MUSIC PARTY
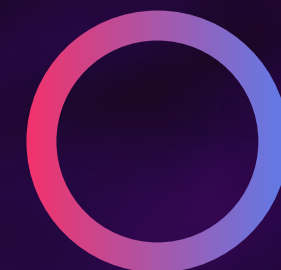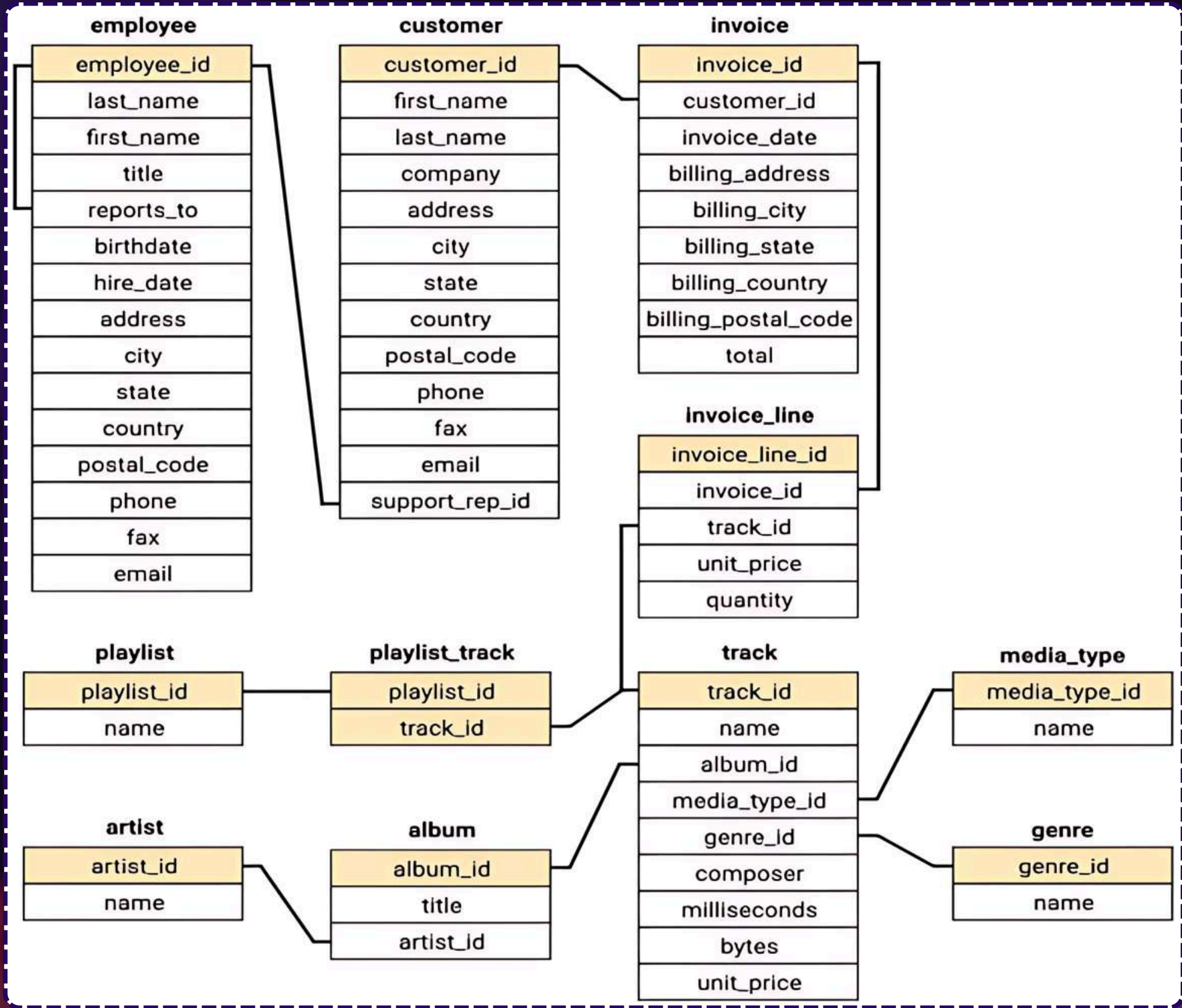
Objective :

To analyze the music playlist database using **SQL** and help the store understand its business growth.

