**Objective Questions**

**1.Does any table have missing values or duplicates? If yes, how would you handle it?**

Ans:

Yes, the tables contain some missing values. Specifically, the "State" column in the customer table has missing values. To address this, we used the provided cities and postal codes, along with Google, to update the missing state information. Similarly, the invoice table also has null values in the "State" column. We updated the "Billing State" column in the invoice table by using the information from the customer table. The concepts used to resolve these issues include the SQL commands for Update and Join.

**2.Find the top-selling tracks and top artist in the USA and identify their most famous genres**

Ans:

To identify the top-selling tracks, top artists, and popular genres in the USA, we used joins across multiple tables since this information isn't available in a single table. Each query was filtered to include only data from the USA, and we limited the results to the top 5 tracks. The commands utilized for these queries included JOIN, WHERE, GROUP BY, SUM, and LIMIT.

**Top Selling Tracks**

|  |
| --- |
| **Track\_name** |
| War Pigs |
| You Know I'm No Good (feat. Ghostface Killah) |
| Violent Pornography |
| I Looked At You |
| Scentless Apprentice |

**Top Artists Top Genres**

|  |
| --- |
| **Artist name** |
| Van Halen |
| R.E.M. |
| The Rolling Stones |
| Nirvana |
| Foo Fighters |

|  |
| --- |
| **Genre Name** |
| Rock |
| Alternative & Punk |
| Metal |
| R&B/Soul |
| Blues |

**3.What is the customer demographic breakdown (age, gender, location) of Chinook's customer base?**

Ans:

To understand the demographic breakdown, we constructed a query to determine the number of customers in each country.

**4.Calculate the total revenue and number of invoices for each country, state, and city:**

Ans:

To perform this, we constructed separate queries to calculate the total revenue and the number of invoices for each country, state, and city.

**5.Find the top 5 customers by total revenue in each country**

Ans: We used a Common Table Expression (CTE) to merge the first and last names of customers, creating their full names. By applying the dense\_rank window function based on revenue, we identified the top 5 customers in each country.

|  |  |
| --- | --- |
| **Country** | **Customer\_name** |
| Argentina | Diego GutiÃ©rrez |
| Australia | Mark Taylor |
| Austria | Astrid Gruber |
| Belgium | Daan Peeters |
| Brazil | LuÃ­s GonÃ§alves |
|  | Fernanda Ramos |
|  | Roberto Almeida |
|  | Alexandre Rocha |
|  | Eduardo Martins |
| Canada | FranÃ§ois Tremblay |
|  | Edward Francis |
|  | Ellie Sullivan |
|  | Aaron Mitchell |
|  | Jennifer Peterson |
| Chile | Luis Rojas |
| Czech Republic | FrantiÅ¡ek WichterlovÃ¡ |
|  | Helena HolÃ½ |
| Denmark | Kara Nielsen |
| Finland | Terhi HÃ¤mÃ¤lÃ¤inen |
| France | Wyatt Girard |
|  | Camille Bernard |
|  | Isabelle Mercier |
|  | Dominique Lefebvre |
|  | Marc Dubois |
| Germany | Fynn Zimmermann |
|  | Hannah Schneider |
|  | Leonie Kohler |
|  | Niklas Schroder |
|  | Ladislav KovÃ¡cs |
| Hungary | Manoj Pareek |
| India | Puja Srivastava |
|  | Hugh O'Reilly |
| Ireland | Lucas Mancini |
| Italy | Johannes Van der Berg |
| Netherlands | BjÃ¸rn Hansen |
| Norway | StanisÅ‚aw WÃ³jcik |
| Poland | JoÃ£o Fernandes |
| Portugal | Madalena Sampaio |
|  | Enrique Muaz |
| Spain | Joakim Johansson |
| Sweden | Phil Hughes |
| United Kingdom | Steve Murray |
|  | Emma Jones |
|  | Jack Smith |
| USA | Dan Miller |
|  | Heather Leacock |
|  | Kathy Chase |
|  | Richard Cunningham |

**6.Identify the top-selling track for each customer**

Ans:

We created a Common Table Expression (CTE) to concatenate the first and last names of customers, forming their full names. By using the dense\_rank window function based on the count of tracks purchased, we identified the topmost track for each customer.

