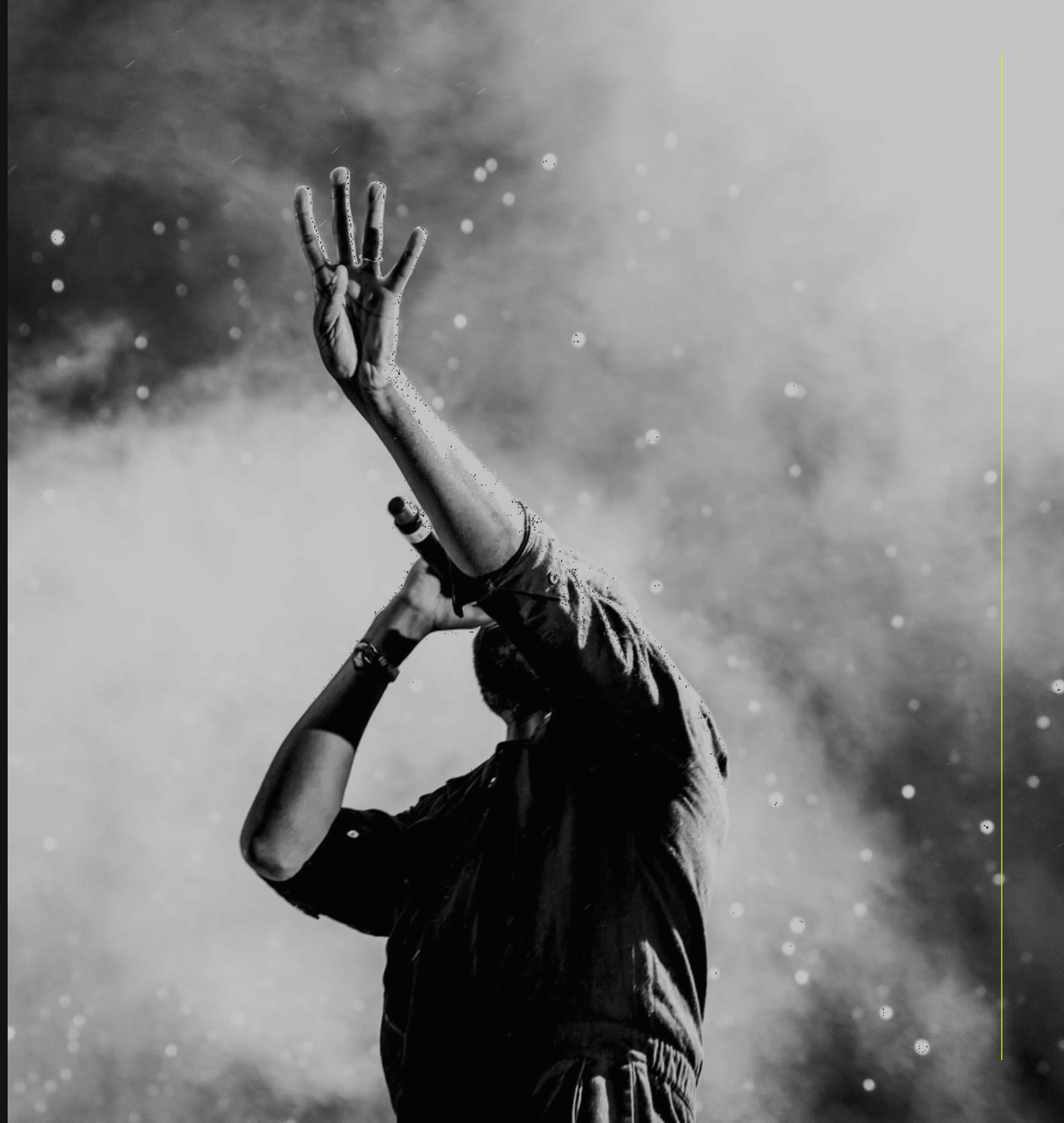

CREATED BY ANKUSH KUMAR SINGH

02 - INTRODUCTION

MUSIC STORE ANALYSIS

Using SQL analytics, this music store aims to boost sales, detect issues, spot valued customers, and create better promotions. Analyzing data for smart decisions drives growth and strengthens customer connections.



