



SQL PROJECT

MUSIC STORE ANALYSIS



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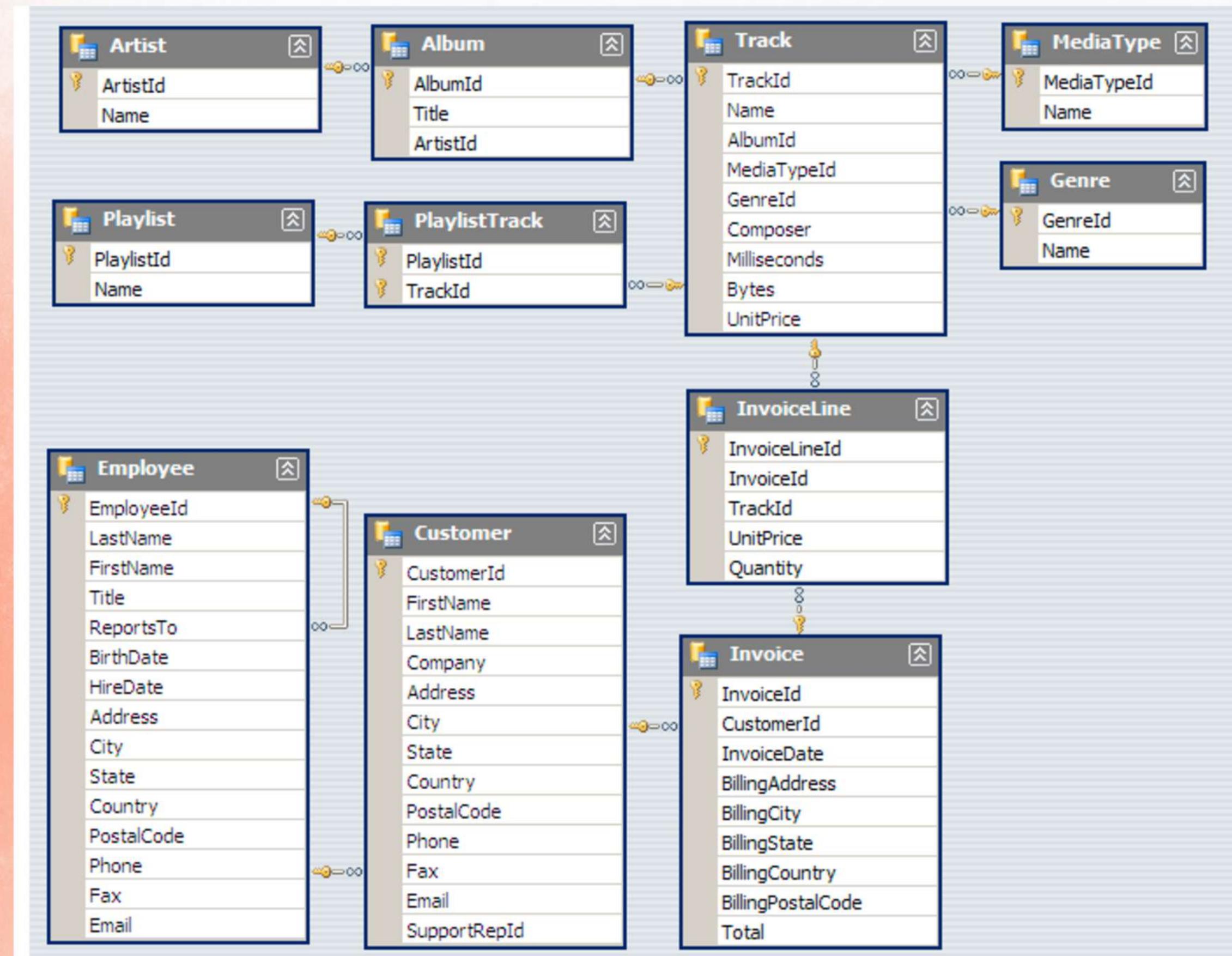
OBJECTIVE

Achieve sustainable business growth for the music store by identifying key trends, customer behaviour and product performance through data analysis.





DATABASE SCHEMA





PROBLEM STATEMENT CATEGORY

EASY

- Select
- Order By
- Limit

MODERATE

- Joins
- Aggregate Functions

ADVANCED

- Ranking Functions
- CTE (Common Table Expressions)





EASY CATEGORY



WHO IS THE SENIOR MOST EMPLOYEE BASED ON JOB TITLE?

```
select employee_id , title ,first_name ,last_name  
levels from employee ORDER BY levels desc  
limit 1
```

	employee_id [PK] character varying (50)	title character varying (50)	first_name character (50)	last_name character (50)	levels character varying (10)
1	9	Senior General Manager	Mohan	Madan	L7



WHICH COUNTRIES HAVE THE MOST INVOICES?

```
select COUNT(*) as counts , billing_country  
from invoice  
group by billing_country  
order by counts desc
```

	counts	billing_country
1	131	USA
2	76	Canada
3	61	Brazil
4	50	France
5	41	Germany
6	30	Czech Republic
7	29	Portugal
8	28	United Kingdom
9	21	India
10	13	Chile
11	13	Ireland



WHAT ARE TOP 3 VALUES OF TOTAL INVOICE?



