SQL PROJECT- MUSIC STORE DATA ANALYSIS

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

```
SELECT first_name||' '||last_name||' ('||title||')'
FROM employee
ORDER BY birthdate
DESC LIMIT 1;
```

Q2: Which countries have the most Invoices?

```
SELECT billing_country,COUNT(billing_country)
FROM invoice
GROUP BY billing_country
ORDER BY COUNT(billing_country) DESC;
```

Q3: What are top 3 values of total invoice?

```
SELECT total
FROM invoice
ORDER BY total DESC
LIMIT 3;
```

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.

```
SELECT billing_city,SUM(total)
FROM invoice
GROUP BY billing_city
ORDER BY SUM(total) DESC
LIMIT 1;
```

Q5: Who is the best customer? The customer who has spent the most money will be declared the best customer. Write a query that returns the person who has spent the most money.

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

Q6: Write 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 DISTINCT email,first_name,last_name
FROM customer AS c
JOIN invoice AS i ON c.customer_id=i.customer_id
JOIN invoice_line AS il ON i.invoice_id=il.invoice_id
WHERE track_id IN

(

        SELECT track_id FROM track

        JOIN genre ON track.genre_id=genre.genre_id

        WHERE genre.name LIKE 'Rock'

)

ORDER BY email;
```

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 art.artist_id,art.name,COUNT(a.artist_id) AS noOfSongs
FROM track AS t
JOIN album AS a ON a.album_id=t.album_id
JOIN artist AS art ON art.artist_id= a.artist_id
JOIN genre AS g ON g.genre_id=t.genre_id
WHERE g.name LIKE 'Rock'
GROUP BY art.artist_id
ORDER BY noOfSongs DESC
LIMIT 10;
```

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 name,milliseconds
FROM track
WHERE milliseconds > ( SELECT AVG(milliseconds) AS avg_track_legth FROM track )
ORDER BY milliseconds DESC;
```

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

```
WITH best_selling_artist AS (

        SELECT artist.artist_id AS artist_id, artist.name AS artist_name,

        SUM(invoice_line.unit_price*invoice_line.quantity) AS total_sales

        FROM invoice_line

        JOIN track ON track.track_id = invoice_line.track_id

        JOIN album ON album.album_id = track.album_id
```

```
        JOIN artist ON artist.artist_id = album.artist_id
        GROUP BY 1
        ORDER BY 3 DESC
        LIMIT 1
)
SELECT c.customer_id, c.first_name, c.last_name, bsa.artist_name,
SUM(il.unit_price*il.quantity) AS amount_spent
FROM invoice i
JOIN customer c ON c.customer_id = i.customer_id
JOIN invoice_line il ON il.invoice_id = i.invoice_id
JOIN track t ON t.track_id = il.track_id
JOIN album alb ON alb.album_id = t.album_id
JOIN best_selling_artist bsa ON bsa.artist_id = alb.artist_id
GROUP BY 1,2,3,4
ORDER BY 5 DESC;
```

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 popular_genre AS
(
   SELECT COUNT(invoice_line.quantity) AS purchases, customer.country, genre.name,
genre.genre_id,
        ROW_NUMBER() OVER(PARTITION BY customer.country ORDER BY
COUNT(invoice_line.quantity) DESC) AS RowNo
   FROM invoice_line
        JOIN invoice ON invoice.invoice_id = invoice_line.invoice_id
        JOIN customer ON customer.customer_id = invoice.customer_id
        JOIN track ON track.track_id = invoice_line.track_id
        JOIN genre ON genre.genre_id = track.genre_id
        GROUP BY 2,3,4
        ORDER BY 2 ASC, 1 DESC
```

```
)

SELECT * FROM popular_genre WHERE RowNo <= 1
```

OR with Recursive Method:

```
WITH RECURSIVE
	sales_per_country AS(
		SELECT COUNT(*) AS purchases_per_genre, customer.country, genre.name,
genre.genre_id
		FROM invoice_line
		JOIN invoice ON invoice.invoice_id = invoice_line.invoice_id
		JOIN customer ON customer.customer_id = invoice.customer_id
		JOIN track ON track.track_id = invoice_line.track_id
		JOIN genre ON genre.genre_id = track.genre_id
		GROUP BY 2,3,4
		ORDER BY 2
	),
max_genre_per_country AS (SELECT MAX(purchases_per_genre) AS max_genre_number, country
FROM sales_per_country
GROUP BY 2
ORDER BY 2)

SELECT sales_per_country. *
FROM sales_per_country
JOIN max_genre_per_country ON sales_per_country.country = max_genre_per_country.country
WHERE sales_per_country.purchases_per_genre = max_genre_per_country.max_genre_number;
```

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 Customter_with_country AS (
SELECT customer.customer_id,first_name,last_name,billing_country,SUM(total) AS total_spending,
ROW_NUMBER() OVER(PARTITION BY billing_country ORDER BY SUM(total) DESC) AS RowNo
FROM invoice
JOIN customer ON customer.customer_id = invoice.customer_id
GROUP BY 1,2,3,4
ORDER BY 4 ASC,5 DESC)
SELECT * FROM Customter_with_country WHERE RowNo <= 1
```

OR with Recursive Method:

```
WITH RECURSIVE
customter_with_country AS (
SELECT customer.customer_id,first_name,last_name,billing_country,SUM(total) AS total_spending
FROM invoice
JOIN customer ON customer.customer_id = invoice.customer_id
GROUP BY 1,2,3,4
ORDER BY 2,3 DESC),

country_max_spending AS(
SELECT billing_country,MAX(total_spending) AS max_spending
FROM customter_with_country
GROUP BY billing_country)

SELECT cc.billing_country, cc.total_spending, cc.first_name, cc.last_name, cc.customer_id
FROM customter_with_country cc
JOIN country_max_spending ms
ON cc.billing_country = ms.billing_country
WHERE cc.total_spending = ms.max_spending
ORDER BY 1;
```