

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

Answer query:

```
select * from employee
order by levels desc
limit 1;
```

Q.2 Which countries have the most Invoices?

Answer query:

```
select count(*) as c, billing_country from invoice
group by billing_country
order by c desc;
```

Q.3 What are top 3 values of total invoice?

```
select total from invoice
order by total desc
limit 3;
```

Q.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?

Answer query:

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

Q.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 customer.customer_id, customer.first_name, customer.last_name,
sum(invoice.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;
```

Q.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?

Answer query:

```
select Distinct 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
where track_id in
(
    select track_id from track t
    join genre g on g.genre_id=t.genre_id
    where g.name like 'Rock'
)
order by email;
```

Q.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.artist_id, a.name, count(a.artist_id) as total_tracks from track t
join album al on al.album_id=t.album_id
join artist a on a.artist_id=al.artist_id
join genre g on g.genre_id=t.genre_id
where g.name like 'Rock'
group by a.artist_id
order by total_tracks desc
limit 10;
```

Q.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?

Answer query:

```
select name, milliseconds from track
where milliseconds >
(
    select avg(milliseconds) from track
)
order by milliseconds desc;
```

Q.9 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 Row_no
    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 Row_no <= 1;</pre>
```

Q.10 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 as 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 1
    order by 3 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 i
 join customer c on c.customer_id=i.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 al on al.album_id=t.album_id
  join best_selling_artist bsa on bsa.artist_id=al.artist_id
  group by 1,2,3,4
 order by 5 desc;
```

Q.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?

```
with recursive customer_with_country as (
    select customer.customer_id,first_name,last_name,billing_country,sum(total) as total_spending
    from invoice
    join customer on customer.customer_id=invoice.invoice_id
    group by 1,2,3,4
    order by 1,5 desc),

    country_max_spending as(
        select billing_country,max(total_spending) as max_spending
            from customer_with_country
            group by billing_country
        )

select cc.billing_country,cc.total_spending,cc.first_name,cc.last_name,cc.customer_id
from customer_with_country cc
    join country_max_spending ms on ms.billing_country=cc.billing_country
    where cc.total_spending=ms.max_spending
    order by 1;
```