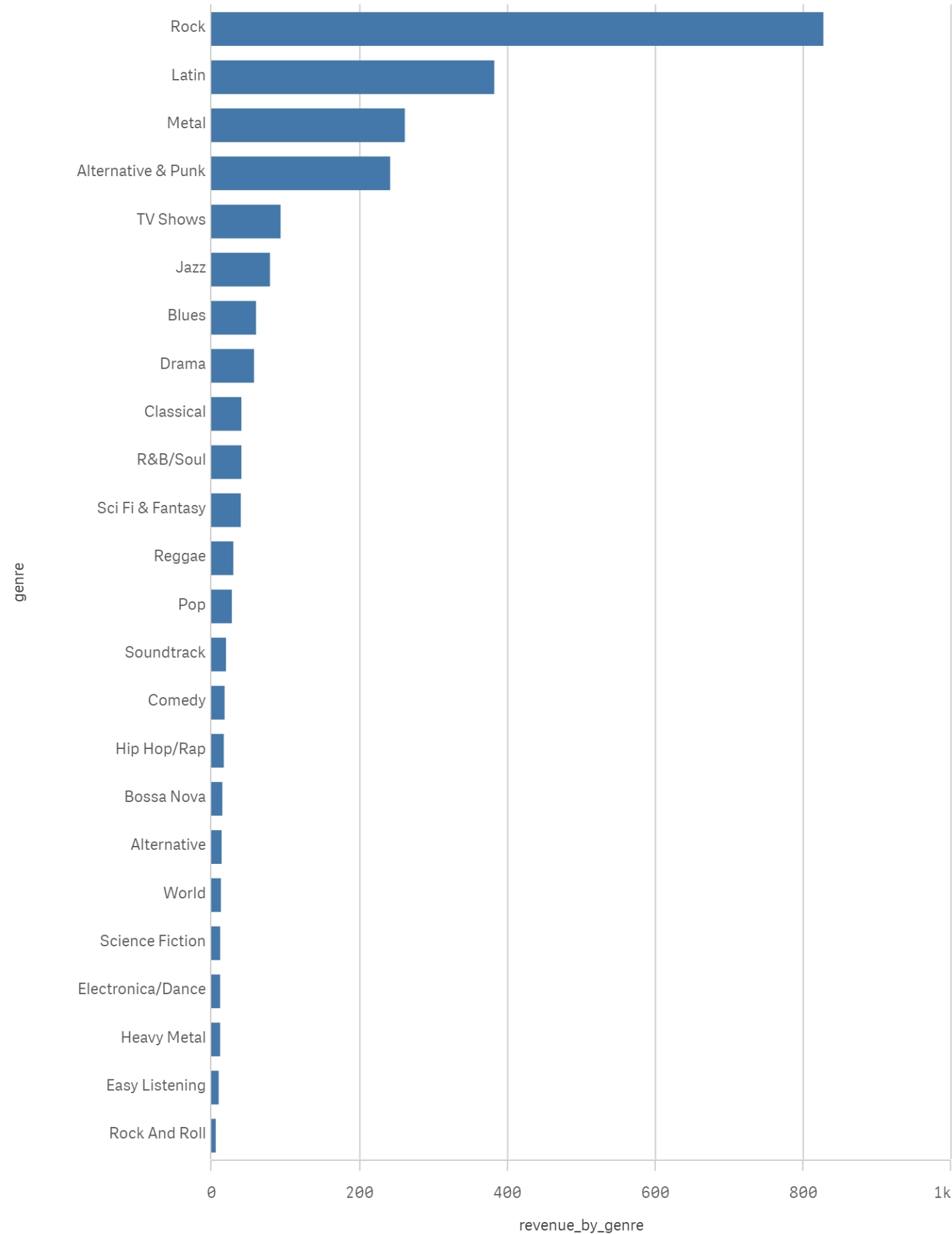


Analysis of chinook database with SQL

The chinook database contains 11 tables:

