Music SQL Database Analysis

study project for DFND
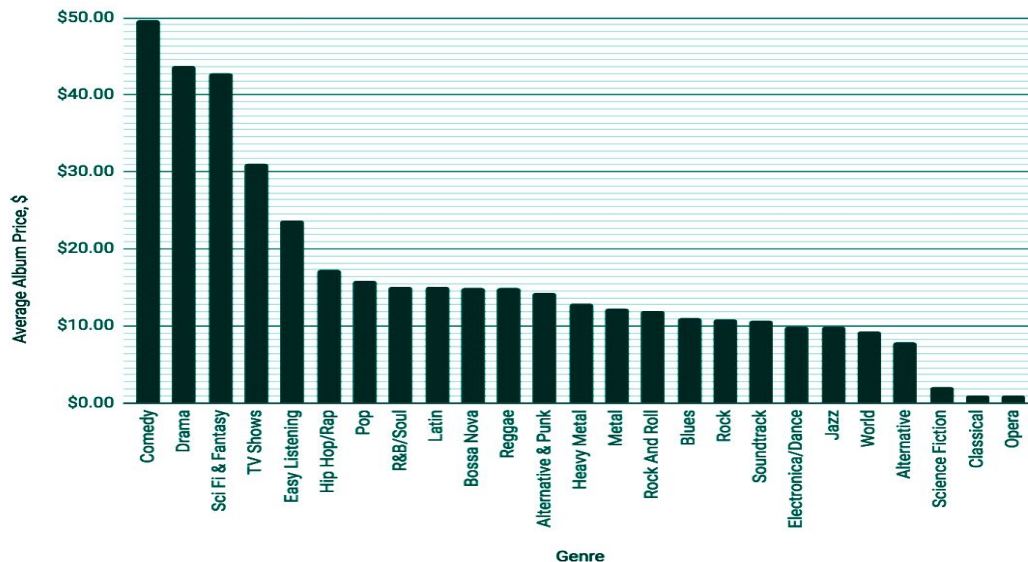
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Average Album Price by Genre

Though "Greatest hits" in Metal genre demonstrates the highest album price in the store of **$56.43**, the average album price of this genre can be considered rather low in comparison with the other genres. The highest album prices can be seen mostly in video genres, like Comedy, Drama or TV Shows, while the average album price for music genres is lower than **$18**, with classical and opera music of about **$1** per album.

Average Album Price by Genre

```
SELECT a.Title, g.Name AS Genre, SUM(t.UnitPrice) AS Price
FROM Track AS t
JOIN Album AS a ON a.AlbumID = t.AlbumID
JOIN Genre AS g ON t.GenreId = g.GenreID
GROUP BY a.AlbumID
ORDER BY Price DESC
LIMIT 1;
```
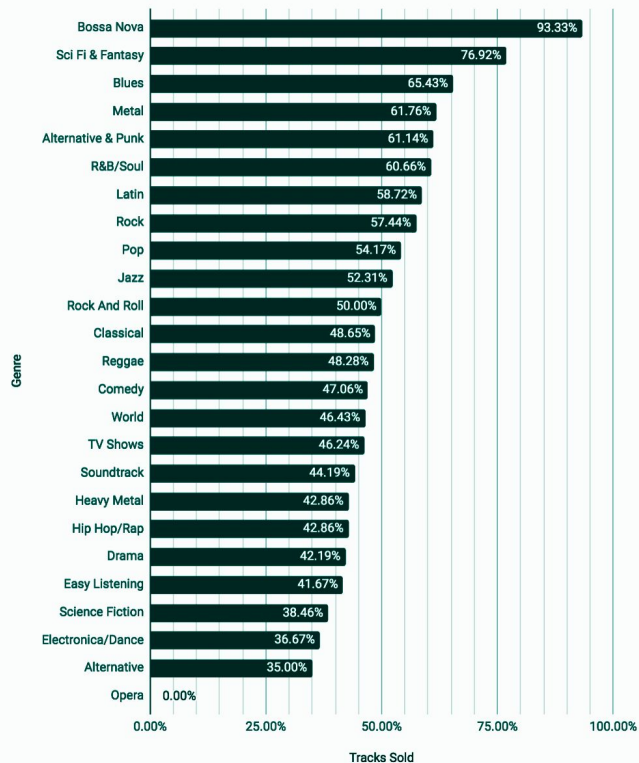
1 records

