Spotify

Trend Analysis and Insights via **Tableau**

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BADM-5: Capstone Project - III

INTRODUCTION

The project aims to leverage Tableau's data visualization capabilities to transform raw Spotify data into meaningful and interactive visualizations for analyzing music preferences and making data-driven decisions. The focus is on suggesting advertisements to stay competitive in the music industry. The report presents insights based on the analysis of Spotify data and provides recommendations for an effective advertising strategy.

METHODOLOGY

The analysis is conducted using Tableau to query and extract relevant data from the Spotify database. The data is first imported into Tableau, a powerful data visualization tool, to create visually appealing and informative visualizations. The Tableau calculated fields are designed to extract key metrics such as Top 20 artists by Streams/Positions, Top 20 Tracks by Streams/Positions, Daily streaming %, and Geo streaming % to understand the user preferences and artist/track popularity.

Below are the steps taken to derive insights from the data provided.

- Downloaded data, and stored it appropriately.
- Provided CSV Data structure is analyzed and sorted.
- Necessary Data cleaning was done by removing blank/error values (i.e., the ones which couldn't be correlated with the available variables). There were 333 blanks, which couldn't be correlated with the available data.
- After primary data cleaning via EXCEL, Tableau has been selected for data extraction from the Cyclistic database.
- The data is further imported to Tableau, and derived data tables to the main dataset through the common table.

Some of the metrics derived from the dataset via SQL query are.,

- Top 20 Artists by Streams per position
- Top 20 Tracks by Streams per position
- Daily Streaming Pattern of Top Artists by %
- Geo Streaming Pattern by %
- Position by Time

FIELDS IMPLEMENTED

Streams Per Position	[Streams]/[Position]	[streams] – total number of Streams [Position] – position of the artist/ track on ranking	✓ Popularity/Position ✓ Streaming Efficiency ✓ Performance analysis
Position by Time	AVG([Position])	[position]– position of the artist/ track on ranking	✓ Popular artists ✓ Track performance ✓ Comparison
Daily Streams	(SUM([Streams])-LOOKUP(SUM([Streams]),-1))/LOOKUP(SUM([Streams]),-1)	Sum([Streams]) – Calculated sum of the "Streams" for the current period LOOKUP(SUM([Streams]), -1)- looks up the total number of streams for the previous period.	✓ Growth Rate ✓ Decline Rate ✓ Periodic Pattern
Geo by Streams	SUM([Streams])/Total(SUM([Streams]))	Sum([Streams]) – Calculated sum of the "Streams" for each artist Total(sum([streams])) – Calculates the total sum of the "streams" across all artists or tracks in the data.	✓ Audience Range ✓ Popular Tracks/Artists ✓ Market comparisons
Unique Artists	Countd([Artists])	Countd([Artists]) – To derive total number of unique artists from the dataset.	✓ Artist's Significance
Unique Tracks	Countd([Trackname])	Countd([Trackname]) – To derive a total number of unique artists from the dataset.	✓ Track's Popularity

KEY INSIGHTS

Below are the insights derived from the Spotify dataset by utilizing Tableau's data visualization capabilities.

TOP **20** ARTISTS BY STREAMS

By plotting YEAR (Column) VS POSITION (Row), and having an artist as a filter (Top 20 by Streams[sum]), we have a total of 20 Top artists from all three years.

Ariana Grande, Billie Eilish, Calvin Harris, Cardi B, Dua Lipa, Ed Sheeran, Imagine Dragons, J Balvin, Kendrick Lamar, Khalid, Luis Fonsi, Marron 5, Marshmello, Migos, Ozuna, Post Malone, The Chainsmokers, Travis Scott, XXXTentacion are the top 20 artists.

In the above, Ariana Grande tops the chart with the total positions bagged, which is 7, 706.

TOP **20** TRACKS BY STREAMS

By plotting YEAR (Column) VS TRACKNAME (Row), and having an artist as a filter (Top 20 by Streams per position), we have a total of 20 Top Track names from all three years.