Schema:

employee		customer		invoice
employee_id		customer_id		invoice_id
last_name		first_name		customer_id
first_name		last_name		invoice_date
title		company		billing_address
reports_to		address		billing_city
birthdate		city		billing_state
hire_date		state		billing_country
address		country		billing_postal_code
city		postal_code		total
state		phone		
country		fax		invoice_line
postal_code		email		invoice_line_id
phone		support_rep_id		invoice_id
fax				track_id
email				unit_price
				quantity

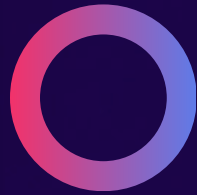| playlist		playlist_track		track		media_type
playlist_id		playlist_id		track_id		media_type_id
name		track_id		name		name
				album_id		
				media_type_id		
artist		album		genre_id		genre
artist_id		album_id		composer		genre_id
name		title		milliseconds		name
		artist_id		bytes		
				unit_price		

Questions Set 1: EASY

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

```sql
SELECT *
FROM employee
ORDER BY levels DESC
LIMIT 1
```

last_name character		first_name character		title character varying (50)		reports_to character varying (30)		levels charact
Madan	...	Mohan	...	Senior General Manager		[null]		L7

2. Which countries have the **most** Invoices?

```sql
select count(*) as Invoices ,billing_country
from invoice
group by billing_country
order by Invoices DESC
LIMIT 1
```

invoices 🔒	billing_country 🔒
bigint	character varying (30)
131	USA

Q3. What are top 3 values of total invoice?

```sql
SELECT total
FROM invoice
ORDER By total desc
LIMIT 3
```

	total double precision 🔒
1	23.75999999999998
2	19.8
3	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

```
SELECT billing_city , sum(total) as invoice_total
FROM invoice
group by billing_city
order by invoice_total desc
```

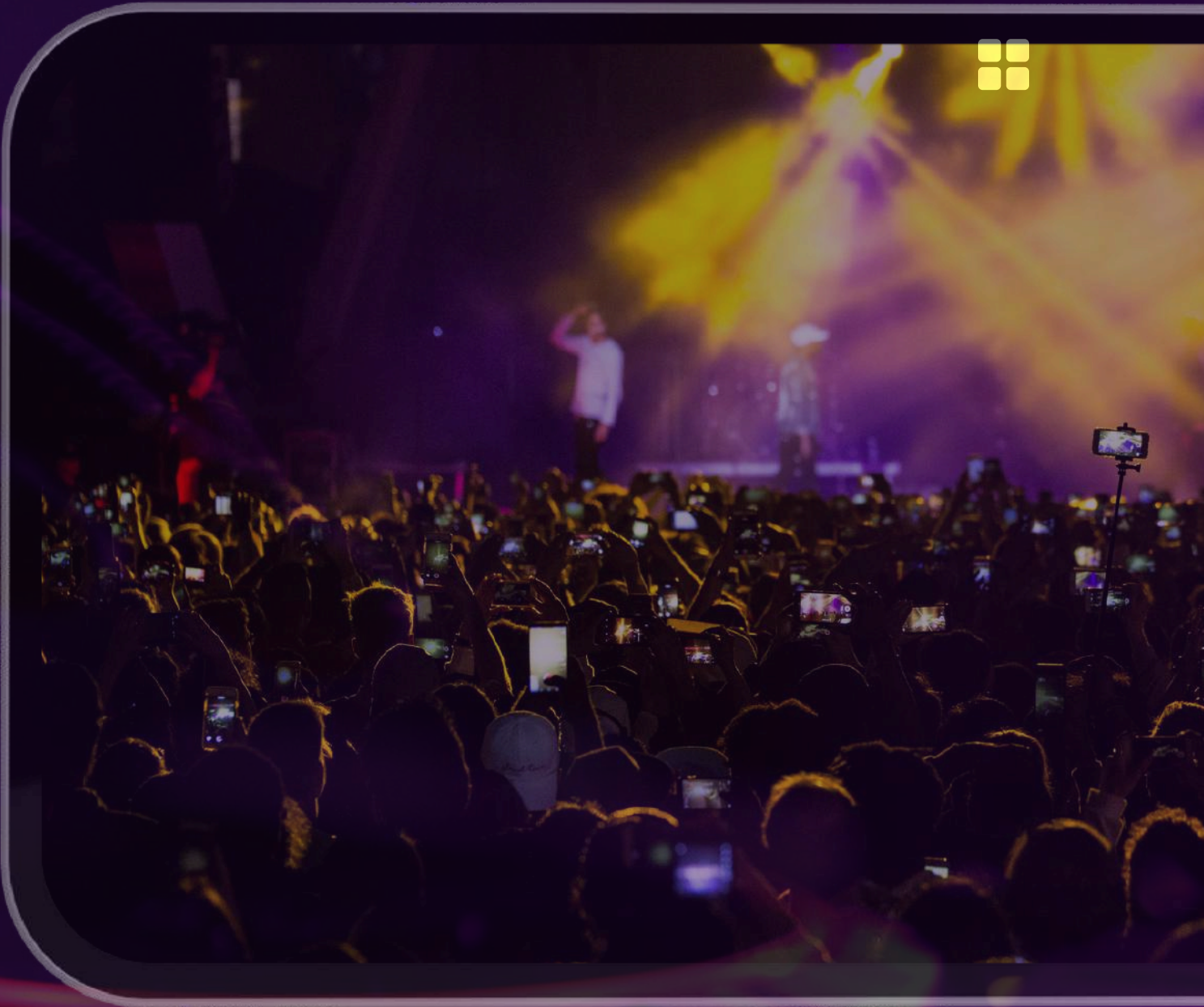| billing_city character varying (30)	invoice_total double precision
Prague	273.24000000000007