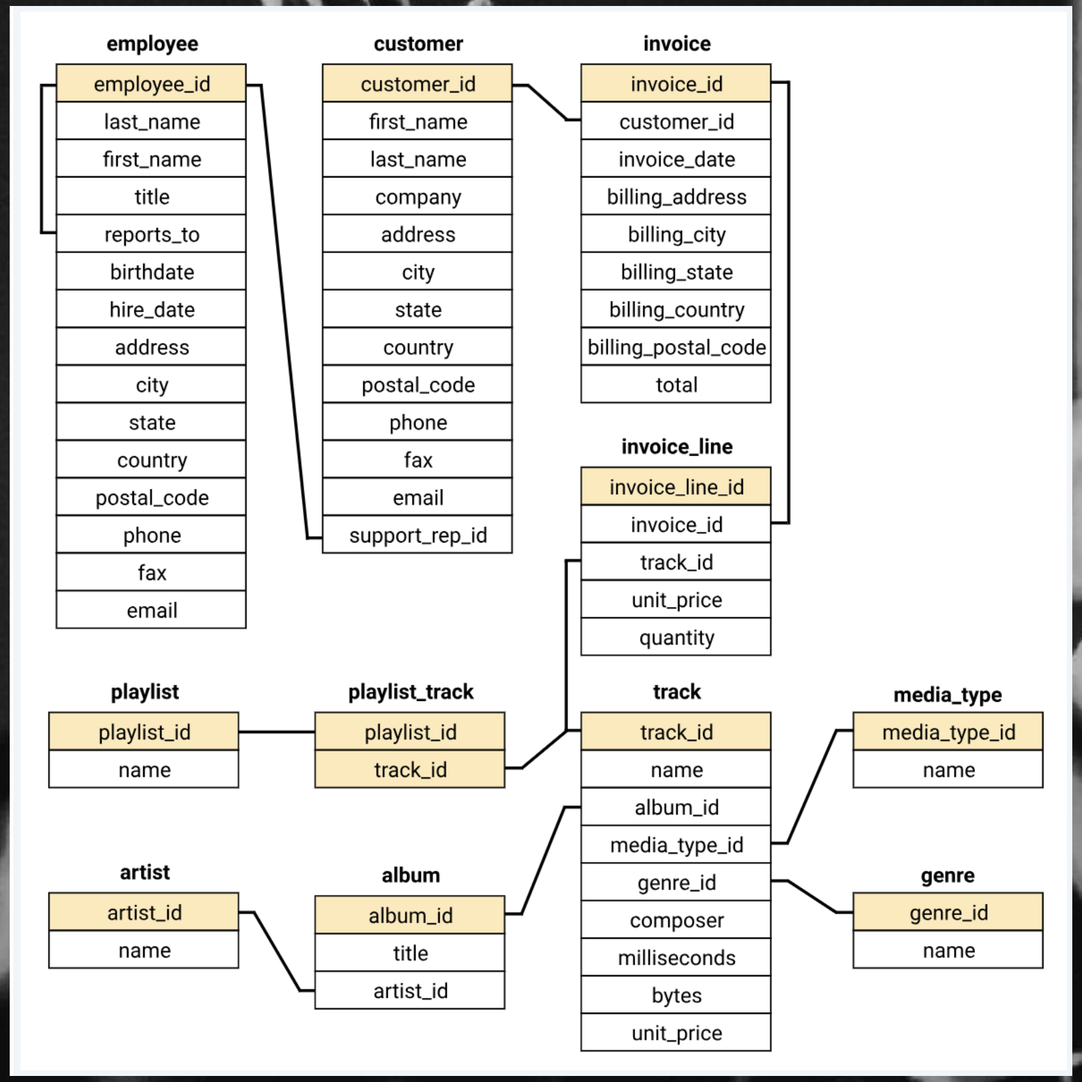
QUERIES ARE DIVIDED INTO 3 CATEGORIES

01 - **EASY**
02 - **MODERATE**
03 - **ADVANCED**

EASY QUERIES

USING SIMPLE QUERIES AND JOINS

SCHEMA


employee
employee_id
last_name
first_name
title
reports_to
birthdate
hire_date
address
city
state
country
postal_code
phone
fax
email
customer
customer_id
first_name
last_name
company
address
city
state
country
postal_code
phone
fax
email
support_rep_id
invoice
invoice_id
customer_id
invoice_date
billing_address
billing_city
billing_state
billing_country
billing_postal_code
total
invoice_line
invoice_line_id
invoice_id
track_id
unit_price
quantity
playlist
playlist_id
name
playlist_track
playlist_id
track_id
track
track_id
name
album_id
media_type_id
genre_id
composer
milliseconds
bytes
unit_price
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genre
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artist
artist_id
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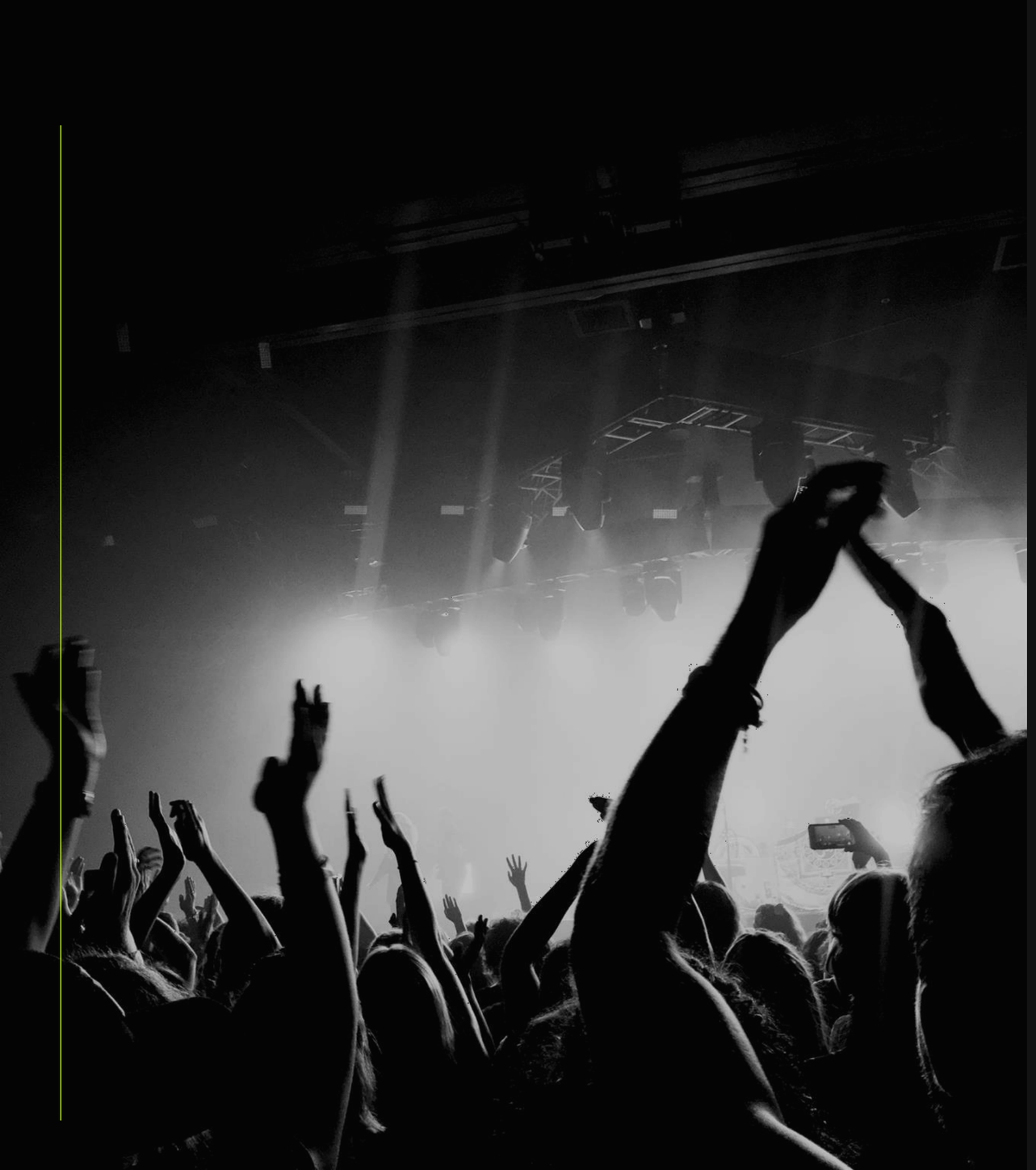
album
album_id
title
artist_id



QUERY NO - 01

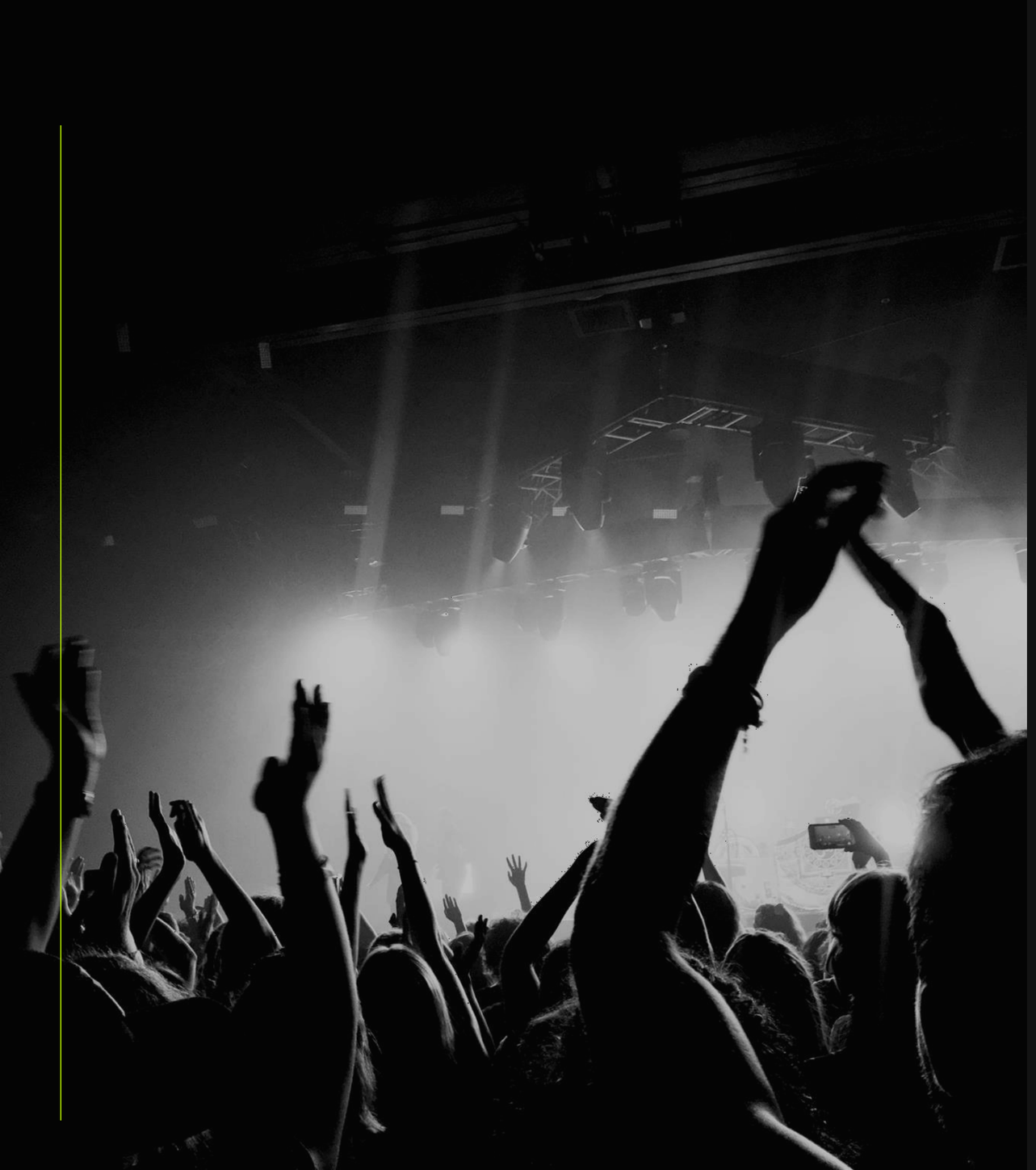
Q1: Who is the senior most employee based on job title?

```sql
SELECT TOP 1 employee_id, last_name, first_name,title,
reports_to, levels
FROM employee
ORDER BY levels DESC
```

120 %

Results | Messages

	employee_id	last_name	first_name	title	reports_to	levels
1	9	Madan	Mohan	Senior General Manager	NULL	L7



