Spotify®

2019 Worldwide Daily Song Rankings

The 200 daily most streamed songs in 10 countries

Introduction

Spotify now boasts 271m users and 124 million **subscribers**, across 79 markets, with its paid user base growing 31% YoY

Countries Contribute Most To Spotify's Bottom Line	
Country	**Share %**
USA	34.6%
United Kingdom	7.5%
Mexico	5.7%
Germany	5.5%
Brazil	5.2%
Canada	4.1%
Australia	3.9%
Netherlands	3.3%
France	3.2%
Sweden	2.9%
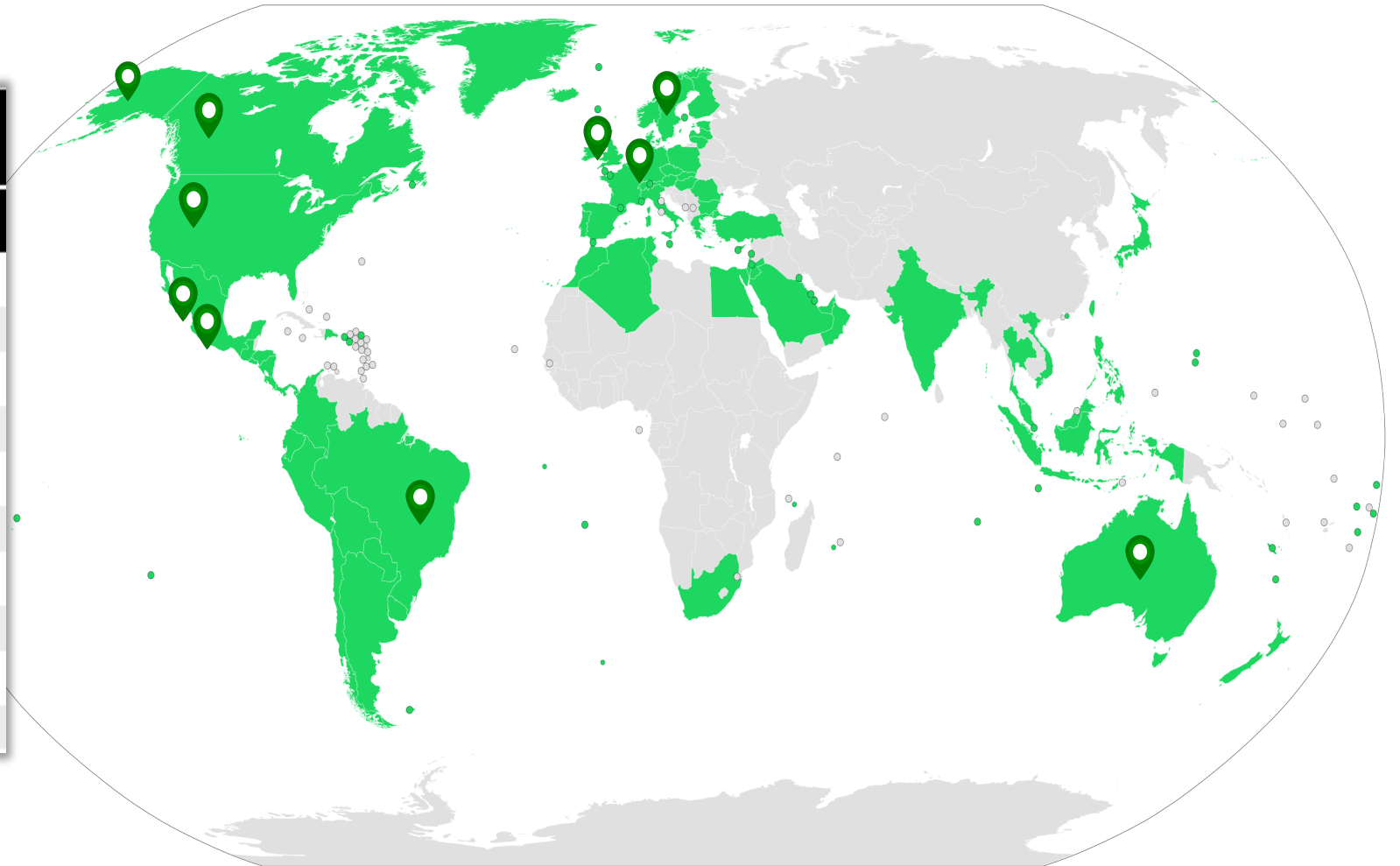
Objectives & MVP