5. 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

```sql
SELECT c.customer_id, c.first_name ,c.last_name, sum(i.total) as gt
FROM customer as c
INNER JOIN invoice as i
ON c.customer_id = i.customer_id
group by c.customer_id
order by gt desc
limit 1
```

customer_id [PK] integer	first_name character	last_name character	gt double precision
5	R	Madhav	144.54000000000002

Questions Set 2: Medium

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

```sql
select distinct c.email, c.first_name , c.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
join track as t
on il.track_id = t.track_id
join genre
on t.genre_id = genre.genre_id
where genre.name = 'Rock'
order by email asc
```

	email character varying (50)	first_name character	last_name character
1	aaronmitchell@yahoo.ca	Aaron	Mitchell
2	alero@uol.com.br	Alexandre	Rocha
3	astrid.gruber@apple.at	Astrid	Gruber
4	bjorn.hansen@yahoo.no	Bjørn	Hansen
5	camille.bernard@yahoo.fr	Camille	Bernard
6	daan_peeters@apple.be	Daan	Peeters
7	diego.gutierrez@yahoo.ar	Diego	Gutiérrez
8	dmiller@comcast.com	Dan	Miller
9	dominiquelefebvre@gmail.c...	Dominique	Lefebvre
10	edfrancis@yachoo.ca	Edward	Francis

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

```sql
select artist.name as artist_name ,
       count(track.track_id) as total_count
from artist
join album
on artist.artist_id = album.artist_id
join track
on album.album_id = track.album_id
join genre
on track.genre_id = genre.genre_id
where genre.name = 'Rock'
group by artist_name
order by total_count desc
limit 10;
```

artist_name character varying (120) 🔒	total_count bigint 🔒
1 Led Zeppelin	114
2 U2	112
3 Deep Purple	92

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

```sql
select name, milliseconds as song_length
from track
where milliseconds > (select avg(milliseconds) from track)
order by milliseconds  desc
```

name character varying (150)	song_length integer
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
Fire In Space	2926593
The Long Patrol	2925008

Questions Set 3: Hard

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

```sql
SELECT
    c.first_name || ' ' || c.last_name AS customer_name,
    ar.name AS artist_name,
    SUM(il.unit_price * il.quantity) AS total_spent
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
JOIN track AS t
ON il.track_id = t.track_id
JOIN album AS a
ON t.album_id = a.album_id
JOIN artist AS ar
ON a.artist_id = ar.artist_id
GROUP BY customer_name, artist_name
ORDER BY total_spent DESC;
```

customer_name text	artist_name character varying (120)	total_spent double precision
Hugh O'Reilly	Queen	27.719999999999985
Wyatt Girard	Frank Sinatra	23.75999999999999
Helena Holý	Red Hot Chili Peppers	19.799999999999997
François Tremblay	The Who	19.799999999999997
Robert Brown	Creedence Clearwater Revival	19.799999999999997

