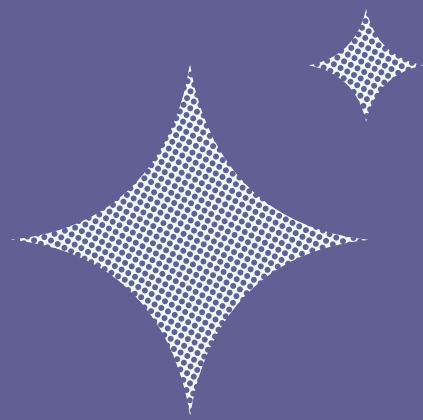
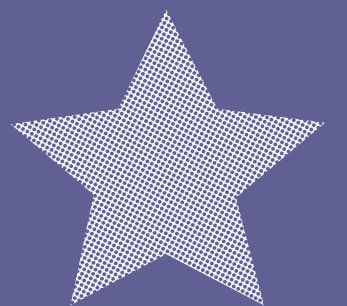


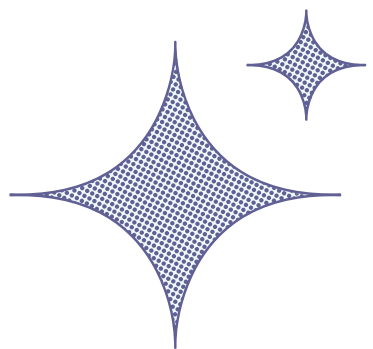
SQL PROJECT ON