Title	Genre	Price
Greatest Hits	Metal	56.43

```
SELECT Genre, AVG(Price) as Avg_Album_Price
FROM (SELECT a.Title, g.Name AS Genre, SUM(t.UnitPrice) AS Price
    FROM Track AS t
    JOIN Album AS a ON a.AlbumID = t.AlbumID
    JOIN Genre AS g ON t.GenreId = g.GenreID
    GROUP BY a.AlbumID
    ORDER BY Price DESC ) album_prices
GROUP BY 1
ORDER BY 2 DESC;
```

Proportion of Sold Tracks by Genre

Proportion of Sold Tracks by Genre

Genre	Tracks Sold
Bossa Nova	93.33%
Sci Fi & Fantasy	76.92%
Blues	65.43%
Metal	61.76%
Alternative & Punk	61.14%
R&B/Soul	60.66%
Latin	58.72%
Rock	57.44%
Pop	54.17%
Jazz	52.31%
Rock And Roll	50.00%
Classical	48.65%
Reggae	48.28%
Comedy	47.06%
World	46.43%
TV Shows	46.24%
Soundtrack	44.19%
Heavy Metal	42.86%
Hip Hop/Rap	42.86%
Drama	42.19%
Easy Listening	41.67%
Science Fiction	38.46%
Electronica/Dance	36.67%
Alternative	35.00%
Opera	0.00%

Not only album prices but also the proportion of tracks, that were sold at least once differ by genres. The most "successful" genre is **Bossa Nova** with only **6.67%** of track that were **never** sold. The least "successful" is **Opera**, there **100%** tracks were **never** sold. Only **10** of **25** genres have the proportion of sold tracks higher than **50%**, with Comedy and Drama - the most expensive in terms of album prices - below this threshold.

```
SELECT Genre, AVG(Sold)
FROM (SELECT t.Name, g.Name AS Genre, t.TrackId IN
(SELECT il.TrackId FROM InvoiceLine as il) AS Sold
      FROM Track AS t
      JOIN Genre AS g ON t.GenreId = g.GenreId) sub
GROUP BY 1
ORDER BY 2 DESC;
```

Most Popular Genres in US States

```sql
SELECT BillingState AS State, Genre, MAX(num_tracks) AS
NumberOfPurchasedTracks
FROM (SELECT i.BillingState, g.Name AS Genre, count(il.TrackID)
AS num_tracks
    FROM Invoice AS i
    JOIN InvoiceLine AS il ON i.InvoiceId = il.InvoiceId AND
i.BillingState <> "NA" AND i.BillingCountry = "USA"
    JOIN Track AS t ON il.TrackId = t.TrackId
    JOIN Genre AS g ON t.GenreId = g.GenreId
    GROUP BY 2
    ORDER BY 3 DESC) sub
GROUP BY 1
ORDER BY 1;
```
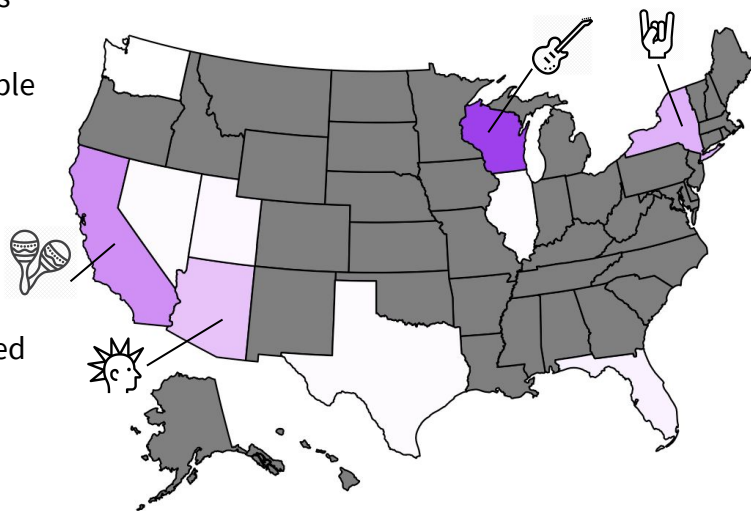
Displaying records 1 - 10

