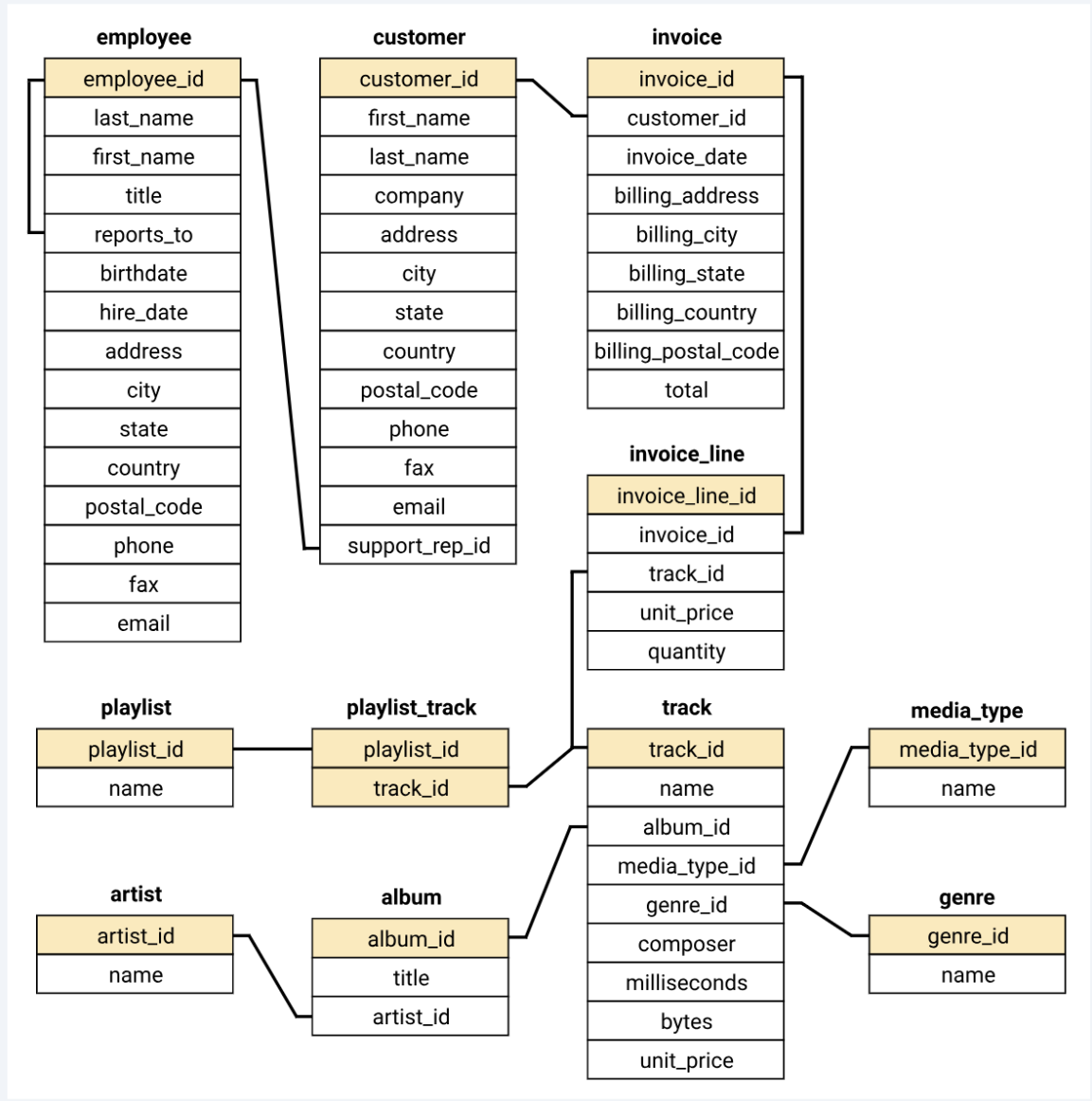
DIGITAL MUSIC STORE ANALYSIS

BY MD FAIZAN ALI

DATABASE: music_database

SCHEMA

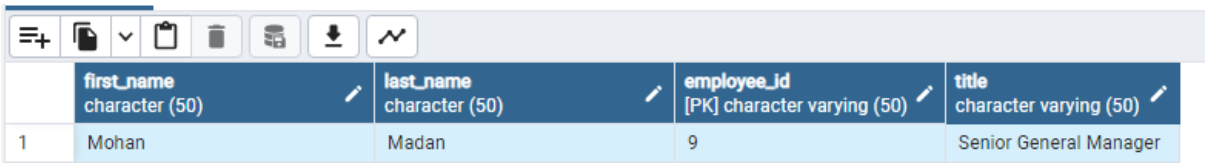


1. Who is the most senior employee based on the job title?

   ANS:
   select first_name, last_name, employee_id, title
   from employee
   order by levels desc

limit 1

Madan Mohan, employee_id=9, Senior General Manager



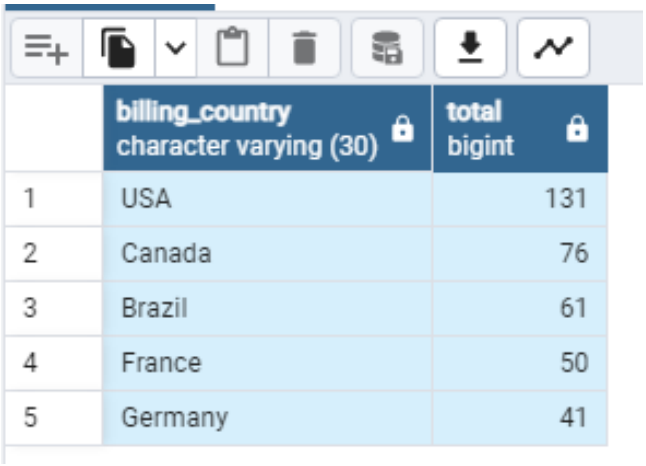
	first_name character (50)	last_name character (50)	employee_id [PK] character varying (50)	title character varying (50)
1	Mohan	Madan	9	Senior General Manager

2. Which countries have the most invoices?

ANS:

```
