

10.1 آهنگ برتر که بیشترین درآمد رو داشتن به همراه درآمد ایجاد شده

```
SELECT
    t.Name AS song_name,
    a.Name AS artist_name,
    SUM(il.Quantity) AS total_quantity_sold,
    SUM(il.UnitPrice * il.Quantity) AS total_sales_value
FROM
    chinook.invoiceline il
JOIN
    chinook.track t ON il.TrackId = t.TrackId
JOIN
    chinook.album al ON t.AlbumId = al.AlbumId
JOIN
    chinook.artist a ON al.ArtistId = a.ArtistId
GROUP BY
    t.TrackId, t.Name, a.Name
ORDER BY
    total_quantity_sold DESC
LIMIT 10;
```

song_name	artist_name	total_quantity_sold	total_sales_value
Balls to the Wall	Accept	2	1.98
When My Left Eye Jumps	Buddy Guy	2	1.98
Welcome Home (Sanitarium)	Apocalyptica	2	1.98
Inject The Venom	AC/DC	2	1.98
Bowels Of The Devil	Body Count	2	1.98
Cornucopia	Black Sabbath	2	1.98
Overdose	AC/DC	2	1.98
Por Causa De Você	Antônio Carlos Jobim	2	1.98
Not The Doctor	Alanis Morissette	2	1.98
Deuces Are Wild	Aerosmith	2	1.98

2. محبوب ترین ژانر، به ترتیب از نظر تعداد آهنگهای فروخته شده و کل درآمد

```
SELECT
    g.Name AS genre_name,
    COUNT(il.TrackId) AS total_songs_sold,
    SUM(il.Quantity * il.UnitPrice) AS total_revenue
FROM
    chinook.invoiceline il
JOIN
    chinook.track t ON il.TrackId = t.TrackId
JOIN
    chinook.genre g ON t.GenreId = g.GenreId
GROUP BY
    g.GenreId, g.Name
ORDER BY
    total_songs_sold DESC
limit 3|
```

genre_name	total_songs_sold	total_revenue
Rock	835	826.65
Latin	386	382.14
Metal	264	261.36

3. کاربرانی که تا حال خرید نداشتند

```
SELECT
    c.CustomerId,
    c.FirstName,
    c.LastName,
    c.Email
FROM
    chinook.customer c
LEFT JOIN
    chinook.invoice i ON c.CustomerId = i.CustomerId
WHERE
    i.InvoiceId IS NULL;
```

CustomerId	FirstName	LastName	Email

4. میانگین زمان آهنگ ها در هر آلبوم

```
SELECT
    a.Title AS AlbumTitle,
    AVG(t.Milliseconds) / 1000 AS AverageDurationInSeconds
FROM
    chinook.album a
JOIN
    chinook.track t ON a.AlbumId = t.AlbumId
GROUP BY
    a.AlbumId, a.Title;
```

AlbumTitle	AverageDurationInSeconds
For Those About To Rock We Salute You	240.04150000
Balls to the Wall	342.56200000
Restless and Wild	286.02933333
Let There Be Rock	306.65737500
Big Ones	294.11393333
Jagged Little Pill	265.45576923
Facelift	270.78041667
Warner 25 Anos	207.63757143
Plays Metallica By Four Cellos	333.92587500
Audioslave	280.55092857

5. کارمندی که بیشترین تعداد فروش را داشته

```
SELECT
  DATE_FORMAT(e.hiredate, '%Y-%m') AS hire_date,
  CONCAT(e.firstname, ' ', e.lastname) AS name,
  COUNT(i.invoiceid) AS number_of_sale,
  ROUND(SUM(i.total), 2) AS value_of_sale
FROM chinook.employee e
JOIN chinook.customer c ON c.supportrepid = e.employeeid
JOIN chinook.invoice i ON i.customerid = c.customerid
WHERE e.title = 'Sales Support Agent'
GROUP BY hire_date, name;
```

hire_date	name	number_of_sale	value_of_sale
2002-04	Jane Peacock	146	833.04
2003-05	Margaret Park	140	775.40
2003-10	Steve Johnson	126	720.16

