MUSIC STORE DATA ANALYSIS

SET-1 EASY PROBLEMS

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

```
SELECT *

FROM employee

ORDER BY levels DESC

LIMIT 1;
```

Data Output | Messages | Notifications

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

Q2) Which countries have the most invoices?

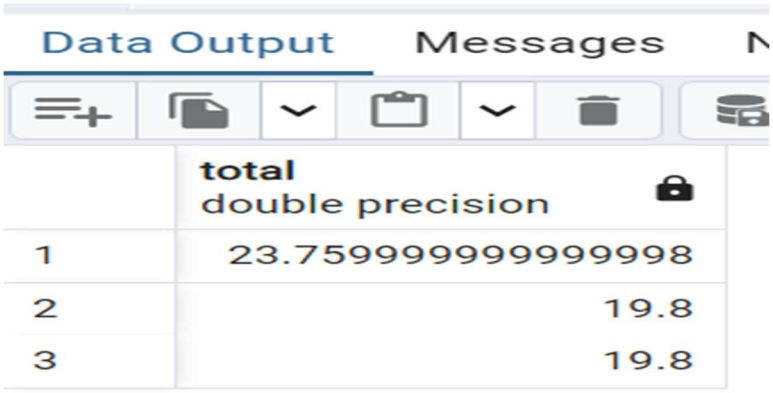
```
SELECT billing_country, COUNT(billing_country) AS most_invoices

FROM invoice

GROUP BY billing_country

ORDER BY most_invoices DESC;
```

Data Output | Messages | Notifications

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

Q3) What are top 3 values of total invoice?

```
SELECT total
FROM invoice
ORDER BY total DESC
LIMIT 3;
```

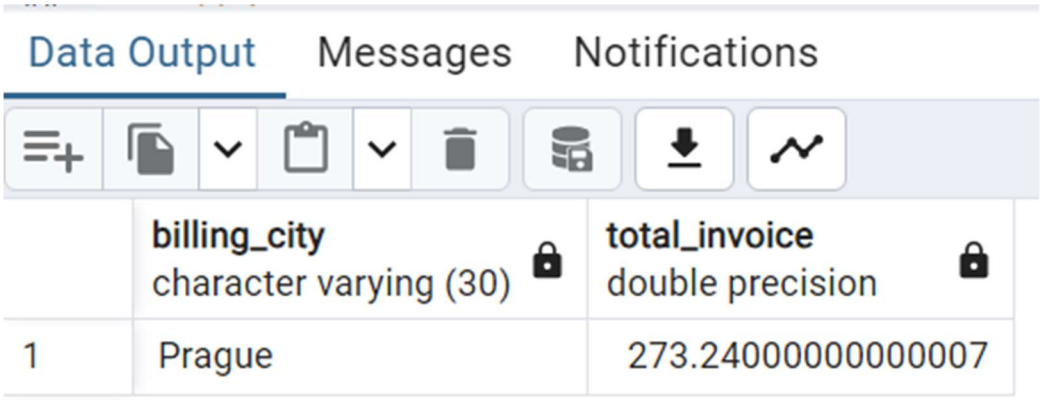


Data Output | Messages

	total double precision
1	23.759999999999998
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 total. Return both the city name and sum of all invoice total.

```
SELECT billing_city, SUM(total) AS total_invoice
FROM invoice
GROUP BY billing_city
ORDER BY total_invoice DESC
LIMIT 1;
```



Data Output | Messages | Notifications

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

Q5) Who is the best customer? The customer who has spent the most money will be declared as best customer. Write a query that returns the person who has spent the most money?

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

Data Output | Messages | Notifications

	customer_id [PK] integer	first_name character	last_name character	total_invoice double precision
1	5	R ...	Madhav	144.54000000000002

SET-2 MODERATE PROBLEMS

Q1) Write a query to return the email, first name, last name and genre of all rock music listeners. Return your list ordered alphabetically by email starting the A.

```
SELECT email, first_name, last_name
FROM customer c
JOIN invoice i ON i.customer_id=c.customer_id
JOIN invoice_line il ON il.invoice_id=i.invoice_id
JOIN track t ON t.track_id=il.track_id
JOIN genre g ON g.genre_id=t.genre_id
WHERE g.name LIKE '%Rock%'
GROUP BY email, first_name, last_name
ORDER BY email;
```