select billing_country, count(total) as total
from invoice
group by billing_country
order by total desc
limit 5
```

Top 5 from highest to lowest (USA, Canada, Brazil, France, Germany)



	billing_country character varying (30)	total bigint
1	USA	131
2	Canada	76
3	Brazil	61
4	France	50
5	Germany	41

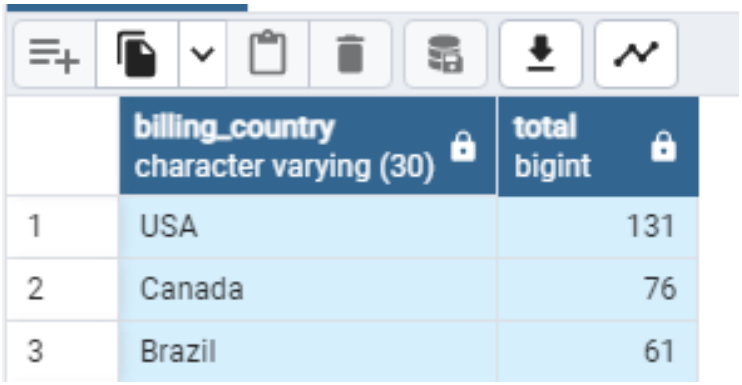
3. What are top 3 values of most invoices?

ANS:

```
select billing_country, count(total) as total
from invoice
```

group by billing_country
order by total desc
limit 3

USA=131, Canada=76, Brazil=61

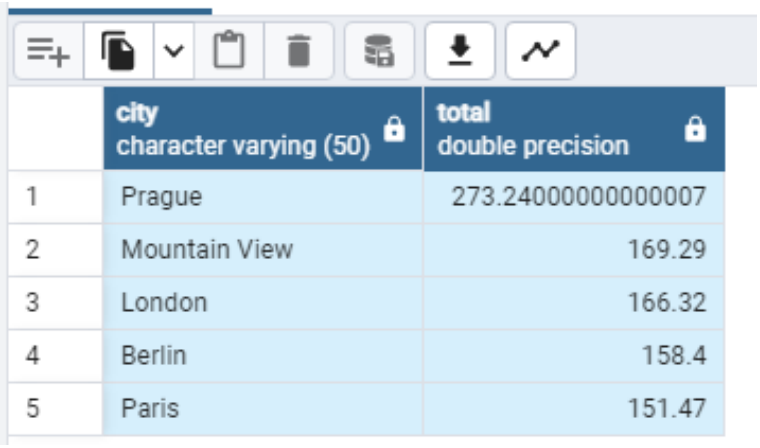


	billing_country character varying (30)	total bigint
1	USA	131
2	Canada	76
3	Brazil	61