- employee -- contains data such as employee id, last name, first name, etc
- customer -- contains the customer data
- invoice -- contains invoice header data
- invoice_line -- contains the invoice line items data
- artist -- contains the artist data including name
- album -- stores data about a list of tracks
- media_type -- stores media types such as MPEG audio and other types
- genre -- stores music types such as rock, jazz. etc
- track -- contains the data of songs
- playlist and playlist_track -- the related tables that store data about playlists

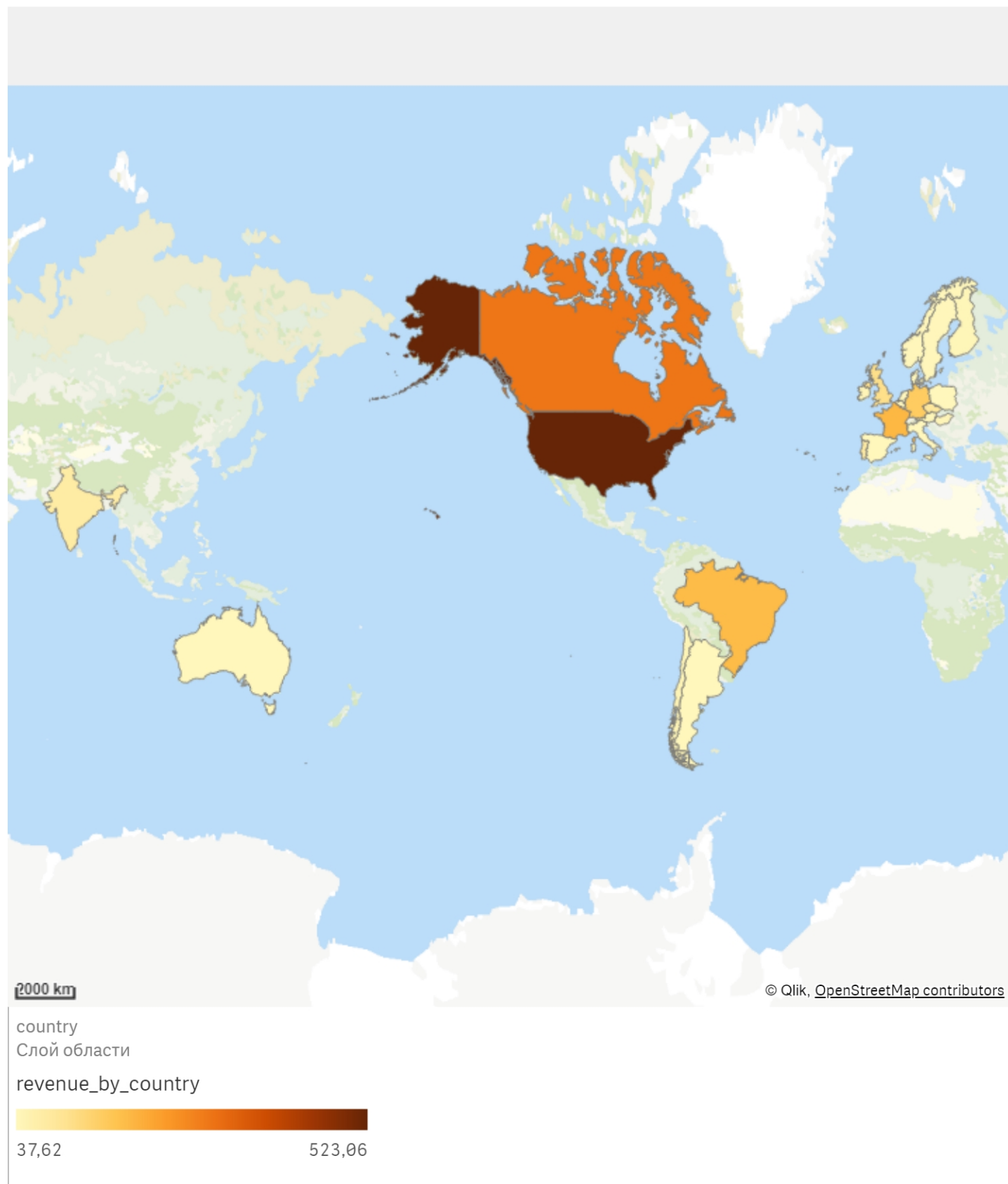
The amount of revenue by music genre



Insights

We see that the Rock genre brings the largest amount of revenue. Other genres lag behind, and this needs to be taken into account during the advertisement campaign. One may think of increasing slightly the prices for songs belonging to the Rock genre.

