Music Store Analytics

Created using SQL and Microsoft Power BI

Project Overview :

This project explores sales and listening trends in a digital music store using SQL and Power BI. The analysis covers top customers, high-revenue regions, genre and artist popularity, and overall revenue metrics. Data modeling and DAX were used in Power BI to build an interactive dashboard. The dataset includes tables like customer, invoice, invoice_line, track, album, artist, and genre."

Tools and Technologies Used :

- *SQL (PostgreSQL) – Data extraction, aggregation, filtering, and joining across multiple tables*
- *pgAdmin – Query execution and database exploration*
- *Power BI – Interactive data visualization and dashboard creation*
- *DAX (Data Analysis Expressions) – Custom calculations and KPIs in Power BI*
- *Power BI Data Modeling – Defining relationships between tables based on primary/foreign keys*

Dataset Relationship Diagram (Schema)

SQL queries

-- Q1: Who is the senior most employee based on the job title?
-- The senior most employee based on the job title is the one having the highest level

```
select * from employee
order by levels desc
limit 1;
```

-- Q2. What is the number of invoices for each country ?

```
select billing_country as country,count(*) as number_of_invoices
from
invoice
group by billing_country
order by number_of_invoices;
```

SQL queries

-- Q3. What are top three values of total invoices?

```
select total from invoice
order by total desc
limit 3;

-- Another way to do it using cte and window functions
with total_cte as (select total,
row_number()over(order by total desc) as row_num
from
invoice)

select total from total_cte
order by total_cte.total desc
limit 3;
```

SQL queries

Q4.Which city has the best customers?.Write a query that returns one city that has the highest sum of invoice totals. Return both the city name & sum of all invoice totals

```
select billing_city as city, sum(total) as invoice_total
from
invoice
group by billing_city
order by invoice_total desc
limit 1;
```

Q5.Who is the best customer? The customer who has spent the most money will be declared the best customer. Write a query that returns the person who has spent the most money

```
select c.customer_id,c.first_name,c.last_name,sum(i.total) as total
from
customer c
join
invoice i
on
c.customer_id = i.customer_id
group by c.customer_id
order by total desc
limit 1;
```

SQL queries

Q6.Write 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

```
select distinct c.email,c.first_name,c.last_name
from customer c
join
invoice i
on
c.customer_id = i.customer_id
join
invoice_line il
on
i.invoice_id = il.invoice_id
where track_id in
 (select track_id
 from track t
 join genre g
 on
 t.genre_id = g.genre_id
 where
 g.name like 'Rock')
order by c.email asc;
```

SQL queries

Q7. Write a query that returns the Artist name and total track count of the top 10 rock bands

```
select
a.artist_id,
a.name,
count(t.track_id)
as number_of_songs
from track t
join album al
on
al.album_id = t.album_id
join
artist a
on
a.artist_id = al.artist_id
join
genre g
on
g.genre_id = t.genre_id
where
g.name = 'Rock'
group by a.artist_id,a.name
order by
number_of_songs desc
limit 10;
```

SQL queries

Q8. 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

```
select t.name,t.milliseconds as track_length
from track t
where
t.milliseconds > (select avg(t.milliseconds) as avg_track_length
                  from track t)
order by t.milliseconds desc;
```

Q9.Find how much amount spent by each customer on the top selling artist? Write a query to return
customer name, artist name and total spent

SQL queries

```
with best_selling_artist as (
      select a.artist_id, a.name, sum(il.unit_price*il.quantity) as total_sales
      from invoice_line il
    join
    track t
    on
    il.track_id = t.track_id
    join
    album al
    on
    t.album_id = al.album_id
    join
    artist a
    on
    al.artist_id = a.artist_id
    group by a.artist_id
    order by total_sales desc
    limit 1)
```

SQL queries

```
select c.customer_id, c.first_name, c.last_name,bsa.name as artist_name,
sum(il.unit_price*il.quantity) as total_spend
from
customer c
join
invoice i
on
c.customer_id = i.customer_id
join
invoice_line il
on
i.invoice_id = il.invoice_id
join
track t
on
il.track_id = t.track_id
join
album al
on
t.album_id = al.album_id
join
best_selling_artist bsa
on
al.artist_id = bsa.artist_id
group by c.customer_id, c.first_name, c.last_name,bsa.name
order by total_spend desc;
```

SQL queries

Q10.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

```
with popular_genre as (
    select c.country,g.genre_id,g.name,count(il.quantity) as purchases,
  row_number()over w as row_num
  from
  customer c
  join
  invoice i
  on
  c.customer_id = i.customer_id
  join
  invoice_line il
  on
  il.invoice_id = i.invoice_id
  join
  track t
  on
  il.track_id = t.track_id
```

SQL queries

```
 join
  genre g
  on
  t.genre_id = g.genre_id
  group by
  c.country,g.genre_id,g.name
  Window w as (partition by c.country order by
 count(il.quantity) desc)
  order by c.country asc,count(il.quantity)
 desc
 )

select
pg.country,pg.genre_id,pg.purchases,pg.name
as genre_name
from
popular_genre pg
where row_num = 1;
```

