

Q1:- Which artists did not make any albums at all? Include their names in your answer.

Ans:-
SELECT A.ArtistId,
A.Name
FROM Artist AS A
LEFT OUTER JOIN
Album AS B
ON A.ArtistId=B.ArtistId
GROUP BY A.ArtistId,A.Name
HAVING COUNT(DISTINCT B.AlbumId)=0;
OR
(SELECT artistId, name FROM artist)
EXCEPT
(SELECT artist.artistId,artist.name FROM artist, album WHERE artist.artistId = album.artistId);

Q2:- Which artists did not record any tracks of the Latin genre?

Ans:-
With CTE_A as
(
SELECT A.AlbumId FROM Track AS A INNER JOIN Genre AS B ON A.GenreId=B.GenreId WHERE B.Name!="Latin"
)
CTE_B as
(
SELECT A.ArtistId FROM Album AS A INNER JOIN CTE_A AS B ON A.AlbumId=B.AlbumId
)
SELECT DISTINCT A.ArtistId,A.Name FROM Artist AS A INNER JOIN CTE_B AS B ON A.ArtistId=B.ArtistId;
OR
SELECT artistId, name FROM artist
EXCEPT
SELECT artist.artistId, artist.name
FROM artist, album, track, genre
WHERE artist.artistId = album.artistId AND album.albumId = track.albumId AND track.genreId = genre.genreId AND genre.name = 'Latin';

Q3:- Which video track has the longest length?

Ans:-
SELECT TrackId,Name FROM (
SELECT *,
DENSE_RANK() OVER (ORDER BY TrackLength DESC) AS Rank
FROM (
SELECT A.TrackId,A.Name,MAX(A.Milliseconds) AS TrackLength
FROM Track AS A
INNER JOIN
MediaType AS B
ON A.MediaTypeId=B.MediaTypeId
WHERE LOWER(B.Name) LIKE '%video%'
GROUP BY A.TrackId,A.Name
)
)

)WHERE Rank=1;

OR

SELECT trackId,track.name FROM track ,mediaType

WHERE milliseconds = (SELECT MAX(milliseconds) FROM track,mediaType WHERE track.mediaTypeId = mediaType.mediaTypeId AND mediaType.name LIKE '%video%')

AND track.mediaTypeId = mediaType.mediaTypeId AND mediaType.name LIKE '%video%';

Q4:-Find the names of customers who live in the same city as the top employee(The one not managed by anyone).

Ans:-SELECT CustomerId,FirstName,LastName FROM Customer WHERE City=(
SELECT City FROM Employee WHERE ReportsTo IS NULL);

Q5:- Find the managers of employees supporting Brazilian customers.

Ans:-

SELECT ReportsTo FROM Employee WHERE EmployeeId=(

SELECT SupportRepId FROM Customer WHERE LOWER(Country)="brazil");

OR

WITH managersOfSuppBraz AS (

SELECT DISTINCT reportsTo AS manId

FROM employee, customer

WHERE employeeId = supportRepId AND customer.country ='Brazil')

SELECT employeeId, firstname,lastname

FROM employee e,managersOfSuppBraz m

WHERE e.employeeId =m.manId;

Q6:- How many audio tracks in total were bought by German customers? And what was the total price paid for them ?

Ans:-

SELECT COUNT(DISTINCT t.TrackId),SUM(l.UnitPrice)

FROM Track t,InvoiceLine l,Invoice i,Customer c,MediaType m

WHERE t.TrackId=l.TrackId AND t.MediaTypeId=m.MediaTypeId AND l.InvoiceId=i.InvoiceId AND i.CustomerId=c.CustomerId AND LOWER(m.Name) LIKE '%audio%' AND LOWER(c.Country)="germany";

Q7:- Which playlists have no Latin tracks?

Ans:-

SELECT PlaylistId,Name

FROM Playlist

EXCEPT

SELECT DISTINCT p.PlaylistId,p.Name

FROM Playlist p,PlaylistTrack pt,Track t,Genre g

WHERE P.PlaylistId=pt.PlaylistId AND pt.TrackId=t.TrackId AND t.GenreId=g.GenreId AND g.Name="Latin";

Q8:- What is the space,in bytes,occupied by the playlist “Grunge”,and how much would it cost?(Assume that the cost of a playlist is the sum of the price of its constituent tracks).