MUSIC PARTY

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 number 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.

```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 2,3,4
    ORDER BY 2 ASC, 1 DESC
)
SELECT * FROM popular_genre WHERE RowNo <= 1
```
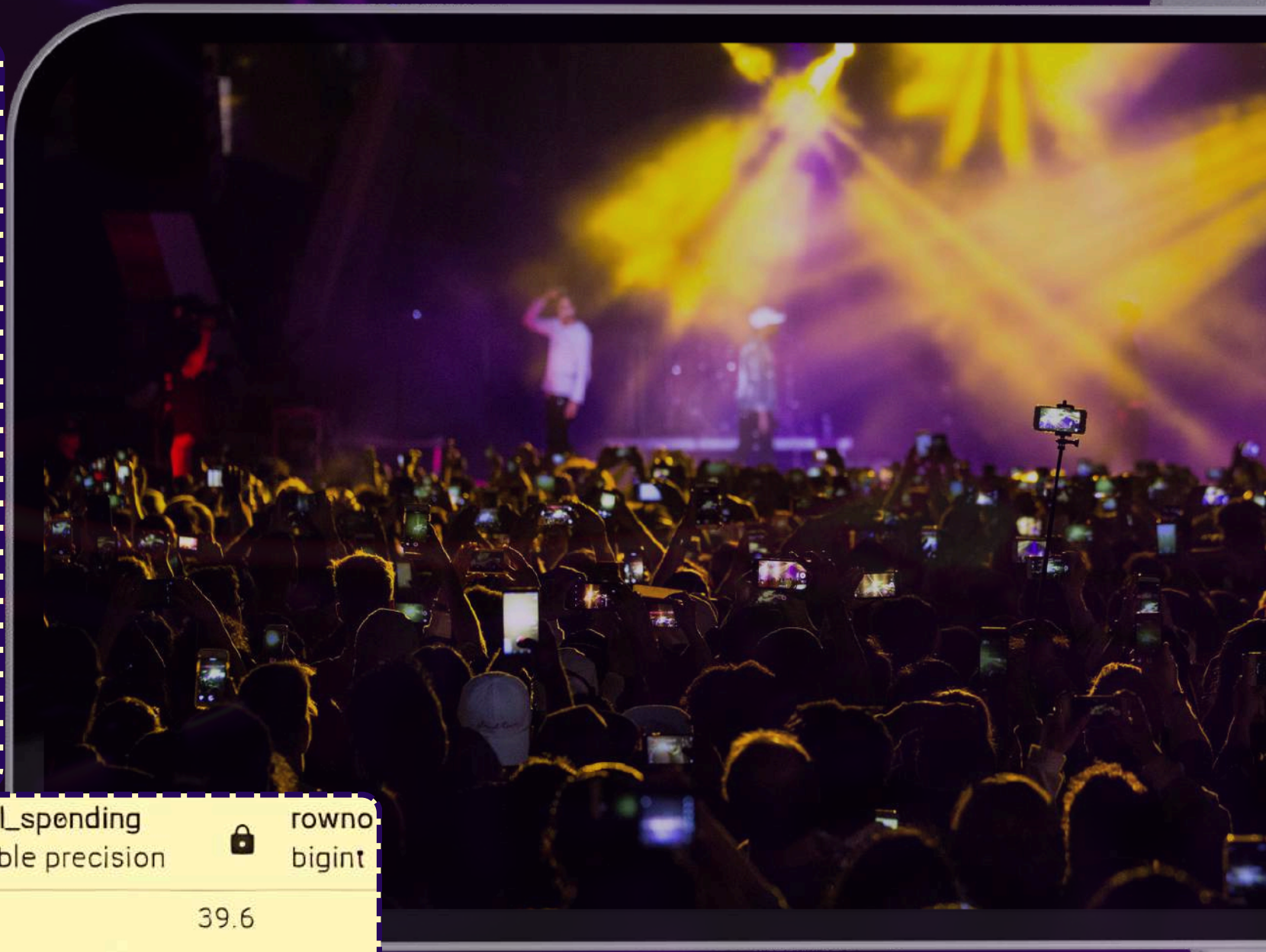
	purchases bigint	country character varying (50)	name character varying (120)	genre_id character varying (50)	rowno bigint
1	17	Argentina	Alternative & Punk	4	1
2	34	Australia	Rock	1	1
3	40	Austria	Rock	1	1
4	26	Belgium	Rock	1	1
5	205	Brazil	Rock	1	1
6	333	Canada	Rock	1	1

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.**

```sql
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
```

customer_id integer	first_name character	last_name character	billing_country character varying (30)	total_spending double precision	rowno bigint
56	Diego	Gutiérrez	Argentina	39.6	
55	Mark	Taylor	Australia	81.18	
7	Astrid	Gruber	Austria	69.3	

INSIGHTS

- Rock is the most popular genre among our consumers, dominating in 23 out of 24 countries and accounting for the majority of transactions.
- The Prague store stands out among all stores, earning the highest invoice at $273, making it the top performer.
- Queen has emerged as the most popular artist, with total sales amounting to $190, making her the favorite among our patrons.
- R Madhav is recognized as the top music enthusiast and best customer, having spent the most money on music

THANK YOU ALL

Arun Prajapati **in**

Data Analytics Enthusiast

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