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

ANS:
select c.city, sum(i.total) as total
from customer as c
join invoice as i
on i.customer_id=c.customer_id
group by city
order by 2 desc
limit 5

Here are the top 5 cities which have highest total so that you can throw a music fest.
"Prague, Mountain View, London, Berlin, Paris"



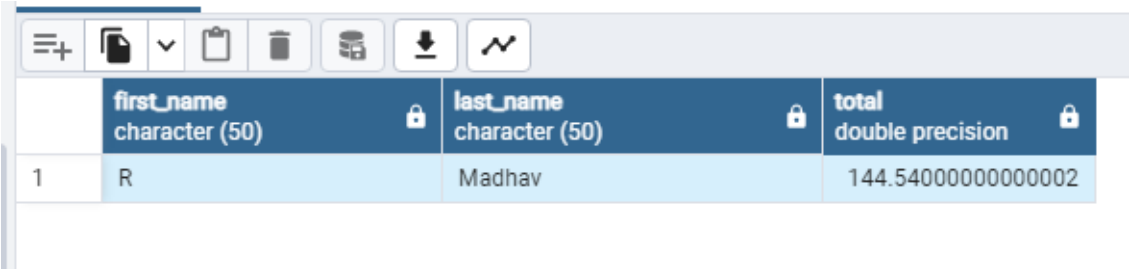
	city character varying (50)	total double precision
1	Prague	273.24000000000007
2	Mountain View	169.29
3	London	166.32
4	Berlin	158.4
5	Paris	151.47

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.

   ANS:

```
select c.first_name, c.last_name, sum(i.total) as total
from customer as c
join invoice as i
on i.customer_id=c.customer_id
group by 1,2
order by 3 desc
limit 1
```