|  |  |
| --- | --- |
| **Customer\_name** | **Track\_name** |
| Aaron Mitchell | A Tarde |
| Alexandre Rocha | `40` |
| Astrid Gruber | 51st Anniversary |
| BjÃ¸rn Hansen | (Anesthesia) Pulling Teeth |
| Camille Bernard | 2112 Overture |
| Daan Peeters | 13 Years Of Grief |
| Dan Miller | After Midnight |
| Diego GutiÃ©rrez | American Idiot |
| Dominique Lefebvre | 1/2 Full |
| Eduardo Martins | Like A Bird |
| Edward Francis | A Room At The Heartbreak Hotel |
| Ellie Sullivan | 24 Caprices, Op. 1, No. 24, for Solo Violin, in A Minor |
| Emma Jones | #1 Zero |
| Enrique Muaz | (We Are) The Road Crew |
| Fernanda Ramos | 24 Caprices, Op. 1, No. 24, for Solo Violin, in A Minor |
| FranÃ§ois Tremblay | Sting Me |
| Frank Ralston | A World Without Heroes |
| FrantiÅ¡ek WichterlovÃ¡ | A Tarde |
| Fynn Zimmermann | Radio/Video |
| Hannah Schneider | I Can't Explain |
| Heather Leacock | (There Is) No Greater Love (Teo Licks) |
| Helena HolÃ½ | (There Is) No Greater Love (Teo Licks) |
| Hugh O'Reilly | Drain You |
| Isabelle Mercier | Tease Me Please Me |
| Jack Smith | A Kind Of Magic |
| Jennifer Peterson | Alabama Song |
| Joakim Johansson | (White Man) In Hammersmith Palais |
| JoÃ£o Fernandes | Train In Vain |
| Johannes Van der Berg | Confusion |
| John Gordon | (I Can't Help) Falling In Love With You |
| Julia Barnett | Get What You Need |
| Kara Nielsen | 22 Acacia Avenue |
| Kathy Chase | (Oh) Pretty Woman |
| Ladislav KovÃ¡cs | Astronomy |
| Leonie Kohler | 24 Caprices, Op. 1, No. 24, for Solo Violin, in A Minor |
| Lucas Mancini | All Dead, All Dead |
| LuÃ­s GonÃ§alves | 'Round Midnight |
| Madalena Sampaio | 01 - Prowler |
| Manoj Pareek | 19th Nervous Breakdown |
| Marc Dubois | 5.15 |
| Mark Philips | (We Are) The Road Crew |
| Martha Silk | 14 Years |
| Michelle Brooks | A E O Z |
| Niklas Schroder | 14 Years |
| Patrick Gray | War Pigs |
| Phil Hughes | (We Are) The Road Crew |
| Puja Srivastava | Agora Que O Dia Acordou |
| Richard Cunningham | Abraham, Martin And John |
| Robert Brown | (Wish I Could) Hideaway |
| Roberto Almeida | Love And Marriage |
| StanisÅ‚aw WÃ³jcik | Faceless |
| Steve Murray | A Sombra Da Maldade |
| Terhi HÃ¤mÃ¤lÃ¤inen | (We Are) The Road Crew |
| Tim Goyer | 19th Nervous Breakdown |
| Victor Stevens | Untitled |
| Wyatt Girard | Changes |

**7.Are there any patterns or trends in customer purchasing behavior (e.g., frequency of purchases, preferred payment methods, average order value)?**

Ans:

To analyze the patterns in sales and customer behavior, we conducted the following analyses:

**Quarterly and Yearly Sales Analysis:**

Methodology:

* Extracted quarter and year from the invoice date.
* Calculated the total revenue generated for each quarter and year.

Observations:

* The revenue is highest in the first quarter of each year.
* There is a consistent decrease in revenue in the remaining quarters of each year.

**Quarterly Sales Analysis**

Methodology:

* Retrieved the revenue generated and the number of invoices for each quarter across the given years.

Observations:

* Both revenue and the number of invoices are highest in the first quarter.
* There is a consistent decrease in revenue and the number of invoices in the subsequent quarters.

**Customer Purchasing Power**

Methodology:

* Retrieved customer ID, number of invoices, and the bucket size (number of tracks) of each customer.

Observations

* Analyzed the average number of tracks purchased by each customer.
* Assessed the total number of tracks purchased by each customer.