SQL queries

Q11.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.

```
with customer_spending as (
select c.country,c.customer_id,c.first_name,c.last_name,
sum(il.unit_price*il.quantity) as total_spend,
row_number()over(partition by c.country order by  sum(il.unit_price*il.quantity) desc)
as row_num
from
customer c
join
invoice i
on
c.customer_id = i.customer_id
join
invoice_line il
on
i.invoice_id = il.invoice_id
group by c.country,c.customer_id,c.first_name,c.last_name
order by c.country asc,sum(il.unit_price*il.quantity) desc
)
```

SQL queries

```
select cs.country,cs.customer_id,cs.first_name,cs.last_name,cs.total_spend
from customer_spending cs
where row_num = 1
order by cs.country asc;
```

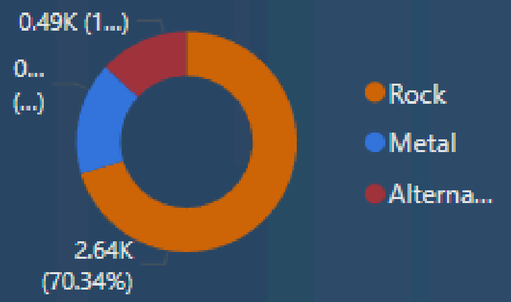
Music Store Sales Dashboard

Total Revenue
4.71K

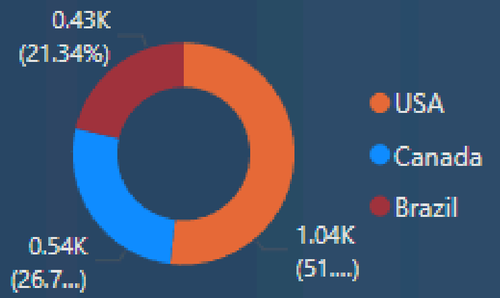
Total Customers
59

Total Invoices
614

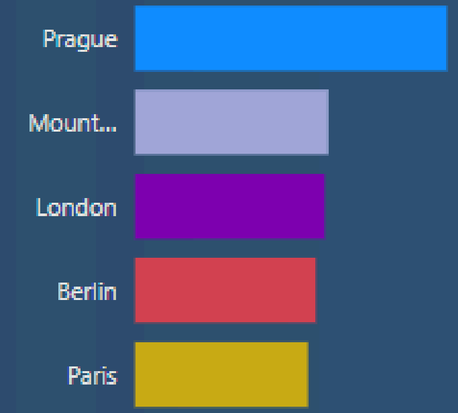
Best Selling Genres



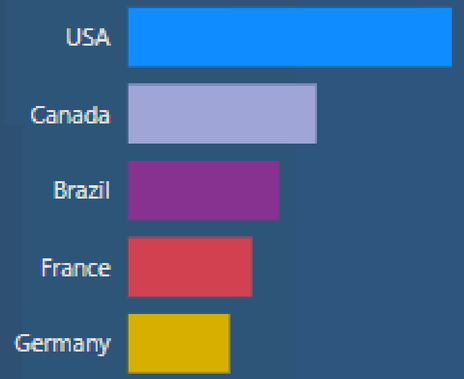
Top Revenue generating countries



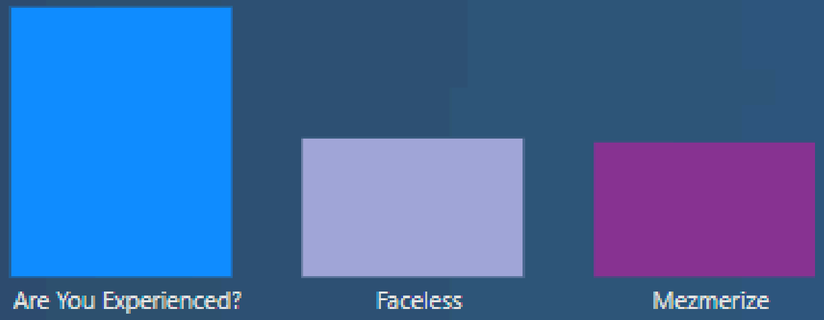
Top cities by revenue



Top countries by invoice count



Top selling Albums



Global distribution of Rock listeners

Top 5 Rock Artists

Key Features and insights

Key Features

- *Country-wise and city-wise revenue and invoice breakdown*
- *Top-selling genres and artists*
- *Best customer per country by total spend*
- *Most purchased albums and track analysis*
- *Interactive filters, KPIs, and maps*

Key Business Insights

- *USA generated the most invoices.*
- *Prague was the top revenue-generating city.*
- *Rock is the most popular genre.*
- *Led Zeppelin is the top Rock artist.*
- *“Are You Experienced?” is the best-selling album.*