Ventures

```
select invoice_id ,total from invoice  
order by total desc  
limit 3
```

invoice_id [PK] integer	total double precision
1	183 23.759999999999998
2	92 19.8
3	31 19.8

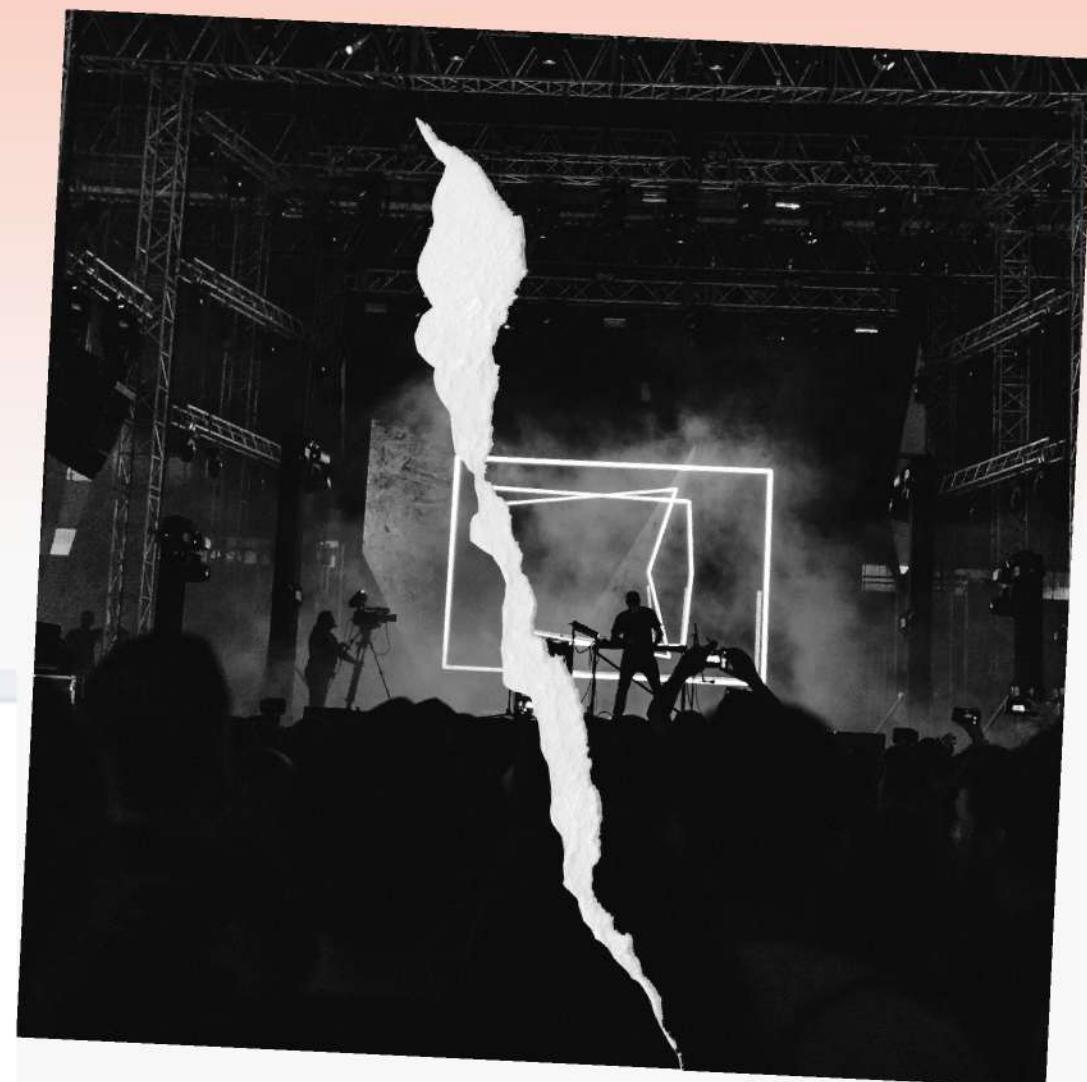


WHICH CITY HAS THE BEST CUSTOMERS? WE WOULD LIKE TO THROW A PROMOTIONAL MUSIC FESTIVAL IN THE CITY WE MADE THE MOST MONEY. WRITE A QUERY THAT RETURNS ONE CITY THAT HAS THE HIGHEST SUM OF INVOICE TOTALS. RETURN BOTH THE CITY NAME & SUM OF ALL INVOICE TOTALS

```
select SUM(total) as invoice_total , billing_city  
from invoice  
group by billing_city  
order by invoice_total desc limit 1;
```