Ans:-

SELECT SUM(a.Bytes),SUM(a.UnitPrice)

FROM Playlist p,PlaylistTrack pt, Track a

WHERE p.PlaylistId=pt.PlaylistId AND pt.TrackId=a.TrackId AND p.Name="Grunge";

Q9:- Which playlists do not contain any tracks for the artists “Black Sabbath” nor “Chico Buarque”?

Ans:-

```
SELECT PlaylistId,Name FROM Playlist
EXCEPT
SELECT p.PlaylistId,p.Name
FROM Playlist p,PlaylistTrack pt,Track t,Album a,Artist at
WHERE p.PlaylistId=pt.PlaylistId AND pt.TrackId=t.TrackId AND t.AlbumId=a.AlbumId AND a.ArtistId=at.ArtistId AND at.Name IN ("Black Sabbath","Chico Buarque");
```

Q10:- List the names and the countries of those customers who are supported by an employee who was younger than 35 when hired.

Ans:-

```
SELECT FirstName, LastName, Country FROM Customer
WHERE SupportRepId=
(SELECT EmployeeId FROM Employee WHERE DATEDIFF(year,BirthDate,HireDate)<35);
```

Q11:- List the genre of tracks which is contained in the most playlist.

Ans:-

```
SELECT g.GenreId, g.Name
FROM Genre g,Track t,PlaylistTrack pt
WHERE g.GenreId=t.GenreId AND t.TrackId=pt.TrackId
GROUP BY g.GenreId, g.Name
HAVING COUNT(DISTINCT pt.PlaylistId) = (SELECT MAX(tbl.playlist_cnt) FROM (SELECT COUNT(DISTINCT pt.PlaylistId) AS playlist_cnt
FROM Genre g,Track t,PlaylistTrack pt
WHERE g.GenreId=t.GenreId AND t.TrackId=pt.TrackId
GROUP BY g.GenreId, g.Name) AS tbl);
```

Q12:- Find audio tracks which have a length longer than the average length of all the audio tracks.

Ans:-

```
SELECT t.TrackId, t.Name
FROM Track t,MediaType m
WHERE t.MediaTypeId=m.MediaTypeId AND LOWER(m.Name) LIKE '%audio%' AND
t.Milliseconds > (SELECT AVG(t.Milliseconds)
FROM Track t,MediaType m
WHERE t.MediaTypeId=m.MediaTypeId AND LOWER(m.Name) LIKE '%audio%');
```

Q13:- Which playlist(s) contain the largest number of pop tracks.

Ans:-

```
SELECT P.PlaylistId, P.Name
FROM Playlist as P, PlaylistTrack as PL, Track, Genre
WHERE P.PlaylistId = PL.PlaylistId
AND PL.TrackId = Track.TrackId
AND Track.GenreId = Genre.GenreId AND Genre.Name='Pop'
GROUP BY P.PlaylistId, P.Name
HAVING COUNT(Track.TrackId) = (SELECT MAX(tbl.count)
FROM (SELECT COUNT(Track.TrackId) as count
```

```

FROM Playlist as P, PlaylistTrack as PL, Track, Genre
WHERE P.PlaylistId = PL.PlaylistId
AND PL.TrackId = Track.TrackId
AND Track.GenreId = Genre.GenreID AND Genre.Name='Pop'
GROUP BY P.PlaylistId) tbl);

```

Q14:- Find the number of employees live in the same city with each customer, sorted by descending order.

Ans:-

```

SELECT CustomerId,COUNT(EmployeeId)
FROM Customer as c
LEFT OUTER JOIN
Employee as e
ON c.City=e.City
GROUP BY CustomerId
ORDER BY COUNT(EmployeeId) DESC;

```

Q15:- Which artist(s) has the most tracks which can be classified to Jazz.