   Name: R madhav, Total invoice: 144.54000000000002, Customer_id: 5

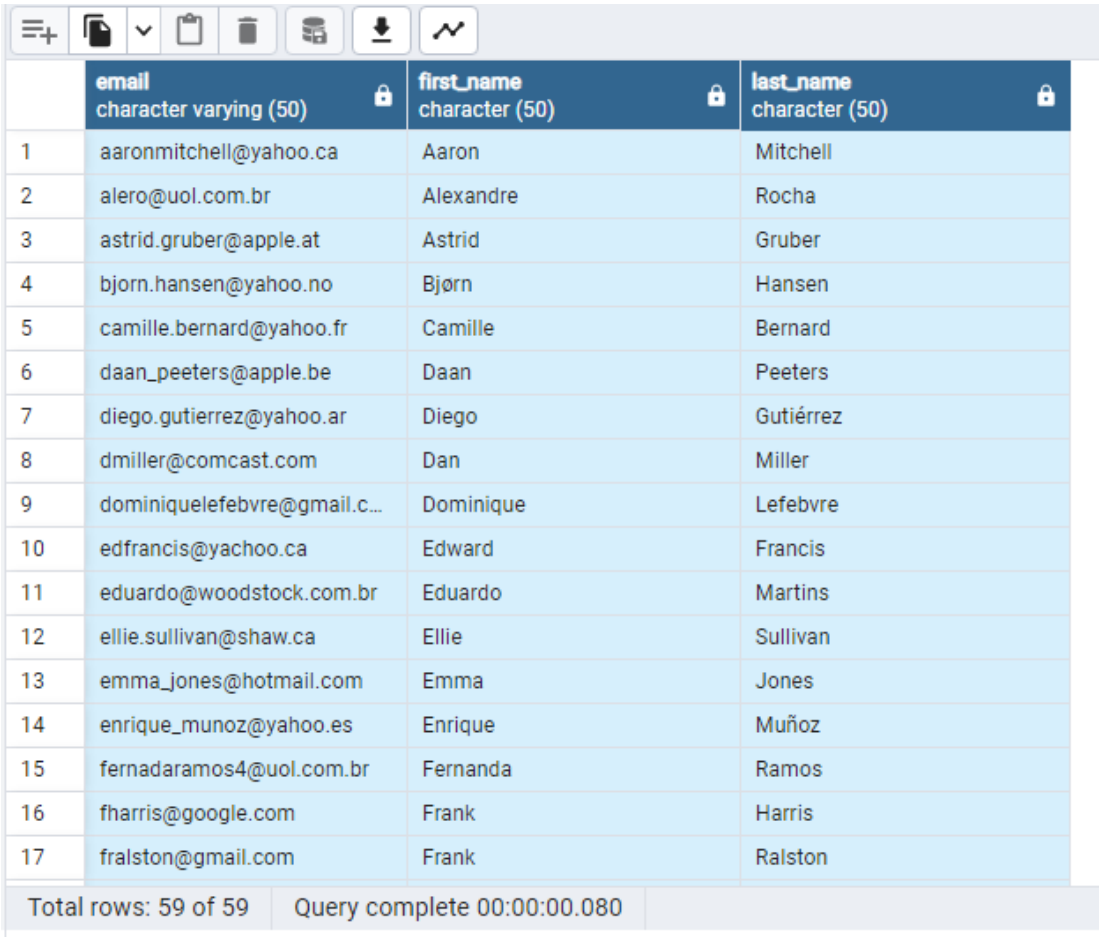


	first_name character (50)	last_name character (50)	total double precision
1	R	Madhav	144.54000000000002

6. 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.

ANS: Query: it will show top 17 customers

```
select c.email, c.first_name, c.last_name
from customer as c
join invoice as i
on i.customer_id=c.customer_id
join invoice_line il
on il.invoice_id=i.invoice_id
join track as t
on t.track_id=il.track_id
join genre as g
on g.genre_id=t.genre_id
where g.name='Rock'
group by c.first_name, c.last_name, c.email
order by c.email
limit 17;
```