The amount of revenue by country



Insights

The result of the query shows that the largest revenue comes from the songs sold in USA and Canada. European countries such as France, Italy and Germany are also represented. It is not clear from the data, however, whether the population of a country plays any role. The amount of revenue from India, for example, is comparable to that from Portugal, and China is not in the database at all.

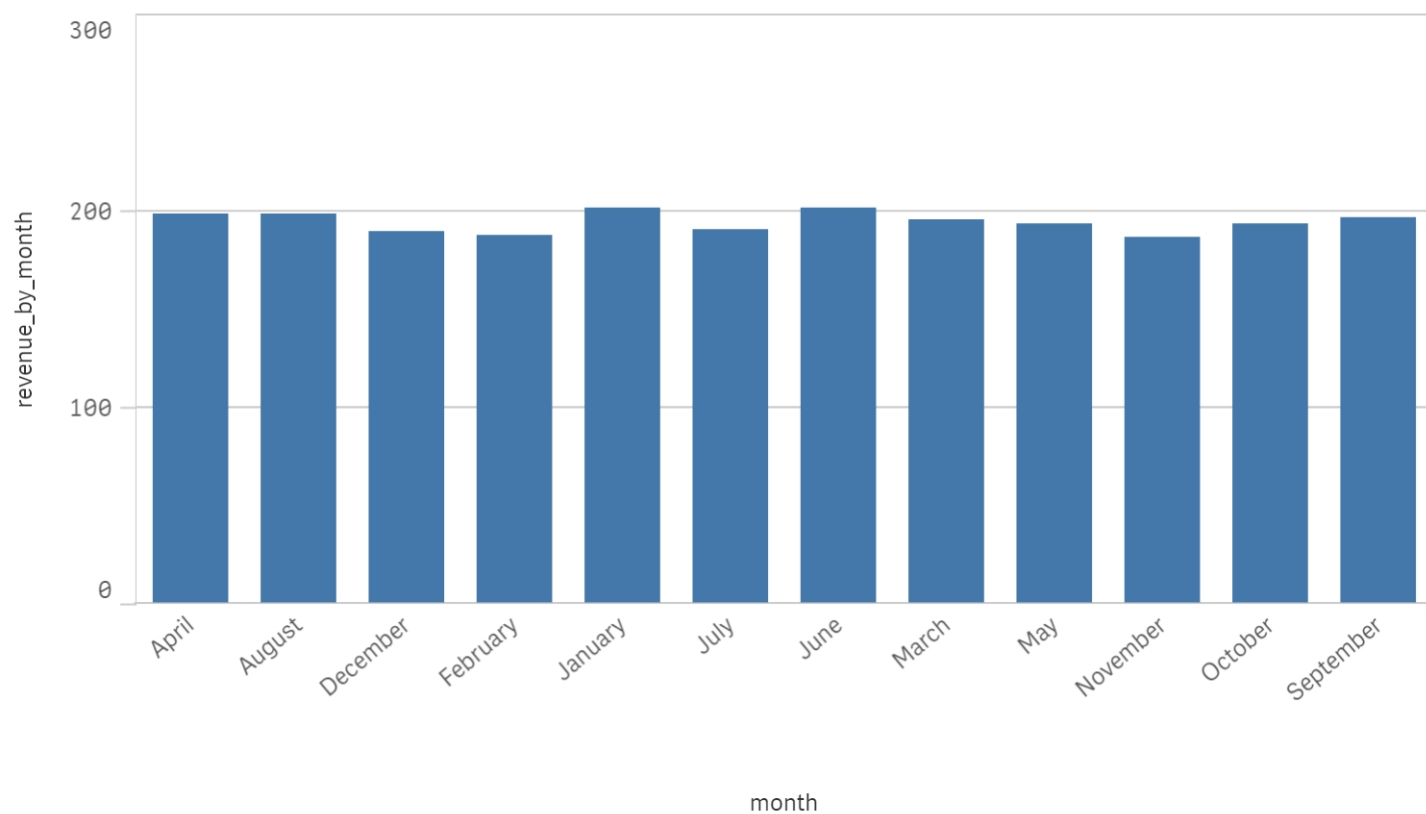
Revenue by different types of media files

