Project / Case Study in SQL

Chinook Digital Music Store

OVERVIEW

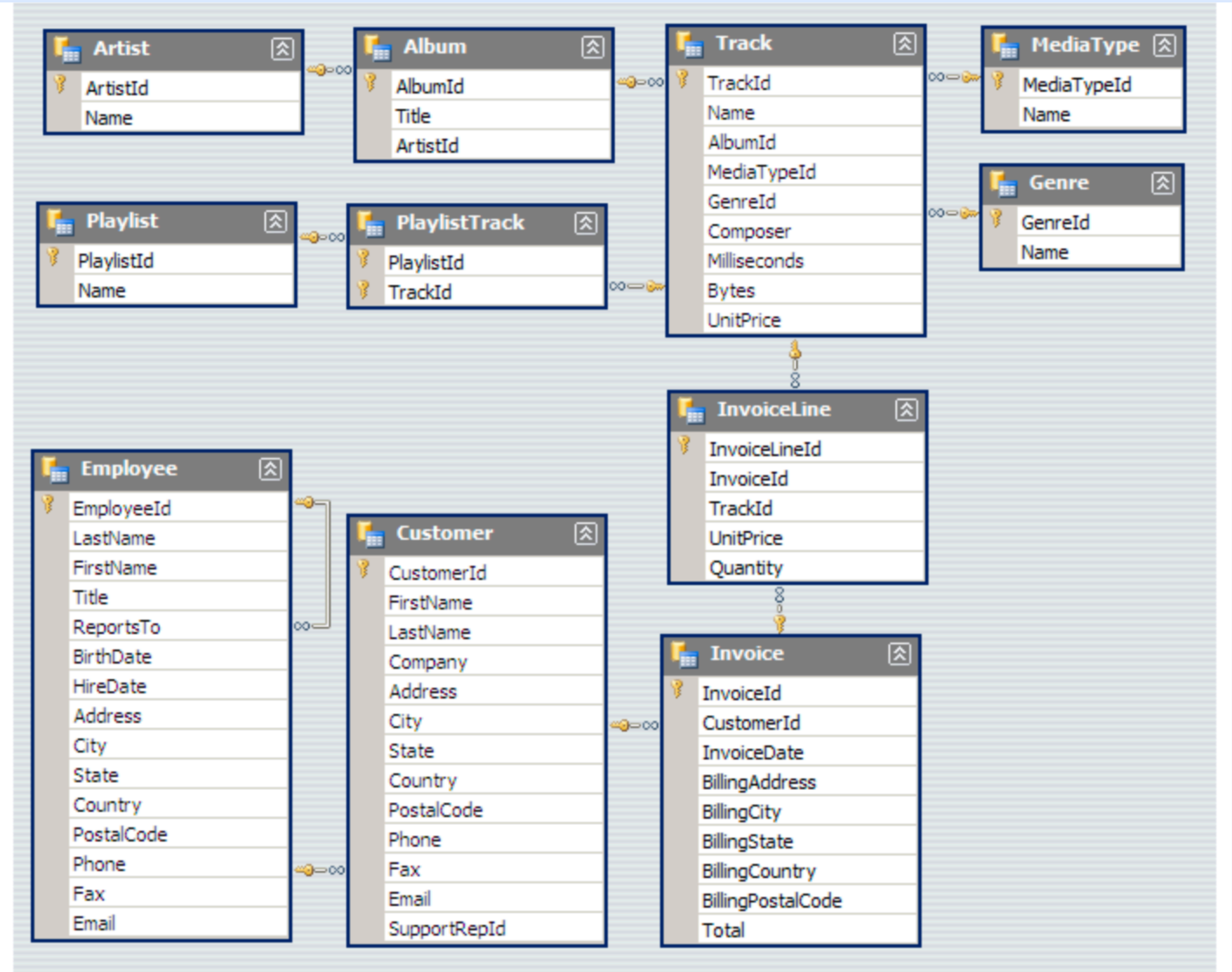
We have digital music store dataset that offers comprehensive details on various aspects of the digital music store, including genres, albums, tracks, artists, customers, and invoice details. All information is neatly organized within the below respective tables:

Tables
Artist
Album
Track
Playlist
PlaylistTrack

Tables
Genre
Employees
Customers
Invoice
InvoiceLine

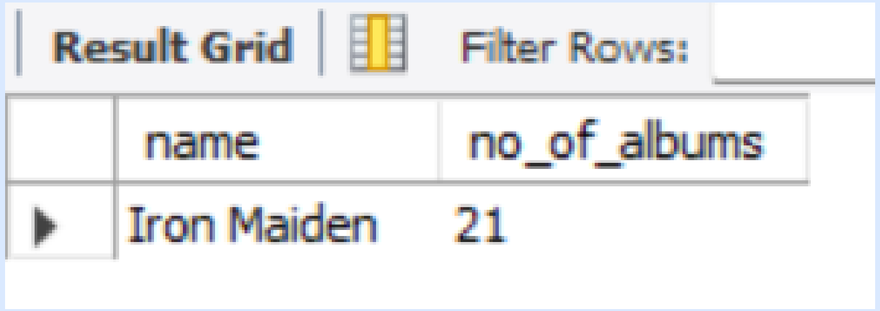
Task: Use the information from these tables to gain insights for music store. Link the tables to perform analyses and solve the given problem statements.

DATA MODEL


Artist
ArtistId
Name
Album
AlbumId
Title
ArtistId
Track
TrackId
Name
AlbumId
MediaTypeId
GenreId
Composer
Milliseconds
Bytes
UnitPrice
MediaType
MediaTypeId
Name
Genre
GenreId
Name
Playlist
PlaylistId
Name
PlaylistTrack
PlaylistId
TrackId
InvoiceLine
InvoiceLineId
InvoiceId
TrackId
UnitPrice
Quantity
Employee
EmployeeId
LastName
FirstName
Title
ReportsTo
BirthDate
HireDate
Address
City
State
Country
PostalCode
Phone
Fax
Email
Customer
CustomerId
FirstName
LastName
Company
Address
City
State
Country
PostalCode
Phone
Fax
Email
SupportRepId
Invoice
InvoiceId
CustomerId
InvoiceDate
BillingAddress
BillingCity
BillingState
BillingCountry
BillingPostalCode
Total

FIND THE ARTIST WHO HAS CONTRIBUTED WITH THE MAXIMUM NO OF ALBUMS. DISPLAY THE ARTIST NAME AND THE NO OF ALBUMS.

```
with cte as
        ( select ar.name as name, count(*) as no_of_albums,
                rank() over(order by count(*) desc) as rnk
          from artist ar
          join album al on ar.artistid = al.artistid
         group by ar.artistid, ar.name
        )
select name, no_of_albums
from cte
where rnk = 1;
```



DISPLAY THE NAME, EMAIL ID, COUNTRY OF ALL LISTENERS WHO LOVE JAZZ, ROCK AND POP MUSIC.

```
select concat(c.firstname, ' ' ,c.lastname) as name , c.email, c.country
from customer c
join invoice i on c.customerid = i.customerid
join invoiceline il on i.invoiceid = il.invoiceid
join track t on il.trackid = t.trackid
join genre g on t.genreid = g.genreid
where g.name in ('Jazz','Rock','Pop');
```

Result Grid | Filter Rows: | Export:

name	email	country
Lucas Mancini	lucas.mancini@yahoo.it	Italy
Leonie Köhler	leonekohler@surfeu.de	Germany
Ellie Sullivan	ellie.sullivan@shaw.ca	Canada
Fernanda Ramos	fernadaramos4@uol.com.br	Brazil
Leonie Köhler	leonekohler@surfeu.de	Germany
Lucas Mancini	lucas.mancini@yahoo.it	Italy
Bjørn Hansen	bjorn.hansen@yahoo.no	Norway

943 row(s) returned

FIND THE EMPLOYEE WHO HAS SUPPORTED THE MOST NO OF CUSTOMERS. DISPLAY THE EMPLOYEE NAME AND DESIGNATION.