# Music Store

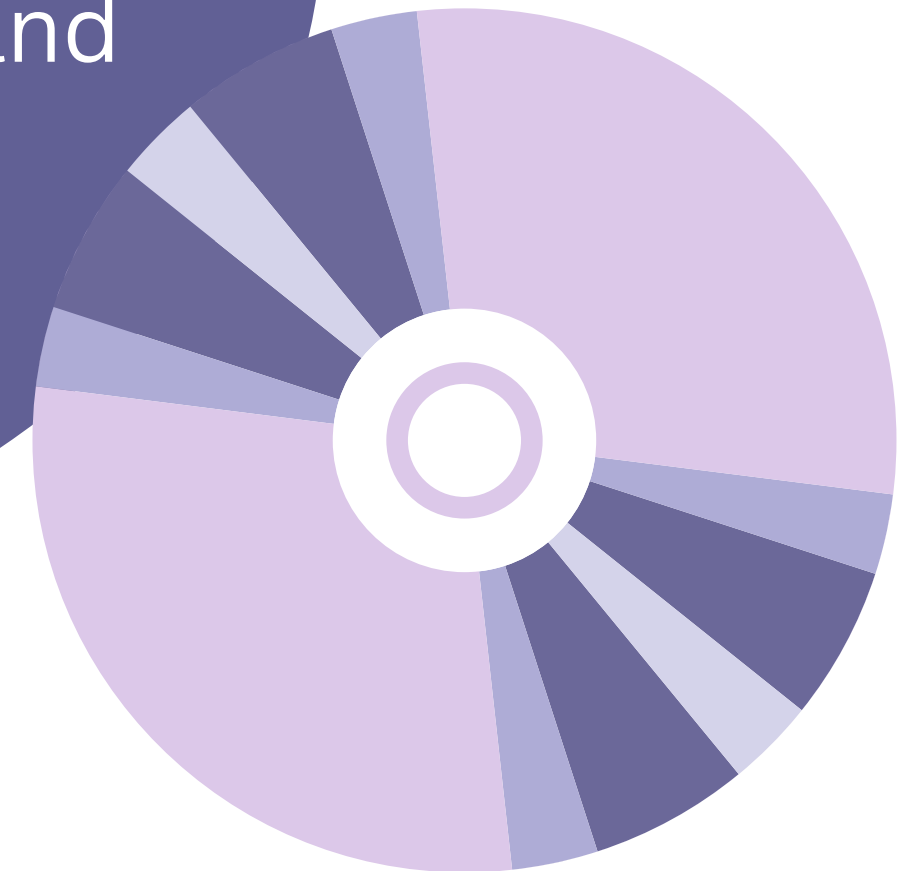
DATABASE



# PROJECT INTRODUCTION

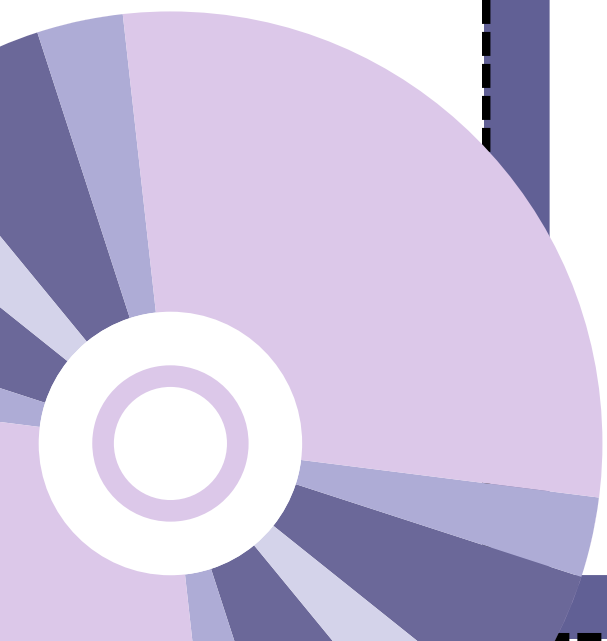
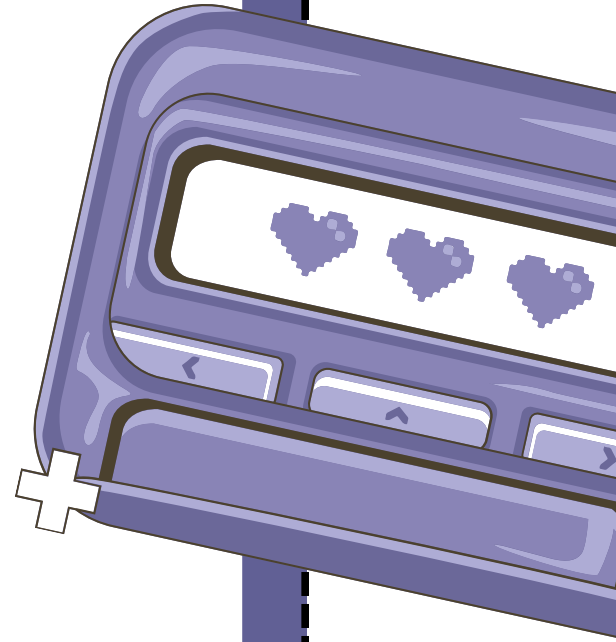