type_of_media	revenue_by_media_type	
AAC audio file	2.97	
MPEG audio file	1956.24	
Protected AAC audio file	144.54	
Protected MPEG-4 video file	220.89	
Purchased AAC audio file	3.96	

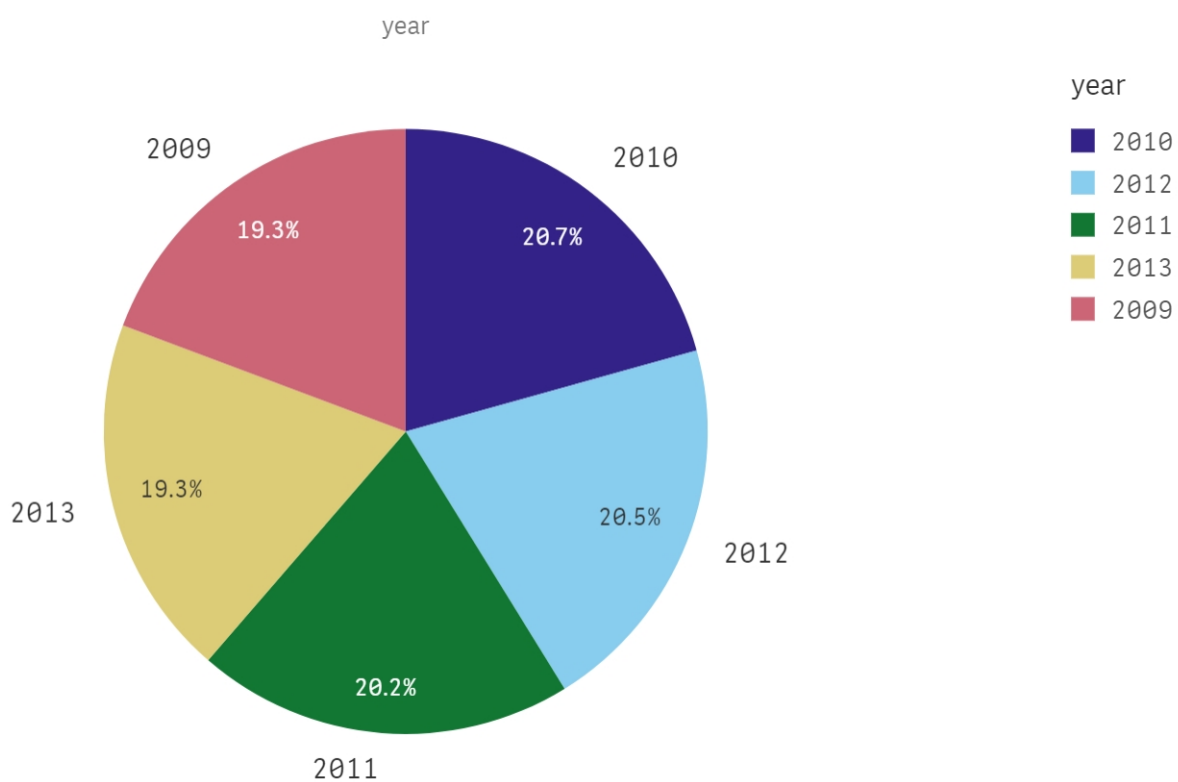
Insights

We see that the overwhelming majority of files were sold in MPEG format (both audio and video). It is not clear whether one should offer other formats as products absent compelling reasons to keep them in stock.