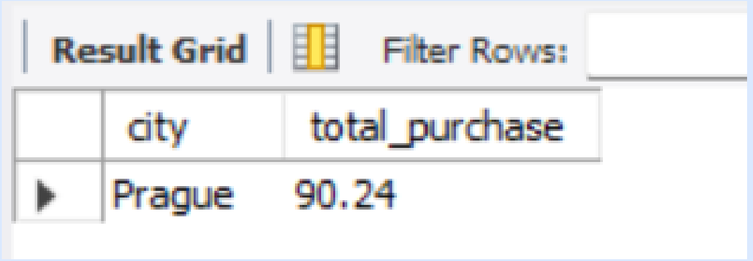
```
with emp as
            ( select concat(e.firstname, ' ', e.lastname) name , e.title,
                        count(*) no_of_cust_support,
                        rank() over(order by count(*) desc) as rnk
              from employee e
              join customer c on c.supportrepid = e.employeeid
              group by e.employeeid
             )
select name, title as designation, no_of_cust_support
from emp
where rnk = 1;
```

Result Grid | Filter Rows: | Export: | Wr

name	designation	no_of_cust_support
Jane Peacock	Sales Support Agent	21

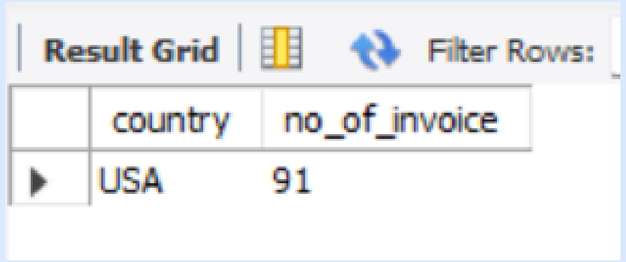
WHICH CITY CORRESPONDS TO THE BEST CUSTOMERS WITH RESPECT TO TOTAL PURCHASE.

```
with city as
            ( select c.city, sum(i.total) total_purchase,
                        rank() over( order by sum(i.total) desc) as rnk
              from invoice i
              join customer c on c.customerid = i.customerid
             group by c.city
            )
select city, total_purchase
from city
where rnk = 1;
```



THE HIGHEST NUMBER OF INVOICES BELONGS TO WHICH COUNTRY.

```
select country, no_of_invoice
from ( select billingcountry as country, count(1) as no_of_invoice,
                    rank() over(order by count(1) desc) as rnk
          from Invoice
          group by billingcountry
        ) sq
where sq.rnk=1;
```



NAME THE BEST CUSTOMER WHO HAS DONE THE HIGHEST PURCHASE.

```
select name
from ( select c.customerid, concat(c.firstname,' ', c.lastname) as name, sum(i.total) total,
                    rank() over(order by sum(i.total) desc) as rk
          from customer c
          join invoice i on c.customerid = i.customerid
          group by c.customerid
        ) sq
where rk=1;
```

Result Grid

	name
▶	Helena Holý

FIND OUT TOP 3 CITY BEST FOR HOSTING THE ROCK CONCERT BASED ON THE ROCK-MUSIC LISTENERS IN EACH CITY.

```
with city as
            ( select i.billingcity as city, count(*) as no_of_listener,
                        rank() over(order by count(*) desc) rk
              from invoice i
              join invoiceline il on i.invoiceid = il.invoiceid
              join track t on il.trackid = t.trackid
              join genre g on g.genreid = t.genreid
             where g.name = 'Rock'
             group by i.billingcity
           )
select city, no_of_listener
from city
where rk <=3 ;
```