Community

	invoice_total double precision	billing_city character varying (30)
1	273.24000000000007	Prague



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 customer.customer_id , customer.first_name , customer.last_name , sum(total) as total  
from customer  
join invoice on customer.customer_id = invoice.customer_id  
group by customer.customer_id  
order by total desc  
limit 1
```

	customer_id [PK] integer	first_name character (50)	last_name character (50)	total double precision
1	5	R	Madhav	144.54000000000002





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
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 = 'Rock'
)
order by email
```

email character varying (50)	first_name character (50)	last_name character (50)
aaronmitchell@yahoo.ca	Aaron	Mitchell
alero@uol.com.br	Alexandre	Rocha
astrid.gruber@apple.at	Astrid	Gruber
bjorn.hansen@yahoo.no	Bjørn	Hansen
camille.bernard@yahoo.fr	Camille	Bernard



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 artist.artist_id , artist.name , count(artist.artist_id) as number_of_songs
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 LIKE 'Rock'
group by artist.artist_id
order by number_of_songs desc
limit 10;
```





Music Store Analysis

	email character varying (50)	first_name character (50)	last_name character (50)
1	aaronmitchell@yahoo.ca	Aaron	Mitchell
2	alerol@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	dominiquelefrevre@gmail.c...	Dominique	Lefebvre
10	edfrancis@yachoo.ca	Edward	Francis





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_song_length
    from track)
order by milliseconds desc;
```





Music Store Analysis

	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
9	Take the Celestra	2927677
10	Fire In Space	2926593





ADVANCED CATEGORY



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 , 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 artist.artist_id
     order by total_sales 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 as i
     join customer as c on c.customer_id = i.customer_id
     join invoice_line as il on i.invoice_id = il.invoice_id
     join track as t on t.track_id = il.track_id
     join album as alb on alb.album_id = t.album_id
     join best_selling_artist as 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;
```



Music Store Analysis



	customer_id integer	first_name character (50)	last_name character (50)	artist_name character varying (120)	amount_spent double precision
1	46	Hugh	O'Reilly	Queen	27.719999999999985
2	38	Niklas	Schröder	Queen	18.81
3	3	François	Tremblay	Queen	17.82
4	34	João	Fernandes	Queen	16.830000000000002
5	53	Phil	Hughes	Queen	11.88
6	41	Marc	Dubois	Queen	11.88
7	47	Lucas	Mancini	Queen	10.89
8	33	Ellie	Sullivan	Queen	10.89
9	20	Dan	Miller	Queen	3.96
10	5	R	Madhav	Queen	3.96
11	23	John	Gordon	Queen	2.969999999999998
12	54	Steve	Murray	Queen	2.969999999999998
13	31	Martha	Silk	Queen	2.969999999999998
14	16	Frank	Harris	Queen	1.98
15	17	Jack	Smith	Queen	1.98



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_line.invoice_id = invoice.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
    order by customer.country asc , purchases desc
)
select * from popular_genre where rowno <= 1
```





Music Store Analysis

	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
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



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
    order by billing_country asc , total_spending desc
)
select * from customer_with_country where rowno <= 1
```



Music Store Analysis

	customer_id	first_name	last_name	billing_country	total_spending	rowno
	integer	character (50)	character (50)	character varying (30)	double precision	bigint
1	56	Diego	Gutiérrez	Argentina	39.6	1
2	55	Mark	Taylor	Australia	81.18	1
3	7	Astrid	Gruber	Austria	69.3	1
4	8	Daan	Peeters	Belgium	60.38999999999999	1
5	1	Luís	Gonçalves	Brazil	108.89999999999998	1
6	3	François	Tremblay	Canada	99.99	1
7	57	Luis	Rojas	Chile	97.02000000000001	1
8	5	R	Madhav	Czech Republic	144.54000000000002	1
9	9	Kara	Nielsen	Denmark	37.61999999999999	1
10	44	Terhi	Hämäläinen	Finland	79.2	1
11	42	Wyatt	Girard	France	99.99	1
12	37	Fynn	Zimmermann	Germany	94.05000000000001	1
13	45	Ladislav	Kovács	Hungary	78.21	1
14	58	Manoj	Pareek	India	111.86999999999999	1
15	46	Hugh	O'Reilly	Ireland	114.83999999999997	1



THANK You