--Question 1: Which countries have the most Invoices?

--Use the Invoice table to determine the countries that have the most invoices.

--Provide a table of BillingCountry and Invoices ordered by the number of invoices

-- for each country. The country with the most invoices should appear first.

**select BillingCountry,count(InvoiceId) as invoices**

**from Invoice**

**group by BillingCountry**

**order by 2 desc**

--Question 2: 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 the 1 city that has the highest sum of invoice totals.

-- Return both the city name and the sum of all invoice totals.

**select City,sum(Total) as T**

**from Customer c**

**join Invoice i**

**on i.CustomerId=c.CustomerId**

**group by 1**

**order by 2 desc**

**limit 1**

--Question 3: Who is the best customer?

--The customer who has spent the most money will be declared the best customer.

--Build a query that returns the person who has spent the most money.

**SELECT CustomerId ,sum(Total) as t**

**from Invoice**

**group by 1**

**order by 2 desc**

**limit 1**

--Use your query to return the email, first name, last name, and Genre of all Rock Music listeners.

--Return your list ordered alphabetically by email address starting with A.

**select c.Email,c.FirstName,c.LastName,g.name as G**

**from customer c**

**join Invoice i**

**on c.CustomerId=i.CustomerId**

**join InvoiceLine il**

**on il.InvoiceId=i.InvoiceId**

**join Track t**

**on t.TrackId=il.TrackId**

**join Genre g**

**on t.GenreId=g.GenreId**

**WHERE G='Rock'**

**group by 1**

**order by 1**

--Question 2: Who is writing the rock music?

--Now that we know that our customers love rock music, we can decide which musicians to invite to play at the concert.

--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,g.Name,count(t.TrackId) as Tot**

**from Artist a**

**join Album al**

**on a.ArtistId=al.ArtistId**

**join Track t**

**on al.AlbumId=t.AlbumId**

**join Genre g**

**on t.GenreId=g.GenreId**

**where g.Name='Rock'**

**group by 1**

**order by 3 DESC**

**limit 10**

--First, find which artist has earned the most according to the InvoiceLines?

--Now use this artist to find which customer spent the most on this artist.

--Notice, this one is tricky because the Total spent in the Invoice table might not be on a single product,

--so you need to use the InvoiceLine table to find out how many of each product was purchased,

-- and then multiply this by the price for each artist.

**SELECT a.Name,count(il.InvoiceId) as ct,count(il.InvoiceId)\*il.UnitPrice as price**

**from Artist a**

**join Album al**

**on a.ArtistId=al.ArtistId**

**join Track t**

**on al.AlbumId=t.AlbumId**

**join InvoiceLine as il**

**on il.TrackId=t.TrackId**

**join Invoice i**

**on i.InvoiceId=il.InvoiceId**

**join Customer c**

**on c.CustomerId=i.CustomerId**

**group by 1**

**order by 3 desc**

**SELECT c.FirstName,c.CustomerId,a.Name,count(il.InvoiceId)\*il.UnitPrice as price**

**from Artist a**

**join Album al**

**on a.ArtistId=al.ArtistId**

**join Track t**

**on al.AlbumId=t.AlbumId**

**join InvoiceLine as il**

**on il.TrackId=t.TrackId**

**join Invoice i**

**on i.InvoiceId=il.InvoiceId**

**join Customer c**

**on c.CustomerId=i.CustomerId**

**where a.Name='Iron Maiden'**

**group by 1**

**order by 4 desc**

--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.// divide question in parts solve for inner calculation part first

**select t2.genid,t2.co,t2.pur**

**from (SELECT t1.genid as gig,t1.co as con,max(t1.pur) as max\_purchase**

**from( select c.Country as co,t.GenreId genid,count(i.invoiceid) as pur**

**from customer c**

**join Invoice i**

**on c.CustomerId=i.CustomerId**

**join InvoiceLine il**

**on il.InvoiceId=i.InvoiceId**

**join Track t**

**on t.TrackId=il.TrackId**

**join Genre g**

**on t.GenreId=g.GenreId**

**group by 1,2)t1**

**group by 2)t3**

**join ( select c.Country as co,t.GenreId genid,count(i.invoiceid) as pur**

**from customer c**

**join Invoice i**

**on c.CustomerId=i.CustomerId**

**join InvoiceLine il**

**on il.InvoiceId=i.InvoiceId**

**join Track t**

**on t.TrackId=il.TrackId**

**join Genre g**

**on t.GenreId=g.GenreId**

**group by 1,2)t2**

**on t3.con=t2.co and t3.max\_purchase=t2.pur**

--Return all the track names that have a song length longer than the average song length.

--Though you could perform this with two queries. Imagine you wanted your query to update based on when new data is put in the database.

--Therefore, you do not want to hard code the average into your query. You only need the Track table to complete this query.

--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)**

**from Track)**

**order by 2 desc**

--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.

--You should only need to use the Customer and Invoice tables.

**SELECT t3.id,t3.fn,t3.co,t3.most1**

**from(select t1.id as id,t1.fn as fn,t1.co as co,max(t1.most) as most1**

**from(SELECT i.CustomerId as id,c.FirstName as fn,c.Country co,sum(i.Total) as most**

**FROM Customer c**

**join Invoice i**

**on c.CustomerId=i.CustomerId**

**group by 1)t1**

**group by 3)t3**

**join**

**( SELECT i.CustomerId as id,c.FirstName as fn,c.Country co,sum(i.Total) as most**

**FROM Customer c**

**join Invoice i**

**on c.CustomerId=i.CustomerId**

**group by 1)t2**

**on t3.co=t2.co and t3.most1=t2.most**