**Summary:**

* There is a clear trend of higher sales in the first quarter of each year, followed by a decline in the subsequent quarters.
* Customers tend to purchase more tracks in the first quarter.
* The purchasing power varies among customers, with a noticeable average number of tracks bought per customer

**8.What is the customer churn rate?**

Ans:

To calculate the customer churn rate, we created three Common Table Expressions (CTEs):

1. Latest\_date: This CTE identifies the most recent invoice date from the database.

2. Recent\_Purchases: This CTE determines which customers made purchases within the last three months based on the `latest\_date`.

3. Customer\_status: This CTE classifies customers as either active or inactive based on their recent purchase activity.

Using these CTEs, we then calculated the churn rate for the given data.



**9. Calculate the percentage of total sales contributed by each genre in the USA and identify the best-selling genres and artists**

Ans:

**Percentage of Sales**

|  |  |
| --- | --- |
| Genre Name | Sales Percent (%) |
| Rock | 53.38 |
| Alternative & Punk | 12.37 |
| Metal | 11.8 |
| R&B/Soul | 5.04 |
| Blues | 3.43 |
| Alternative | 3.33 |
| Latin | 2.09 |
| Pop | 2.09 |
| Hip Hop/Rap | 1.9 |
| Jazz | 1.33 |
| Easy Listening | 1.24 |
| Reggae | 0.57 |
| Electronica/Dance | 0.48 |
| Classical | 0.38 |
| Heavy Metal | 0.29 |
| Soundtrack | 0.19 |
| TV Shows | 0.1 |

**Top Genres and Artists:**

|  |  |
| --- | --- |
| Artist\_name | Genre\_name |
| Van Halen | Rock |
| The Rolling Stones | Rock |
| Nirvana | Rock |
| R.E.M. | Alternative & Punk |
| Green Day | Alternative & Punk |
| Eric Clapton | Blues |
| Pearl Jam | Rock |
| AC/DC | Rock |
| Jimi Hendrix | Rock |
| The Doors | Rock |

10.Find customers who have purchased tracks from at least 3 different genres

Ans:

To achieve this, we utilized data from the customers, invoices, tracks, and genres tables. We employed the COUNT function to identify customers who purchased at least three different tracks.

|  |  |
| --- | --- |
| **Customer Name** | |
| Aaron Mitchell | Johannes Van der Berg |
| Alexandre Rocha | John Gordon |
| Astrid Gruber | Julia Barnett |
| BjÃ¸rn Hansen | Kara Nielsen |
| Camille Bernard | Kathy Chase |
| Daan Peeters | Ladislav KovÃ¡cs |
| Dan Miller | Leonie Kohler |
| Diego GutiÃ©rrez | Lucas Mancini |
| Dominique Lefebvre | LuÃ­s GonÃ§alves |
| Eduardo Martins | Luis Rojas |
| Edward Francis | Madalena Sampaio |
| Ellie Sullivan | Manoj Pareek |
| Emma Jones | Marc Dubois |
| Enrique Muaz | Mark Philips |
| Fernanda Ramos | Mark Taylor |
| FranÃ§ois Tremblay | Martha Silk |
| Frank Harris | Michelle Brooks |
| Frank Ralston | Niklas Schroder |
| FrantiÅ¡ek WichterlovÃ¡ | Patrick Gray |
| Fynn Zimmermann | Phil Hughes |
| Hannah Schneider | Puja Srivastava |
| Heather Leacock | Richard Cunningham |
| Helena HolÃ½ | Robert Brown |
| Hugh O'Reilly | Roberto Almeida |
| Isabelle Mercier | StanisÅ‚aw WÃ³jcik |
| Jack Smith | Steve Murray |
| Jennifer Peterson | Terhi HÃ¤mÃ¤lÃ¤inen |
| Joakim Johansson | Tim Goyer |
| JoÃ£o Fernandes | Victor Stevens |
|  | Wyatt Girard |

**11.Rank genres based on their sales performance in the USA**

Ans:

To perform this, we have used dense\_rank function

|  |  |
| --- | --- |
| Genre Name | R1 |
| Rock | 1 |
| Alternative & Punk | 2 |
| Metal | 3 |
| R&B/Soul | 4 |
| Blues | 5 |
| Alternative | 6 |
| Latin | 7 |
| Pop | 7 |
| Hip Hop/Rap | 8 |
| Jazz | 9 |
| Easy Listening | 10 |
| Reggae | 11 |
| Electronica/Dance | 12 |
| Classical | 13 |
| Heavy Metal | 14 |
| Soundtrack | 15 |
| TV Shows | 16 |

**12.Identify customers who have not made a purchase in the last 3 months**

Ans:

To perform these, we have constructed 2 cte’s:

1.Last Invoice Date: The last invoice date from the given data.

