

1. Customer Analytics

Q1. Who is the best customer? The customer who has spent the most money will be declared the best customer.

Query :

```
SELECT c.customer_id, c.first_name, c.last_name, c.country, ROUND(SUM(i.total),1) as Invoice_total
FROM `ar-da-projects.Project_iTune.invoice` as i, `ar-da-projects.Project_iTune.customer` as c
Where c.customer_id=i.customer_id
Group by c.customer_id, c.first_name, c.last_name, c.country, i.total
ORDER BY i.total desc
LIMIT 1
```

Result :

customer_id	first_name	last_name	country	Invoice_total
42	Wyatt	Girard	France	23.8

Q2. Which city has the best customers?

Query :

```
SELECT billing_city as City, billing_country AS Country, ROUND(SUM(total),1) as Invoice_total
FROM `ar-da-projects.Project_iTune.invoice`
Group by billing_city, billing_country, total
ORDER BY total desc
LIMIT 1
```

Result :

City	Country	Invoice_total
Bordeaux	France	23.8

Q3. What are the most popular countries for music purchases?

Query:

```
SELECT billing_country AS Country, ROUND(sum(total),2) AS Total_PUurchase
FROM `ar-da-projects.Project_iTune.invoice`
GROUP BY billing_country
ORDER BY Total_PUurchase DESC
LIMIT 5
```

Result:

Country	Total_Purchase
USA	1040.49
Canada	535.59
Brazil	427.68
France	389.07
Germany	334.62

Q4. Find how much amount spent by each customer on artists. Write a query to return the customer name, artist name, and total spent.

```
SELECT c.first_name, c.last_name, r.name AS Artist, ROUND(SUM(i.total),1) as Invoice_total
FROM `ar-da-projects.Project_iTune.invoice` as i, `ar-da-projects.Project_iTune.customer` as c,
`ar-da-projects.Project_iTune.artist` as r,
`ar-da-projects.Project_iTune.invoice_line` as l,
`ar-da-projects.Project_iTune.track` as t,
`ar-da-projects.Project_iTune.album` as al
Where c.customer_id=i.customer_id
AND i.invoice_id=l.invoice_id
AND l.track_id=t.track_id
AND t.album_id=al.album_id
AND al.artist_id=r.artist_id
Group by c.first_name, c.last_name, r.name, i.total
ORDER BY i.total desc
```

first_name	last_name	Artist	Invoice_total
Wyatt	Girard	Frank Sinatra	570.2
Aaron	Mitchell	James Brown	396.0
František	Wichterlová	Kiss	396.0
Robert	Brown	Creedence Clearwater Revival	396.0
François Tremblay		The Who	396.0
Heather	Leacock	House Of Pain	357.4
Mark	Taylor	The Clash	320.8
Ladislav Kovács		The Cult	320.8
Hugh	O'Reilly	Marisa Monte	320.8
Richard	Cunningham	Marvin Gaye	320.8

2. Sales & Revenue Analysis

Q5. What are the average prices of different types of music?

Query:

```
SELECT g.name As Types_of_Music, Round(AVG(t.unit_price),2) AS Average_Price
FROM `ar-da-projects.Project_iTune.track` t,
`ar-da-projects.Project_iTune.genre` g
WHERE t.genre_id=g.genre_id
Group by g.name
ORDER BY Average_Price DESC
Limit 10
```

Result :

Types_of_Music	Average_Price
Comedy	1.99
Drama	1.99
TV Shows	1.99
Science Fiction	1.99
Sci Fi & Fantasy	1.99
Blues	0.99
Pop	0.99
Rock And Roll	0.99
Metal	0.99
Latin	0.99

Q6. How much revenue does each sales representative contribute?

Query :

```
SELECT e.employee_id, CONCAT(e.first_name, ' ',e.last_name)AS Employee_Name,ROUND
(SUM(i.total),2) AS Total_Sales
FROM `ar-da-projects.Project_iTune.employee` e,
`ar-da-projects.Project_iTune.customer` c,
`ar-da-projects.Project_iTune.invoice` i
Where e.employee_id=c.support_rep_id
AND c.customer_id=i.customer_id
GROUP BY e.employee_id,Employee_Name
ORDER BY Total_Sales DESC
```

Result :

employee_id	Employee_Name	Total_Sales
3	Jane Peacock	1731.51
4	Margaret Park	1584.0
5	Steve Johnson	1393.92

Q7. What are top 3 values of total invoice?