QUERY NO - 02

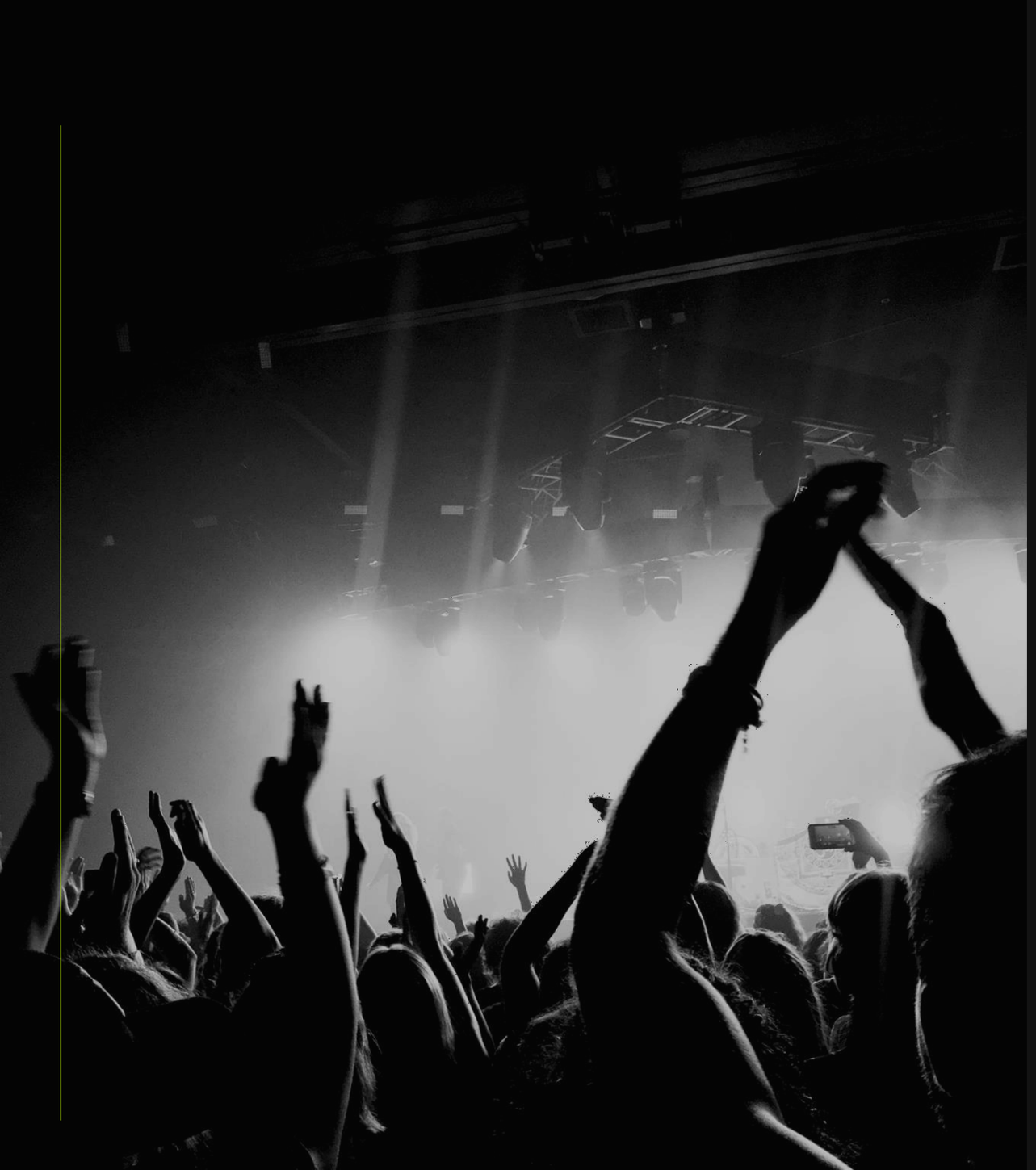
Q2: Which countries have the most Invoices?

```sql
select TOP 5 COUNT(*)as c, billing_country
from invoice
group by billing_country
order by billing_country desc
```

120 %

Results | Messages

	c	billing_country
1	131	USA
2	28	United Kingdom
3	10	Sweden
4	11	Spain
5	29	Portugal



QUERY NO - 03

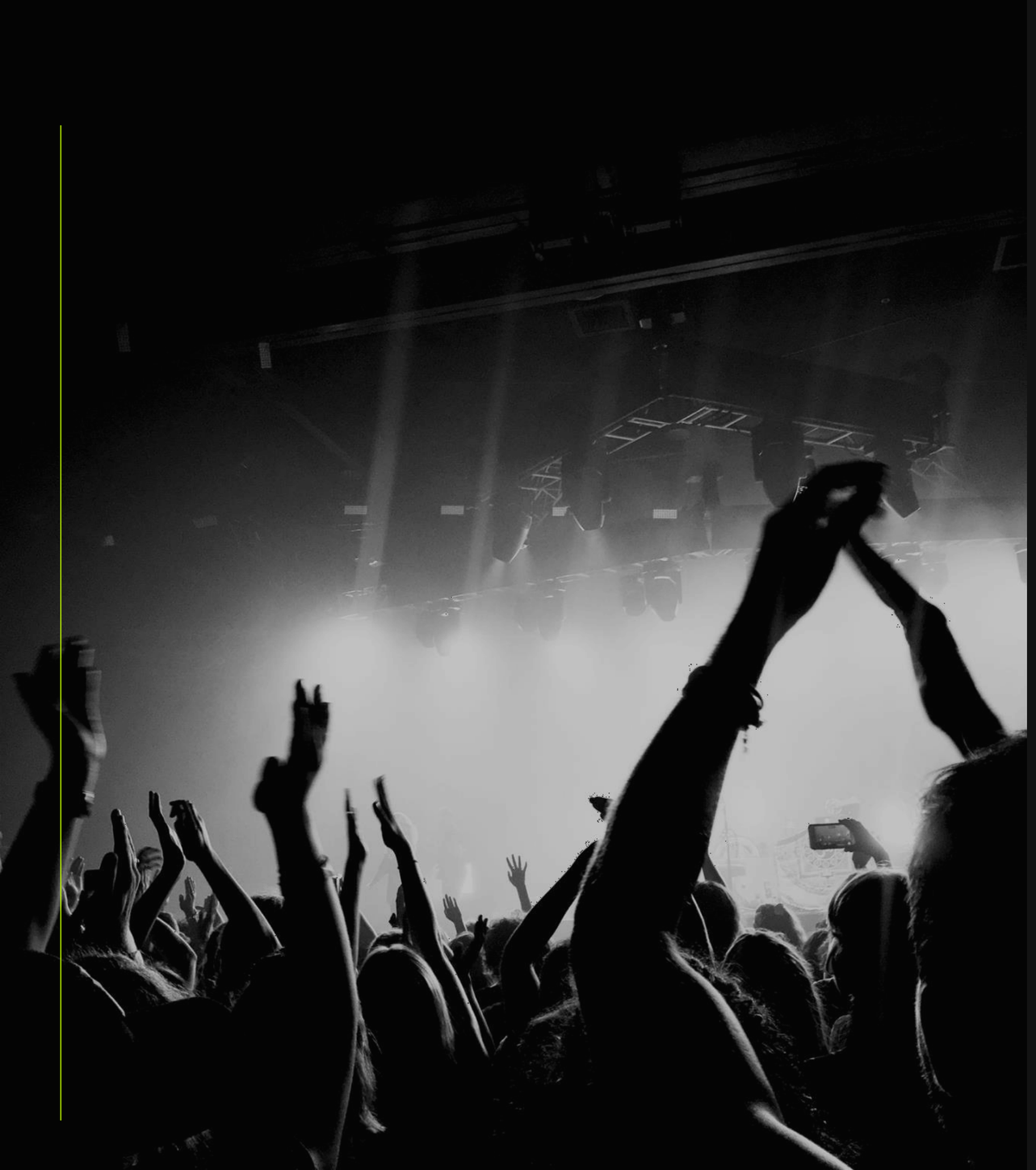
Q3: What are top 3 values of total invoice?

```
select TOP 3 total from invoice
order by total desc
```