Revenue by month



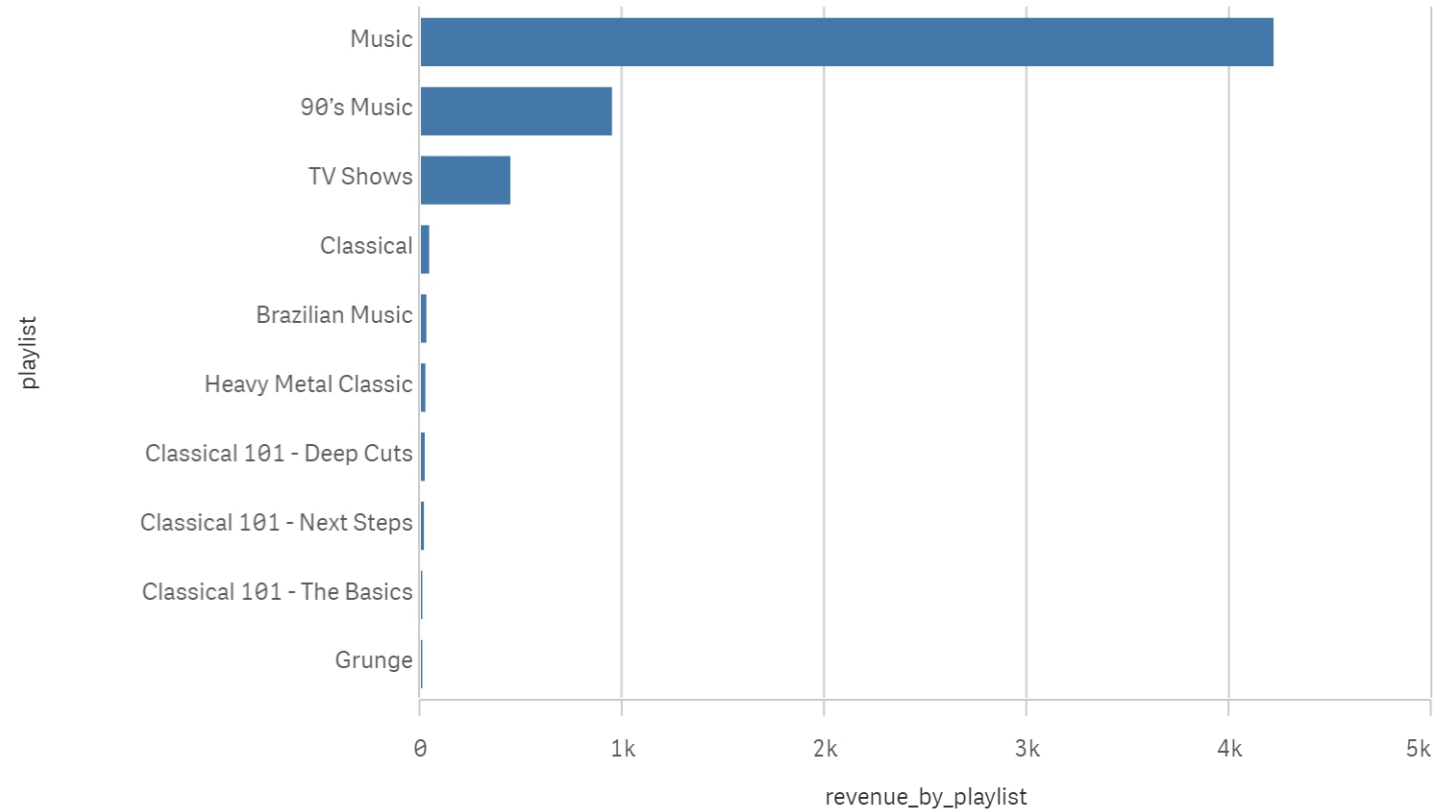
Revenue by year



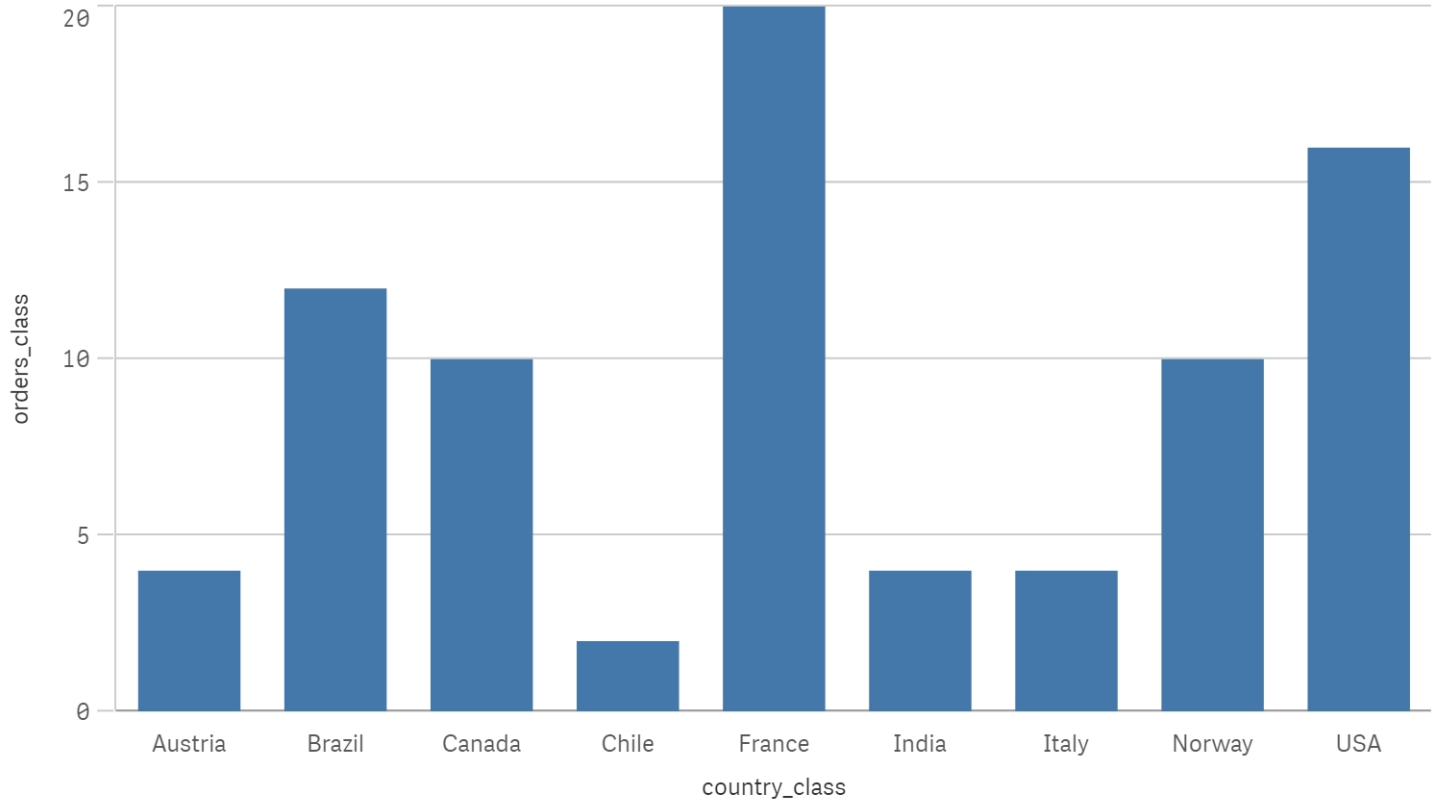
Insight

The results indicate that the revenue is almost the same for each month meaning that there are no seasonal trends in sales. Similarly, the income brought by selling songs only slightly changes with year; 2010, 2011 and 2012 years were a bit more successful compared to 2009 and 2013.