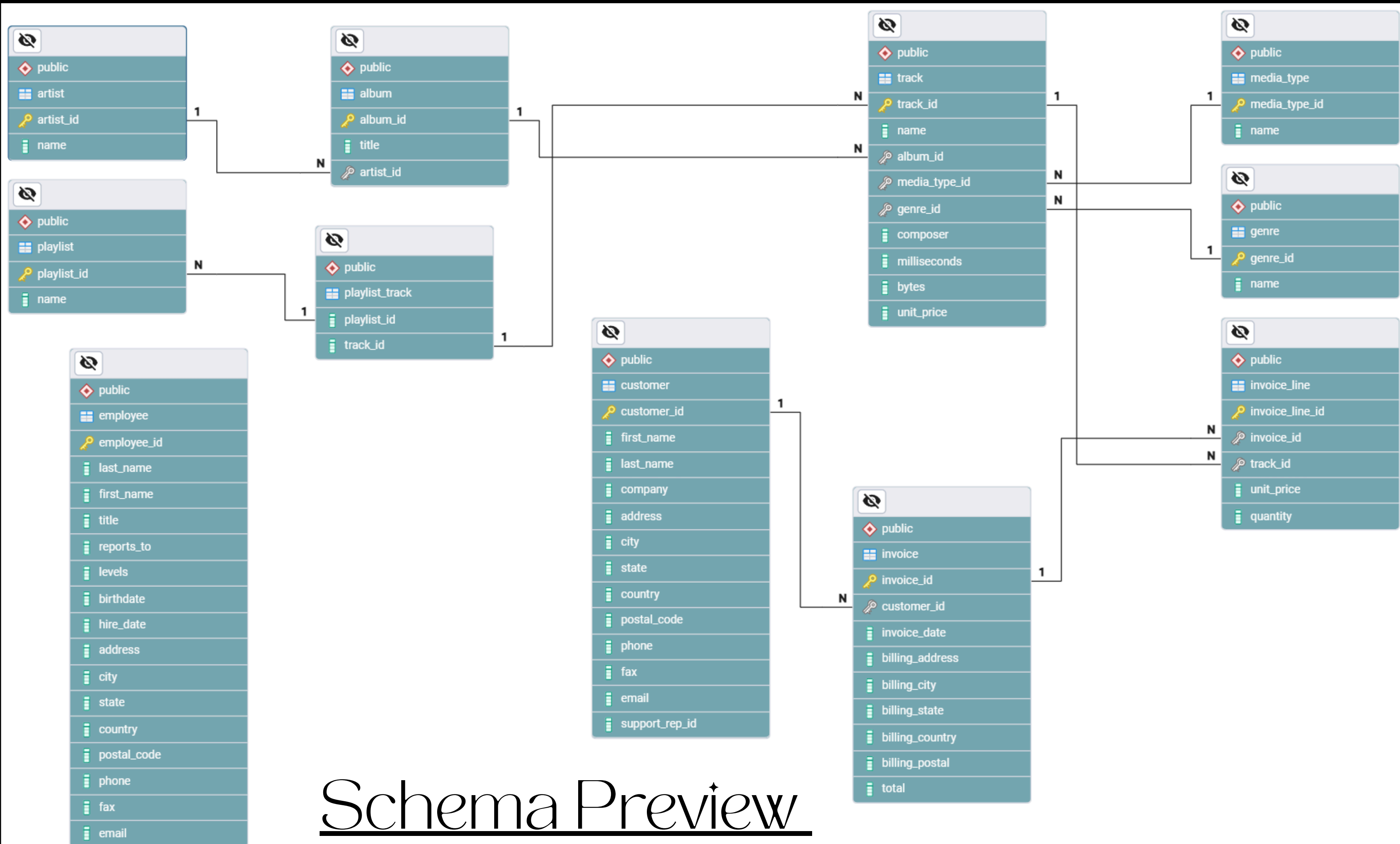
In this project, we performed a deep analysis of a music store database using SQL queries. The objective was to extract meaningful insights related to customer behavior, artist popularity, and sales performance across different countries and cities.



# Queries

1. Who is the senior most employee based on job title
2. Which countries have the most invoice
3. What are the top 3 values of total invoice
4. 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
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.
6. 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.
7. 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.
8. 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
9. Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent
10. 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 genre.
11. 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.









# Schema Preview

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

```
SELECT employee_id, last_name, first_name,  
        title  
FROM employee  
ORDER by levels DESC  
LIMIT 1
```

	employee_id [PK] character varying (50) 	last_name character (50) 	first_name character (50) 	title character varying (50) 
1	9	Madan ...	Mohan ...	Senior General Manager

## 2.Which countries have the most invoice.

```
SELECT COUNT(*),  
billing_country AS  
total_invoice  
FROM invoice  
GROUP BY billing_country  
ORDER BY total_invoice  
DESC
```

	count bigint 	total_invoice character varying (30) 
1	131	USA
2	28	United Kingdom
3	10	Sweden
4	11	Spain
5	29	Portugal
6	10	Poland
7	9	Norway
8	10	Netherlands
9	9	Italy
10	13	Ireland
11	21	India
12	10	Hungary
13	41	Germany
14	50	France
15	11	Finland
16	10	Denmark
17	30	Czech Republic
18	13	Chile
19	76	Canada
20	61	Brazil
21	7	Belgium
22	9	Austria
23	10	Australia
24	5	Argentina





3.What are the top three values of total invoice.

