs
JOIN max_spent_per_country msp ON ccs.country = msp.country AND ccs.total_spent = msp.max_spent;
```

country	first_name	last_name	total_spent
Chile	Luis	Rojas	97.01999999999987
Czech Republic	Frantiek	Wichterlov	144.53999999999985
Denmark	Kara	Nielsen	37.61999999999999
Finland	Terhi	Hmlinen	79.19999999999996
France	Wyatt	Girard	99.98999999999985
Germany	Fynn	Zimmermann	94.04999999999988
Hungary	Ladislav	Kovcs	78.20999999999997
India	Manoj	Pareek	111.86999999999979
Ireland	Hugh	O'Reilly	114.83999999999978
Italy	Lucas	Mancini	50.490000000000016
Netherlands	Johannes	Van der Berg	65.34000000000003
Norway	Bjrn	Hansen	72.27
Poland	Stanisaw	Wjcik	76.22999999999998
Portugal	Joo	Fernandes	102.95999999999984
Spain	Enrique	Muoz	98.00999999999986

Q12. Who are the most popular artists?

-- By total amount spent (on tracks purchased)

```
SELECT ar.artist_id, ar.name AS artist_name, SUM(il.unit_price * il.quantity) AS total_spent FROM artist ar
JOIN album a ON ar.artist_id = a.artist_id JOIN track t ON a.album_id = t.album_id
JOIN invoice_line il ON t.track_id = il.track_id
GROUP BY ar.artist_id, ar.name ORDER BY total_spent DESC LIMIT 10;
```

artist_id	artist_name	total_spent
51	Queen	190.08000000000027
94	Jimi Hendrix	185.13000000000022
110	Nirvana	128.69999999999997
127	Red Hot Chili Peppers	128.69999999999997
118	Pearl Jam	127.70999999999971
1	AC/DC	122.75999999999974
88	Guns N' Roses	122.75999999999974
84	Foo Fighters	119.78999999999975
142	The Rolling Stones	115.82999999999977
50	Metallica	104.93999999999983

-- By number of tracks purchased:

```
SELECT ar.artist_id, ar.name AS artist_name, COUNT(DISTINCT t.track_id) AS tracks_bought FROM artist ar
JOIN album a ON ar.artist_id = a.artist_id JOIN track t ON a.album_id = t.album_id
JOIN invoice_line il ON t.track_id = il.track_id
GROUP BY ar.artist_id, ar.name ORDER BY tracks_bought DESC LIMIT 10;
```

artist_id	artist_name	tracks_bought
90	Iron Maiden	75
150	U2	73
50	Metallica	68
118	Pearl Jam	62
22	Led Zeppelin	53
152	Van Halen	48
127	Red Hot Chili Peppers	48
51	Queen	45
84	Foo Fighters	43
88	Guns N' Roses	42

Q13. Which is the most popular song?

```
-- Q13. Which is the most popular song?
SELECT t.track_id, t.name AS track_name, COUNT(*) AS purchase_count FROM track t
JOIN invoice_line il ON t.track_id = il.track_id
GROUP BY t.track_id, t.name ORDER BY purchase_count DESC LIMIT 1;
```

track_id	track_name	purchase_count
3336	War Pigs	31

Q14. What are the average prices of different types of music?

```
-- Q14. What are the average prices of different types of music?
SELECT m.name AS media_type, AVG(t.unit_price) AS average_price FROM media_type m
JOIN track t ON m.media_type_id = t.media_type_id
GROUP BY m.media_type_id, m.name;
```

media_type	average_price
MPEG audio file	0.98999999999999363
Protected AAC audio file	0.99000000000000027
Protected MPEG-4 video file	1.985327102803744
Purchased AAC audio file	0.99000000000000001
AAC audio file	0.99000000000000001

Q15. What are the most popular countries for music purchases?

```
-- Q15. What are the most popular countries for music purchases?
-- Countries with the highest total sales amount (sum of invoice totals)
SELECT c.country, SUM(i.total) AS total_revenue FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
GROUP BY c.country ORDER BY total_revenue DESC LIMIT 5;
```

country	total_revenue
USA	1040.4899999999998
Canada	535.59000000000001
Brazil	427.68000000000006
France	389.06999999999999
Germany	334.62

```
-- Countries with the most number of invoices/purchases
SELECT c.country, COUNT(i.invoice_id) AS total_invoices FROM customer c
JOIN invoice i ON c.customer_id = i.customer_id
GROUP BY c.country ORDER BY total_invoices DESC LIMIT 5;
```

country	total_invoices
USA	131
Canada	76
Brazil	61
France	50
Germany	41