120 %

Results | Messages

	total
1	24
2	20
3	20

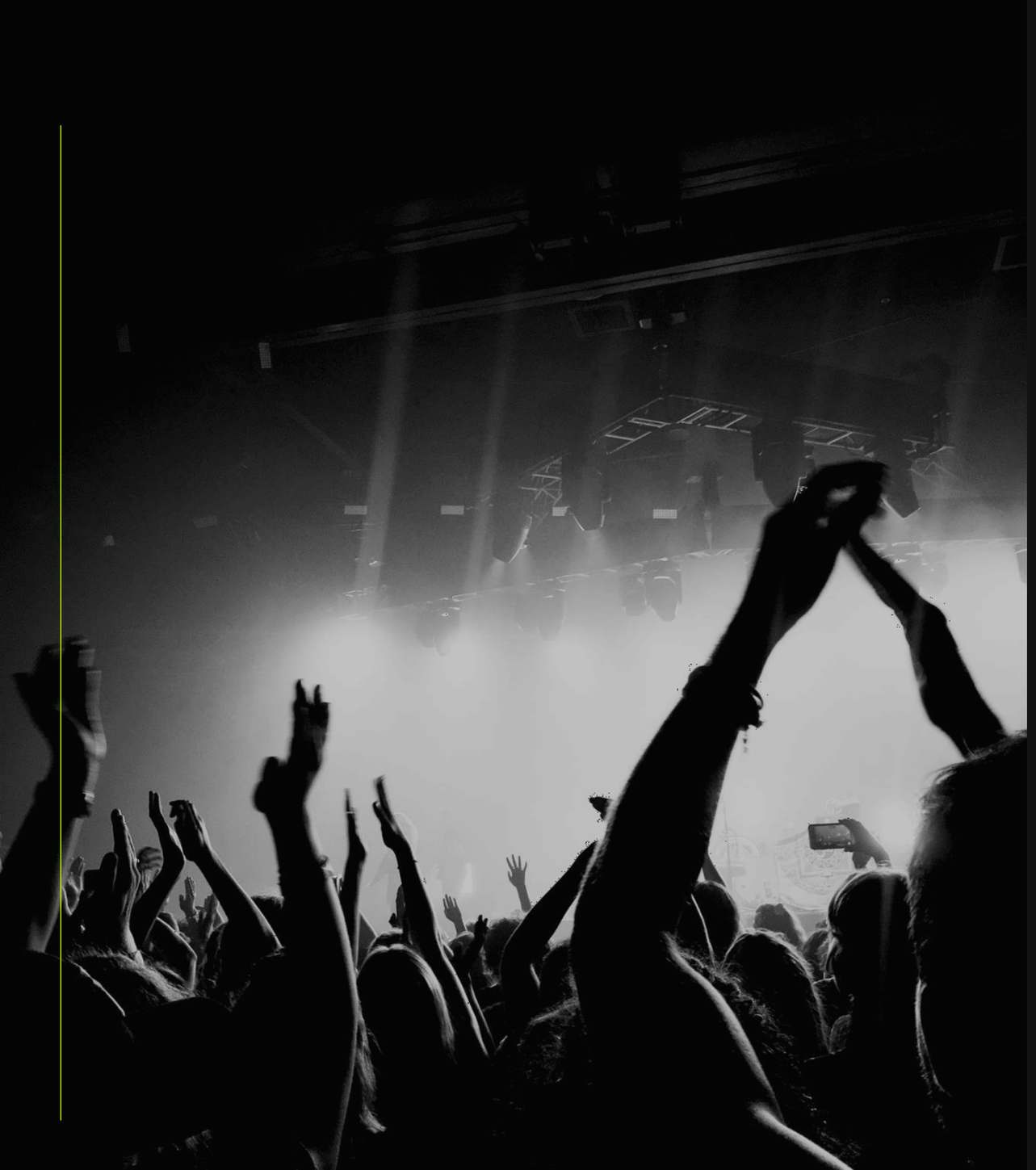


QUERY NO - 04

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

```sql
select sum(total) as invoice_total, billing_city
from invoice
group by billing_city
order by invoice_total desc
```

	invoice_total	billing_city
1	276	Prague
2	171	Mountain View
3	168	London



QUERY NO - 05

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 TOP 1 customer.customer_id, customer.first_name,
customer.last_name, SUM(invoice.total) AS
total_spending
FROM customer
JOIN invoice ON customer.customer_id =
invoice.customer_id
GROUP BY customer.customer_id, customer.first_name,
customer.last_name
ORDER BY total_spending DESC
```

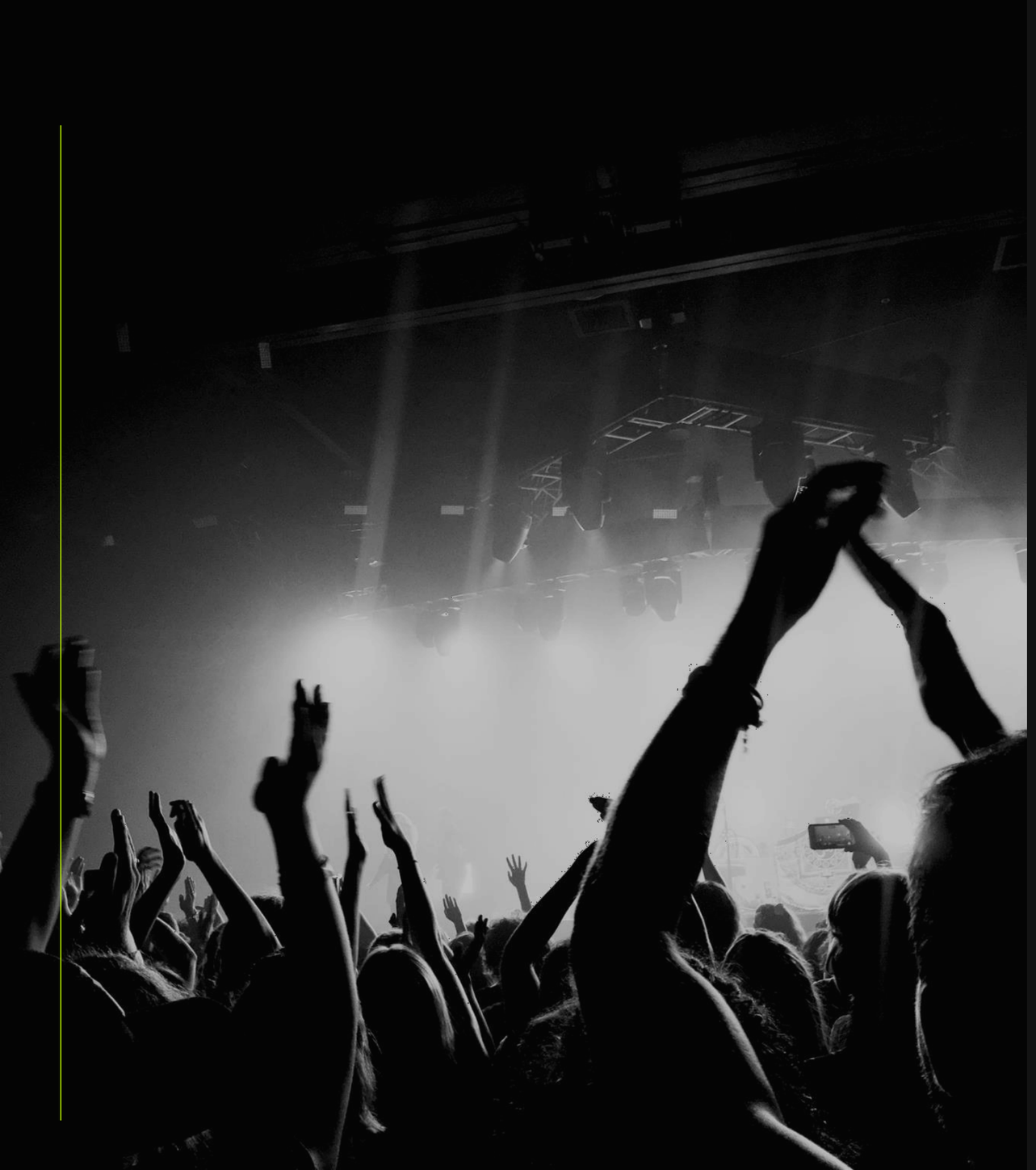
120 %

Results | Messages

	customer_id	first_name	last_name	total_spending
1	5	František	Wichterlová	146

MODERATE LEVEL QUERIES

USING CTE AND JOINS



QUERY NO - 01

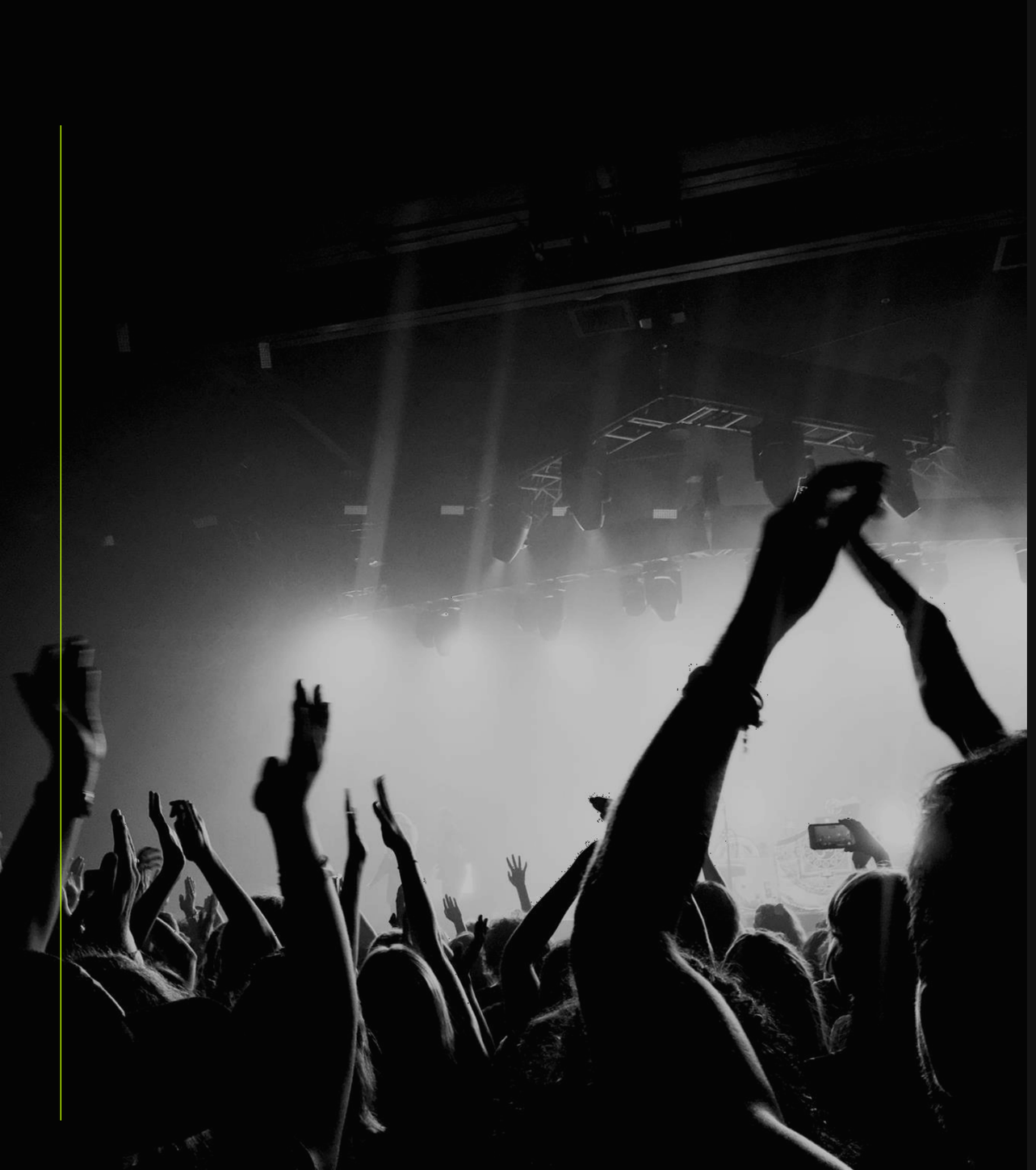
Q1: Write query to return the email, first name, last name, & Genre of all Rock Music listeners. Return your list ordered alphabetically by email starting with A.