Result Grid | Filter Rows:

city	no_of_listener
São Paulo	40
Berlin	34
Paris	30

IDENTIFY ALL THE ALBUMS WHICH HAVE LESS THEN 5 TRACK UNDER THEM. DISPLAY THE ALBUM NAME, ARTIST NAME AND THE NO OF TRACKS IN THE RESPECTIVE ALBUM.

```
with cte as
        (  select al.title, al.artistid, count(*) no_of_tracks
           from album al
           join track t on al.albumid = t.albumid
          group by al.title, al.artistid
          having count(*)<5
        )
select cte.title as album_name, ar.name as artist_name, cte.no_of_tracks
from artist ar
join cte on ar.artistid = cte.artistid
order by no_of_tracks;
```

album_name	artist_name	no_of_tracks
Balls to the Wall	Accept	1
Weill: The Seven Deadly Sins	Kent Nagano and Orch...	1
J.S. Bach: Chaconne, Suite in E Minor, Partita in...	Julian Bream	1
Szymanowski: Piano Works, Vol. 1	Martin Roscoe	1
Nielsen: The Six Symphonies	Göteborgs Symfoniker ...	1
Great Recordings of the Century: Paganini's 24 ...	Itzhak Perlman	1

95 row(s) returned

PTO (for 2nd way)

SAME PROBLEM STATEMENT (2ND WAY)

```
select al.title as album_name ,ar.name as artist_name, count(t.trackid) no_of_tracks
from album al
join track t on al.albumid = t.albumid
join artist ar on al.artistid = ar.artistid
group by al.title, ar.name
having  count(t.trackid) < 5
order by no_of_tracks;
```

	album_name	artist_name	no_of_tracks
▶	Balls to the Wall	Accept	1
	Weill: The Seven Deadly Sins	Kent Nagano and Orch...	1
	J.S. Bach: Chaconne, Suite in E Minor, Partita in...	Julian Bream	1
	Szymanowski: Piano Works, Vol. 1	Martin Roscoe	1
	Nielsen: The Six Symphonies	Göteborgs Symfoniker ...	1
	Great Recordings of the Century: Paganini's 24 ...	Itzhak Perlman	1

95 row(s) returned

DISPLAY THE TRACK, ALBUM, ARTIST AND THE GENRE FOR ALL TRACKS WHICH ARE NOT PURCHASED.

```
select t.name as track_name, al.title as album_name, ar.name as artist_name, g.name as genre_name
from track t
left join invoiceline il on t.trackid = il.trackid
join album al on t.albumid = al.albumid
join artist ar on al.artistid = ar.artistid
join genre g on t.genreid = g.genreid
where il.invoicelineid is null;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

track_name	album_name	artist_name	genre_name
Let's Get It Up	For Those About To Rock We Salute You	AC/DC	Rock
C.O.D.	For Those About To Rock We Salute You	AC/DC	Rock
Let There Be Rock	Let There Be Rock	AC/DC	Rock
Bad Boy Boogie	Let There Be Rock	AC/DC	Rock
Whole Lotta Rosie	Let There Be Rock	AC/DC	Rock
Walk On Water	Big Ones	Aerosmith	Rock
Dude (Looks Like A Lady)	Big Ones	Aerosmith	Rock
Cryin'	Big Ones	Aerosmith	Rock

1519 row(s) returned

PTO (for 2nd way)

SAME PROBLEM STATEMENT (2ND WAY)

```
select t.name as track_name, al.title as album_name, ar.name as artist_name, g.name as genre_name
from track t
join album al on al.albumid=t.albumid
join artist ar on ar.artistid = al.artistid
join genre g on g.genreid = t.genreid
where not exists ( select 1
                   from InvoiceLine il
                   where il.trackid = t.trackid
                  );
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

track_name	album_name	artist_name	genre_name
Let's Get It Up	For Those About To Rock We Salute You	AC/DC	Rock
C.O.D.	For Those About To Rock We Salute You	AC/DC	Rock
Let There Be Rock	Let There Be Rock	AC/DC	Rock
Bad Boy Boogie	Let There Be Rock	AC/DC	Rock
Whole Lotta Rosie	Let There Be Rock	AC/DC	Rock
Walk On Water	Big Ones	Aerosmith	Rock
Dude (Looks Like A Lady)	Big Ones	Aerosmith	Rock
Cryin'	Big Ones	Aerosmith	Rock