Revenue by playlist



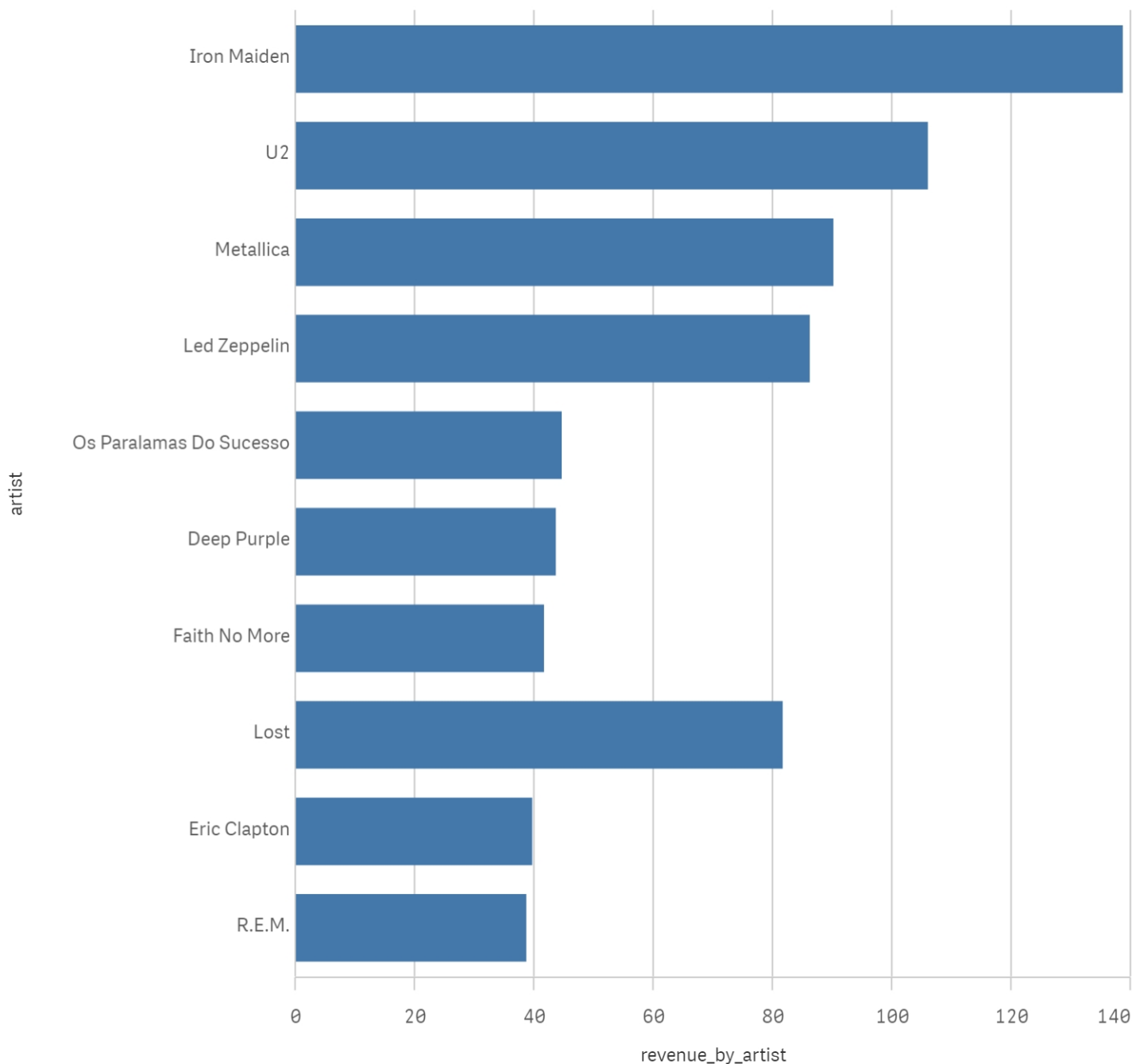
Number of orders of songs belonging to classical music



Insights

Looking at the table depicting the amount of revenue brought by each playlist, we see that the songs from playlists with the classical music are poorly sold. To get the deeper insight why this is, let's look at the number of orders of classical songs for each country. Only 9 countries out of 24 have ordered a small number of songs of the classical genre. It could be also interesting to determine the typical age of the customers who order classics but there is no data available to do this. France seems to be the top country where classical music is sold at all.