```
SELECT DISTINCT email AS Email,first_name AS FirstName,
last_name AS LastName, genre.name AS Name
FROM customer
JOIN invoice ON
invoice.customer_id=customer.customer_id
JOIN invoice_line ON invoice_line.invoice_id =
invoice.invoice_id
JOIN track ON track.track_id = invoice_line.track_id
JOIN genre ON genre.genre_id = track.genre_id
WHERE genre.name LIKE 'Rock'
ORDER BY email;
```

120 %

Results | Messages

	Email	First Name	Last Name	Name
1	aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
2	alero@uol.com.br	Alexandre	Rocha	Rock
3	astrid.gruber@apple.at	Astrid	Gruber	Rock
4	bjorn.hansen@yahoo.no	Bjørn	Hansen	Rock
5	camille.bernard@yahoo.fr	Camille	Bernard	Rock
6	daan_peeters@apple.be	Daan	Peeters	Rock
7	diego.gutierrez@yahoo.ar	Diego	Gutiérrez	Rock
8	dmiller@comcast.com	Dan	Miller	Rock



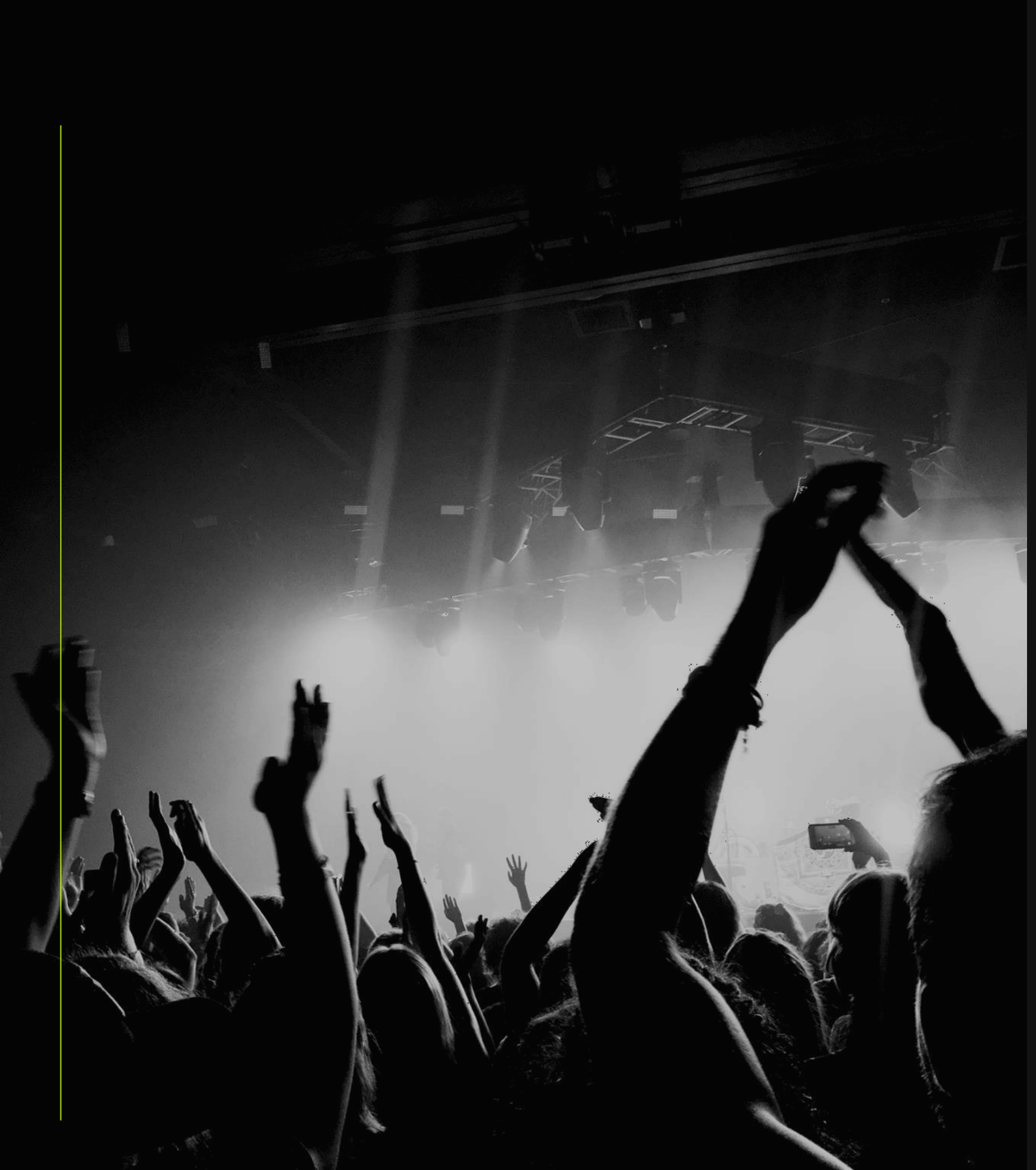
QUERY NO - 02

Q2: 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.