2.Recent Purchases: To know the customers who had made purchases in last 3 months.

By using these two tables we can identify customers who had not made purchases in 3 months.

|  |  |
| --- | --- |
| Customer Name |  |
| LuÃ­s GonÃ§alves | Tim Goyer |
| FranÃ§ois Tremblay | Hannah Schneider |
| BjÃ¸rn Hansen | Fynn Zimmermann |
| Astrid Gruber | Niklas Schroder |
| Daan Peeters | Camille Bernard |
| Kara Nielsen | Isabelle Mercier |
| Eduardo Martins | Johannes Van der Berg |
| Alexandre Rocha | Enrique Muaz |
| Jack Smith | Steve Murray |
| Michelle Brooks | Diego GutiÃ©rrez |
| Manoj Pareek | Luis Rojas |

**Subjective Questions**

1. **Recommend the three albums from the new record label that should be prioritised for advertising and promotion in the USA based on genre sales analysis.**

Ans:

Based on the genre sales analysis of the provided data, the following three genres have the highest sales quantities:

* These albums have achieved substantial sales, indicating strong customer approval.
* Given the current market trends, if we effectively promote and advertise these new albums, we can expect a significant increase in market share.

|  |  |
| --- | --- |
| 1 | Are You Experienced? |
| 2 | From the Muddy Banks of Wishkah(live) |
| 3 | The Doors |

1. **Determine the top-selling genres in countries other than the USA and identify any commonalities or differences.**

Ans:

Based on the genres sold between the USA and other countries, we can observe the following:

* Rock is the top category in both the USA and other countries.
* Metal is the second highest sold genre in both markets.

This indicates a strong and consistent preference for Rock and Metal genres across different regions.

|  |  |  |
| --- | --- | --- |
| USA | Genres | All Countries |
| 561 | Rock | 2074 |
| 124 | Metal | 317 |
| 35 | Alternative | 185 |
| 14 | Jazz | 31 |
| 22 | Latin | 20 |

1. **Customer Purchasing Behavior Analysis: How do the purchasing habits (frequency, basket size, spending amount) of long-term customers differ from those of new customers? What insights can these patterns provide about customer loyalty and retention strategies?**

Ans:

1.**Peak Sales Periods:**

- January: The month of January shows a high number of invoices (57) and track counts (443). This is likely due to the post-holiday period where customers are using gift cards, making purchases with holiday money, or taking advantage of New Year sales and promotions.

-April: April has the highest invoice count (60) and the second-highest track count (447), suggesting another peak in sales. This could be attributed to spring promotions, tax return season, or new product releases that drive consumer interest and purchases.

2. **Consistent Sales:**

-March: With 56 invoices and the highest track count of 461, March demonstrates steady and strong sales performance. This consistency could be due to ongoing promotions from the beginning of the year, seasonal factors like better weather encouraging purchases, or sustained consumer interest in products released earlier in the year.

3. **Sales Decline:**

- October, November, and December: There is a noticeable decline in sales during these months. October sees 45 invoices with 349 track counts, November drops further to 38 invoices and 294 track counts, and December slightly recovers but remains low with 49 invoices and 368 track counts. This pattern suggests a seasonal dip, potentially due to consumers waiting for holiday deals, reduced marketing efforts, or competition with major shopping events like Black Friday and Cyber Monday in November.

Recommendations:

1. **Focus on Low Sales Months (October-November):**

-**Targeted Promotions**: Implement special promotions, discounts, or limited-time offers to stimulate purchases during these slower periods. Highlight any unique or seasonal products to attract customers.

- **Marketing Campaigns**: Increase marketing efforts through social media, email campaigns, and advertisements to raise awareness and drive traffic to the store. Collaborate with influencers or launch campaigns that create a sense of urgency.

2. **Capitalize on High-Performing Months (January-April):**

**Enhanced Marketing Efforts**: Continue leveraging the post-holiday momentum in January with extended sales and promotions. In April, align marketing efforts with tax return season by offering special deals or highlighting new product releases.

3.**Product Launches**: Schedule key product launches or major updates during these months to maximize exposure and sales. Ensure that these releases are well-publicized and supported by comprehensive marketing strategies.