Query :

```
SELECT invoice_id, customer_id, invoice_date, billing_country, Round(total,1)
FROM `ar-da-projects.Project_iTune.invoice`
ORDER BY total desc
LIMIT 3
```

Result :

invoice_id	customer_id	invoice_date	country	total
183	42	2018-02-09 00:00:00.000000	France	23.8
92	32	2017-07-02 00:00:00.000000	Canada	19.8
362	29	2019-05-24 00:00:00.000000	Canada	19.8

3. Product & Content Analysis

Q8. Which is the most popular song?

Query:

```
SELECT t.name As Song, Round(SUM(i.total),2) AS Total_purchase
FROM `ar-da-projects.Project_iTune.invoice` i,
`ar-da-projects.Project_iTune.track` t,
`ar-da-projects.Project_iTune.invoice_line` l
WHERE i.invoice_id=l.invoice_id
AND l.track_id=t.track_id
Group by Song
ORDER BY Total_purchase DESC
Limit 5
```

Result :

Song	Total_purchase
War Pigs	246.51
Hey Joe	177.21
Are You Experienced?	175.23
Third Stone From The Sun	171.27
Highway Chile	169.29

Q9. 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.

Query :

```
SELECT name, milliseconds FROM `ar-da-projects.Project_iTune.track`
WHERE milliseconds>
(SELECT
AVG(milliseconds)
FROM `ar-da-projects.Project_iTune.track` )
Limit 5
```

Result :

name	milliseconds
You Oughta Know (Alternate)	491885
Master Of Puppets	436453
Snoopy's search-Red baron	456071
Stratus	582086
No More Tears	555075

Q10. What is the average price per track across different genres?

Query:

```
SELECT g.name AS genre_name, ROUND(AVG(t.unit_price),2) AS Avg_price
FROM `ar-da-projects.Project_iTune.track` t,
`ar-da-projects.Project_iTune.genre` g
WHERE t.genre_id =g.genre_id
GROUP BY g.name
ORDER BY Avg_price DESC
LIMIT 10
```

Result :

genre_name	Avg_price
Comedy	1.99
Drama	1.99
TV Shows	1.99
Science Fiction	1.99
Sci Fi & Fantasy	1.99
Blues	0.99
Pop	0.99
Rock And Roll	0.99
Metal	0.99
Latin	0.99

4. Artist & Genre Performance

Q10. Who are the most popular artists or top 5 highest-grossing artists?

Query:

```
SELECT ar.name As Artist, Round(SUM(i.total),2) AS Total_purchase
FROM `ar-da-projects.Project_iTune.invoice` i,
`ar-da-projects.Project_iTune.track` t,
`ar-da-projects.Project_iTune.invoice_line` l,
`ar-da-projects.Project_iTune.artist` ar,
`ar-da-projects.Project_iTune.album` al
```

```

WHERE i.invoice_id=l.invoice_id
AND l.track_id=t.track_id
AND al.album_id = t.album_id
AND ar.artist_id=al.artist_id
Group by Artist
ORDER BY Total_purchase DESC
Limit 5

```

Result :

Artist	Total_purchase
Jimi Hendrix	2623.5
Queen	2269.08
Red Hot Chili Peppers	1484.01
Pearl Jam	1387.98
Nirvana	1366.2

Q11. 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.

Query:

```

SELECT i.billing_country As Country, Round(SUM(i.total),2) AS Total_purchase, g.name AS Genre
FROM `ar-da-projects.Project_iTune.invoice` i,
`ar-da-projects.Project_iTune.track` t,
`ar-da-projects.Project_iTune.invoice_line` l,
`ar-da-projects.Project_iTune.genre` g
WHERE i.invoice_id=l.invoice_id
AND l.track_id=t.track_id
and t.genre_id = g.genre_id
Group by billing_country, g.name
ORDER BY Total_purchase DESC, Country
Limit 10

```

Result:

Country	Total_purchase	Genre
USA	5568.75	Rock
Canada	3536.28	Rock
Germany	2105.73	Rock
Brazil	1993.86	Rock
France	1985.94	Rock
United Kingdom	1682.01	Rock
Czech Republic	1664.19	Rock
USA	1234.53	Alternative & Punk

Portugal	1147.41	Rock
USA	1025.64	Metal

Q12. 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.

