MUSIC STORE QUERY

--- **Question Set 1 - Easy** ---

```
-- Q1: Who is the senior most employee based on job title?
select *
from employee
order by levels desc
limit 1

-- Q2: Which countries have the most invoices?
select
	billing_country,
	count(*)
from invoice
group by billing_country
order by count desc

-- Q3: What are the top 3 values of total invoice?
select total
from invoice
order by total desc
limit 3

-- Q4: Which city has best customers? We would like to throw a promotional music festival
--	in the city we made the most money. Write the query that returns one city that has the
--	highest sum of invoice totals. Return both the city name and the sum of all invoice totals.
select
	billing_city,
	sum(total) as total
from invoice
group by billing_city
order by total desc

-- Q5: Who is the best customer? The customer who has spent the most money will be declared the best
--	customer. Write the query that returns the person who has spent the most money.
select
	customer.customer_id,
	customer.first_name,
	customer.last_name,
	sum(invoice.total) as invoice_total
from customer
join invoice
on customer.customer_id = invoice.customer_id
group by customer.customer_id
order by invoice_total desc
limit 1
```

--- **Question Set 2 - Moderate** ---

```
-- Q1: Write query to return the email, first name, last name, and 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
join invoice
on customer.customer_id = invoice.customer_id
join invoice_line
on invoice.invoice_id = invoice_line.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

-- Q2: Lets 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
        artist.artist_id,
        artist.name,
        count(artist.artist_id) as number_of_songs
from track
join album
on album.album_id = track.album_id
join artist
on artist.artist_id = album.artist_id
join genre
on genre.genre_id = track.genre_id
where genre.name like 'Rock'
group by artist.artist_id
order by number_of_songs desc
limit 10
```

```
-- Q3: 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_length
                        from track
                        )
order by milliseconds desc
```

--- **Question Set 3 – Advance** ---

```
-- Q1: 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
```

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        on bsa.artist_id = alb.artist_id
        group by 1,2,3,4
        order by 5 desc

-- Q2: 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 query that returns each country
--      along with the top genre. For countries where the maximum number of purchases is shared return
--      all genres.

-- Method 1
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 row_no
        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 row_no <= 1

-- Method 2
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

-- Q3: 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.

-- Method 1
with recursive customer_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 customer_with_country
                                        group by billing_country
                                        )
select
        cc.billing_country,
        cc.total_spending,
        cc.first_name,
        cc.customer_id
from customer_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

-- Method 2
with customer_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 row_no
        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 customer_with_country
where row_no <= 1
```