7 Rings (Ariana Grande), Bad Guy (Billie Eilish), Better Now (Post Malone), Con Calma (Daddy Yanke), Despacito – Remix (Luis Fonsi), Despacito (Luis Fonsi + Daddy Yanke), God's Plan (Drake), Havana (Camilla Cabello), Humble (Kendrick Lamar), I don't care (Ed Sheeran+Bieber), In My Feelings (Drake), Mi Gente (J Balvin), Nice for what (Drake), One Kiss(Calvin Harris+Dua Lipa), Rockstar (Post Malone), Senorita (Shawn Mendes), Shape of you(Ed Sheeran), Sunflower(Post Malone), Taki Taki(DJ snake + Selena Gomez), and thank u, next (Ariana Grande) are the top 20 artists.

In the above, Ariana Grande tops the chart with streams per position, which is 37,85,75,392

DAILY STREAMING PATTERN OF **TOP** ARTISTS BY %

Most streamed songs throughout the month were derived through lookup calculation. 7 Rings (Ariana Grande), Bad Guy (Billie Eilish), Better Now (Post Malone), Con Calma (Daddy Yanke), Despacito – Remix (Luis Fonsi), Despacito (Luis Fonsi + Daddy Yanke), God's Plan (Drake), Havana (Camilla Cabello), Humble (Kendrick Lamar), I don't care (Ed Sheeran+Bieber), In My Feelings (Drake), Mi Gente (J Balvin), Nice for what (Drake), One Kiss(Calvin Harris+Dua Lipa), Rockstar (Post Malone), Senorita (Shawn Mendes), Shape of you(Ed Sheeran), Sunflower(Post Malone), Taki Taki(DJ snake + Selena Gomez), and thank u, next (Ariana Grande) are the top 20 songs that were consistently streamed all throughout the month.

GEO **STREAMING** PATTERN BY %

The geographical streaming illustrates the streaming pattern of all the countries. This viz allows us to gain geo-specific insights by analyzing their average number of streams. It helps us to understand the level of engagement and popularity of the songs. By identifying the higher proportion or percentage of streams, we can easily look at market share, popular tracks, and comparative analysis of each country.

POSITION BY **TIME** IN %

This criterion helps analyze the average position of an artist or the track over a specific period. In this, I have used this for artist comparison. By taking an average of the position values, we can get an understanding of the overall performance or popularity of the artists or the tracks. Some of the insights derived from this are., Popular artists, Track performance, and comparison.

RECOMMENDATIONS

POPULARITY DRIVEN

Popular tracks can be identified to Understand the Preferences of the user and design targeted ad campaigns to promote and increase the reach, further generating more streams.

PERFORMANCE DRIVEN

By identifying the artists with the highest total streams, as they demonstrate popularity and strong engagement among listeners. There can be special advertising efforts for these artists and increase their existing fan base.

GEO- FOCUS

Through analyzing the geographical distribution of streams, we can identify the countries where the particular music is popular. By targeting these regions, with localized ad campaigns, we can maximize audience engagement and thereby increase the market share and growth potential.