State	Genre	NumberOfPurchasedTracks
AZ	Alternative & Punk	50
CA	Latin	91
FL	TV Shows	14
IL	Alternative	5
NV	Reggae	6
NY	Metal	64
TX	Drama	6
UT	Comedy	8
WA	Easy Listening	3
WI	Rock	157

In the United States the tastes of customers have different priorities by states. Leaders by the number of purchased tracks are, for example **Rock** in **Wisconsin**, **Latin** in **California** and **Metal** in **New York** (see table on the left).

Still, only **4** states have pronounced preferences with **50+** tracks purchased, the numbers for other listed states are smaller than **15**, in other **45** states no purchases were made (see the map).

US States, Number of Purchased Tracks in States' Most Popular Genres
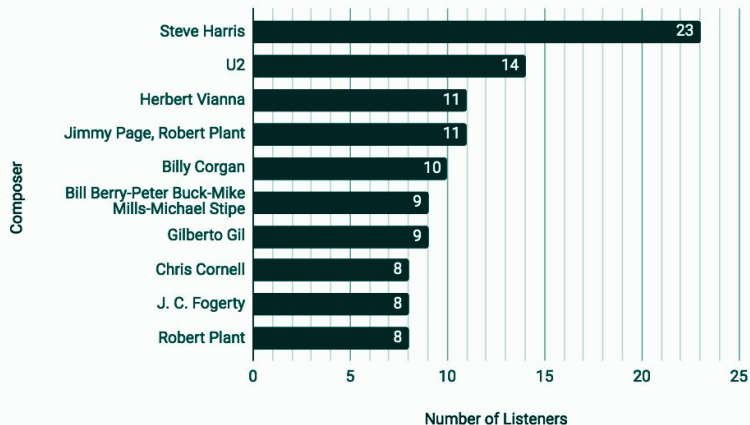no data available for gray states

Number Of Purchased Tracks in Top Genre

40 80 120

see image credentials on the last slide.

Top Composers by Listeners

Top 10 composers by number of unique listeners

For **752** composers in the database only **254** have more than **1** unique listener among the customers. Only **5** composers have **10+** unique listeners, the absolute leader is **Steve Harris** with **23** customers.

```
SELECT COUNT(num_listeners) AS more_than_one
FROM (SELECT t.Composer, count(DISTINCT i.CustomerId) AS
num_listeners
      FROM Track AS t
      JOIN InvoiceLine AS il ON t.TrackId = il.TrackId AND
t.Composer <> "NA"
      JOIN Invoice AS i ON il.InvoiceId = i.InvoiceId
      GROUP BY 1
      ORDER BY 2 DESC) sub
WHERE num_listeners > 1
```

1 records

more_than_one
254

```
SELECT t.Composer, COUNT(DISTINCT i.CustomerId)
FROM Track AS t
JOIN InvoiceLine AS il ON t.TrackId = il.TrackId AND t.Composer
<> "NA"
JOIN Invoice AS i ON il.InvoiceId = i.InvoiceId
GROUP BY 1
ORDER BY 2 DESC;
```

Sources

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- https://cdn.iconscout.com/public/images/icon/premium/png-512/rock-music-3e2838ce7cfc0bd6-512x512.png

- https://cdn.iconscout.com/public/images/icon/premium/png-512/mexican-maracas-maraca-latin-instrument-sound-music-371ec978bef832aa-512x512.png

- https://cdn4.iconfinder.com/data/icons/music-icon-5/24/You-Rock-512.png

- https://png.icons8.com/ios/1600/punk.png