*SELECT \* FROM invoice  
ORDER BY total DESC  
LIMIT 3*

	invoice_id [PK] integer	customer_id integer	invoice_date timestamp without time zone	billing_address character varying (120)	billing_city character varying (30)	billing_state character varying (30)	billing_country character varying (30)	billing_postal character varying (30)	total double precision
1	183	42	2018-02-09 00:00:00	9, Place Louis Barthou	Bordeaux	None	France	33000	23.759999999999998
2	92	32	2017-07-02 00:00:00	696 Osborne Street	Winnipeg	MB	Canada	R3L 2B9	19.8
3	31	3	2017-02-21 00:00:00	1498 rue Bélanger	Montréal	QC	Canada	H2G 1A7	19.8

4.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 total  
FROM invoice  
GROUP BY billing_city  
ORDER BY total DESC  
LIMIT 1
```

	<div><div><div>billing_city</div><div>character varying (30)</div></div><div></div></div>	<div><div><div>total</div><div>double precision</div></div><div></div></div>
1	Prague	273.2400000000000007



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.

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

	first_name character (50) 	last_name character (50) 	total_spent double precision 
1	R ...	Madhav ...	144.5400000000000002

6. 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.genre_id  
FROM customer AS c  
JOIN invoice AS i  
ON c.customer_id =  
   i.customer_id  
JOIN invoice_line AS l  
ON i.invoice_id = l.invoice_id  
JOIN track AS t  
ON l.track_id = t.track_id  
JOIN genre AS g  
ON t.genre_id = g.genre_id  
WHERE g.name LIKE 'Rock'  
ORDER BY c.email ASC
```

	email character varying (50) 🔒	first_name character (50) 🔒	last_name character (50) 🔒	genre_id character varying (50) 🔒
1	aaronmitchell@yahoo.ca	Aaron ...	Mitchell ...	1
2	aaronmitchell@yahoo.ca	Aaron ...	Mitchell ...	1
3	aaronmitchell@yahoo.ca	Aaron ...	Mitchell ...	1
4	aaronmitchell@yahoo.ca	Aaron ...	Mitchell ...	1
5	aaronmitchell@yahoo.ca	Aaron ...	Mitchell ...	1
6	aaronmitchell@vahoo.ca	Aaron ...	Mitchell ...	1
Total rows: 2635		Query complete 00:00:00.221		Rows selected: 1000

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

	name character varying (120)	total_track_count bigint
1	Led Zeppelin	114
2	U2	112
3	Deep Purple	92
4	Iron Maiden	81
5	Pearl Jam	54
6	Van Halen	52
7	Queen	45
8	The Rolling Stones	41
9	Creedence Clearwater Revival	40
10	Kiss	35




8.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_sng_length FROM track  
)  
ORDER BY milliseconds DESC
```

	name character varying (150)	milliseconds integer
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
Total rows: 494    Query complete 00:00:00.207    Rows selected: 494		

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

```
SELECT c.first_name || ' ' || c.last_name AS customer_name,
a.name AS artist_name, SUM(l.unit_price * l.quantity) AS
      total_spent
FROM customer AS c JOIN invoice AS i ON c.customer_id =
      i.customer_id
      JOIN invoice_line AS l on i.invoice_id = l.invoice_id
      JOIN track AS t ON l.track_id = t.track_id
      JOIN album AS alb ON t.album_id = alb.album_id
      JOIN artist AS a ON alb.artist_id = a.artist_id
GROUP BY c.customer_id, a.artist_id, customer_name,
      artist_name
ORDER BY customer_name, total_spent DESC
```

	customer_name 	artist_name 	total_spent 
1	Aaron Mitchell	James Brown	19.799999999999997
2	Aaron Mitchell	Chris Cornell	13.860000000000001
3	Aaron Mitchell	Creedence Clearwater Revival	1.98
4	Aaron Mitchell	U2	1.98
5	Aaron Mitchell	Pearl Jam	1.98
6	Aaron Mitchell	Men At Work	1.98
7	Aaron Mitchell	Nirvana	1.98
8	Aaron Mitchell	Godsmack	0.99
Total rows: 2189		Query complete 00:00:00.228	Rows selected: 1000

10.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 genre.