```sql
SELECT TOP 10 artist.artist_id, artist.name,
COUNT(track.track_id) AS number_of_songs
FROM track
JOIN album2 ON album2.album_id = track.album_id
JOIN artist ON artist.artist_id = album2.artist_id
JOIN genre ON genre.genre_id = track.genre_id
WHERE genre.name LIKE 'Rock'
GROUP BY artist.artist_id, artist.name
ORDER BY number_of_songs DESC
```

Results | Messages

	artist_id	name	number_of_songs
1	22	Led Zeppelin	114
2	150	U2	112
3	58	Deep Purple	92
4	90	Iron Maiden	81
5	118	Pearl Jam	54
6	152	Van Halen	52
7	51	Queen	45
8	142	The Rolling Stones	41
9	76	Creedence Clearwater Revival	40
10	52	Kiss	35



QUERY NO - 03

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.

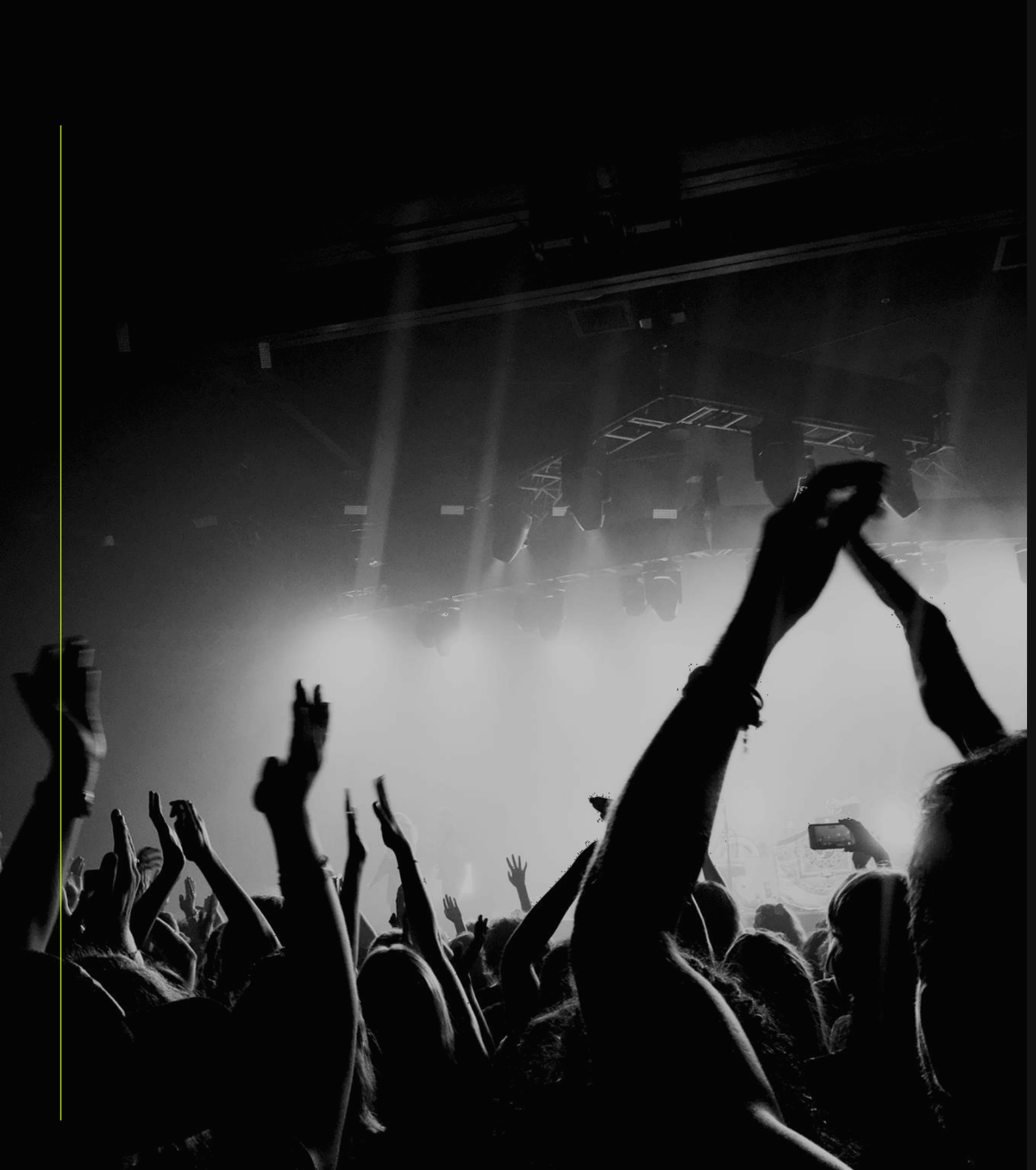
```sql
SELECT name,milliseconds
FROM track
WHERE milliseconds > (
    SELECT AVG(milliseconds) AS avg_track_length
    FROM track )
ORDER BY milliseconds DESC;
```

Results | Messages

	name	milliseconds
1	Occupation / Precipice	5286953
2	Through a Looking Glass	5088838
3	Greetings from Earth, Pt. 1	2960293
4	The Man With Nine Lives	2956998
5	Battlestar Galactica, Pt. 2	2956081
6	Battlestar Galactica, Pt. 1	2952702
7	Murder On the Rising Star	2935894
8	Battlestar Galactica, Pt. 3	2927802
9	Take the Celestra	2927677
10	Fire In Space	2926593

ADVANCE LEVEL QUERIES

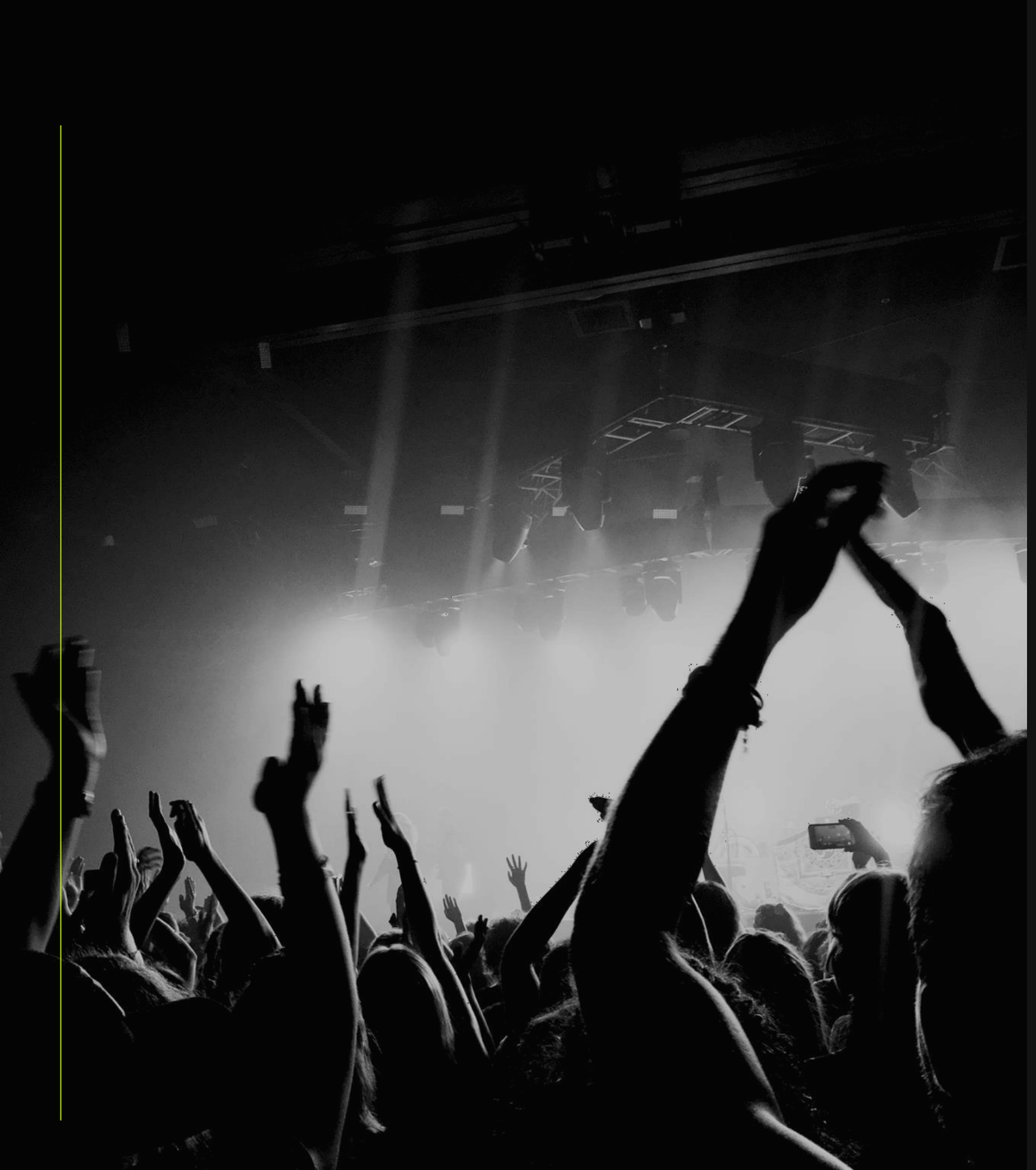
COMPLEX QUERIES AND JOINS



QUERY NO - 01

Q1: Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent

```sql
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 album2 ON album2.album_id = track.album_id
    JOIN artist ON artist.artist_id = album2.artist_id
    GROUP BY artist.artist_id, artist.name
    ORDER BY total_sales DESC
    OFFSET 0 ROWS
    FETCH NEXT 1 ROWS ONLY
)
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 album2 alb ON alb.album_id = t.album_id
JOIN best_selling_artist bsa ON bsa.artist_id = alb.artist_id
GROUP BY c.customer_id, c.first_name, c.last_name, bsa.artist_name
ORDER BY amount_spent DESC;
```

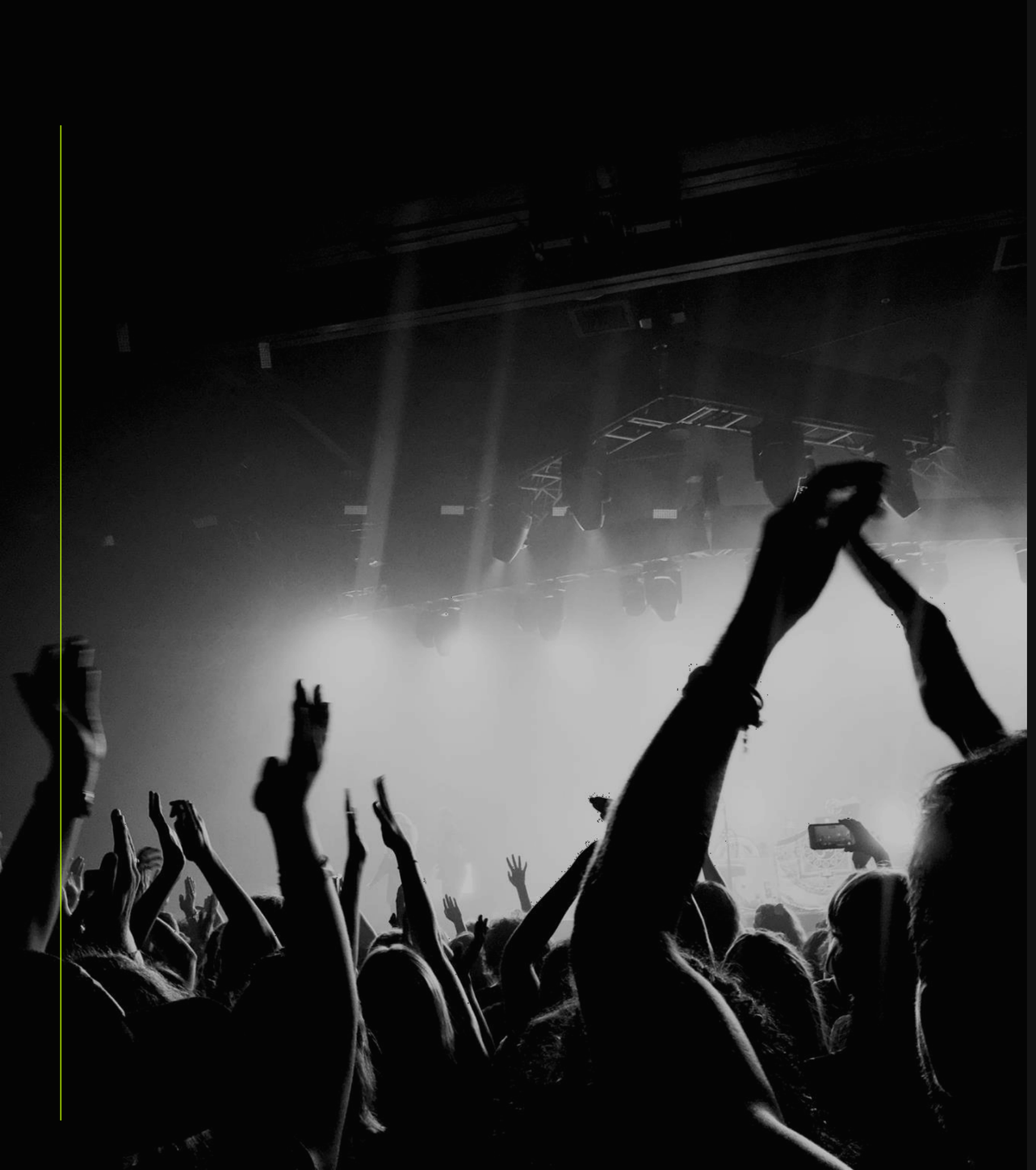


OUTPUT

Q1: Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent

Results | Messages

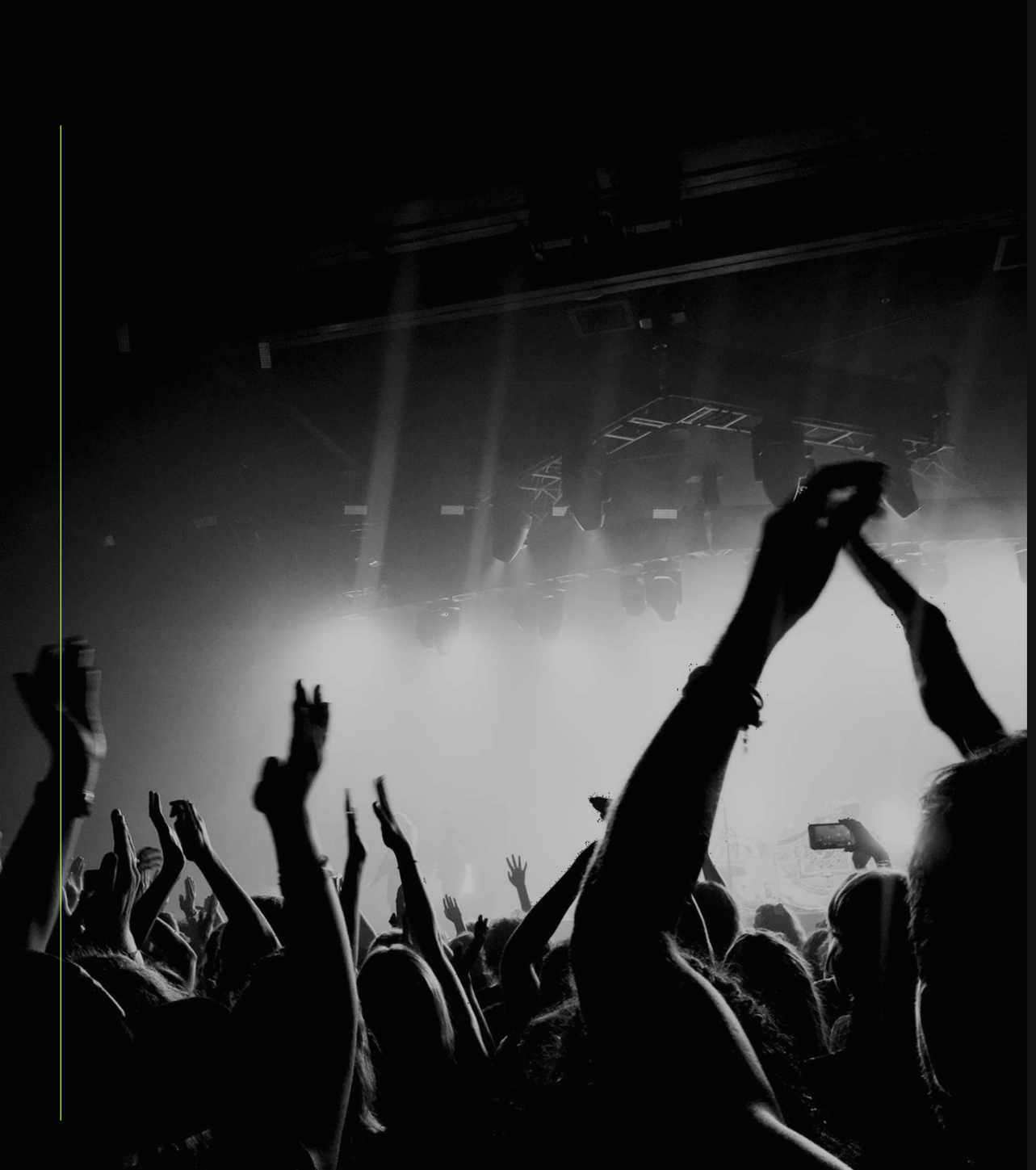
	customer_id	first_name	last_name	artist_name	amount_spent
1	46	Hugh	O'Reilly	Queen	28
2	38	Niklas	Schröder	Queen	19
3	3	François	Tremblay	Queen	18
4	34	João	Fernandes	Queen	17
5	41	Marc	Dubois	Queen	12
6	53	Phil	Hughes	Queen	12
7	47	Lucas	Mancini	Queen	11
8	33	Ellie	Sullivan	Queen	11
9	5	František	Wichterlová	Queen	4
10	20	Dan	Miller	Queen	4
11	23	John	Gordon	Queen	3
12	31	Martha	Silk	Queen	3
13	54	Steve	Murray	Queen	3
14	57	Luis	Rojas	Queen	2
15	1	Luís	Gonçalves	Queen	2



QUERY NO - 02

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 a query that returns each country along with the top Genre. For countries where
the maximum number of purchases is shared return all Genres.