Data Output | Messages | Notifications

	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

Q2) Let's invite the artist who has written the most rock music in our dataset. Write a query that returns the artist name and track counts of the top 10 rock bands.

```
SELECT a.artist_id, a.name, COUNT(t.track_id) track_count
FROM artist a
JOIN album ab ON ab.artist_id=a.artist_id
JOIN track t ON t.album_id=ab.album_id
JOIN genre g ON g.genre_id=t.genre_id
WHERE g.name='Rock'
GROUP BY a.artist_id
ORDER BY track_count DESC
LIMIT 10;
```

Data Output | Messages | Notifications

	artist_id [PK] character varying (50)	name character varying (120)	track_count 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

Q3) Return all the track names that have a song length longer than the average song length. Return the name and millisecond for each track. Order by the song length with the longest songs listed first?

```
SELECT track_id, name, milliseconds as song_length
FROM track
WHERE milliseconds > (
                SELECT AVG(milliseconds)
                  FROM track
)
ORDER BY milliseconds DESC;
```

Data Output | Messages | Notifications

	track_id [PK] integer	name character varying (150)	song_length integer
1	2820	Occupation / Precipice	5286953
2	3224	Through a Looking Glass	5088838
3	3244	Greetings from Earth, Pt. 1	2960293
4	3242	The Man With Nine Lives	2956998
5	3227	Battlestar Galactica, Pt. 2	2956081

SET-3 ADVANCE PROBLEMS

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

```
SELECT c.customer_id, c.first_name, c.last_name, at.name as artist_name,
SUM(il.unit_price * il.quantity) as total_amount_spent
FROM customer c
JOIN invoice i ON i.customer_id=c.customer_id
JOIN invoice_line il ON il.invoice_id=i.invoice_id
JOIN track t ON t.track_id=il.track_id
JOIN album a ON a.album_id=t.album_id
JOIN artist at ON at.artist_id=a.artist_id
GROUP BY 1, 2, 3, 4
ORDER BY 2 DESC;
```

Data Output | Messages | Notifications

	customer_id integer	first_name character	last_name character	artist_name character varying (120)	total_amount_spent double precision
1	42	Wyatt	Girard	Stone Temple Pilots	0.99
2	42	Wyatt	Girard	Jimi Hendrix	1.98
3	42	Wyatt	Girard	Guns N' Roses	0.99
4	42	Wyatt	Girard	Pearl Jam	1.98
5	42	Wyatt	Girard	Amy Winehouse	3.96

Q2) We want to find 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 cte1 AS(
	SELECT COUNT(il.quantity) AS purchases, c.country, g.name, g.genre_id,
	ROW_NUMBER() OVER(PARTITION BY c.country ORDER BY COUNT(il.quantity) DESC) AS Row_No
	FROM invoice_line il
	JOIN invoice i ON i.invoice_id=il.invoice_id
	JOIN customer c ON c.customer_id=i.customer_id
	JOIN track t ON t.track_id=il.track_id
	JOIN genre g ON g.genre_id=t.genre_id
	GROUP BY 2,3,4
	ORDER BY 2 ASC
)
SELECT *
FROM cte1
WHERE Row_No<=1;
```

Data Output | Messages | Notifications

	purchases bigint	country character varying (50)	name character varying (120)	genre_id character varying (50)	row_no 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

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 cte1 AS(
	SELECT i.billing_country, i.customer_id, c.first_name, c.last_name, SUM(i.total) AS total_amount_spent,
	ROW_NUMBER() OVER(PARTITION BY i.billing_country ORDER BY SUM(i.total) DESC) AS Row_No
	FROM invoice i
	JOIN customer c ON c.customer_id=i.customer_id
	GROUP BY 1,2,3,4
	ORDER BY 1
)
SELECT *
FROM cte1
WHERE Row_No<=1;
```

Data Output | Messages | Notifications

	billing_country character varying (30)	customer_id integer	first_name character	last_name character	total_amount_spent double precision	row_no bigint
1	Argentina	56	Diego	Gutiérrez	39.6	1
2	Australia	55	Mark	Taylor	81.18	1
3	Austria	7	Astrid	Gruber	69.3	1
4	Belgium	8	Daan	Peeters	60.38999999999999	1
5	Brazil	1	Luís	Gonçalves	108.89999999999998	1