1519 row(s) returned

FIND ARTIST WHO HAVE PERFORMED IN MULTIPLE GENRES. DIPLAY THE ARITST NAME AND THE GENRE.

```
with all_artist as
                ( select ar.name as artist_name, g.name as genre
                  from artist ar
                  join album al on ar.artistid = al.artistid
                  join track t on t.albumid = al.albumid
                  join genre g on t.genreid = g.genreid
                 group by ar.name, g.name
                ),
      artist_multiple as
               ( select artist_name, count(*)
                 from all_artist
                 group by artist_name
                 having count(*) >1
               )
select a.*
from all_artist a
join artist_multiple am on a.artist_name = am.artist_name
order by 1;
```

	artist_name	genre
▶	Amy Winehouse	R&B/Soul
	Amy Winehouse	Pop
	Antônio Carlos Jobim	Latin
	Antônio Carlos Jobim	Jazz
	Audioslave	Rock
	Audioslave	Alternative & Punk
	Audioslave	Alternative
	Battlestar Galactica	Sci Fi & Fantasy
	Battlestar Galactica	TV Shows
	Battlestar Galactica	Science Fiction

50 row(s) returned

WHICH IS THE MOST POPULAR AND LEAST POPULAR GENRE.

```
with genre as
            ( select g.name, count(*) as no_of_purchased,
                        rank() over(order by count(*) desc) as rnk
              from invoiceline il
              join track t on il.trackid = t.trackid
              join genre g on t.genreid = g.genreid
             group by g.name
            ),
      genre1 as
           ( select max(rnk) as max_rank from genre
           )
select g.name,
          case when g.rnk = 1 then 'Most Popular' else 'Least Popular' end as Category
from genre g
cross join genre1 g1
where g.rnk = 1 or g.rnk= g1.max_rank;
```

name	Category
Rock	Most Popular
Rock And Roll	Least Popular
Science Fiction	Least Popular

IDENTIFY THE 5 MOST POPULAR ARTIST FOR THE MOST POPULAR GENRE.

```
with most_popular as
            (  select *
               from   (  select g.name, count(*), rank() over(order by count(*) desc) rn
                         from invoiceline il
                         join track t on il.trackid = t.trackid
                         join genre g on t.genreid = g.genreid
                        group by g.name
                       ) sq
              where rn = 1
             ),
       artist as
            (   select ar.name as artist_name, count(t.name) as no_of_songs,
                          rank() over(order by count(t.name) desc) rnk
                from artist ar
                join album al on ar.artistid = al.artistid
                join track t on al.albumid = t.albumid
                join genre g on t.genreid = g.genreid
               where g.name = (select name from most_popular)
               group by ar.name, g.name
             )
select artist_name, no_of_songs
from artist
where rnk <= 5;
```

Result Grid | Filter Rows:

artist_name	no_of_songs
Led Zeppelin	114
U2	112
Deep Purple	92
Iron Maiden	81
Pearl Jam	54

FIND THE ARTIST WHO HAS CONTRIBUTED WITH THE MAXIMUM NO OF SONGS/TRACKS. DISPLAY THE ARTIST NAME AND THE NO OF SONGS.

```
with art as
        ( select ar.name as artist_name, count(t.name) as no_of_songs,
                rank() over(order by count(t.name) desc) as rnk
          from artist ar
          join album al on ar.artistid = al.artistid
          join track t on al.albumid = t.albumid
         group by ar.name
        )
select artist_name, no_of_songs
from art
where rnk = 1;
```

	artist_name	no_of_songs
▶	Iron Maiden	213