Ans:-

```

SELECT Artist.Name
FROM Artist, Album, Track, Genre
WHERE Artist.ArtistID=Album.ArtistId AND Album.AlbumId = Track.AlbumId AND Track.GenreId = Genre.GenreId AND Genre.Name = 'JAZZ'
GROUP BY Artist.Name
HAVING COUNT(Track.TrackId) = (SELECT max(tbl.count)
FROM (SELECT COUNT(Track.TrackId) as count
FROM Artist, Album, Track, Genre
WHERE Artist.ArtistID=Album.ArtistId AND Album.AlbumId = Track.AlbumId AND Track.GenreId = Genre.GenreId
AND Genre.Name = 'JAZZ'
GROUP BY Artist.Name) tbl);

```

Q16:- Find the playlist(s) which contains most tracks by artist "AC/DC".

Ans:-

```

SELECT Playlist.Name
FROM Playlist,PlaylistTrack,Artist, Album, Track
WHERE Playlist.PlaylistId=PlaylistTrack.PlaylistId AND PlaylistTrack.TrackId=Track.TrackId AND Track.AlbumId=Album.AlbumId AND Album.ArtistId=Artist.ArtistID AND Artist.Name = 'AC/DC'
GROUP BY Playlist.Name
HAVING COUNT(Track.TrackId) = (SELECT max(tbl.count)
FROM (SELECT COUNT(Track.TrackId) as count
FROM Playlist,PlaylistTrack,Artist, Album, Track
WHERE Playlist.PlaylistId=PlaylistTrack.PlaylistId AND PlaylistTrack.TrackId=Track.TrackId AND Track.AlbumId=Album.AlbumId AND Album.ArtistId=Artist.ArtistID
AND Artist.Name = 'AC/DC'
GROUP BY Playlist.Name) tbl);

```

Q17:- List the name of the artists with more than 5 tracks.

Ans:-

```

SELECT a.Name AS Nm

```

```

FROM Artist a,Album al,Track t
WHERE A.ArtistId=al.ArtistId AND al.AlbumId=t.AlbumId
GROUP BY a.Name
HAVING COUNT(DISTINCT t.TrackId)>5;

```

Q18:- Find the manger who manages most employees but also being managed by someone else (Note: there are employees who do not have managers, i.e., there may be NULL values in ReportsTo column).

Ans:-

```

SELECT tbl2.ReportsTo,tbl2.EmpCnt
FROM (
SELECT tbl1.*, DENSE_RANK() OVER (ORDER BY tbl1.EmpCnt DESC) AS Rank
FROM (
SELECT tbl.*,b.ReportsTo FROM (
SELECT ReportsTo,COUNT(DISTINCT EmployeeId) AS EmpCnt
FROM Employee
GROUP BY ReportsTo) AS tbl1
LEFT OUTER JOIN
Employee AS b
ON tbl1.ReportsTo=b.EmployeeId)AS tbl1) AS tbl2
WHERE tbl2.Rank=1;
OR
SELECT E2.LastName, E2.FirstName
FROM Employee AS E1,Employee AS E2
WHERE E1.ReportsTo = E2.EmployeeID
GROUP BY E2.EmployeeID, E2.LastName, E2.FirstName
HAVING COUNT(*) = (SELECT MAX(AUX.count)
FROM (SELECT COUNT(*) as count
FROM Employee AS E1,Employee AS E2
WHERE E1.ReportsTo = E2.EmployeeID
GROUP BY E2.EmployeeID) AUX);

```

Q19:- Find the name of the German customer(s) who has paid the most in total without company name.

Ans:-

```

SELECT C.CustomerId, C.FirstName, C.LastName
FROM Customer AS C, Invoice AS I
WHERE C.CustomerId= I.CustomerId AND Country='Germany'
GROUP BY C.CustomerId, C.FirstName, C.LastName
HAVING SUM(I.Total) = (SELECT Max(tbl.sum)
FROM (SELECT SUM(I.Total) as sum
FROM Customer AS C, Invoice AS I
WHERE C.CustomerId= I.CustomerId AND Country='Germany'
GROUP BY C.CustomerId, C.FirstName, C.LastName) tbl);

```

Q20:- List the name and age of the employees who support more than 5 customers (Hint: You can use GETDATE() function to get the current date, and use an other function from last assignment to calculate ages).

Ans:-

```

SELECT e.FirstName, e.LastName, DATEDIFF(year,e.BirthDate, GETDATE()) AS age

```

```
FROM Employee e, Customer c
WHERE e.EmployeeId = c.SupportRepId
GROUP BY e.FirstName, e.LastName
HAVING COUNT(c.CustomerId) > 5;
```