Query :

```
SELECT ar.name, COUNT(t.track_id) AS No_of_Tracks
FROM `ar-da-projects.Project_iTune.track` t,
`ar-da-projects.Project_iTune.artist` ar,
`ar-da-projects.Project_iTune.album` al,
`ar-da-projects.Project_iTune.genre` g
WHERE ar.artist_id = al.artist_id
And al.album_id = t.album_id
AND t.genre_id = g.genre_id
And g.name = 'Rock'
GROUP BY ar.artist_id, ar.name
Limit 10
```

Result :

name	No_of_Tracks
Led Zeppelin	114
U2	112
Deep Purple	92
Iron Maiden	81
Pearl Jam	54
Van Halen	52
Queen	45
The Rolling Stones	41
Creedence Clearwater Revival	40
Kiss	35

Q13. Write a 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

Query :

```
SELECT c.email, c.first_name, c.last_name, g.name
FROM `ar-da-projects.Project_iTune.customer` c,
`ar-da-projects.Project_iTune.genre` g,
`ar-da-projects.Project_iTune.invoice_line` l,
`ar-da-projects.Project_iTune.invoice` i,
`ar-da-projects.Project_iTune.track` t
```

```

WHERE c.customer_id=i.customer_id
AND i.invoice_id=l.invoice_id
AND l.track_id=t.track_id
AND t.genre_id=g.genre_id
AND g.name='Rock'
ORDER BY email
LIMIT 10

```

Result :

email	first_name	last_name	name
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock

5. Employee & Operational Efficiency

Q14.What is the average number of customers per employee in descending order?

Query :

```

select CONCAT(e.first_name,' ',e.last_name) AS Employee_name, count(c.customer_id) AS
No_of_customers
FROM `ar-da-projects.Project_iTune.employee` e,
`ar-da-projects.Project_iTune.customer` c
Where c.support_rep_id = e.employee_id
GROUP BY Employee_name
ORDER BY No_of_customers DESC

```

Result :

Employee_name	No_of_customers
Jane Peacock	21
Margaret Park	20
Steve Johnson	18

Q15. Who is the senior most employee based on job title?

Query :

```
SELECT employee_id, first_name, last_name, title, hire_date
FROM `ar-da-projects.Project_iTune.employee`
ORDER BY hire_date
Limit 1;
```

Result :

employee_id	first_name	last_name	title	hire_date
9	Mohan	Madan	Senior General Manager	2016-01-14 00:00:00.000000 UTC

6. Geographic Trends

Q16. Which countries have the most Invoices?

Query :

```
SELECT billing_country As Country, count(invoice_id) As No_of_invoices,
FROM `ar-da-projects.Project_iTune.invoice`
Group by billing_country
ORDER BY No_of_invoices DESC
LIMIT 5
```

Result:

Country	No_of_invoices
USA	131
Canada	76
Brazil	61
France	50
Germany	41

Q17. 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.

Query:

```
SELECT c.customer_id, CONCAT(c.first_name,' ',c.last_name) As Customer_name, i.billing_country As
Country, Round(SUM(i.total),2) As Total_purchase,
FROM `ar-da-projects.Project_iTune.invoice` i,
`ar-da-projects.Project_iTune.customer` c
WHERE c.customer_id = i.customer_id
Group by billing_country, c.customer_id, Customer_name
```

ORDER BY Total_purchase DESC, Country
Limit 10

Result:

customer_id	Customer_name	Country	Total_purchase
5	František Wichterlová	Czech Republic	144.54
6	Helena Holý	Czech Republic	128.7
46	Hugh O'Reilly	Ireland	114.84
58	Manoj Pareek	India	111.87
1	Luís Gonçalves	Brazil	108.9
13	Fernanda Ramos	Brazil	106.92
34	João Fernandes	Portugal	102.96
3	François Tremblay	Canada	99.99
42	Wyatt Girard	France	99.99
50	Enrique Muñoz	Spain	98.01