Predict **rank position** or *the number of streams* a song will have in the future and will expand the analysis to learn factors such as:

- Duration songs "resist" on the top 3, 5, 10, 20 ranking.
- What are the signs of a song that gets into the top rank to stay
- Do countries share same top-ranking artists
- Are people listening to the very same top-ranking songs on countries far away from each other?

Process

*Dataset contains **730,000** rows, which comprises **2574** artists, **8826** songs for a total count of eighty-eight billion streams count including 7 columns.*

- **Data Scrapping *(Spotify API)***
- **Cleaning**
- **Feature Engineering**
- **Data Analysis**
- **Modeling *(Scaling, PCA)***
- **Data Visualization**

Model Performance – Rank Position

Tuned Models	R2 Score		Quality Metrics		Conclusion
	Training	Testing	RMSE	MAE	
Linear Regression	72.1%	71.6%	28.9	22	High Bias
RandomForest Regressor	**98.6%**	**91.9%**	**15**	**10**	**Overfit**

Model Predictions

avg_rank	top_rank	low_rank
141	142	138
9	9	9
192	189	191
181	69	118
10	11	10

Model Performance – Rank Resistance

Tuned Models	R2 Score		Conclusion
	Training	Testing	
RandomForest Regressor	78.3%	☹️	Prediction based on only one attribute (# of streams) is insufficient

Insights from EDA

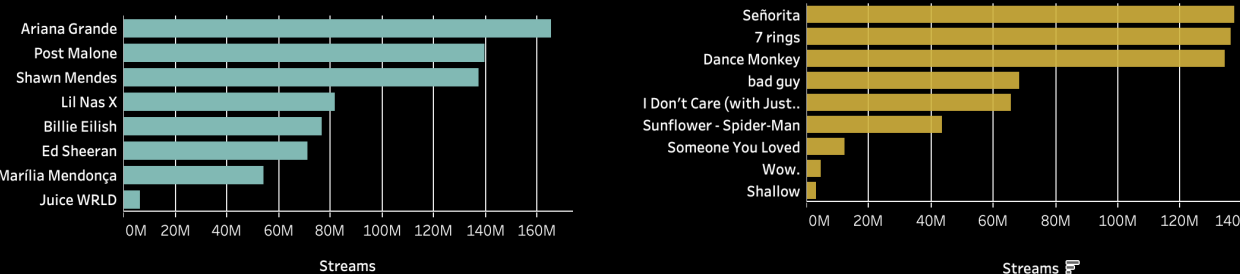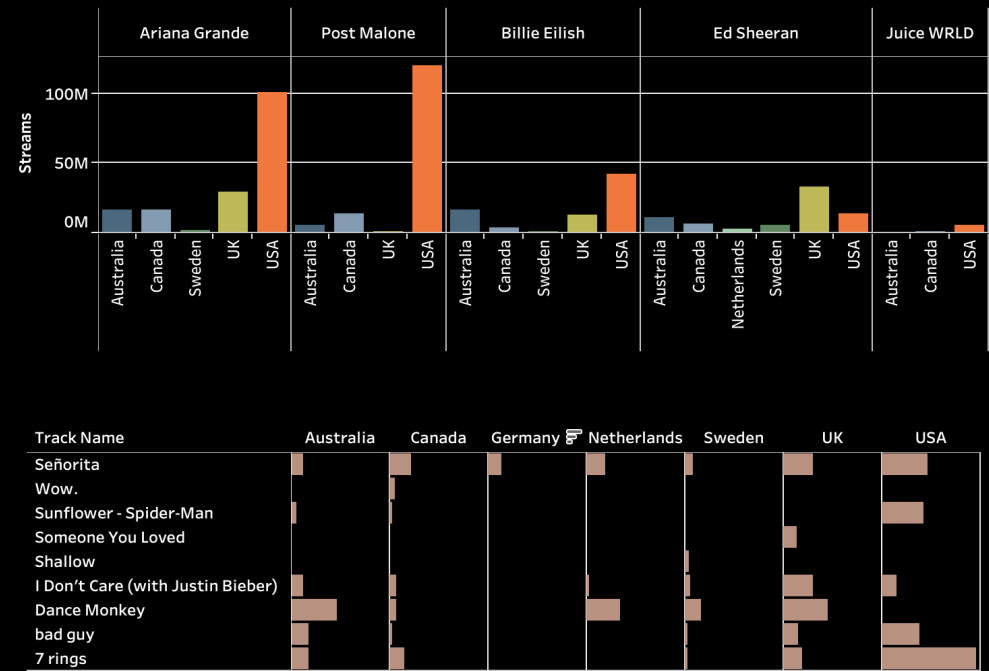| Duration Song Resists at Rank		
Rank Position	Average Number of Days	Average Streams
1	21	917K
3	31	556K
5	39	419K
10	57	316K
20	83	225K