4.**Customer Engagement**: Engage with customers through loyalty programs, exclusive previews, or early access to new products. Encourage repeat purchases by offering incentives for returning customers.

1. **Product Affinity Analysis: Which music genres, artists, or albums are frequently purchased together by customers? How can this information guide product recommendations and cross-selling initiatives?**

|  |  |  |
| --- | --- | --- |
| **Artist Name** | **Genre Name** | **Album Title** |
| Jimi Hendrix | Rock | Are You Experienced? |
| Godsmack | Metal | Faceless |
| System Of A Down | Metal | Mezmerize |
| JET | Alternative & Punk | Get Born |
| The Doors | Rock | The Doors |
| Queen | Rock | Greatest Hits I |
| Aerosmith | Rock | Big Ones |
| The Police | Rock | The Police Greatest Hits |
| Nirvana | Rock | From The Muddy Banks Of The Wishkah [live] |
| The Who | Rock | My Generation - The Very Best Of The Who |

Ans:

The table above highlights artists, genres, and albums that customers often buy together.

* The best-selling artist, genre, and album combinations can be bundled together in offers to increase sales of lesser-selling items.
* By leveraging popular artists and their associated genres and albums, cross-selling opportunities can be explored to boost overall sales and customer engagement.

1. **Regional Market Analysis: Do customer purchasing behaviors and churn rates vary across different geographic regions or store locations? How might these correlate with local demographic or economic factors?**

Ans:

Customer purchasing behaviors and churn rates can differ based on geographic regions and store locations. It's true that these factors can significantly influence customer behavior and retention. Here are a few key points based on observations:

1. Regional Differences in Churn Rates: Countries or regions with fewer customers tend to have higher inactivity rates among those customers. This could be due to various reasons such as local economic conditions, cultural preferences, or lack of targeted marketing efforts.

2. Variation in Customer Preferences: Customers in different regions may have varying preferences for music or other products/services. If the offerings don't align with local tastes or demographics, customers may be less likely to engage or remain active.

3. Local Demographics and Economic Factors: These play a crucial role in shaping customer behavior. For instance, economic prosperity or cultural affinity towards specific types of products can influence how likely customers are to continue purchasing or using a service.

4. Impact on Churn: High churn rates can lead to revenue loss and reduced customer loyalty. Understanding local factors can help tailor marketing strategies, product offerings, and customer support efforts to better meet regional needs and reduce churn.

To address these challenges effectively, businesses often conduct localized market research, adapt their offerings to local tastes and preferences, and implement targeted marketing campaigns that resonate with specific geographic demographics. This approach can help mitigate churn and improve customer retention in diverse market environments.

1. **Customer Risk Profiling: Based on customer profiles (age, gender, location, purchase history), which customer segments are more likely to churn or pose a higher risk of reduced spending? What factors contribute to this risk?**

Ans:

Customer risk profiling involves analyzing customer profiles, such as age, gender, location, and purchase history, to identify segments that are more likely to churn or reduce their spending. Here are some considerations and factors that contribute to this risk:

1.**Behavioral Patterns:** Analyzing customer purchase patterns over time is crucial. If you observe that a customer's spending is decreasing consistently, it could indicate a higher risk of churn. Factors like the emergence of online music platforms (e.g., Spotify, Apple Music) could divert spending away from traditional purchasing methods.

2.**Competitive Landscape:** The presence of competitors offering better incentives or pricing can influence customer behavior. Premium services offered by online platforms might attract customers away from traditional purchasing channels, impacting spending patterns.

3. **Customer Preferences and Satisfaction**: Understanding whether customers are satisfied with the products or services offered is essential. Dissatisfaction can lead to churn, particularly if customers find better alternatives elsewhere.

4. **Economic Factors**: Changes in economic conditions, such as recessions or financial instability, can affect disposable income and, consequently, customer spending habits.

5. **Technological Advancements**: Advancements in technology and digital platforms can reshape consumer behavior rapidly. Customers may prefer the convenience and variety offered by online services over traditional purchasing methods.

To mitigate these risks, businesses can adopt strategies such as personalized marketing campaigns, improving customer service, enhancing product offerings, and leveraging data analytics to predict and pre-empt churn. By understanding the factors contributing to customer risk and taking proactive measures, businesses can better retain their customer base and sustain growth in competitive markets.