Top 10 artists bringing the highest revenue



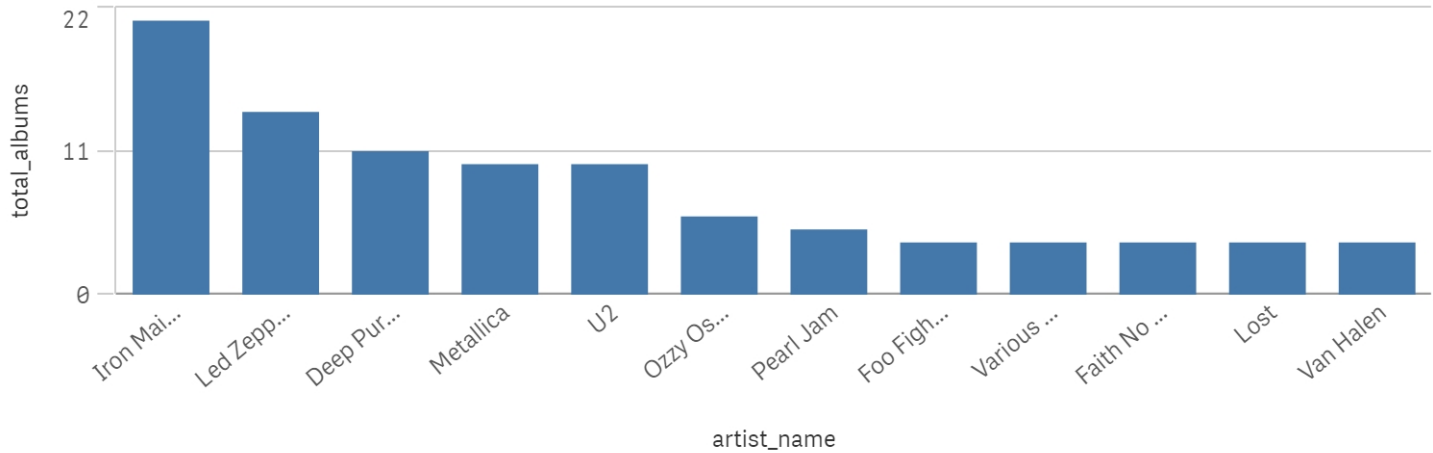
Fraction of revenue brought by top 10 artists

0,31

Insights

We see that top 10 best selling artists are responsible for the 31 percent of the total revenue. A good advice based on the table above could be a slight increase of a price for songs belonging to one of the top artists.

Artists with more than three albums



Top 10 artists in terms of customers

name_of_artist	total_customers
U2	29
Led Zeppelin	28
Iron Maiden	27
Metallica	27
Os Paralamas Do Sucesso	16
Eric Clapton	16
Queen	15
R.E.M.	15
Lenny Kravitz	15
Green Day	14

Insights

We see that many artists who have a considerable number of albums have many customers as well. Many of these artists also belong to the top 10 in terms of the revenue. One can thus conclude that the artists who bring the most revenue are those who release many songs and albums.

Conclusion

In this project, we analyzed the data from chinook database putting emphasis on studying the dependence of revenue brought by selling songs on a variety of parameters available in tables of the database. The following major conclusions can be made as a result of analysis.

- 1) There are many Rock-loving customers and thus one can advise to stock more songs of this genre to increase the total sales. It could be a good idea to increase the average price per song for the songs of the Rock genre. However, more analysis is necessary to decide how much increase is justified.
- 2) The sales do not depend on the time of the year and are relatively stable from year to year.
- 3) The overwhelming majority of customers prefer to purchase songs in mpeg4 format. It is reasonable to analyze whether having songs in other formats is worthwhile at all.
- 4) About 30 percent of all income comes from top 10 artists who have many albums and songs. One may think of increasing the price per song for songs belonging to these artists to boost the revenue. Also, the new songs from the best-selling artists should deserve a special attention during the advertisement campaigns.