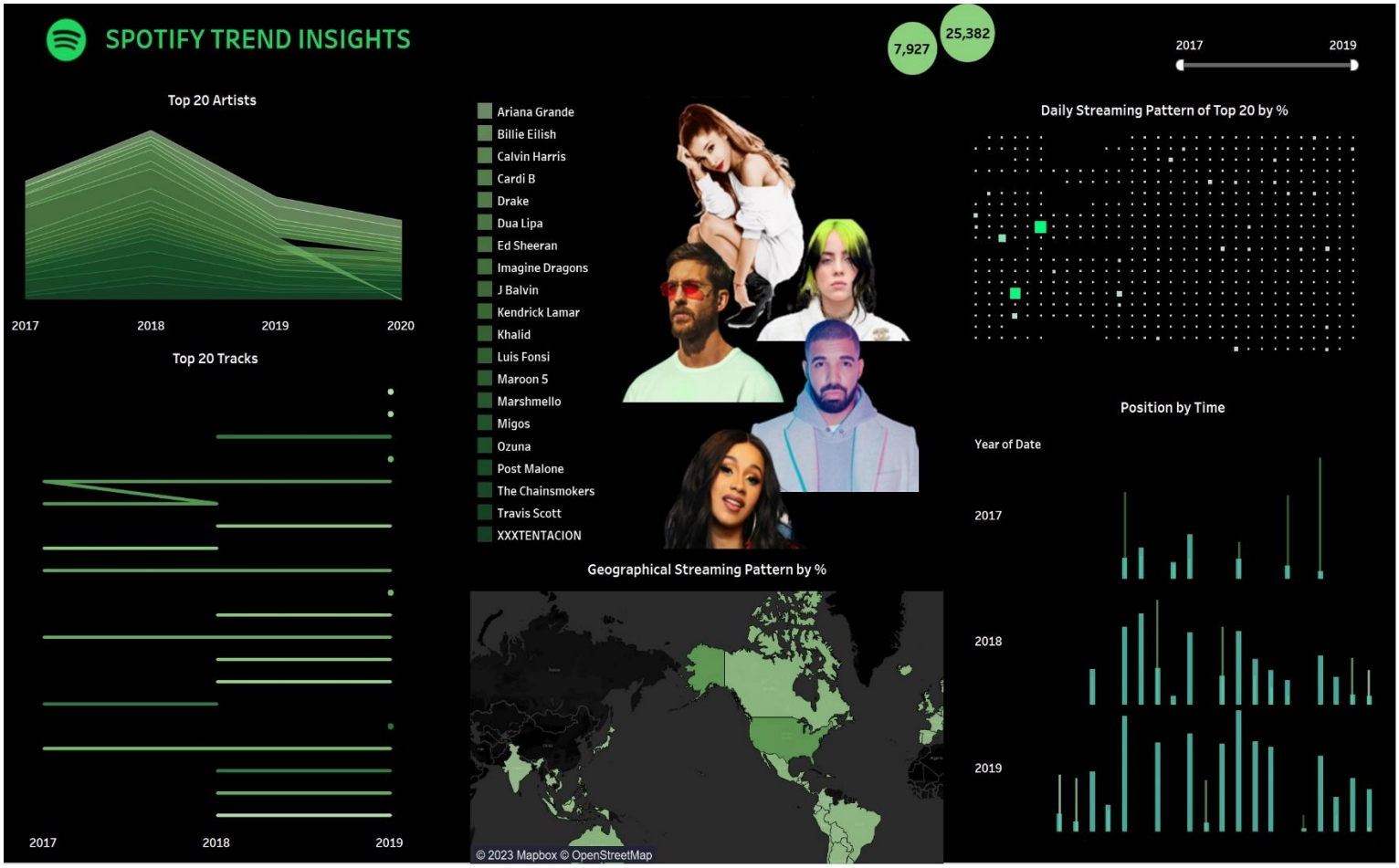
TRENDS

By monitoring the monthly trends, or the trend of streams over time, we can identify the peak periods and fluctuations. By planning ad campaigns strategically during high-demand periods to maximize exposure and reach a larger audience.

PERSONALIZED INSIGHTS

By providing individualized recommendations and insights to artists based on their performance metrics. This helps artists understand their areas of strength, improvement, and opportunities for growth. The artists can also be encouraged to collab with other artists to improve their overall fanbase and also to add some specks of magic to their monotonous albums

By following and implementing these recommendations, we can optimize advertising strategies and stay competitive in the ever-expanding music industry.


SPOTIFY TREND INSIGHTS
7,927
25,382
2017
2019
Top 20 Artists
2017
2018
2019
2020
Ariana Grande
Billie Eilish
Calvin Harris
Cardi B
Drake
Dua Lipa
Ed Sheeran
Imagine Dragons
J Balvin
Kendrick Lamar
Khalid
Luis Fonsi
Maroon 5
Marshmello
Migos
Ozuna
Post Malone
The Chainsmokers
Travis Scott
XXXTENTACION
Daily Streaming Pattern of Top 20 by %
Top 20 Tracks
2017
2018
2019
Geographical Streaming Pattern by %
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Position by Time
Year of Date
2017
2018
2019