1. **Customer Lifetime Value Modeling: How can you leverage customer data (tenure, purchase history, engagement) to predict the lifetime value of different customer segments? This could inform targeted marketing and loyalty program strategies. Can you observe any common characteristics or purchase patterns among customers who have stopped purchasing?**

Ans:

Leveraging customer data effectively can significantly enhance Customer Lifetime Value (CLV) modelling and inform targeted marketing and loyalty programs. Key data points include:

1. **Tenure and Engagement**: Analyzing how long customers stay and their engagement levels provides insights into loyalty and potential future spending.

2. **Purchase History**: Identifying buying habits, preferred products, and purchase frequency helps predict future spending patterns.

3. **Behavioral Analytics:** Tracking behaviors like browsing history and responses to campaigns reveals deeper preferences and spending propensity.

Overall, leveraging customer data for CLV modeling and targeted strategies can maximize retention, optimize marketing spend, and drive sustainable growth.

1. **If data on promotional campaigns (discounts, events, email marketing) is available, how could you measure their impact on customer acquisition, retention, and overall sales?**

Ans:

To measure the impact of promotional campaigns (discounts, events, email marketing) on customer acquisition, retention, and overall sales, you can adopt a structured analytical approach. Here’s how you can leverage the data effectively:

1. **Customer Acquisition:**

Tracking New Customers: Measure the number of new customers acquired during and after promotional campaigns. Compare these numbers to periods without promotions.

Conversion Rates: Analyse the conversion rates from promotional campaign touchpoints (emails, ads) to actual purchases.

Cost of Acquisition: Calculate the cost of acquiring each new customer during the promotion period versus non-promotion periods.

2. **Customer Retention:**

- Repeat Purchase Rates: Measure the frequency of repeat purchases from customers who engaged with promotions compared to those who did not.

- Churn Rate: Track the churn rate before, during, and after the promotion to see if there's a decrease in customer attrition.

- Engagement Metrics: analyse engagement metrics such as email open rates, click-through rates, and event attendance to understand customer interest and ongoing engagement.

3. **Overall Sales:**

Average Order Value (AOV): analyse changes in AOV during promotions to see if discounts or events lead to higher spend per transaction.

Genre/Product Sales: Identify which genres or products saw the most significant sales increases during promotions to understand what drives customer purchases.

By analyzing data on promotional campaigns, you can gain valuable insights into what drives customer acquisition and retention, as well as overall sales performance. This information allows you to optimize future promotional efforts, tailor acquisition and retention strategies, and ultimately enhance business growth.

1. **How would you approach this problem, if the objective and subjective questions weren't given?**

Ans:

If the objective and subjective questions weren’t given for the given database, the approach will be majorly on problem statement depending on the given problem statement my approach would be like:

* **Data Cleaning**: To find data has any null values or not if there are null values handling them. Ensuring the data is in proper format for analysis.
* **Data Structuring:** Creating Common Table Expressions and Views for making the data more readable since we using joins more frequently.
* **Data Aggregation:** Using aggregating functions like Sum (), Max (), Min () for summarizing and extracting meaningful insights from data.
* **Data Integration**: Joins are used to combine data from multiple tables based on related columns. They help in creating a comprehensive dataset for thorough analysis.
* **Temporal Analysis:** Analyzing data over different time periods (monthly, quarterly, yearly) helps identify trends, seasonality, and performance patterns, enabling better decision-making and strategic planning.
* **Data Validation**: Validating the accuracy of data after cleaning, integration and structuring.
* **Data Presentation:** Effectively presenting the results of your data analysis to make the insights clear and accessible.

1. **How can you alter the "Albums" table to add a new column named "ReleaseYear" of type INTEGER to store the release year of each album?**

Ans:

Alter table album

add column ReleaseYear int;

1. **Chinook is interested in understanding the purchasing behavior of customers based on their geographical location. They want to know the average total amount spent by customers from each country, along with the number of customers and the average number of tracks purchased per customer. Write an SQL query to provide this information.**

Ans:

With customer\_summary as (

select c.customer\_id, c.country, count(il.track\_id) as c1 , Sum(total) as TotalRevenue

from customer c join invoice i on c.customer\_id = i.customer\_id

join invoice\_line il on il.invoice\_id = i.invoice\_id

group by c.customer\_id,c.country)

Select country , count(customer\_id) as NumberofCustomers , Round(Avg(c1),0) as AverageNumberofTracks , Round(Avg(TotalRevenue),2) as AverageRevenue

from customer\_summary

group by country;