```sql
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 customer.country, genre.name, genre.genre_id
)
SELECT * FROM popular_genre WHERE RowNo = 1
```

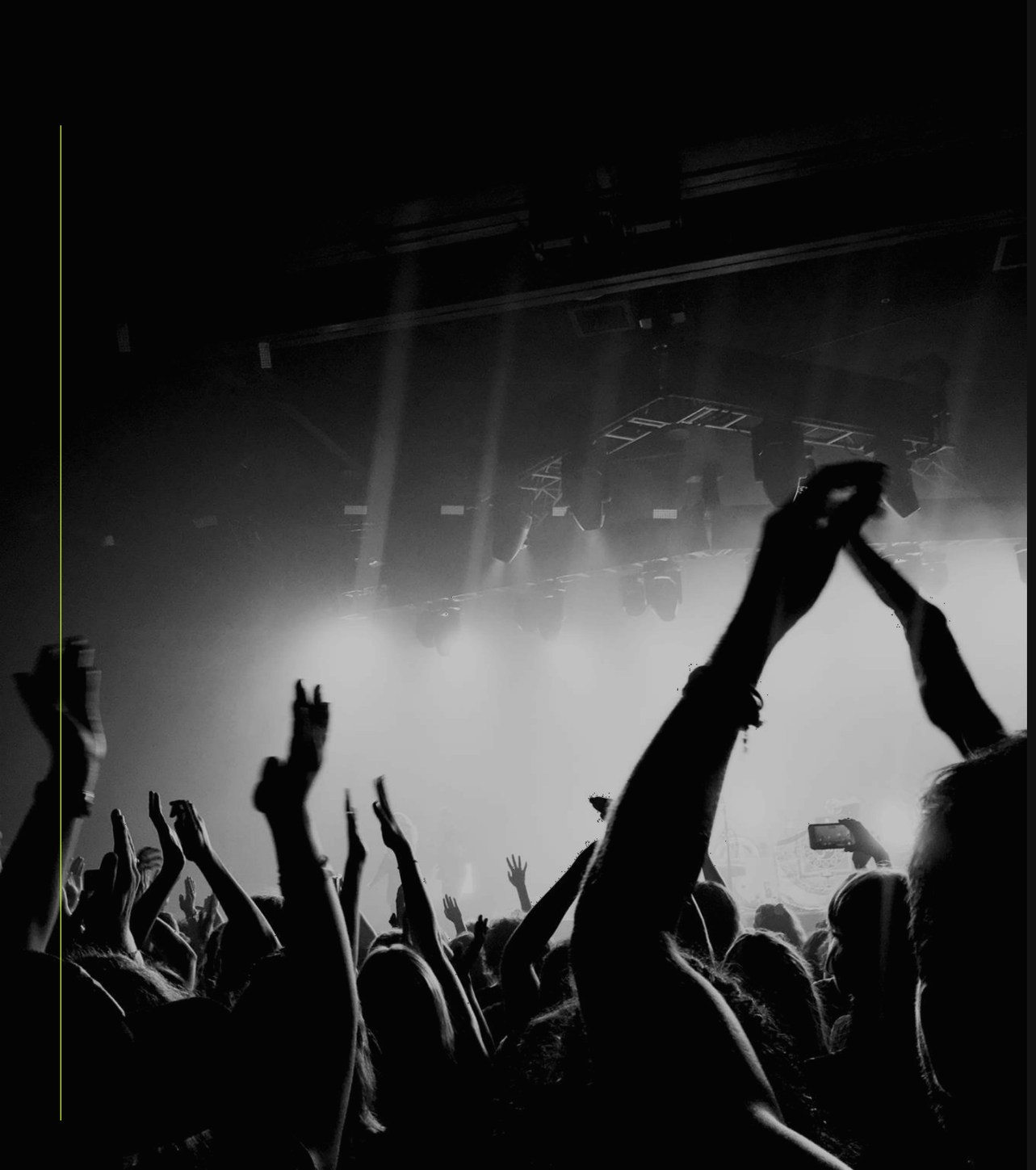


OUTPUT

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 a query that returns each country along with the top Genre. For countries where
the maximum number of purchases is shared return all Genres.

Results | Messages

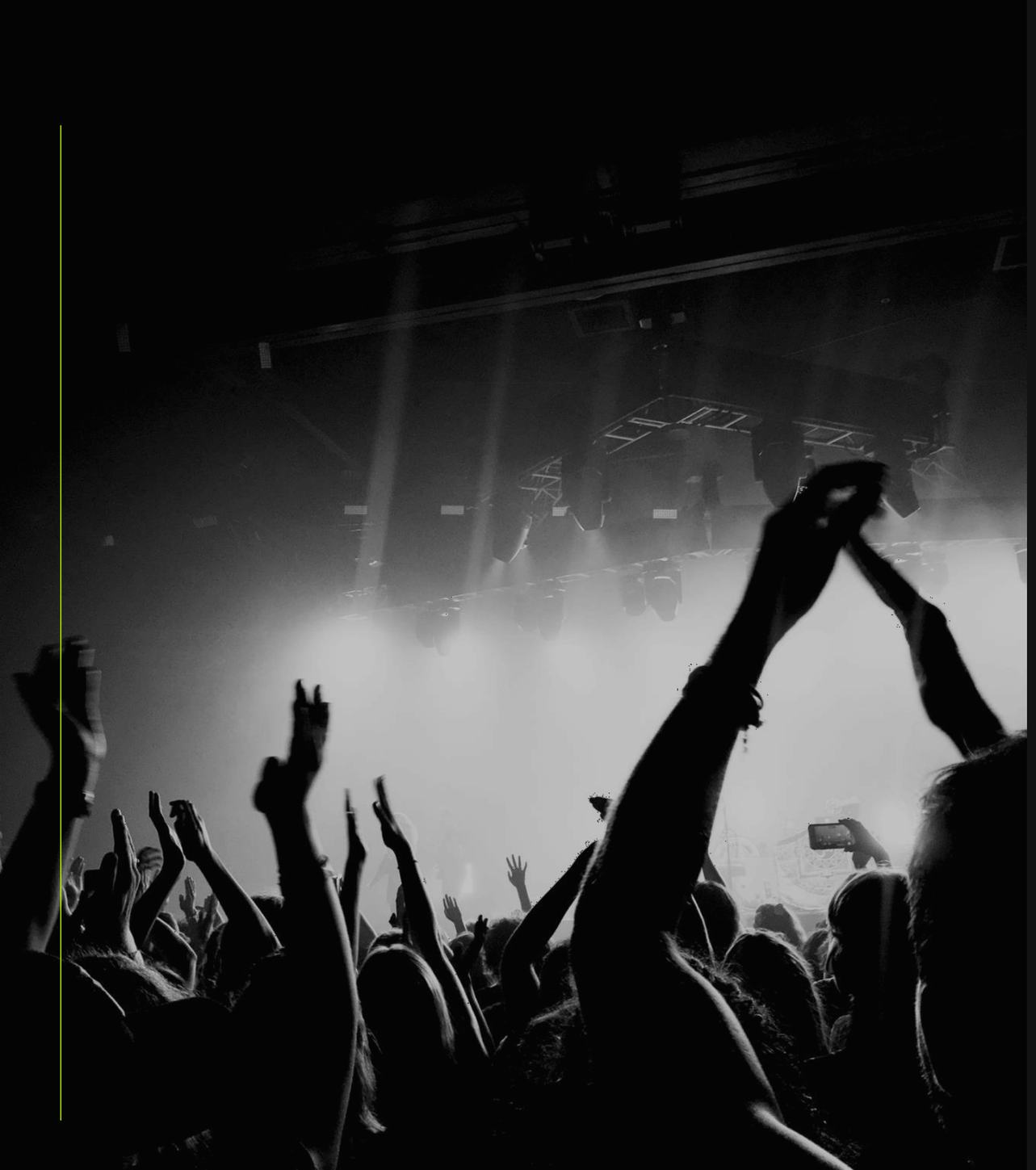
	purchases	country	name	genre_id	RowN
1	17	Argentina	Alternative & Punk	4	1
2	34	Australia	Rock	1	1
3	40	Austria	Rock	1	1
4	26	Belgium	Rock	1	1
5	205	Brazil	Rock	1	1
6	333	Canada	Rock	1	1
7	61	Chile	Rock	1	1
8	143	Czech Republic	Rock	1	1
9	24	Denmark	Rock	1	1
10	46	Finland	Rock	1	1
11	211	France	Rock	1	1
12	194	Germany	Rock	1	1
13	44	Hungary	Rock	1	1
14	102	India	Rock	1	1
15	72	Ireland	Rock	1	1



QUERY NO - 03

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.

```
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 RowNo
    FROM
        invoice
    JOIN customer ON customer.customer_id = invoice.customer_id
    GROUP BY
        customer.customer_id,first_name,last_name,billing_country
)
SELECT * FROM Customer_with_country WHERE RowNo = 1
```



OUTPUT

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.

Results | Messages

	customer_id	first_name	last_name	billing_country	total_spending	RowNo
1	56	Diego	Gutiérrez	Argentina	40	1
2	55	Mark	Taylor	Australia	82	1
3	7	Astrid	Gruber	Austria	70	1
4	8	Daan	Peeters	Belgium	61	1
5	1	Luís	Gonçalves	Brazil	110	1
6	3	François	Tremblay	Canada	101	1
7	57	Luis	Rojas	Chile	98	1
8	5	František	Wichterlová	Czech Republic	146	1
9	9	Kara	Nielsen	Denmark	38	1
10	44	Terhi	Hämäläinen	Finland	80	1
11	42	Wyatt	Girard	France	101	1
12	37	Fynn	Zimmermann	Germany	95	1
13	45	Ladislav	Kovács	Hungary	79	1
14	58	Manoj	Pareek	India	113	1
15	46	Hugh	O'Reilly	Ireland	116	1