Data Analytics & Visualization

Spotify's 2019 Worldwide Daily Song Ranking – Top 10 Markets
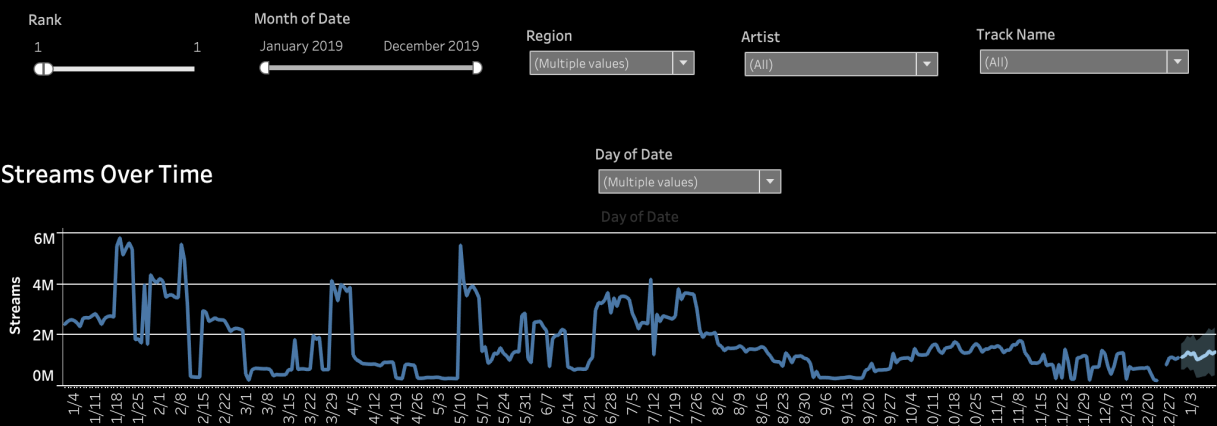
People listening to the very same top ranking songs across the world

Conclusion and Next Steps

❑ Popularity rating is based on total number of streams BUT that alone does not factor in determining the songs success.

❑ Countries share the same top-ranking songs

❑ Extend the data set to include all countries where Spotify is available and add podcast as a separate category.

❑ Further analysis to learn engagement by streaming device e.g. phone, computer or tablet.

❑ Explore impact of attributes such as song genre, keys, energy, danceability, instrumentals, etc.