6. کاربرانی که از بیش از یک ژانر خرید کردند

```
SELECT
    c.CustomerId,
    c.FirstName,
    c.LastName,
    COUNT(DISTINCT g.GenreId) AS GenreCount
FROM
    chinook.customer c
JOIN
    chinook.invoice i ON c.CustomerId = i.CustomerId
JOIN
    chinook.invoiceline il ON i.InvoiceId = il.InvoiceId
JOIN
    chinook.track t ON il.TrackId = t.TrackId
JOIN
    chinook.genre g ON t.GenreId = g.GenreId
GROUP BY
    c.CustomerId, c.FirstName, c.LastName
HAVING
    COUNT(DISTINCT g.GenreId) > 1
ORDER BY
    GenreCount desc; |
```

CustomerId	FirstName	LastName	GenreCount
57	Luis	Rojas	12
45	Ladislav	Kovács	11
17	Jack	Smith	10
3	François	Tremblay	10
37	Fynn	Zimmermann	10
24	Frank	Ralston	10
34	João	Fernandes	10
14	Mark	Philips	10
19	Tim	Goyer	9
6	Helena	Holý	9

7. سه آهنگ برتر از نظر درآمد فروش برای هر ژانر

```
WITH RankedTracks AS (  
  SELECT  
    t.TrackId,  
    t.Name AS TrackName,  
    g.Name AS GenreName,  
    SUM(il.UnitPrice * il.Quantity) AS TotalRevenue,  
    ROW_NUMBER() OVER (PARTITION BY g.GenreId ORDER BY SUM(il.UnitPrice * il.Quantity) DESC) AS RevenueRank  
  FROM  
    chinook.track t  
  JOIN  
    chinook.invoiceline il ON t.TrackId = il.TrackId  
  JOIN  
    chinook.genre g ON t.GenreId = g.GenreId  
  GROUP BY  
    t.TrackId, t.Name, g.Name  
)  
SELECT  
  TrackName,  
  GenreName,  
  TotalRevenue  
FROM  
  RankedTracks  
WHERE  
  RevenueRank <= 3  
ORDER BY  
  GenreName;
```

TrackName	GenreName	TotalRevenue
Four Walled World	Alternative	0.99
Call Me a Dog	Alternative	0.99
Say Hello 2 Heaven	Alternative	0.99
Bowels Of The Devil	Alternative & Punk	1.98
Voodoo	Alternative & Punk	1.98
Basket Case	Alternative & Punk	1.98
When My Left Eye Jumps	Blues	1.98
Sunshine Of Your Love	Blues	1.98
Lay Down Sally	Blues	1.98
Samba Da Volta	Bossa Nova	0.99

8. تعداد آهنگهای فروخته شده به صورت تجمعی در هر سال به صورت جداگانه

```
SELECT
    YEAR(i.InvoiceDate) AS Year,
    SUM(il.Quantity) AS Total_Sold,
    SUM(SUM(il.Quantity)) OVER (ORDER BY YEAR(i.InvoiceDate)) AS Cumulative_Sold
FROM
    chinook.InvoiceLine il
JOIN
    chinook.Invoice i ON il.InvoiceId = i.InvoiceId
GROUP BY
    Year
ORDER BY
    Year;
```

Year	Total_Sold	Cumulative_Sold
2021	454	454
2022	455	909
2023	442	1351
2024	447	1798
2025	442	2240

9. کاربرانی که مجموع خریدشان بالاتر از میانگین مجموع خرید تمام کاربران است

```
SELECT
    c.CustomerId,
    c.FirstName,
    c.LastName,
    SUM(il.Quantity * il.UnitPrice) AS Total_Purchase
FROM
    chinook.Customer c
JOIN
    chinook.Invoice i ON c.CustomerId = i.CustomerId
JOIN
    chinook.InvoiceLine il ON i.InvoiceId = il.InvoiceId
GROUP BY
    c.CustomerId
HAVING
    Total_Purchase > (SELECT AVG(Total)
                      FROM (SELECT SUM(il.Quantity * il.UnitPrice) AS Total
                            FROM chinook.Customer c
                            JOIN chinook.Invoice i ON c.CustomerId = i.CustomerId
                            JOIN chinook.InvoiceLine il ON i.InvoiceId = il.InvoiceId
                            GROUP BY c.CustomerId) AS SubQuery)
ORDER BY
    Total_Purchase DESC;
```

CustomerId	FirstName	LastName	Total_Purchase
6	Helena	Holý	49.62
26	Richard	Cunningham	47.62
57	Luis	Rojas	46.62
45	Ladislav	Kovács	45.62
46	Hugh	O'Reilly	45.62
24	Frank	Ralston	43.62
28	Julia	Barnett	43.62
37	Fynn	Zimmermann	43.62
7	Astrid	Gruber	42.62
25	Victor	Stevens	42.62