```
WITH purchase AS (  
  SELECT g.name AS genre , i.billing_country AS country,  
         SUM(il.quantity) AS total_purchase,  
         DENSE_RANK() OVER (PARTITION BY i.billing_country  
                             ORDER BY SUM(il.quantity) DESC) AS rn  
  FROM genre AS g JOIN track AS t ON g.genre_id =  
                                t.genre_id  
  JOIN invoice_line AS il ON t.track_id = il.track_id  
  JOIN invoice AS i ON il.invoice_id = i.invoice_id  
  GROUP BY genre, country  
  ORDER BY total_purchase DESC  
)  
SELECT genre, country, rn  
FROM purchase  
WHERE rn =1
```

	genre character varying (120) 🔒	country character varying (30) 🔒	m bigint 🔒
1	Rock	USA	1
2	Rock	Canada	1
3	Rock	France	1
4	Rock	Brazil	1
5	Rock	Germany	1
6	Rock	United Kingdom	1
7	Rock	Czech Republic	1
8	Rock	Portugal	1
9	Rock	India	1
10	Rock	Ireland	1
11	Rock	Chile	1
12	Rock	Sweden	1
13	Rock	Finland	1
14	Rock	Spain	1
15	Rock	Hungary	1
16	Rock	Austria	1
17	Rock	Norway	1
18	Rock	Poland	1
19	Rock	Italy	1
20	Rock	Australia	1
21	Rock	Netherlands	1
22	Rock	Belgium	1
23	Rock	Denmark	1
24	Alternative & Punk	Argentina	1



11. 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.

```
SELECT customer_name, country, purchase
FROM (
SELECT c.customer_id, c.first_name || ' ' || c.last_name AS
customer_name, i.billing_country AS country,
SUM(l.unit_price * l.quantity
) AS purchase,
DENSE_RANK() OVER( PARTITION BY i.billing_country
ORDER BY SUM(l.unit_price * l.quantity)DESC) AS spent
FROM invoice_line AS l JOIN invoice AS i ON l.invoice_id =
i.invoice_id
JOIN customer AS c ON i.customer_id = c.customer_id
GROUP BY c.customer_id, customer_name, i.billing_country
ORDER BY purchase DESC) AS top
WHERE spent = 1
```

	customer_name text	country character varying (30)	purchase double precision
1	R Madhav	Czech Republic	144.53999999999985
2	Hugh O'Reilly	Ireland	114.83999999999978
3	Manoj Pareek	India	111.86999999999979
4	Luís Gonçalves	Brazil	108.89999999999998
5	João Fernandes	Portugal	102.95999999999984
6	Wyatt Girard	France	99.98999999999985
7	François Tremblay	Canada	99.98999999999985
8	Enrique Muñoz	Spain	98.00999999999986
9	Phil Hughes	United Kingdom	98.00999999999986
10	Jack Smith	USA	98.00999999999986
11	Luis Rojas	Chile	97.01999999999987
12	Fynn Zimmermann	Germany	94.04999999999988
13	Mark Taylor	Australia	81.17999999999995
14	Terhi Hämäläinen	Finland	79.19999999999996
15	Ladislav Kovács	Hungary	78.20999999999997
16	Stanisław Wójcik	Poland	76.22999999999998
17	Joakim Johansson	Sweden	75.23999999999998
18	Bjørn Hansen	Norway	72.27
19	Astrid Gruber	Austria	69.30000000000001
20	Johannes Van der Berg	Netherlands	65.34000000000003
21	Daan Peeters	Belgium	60.390000000000036
22	Lucas Mancini	Italy	50.490000000000016
23	Diego Gutiérrez	Argentina	39.59999999999994
24	Kara Nielsen	Denmark	37.61999999999999