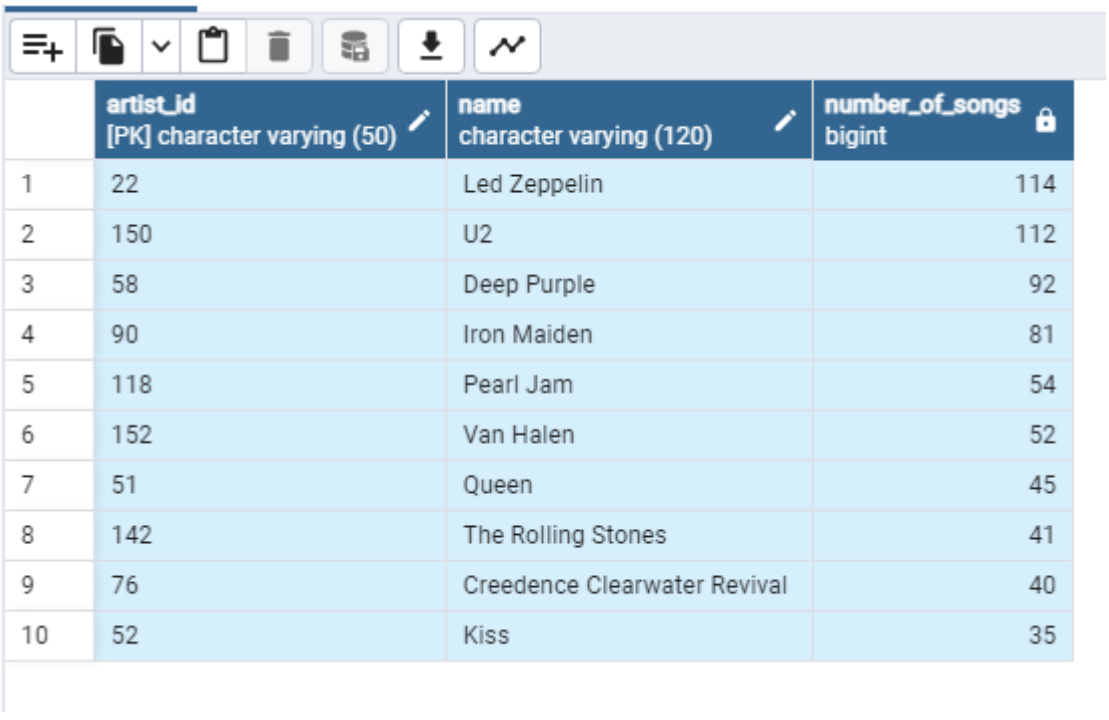


	email character varying (50)	first_name character (50)	last_name character (50)
1	aaronmitchell@yahoo.ca	Aaron	Mitchell
2	alero@uol.com.br	Alexandre	Rocha
3	astrid.gruber@apple.at	Astrid	Gruber
4	bjorn.hansen@yahoo.no	Bjørn	Hansen
5	camille.bernard@yahoo.fr	Camille	Bernard
6	daan_peeters@apple.be	Daan	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
11	eduardo@woodstock.com.br	Eduardo	Martins
12	ellie.sullivan@shaw.ca	Ellie	Sullivan
13	emma_jones@hotmail.com	Emma	Jones
14	enrique_munoz@yahoo.es	Enrique	Muñoz
15	fernadaramos4@uol.com.br	Fernanda	Ramos
16	fharris@google.com	Frank	Harris
17	fralston@gmail.com	Frank	Ralston

Total rows: 59 of 59 Query complete 00:00:00.080

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.

   ANS: You can invite the above artist who have written the top 10
   select a.name, count(g.genre_id) as total_songs
   from artist as a
   join album as ab
   on ab.artist_id=a.artist_id
   join track as t
   on t.album_id=ab.album_id
   join genre as g
   on g.genre_id=t.genre_id
   where g.name='Rock'
   group by a.name
   order by total_rock_songs desc
   limit 10



	artist_id [PK] character varying (50)	name character varying (120)	number_of_songs bigint
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

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.

ANS: All the songs having length more than average length (query)

```
select name, milliseconds
from track
where milliseconds>(select avg(milliseconds) as av 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
9	Take the Celestra	2927677
10	Fire In Space	2926593
11	The Long Patrol	2925008
12	The Magnificent Warriors	2924716
13	The Living Legend, Pt. 1	2924507
14	The Gun On Ice Planet Zero, Pt. 2	2924341
15	The Hand of God	2924007
16	Experiment In Terra	2923548
17	War of the Gods, Pt. 2	2923381

Total rows: 494 of 494 Query complete 00:00:00.078

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

ANS: Amount spent by each customer on best artist

Query:

```
with best_selling_artist as(
select a.artist_id, a.name, sum(il.quantity*il.unit_price) as total_amount
from invoice_line as il
join track as t
on t.track_id=il.track_id
join album as al
on al.album_id=t.album_id
join artist as a
```

```
on a.artist_id=al.artist_id
group by a.artist_id
order by total_amount desc
limit 1
        )

select c.first_name, c.last_name, bsa.name,
sum(il.quantity*il.unit_price) as total_amount
from customer as c
join invoice as i
on i.customer_id=c.customer_id
join invoice_line as il
on il.invoice_id=i.invoice_id
join track as t
on t.track_id=il.track_id
join album as al
on al.album_id=t.album_id
join best_selling_artist as bsa
on bsa.artist_id=al.artist_id
group by 1,2,3
order by 4 desc
```

	first_name character (50)	last_name character (50)	name character varying (120)	total_amount double precision
1	Hugh	O'Reilly	Queen	27.719999999999985
2	Niklas	Schröder	Queen	18.81
3	François	Tremblay	Queen	17.82
4	João	Fernandes	Queen	16.830000000000002
5	Phil	Hughes	Queen	11.88
6	Marc	Dubois	Queen	11.88
7	Lucas	Mancini	Queen	10.89
8	Ellie	Sullivan	Queen	10.89
9	R	Madhav	Queen	3.96
10	Dan	Miller	Queen	3.96
11	John	Gordon	Queen	2.9699999999999998
12	Martha	Silk	Queen	2.9699999999999998
13	Steve	Murray	Queen	2.9699999999999998
14	Wyatt	Girard	Queen	1.98
15	Daan	Peeters	Queen	1.98
16	Edward	Francis	Queen	1.98
17	Emma	Jones	Queen	1.98

Total rows: 43 of 43 | Query complete 00:00:00.147

Amount spent by each customer on every artist

Query:

```
select c.first_name, c.last_name, a.name, sum(il.quantity*il.unit_price)
as total_amount
from customer as c
join invoice as i
on i.customer_id=c.customer_id
join invoice_line as il
on il.invoice_id=i.invoice_id
join track as t
on t.track_id=il.track_id
join album as al
on al.album_id=t.album_id
join artist as a
on a.artist_id=al.artist_id
group by 1,2,3
order by 4 desc
```

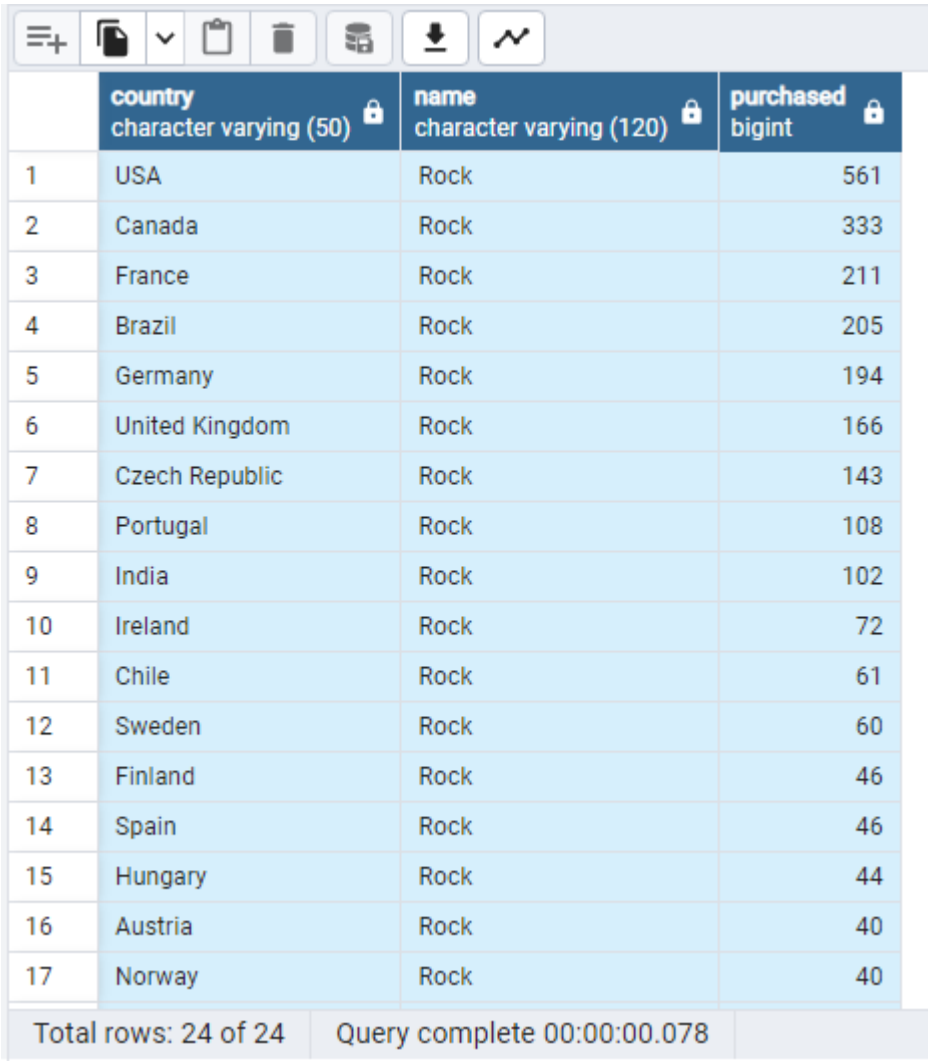
	first_name character (50)	last_name character (50)	name character varying (120)	total_amount double precision
1	Hugh	O'Reilly	Queen	27.719999999999985
2	Wyatt	Girard	Frank Sinatra	23.75999999999999
3	Aaron	Mitchell	James Brown	19.799999999999997
4	François	Tremblay	The Who	19.799999999999997
5	Robert	Brown	Creedence Clearwater Revival	19.799999999999997
6	Helena	Holý	Red Hot Chili Peppers	19.799999999999997
7	R	Madhav	Kiss	19.799999999999997
8	Heather	Leacock	House Of Pain	18.81
9	Niklas	Schröder	Queen	18.81
10	Hugh	O'Reilly	Nirvana	18.81
11	Hugh	O'Reilly	Marisa Monte	17.82
12	Camille	Bernard	Marisa Monte	17.82
13	Luís	Gonçalves	The Cult	17.82
14	Mark	Taylor	The Clash	17.82
15	Steve	Murray	AC/DC	17.82
16	Richard	Cunningham	Marvin Gaye	17.82
17	François	Tremblay	Queen	17.82

Total rows: 2189 of 2189 Query complete 00:00:00.242

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 Gen

ANS:

```
with best_selling_genre as (
        select count(il.quantity) as purchased, c.country, g.name, g.genre_id, row_number() over(partition by c.country order by count(il.quantity) desc) as rowno
        from customer as c
        join invoice as i
        on i.customer_id=c.customer_id
        join invoice_line as il
        on il.invoice_id=i.invoice_id
        join track as t
        on t.track_id=il.track_id
        join genre as g
        on g.genre_id=t.genre_id
        group by 2,3,4
        order by 2 asc, 1 desc
)
select country, name, purchased
from best_selling_genre as bsg
where bsg.rowno=1
order by purchased desc
```



	country character varying (50)	name character varying (120)	purchased bigint
1	USA	Rock	561
2	Canada	Rock	333
3	France	Rock	211
4	Brazil	Rock	205
5	Germany	Rock	194
6	United Kingdom	Rock	166
7	Czech Republic	Rock	143
8	Portugal	Rock	108
9	India	Rock	102
10	Ireland	Rock	72
11	Chile	Rock	61
12	Sweden	Rock	60
13	Finland	Rock	46
14	Spain	Rock	46
15	Hungary	Rock	44
16	Austria	Rock	40
17	Norway	Rock	40

Total rows: 24 of 24 Query complete 00:00:00.078

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.

ANS:

```
with customer_with_country as(
select c.customer_id, c.first_name, c.last_name, i.billing_country, sum(i.total) as amount,
row_number() over(partition by i.billing_country order by sum(i.total) desc) as rono
from invoice as i
join customer as c
```

```
on c.customer_id=i.customer_id
group by 1,2,3,4
order by 4 asc, 5 desc
)

select customer_id, first_name, last_name, billing_country, amount
from customer_with_country
where rono=1
order by 5 desc
```

	customer_id integer	first_name character (50)	last_name character (50)	billing_country character varying (30)	amount double precision
1	5	R	Madhav	Czech Republic	144.54000000000002
2	46	Hugh	O'Reilly	Ireland	114.83999999999997
3	58	Manoj	Pareek	India	111.86999999999999
4	1	Luís	Gonçalves	Brazil	108.89999999999998
5	34	João	Fernandes	Portugal	102.96000000000001
6	42	Wyatt	Girard	France	99.99
7	3	François	Tremblay	Canada	99.99
8	50	Enrique	Muñoz	Spain	98.01
9	53	Phil	Hughes	United Kingdom	98.01
10	17	Jack	Smith	USA	98.01
11	57	Luis	Rojas	Chile	97.02000000000001
12	37	Fynn	Zimmermann	Germany	94.05000000000001
13	55	Mark	Taylor	Australia	81.18
14	44	Terhi	Hämäläinen	Finland	79.2
15	45	Ladislav	Kovács	Hungary	78.21
16	49	Stanisław	Wójcik	Poland	76.22999999999999
17	51	Joakim	Johansson	Sweden	75.24

Total rows: 24 of 24 Query complete 00:00:00.245

CONCLUSION

- Recognize Madan Mohan as the Senior General Manager, leveraging his experience for leadership roles.
- Target top countries (USA, Canada, Brazil) for market expansion through focused marketing.
- Implement promotions and loyalty programs for high-contributing countries like USA, Canada, and Brazil.
- Plan a music festival in cities with the highest invoice totals (Prague, Mountain View, London, Berlin, Paris).
- Acknowledge and reward R Madhav as the best customer, and consider implementing a loyalty program for high-spenders.