In our analysis we utilized datasets from Kaggle relating to music streaming to better help us answer our questions. The datasets in particular that were used are “Most Streamed Spotify Songs 2023”, “Best Songs on Spotify for every year (2000-2023)”, and a custom dataset we created that includes weekly streaming statistics for music artists such as Taylor Swift and other popular artists from Spotify for the year of 2023.  Questions we seek to answer were, what makes a song popular?, what is Taylor Swift's effect on pop music?, is there a relationship between 'key features' or 'metrics' and song popularity and are there any correlations between key features?, who are the top streaming artists of 2023 so far, and do they have anything in common?, why is a 'mid' Taylor Swift song from 2019 gaining massive popularity again in 2023?

First, we sought to answer, “What makes a song popular?” From our datasets that we selected, there are numerous categories ranging from bpm (beats per minute) to valence (musical positiveness conveyed by a track), and energy levels of a song. In addition, the “Best Songs on Spotify for every year (2000-2023)” dataset we are presented with many other different characteristics that could make these songs popular, such as danceability, liveness, and decibel levels. Since each popular song is unique to an artist’s musical style, it caters to their specific fan base. Such as Taylor Swift who currently have the largest fan base in 2023, known as Swifties. Swift has shown a preternatural gift for engaging with her fans, inspiring the kind of devotion that leaves them to await each new song.

Second, “What is Taylor Swift's effect on pop music?”. To better understand this, we followed Taylor's journey through her pop culture career. During Taylor’s career, she has used her untold influence to change seemingly every aspect of the music industry. From helping inspire a vinyl revolution, to motivating record labels to alter the way contracts are written, to changing the way concert tickets are bought and sold. And when it comes to the music itself, she’s navigated shifts in her own unique sound, as seen in our pie chart highlighting her choice of instrumental keys *(figure 3a.)*. While retaining the base of devoted young fans who have grown up alongside her while expanding to new audiences through her embrace of everything from pop to folk music, her dedication to music showcases how she remains relevant by the fact she is the number one artist of 2023 *(figure 2a.)*.

Third, we investigated “is there a relationship between 'key features' or 'metrics' and song popularity, and are there any correlations between key features?” From analyzing the datasets and creating our graphs, there does not seem to be a strong relationship between song popularity and key features. For example, looking at the scatterplot with total streams and valence percentages *(figure 1b.)*. We can see there is no specific amount of valence percentages that would maximize or increase an artist's total amount of streams. In addition, there does not seem to be a strong correlation between key features. As presented with  the scatterplot with valence percentage in a song and energy percentage in a song *(figure 1a.)*. There are a variety of different combinations of songs based on energy and valence and there is not a specific trend for a song.  Although there does seem to be a weak positive correlation with higher valence and higher energy songs being grouped up.

Additionally, we analyzed “Who are the top streaming artists of 2023 so far, and do they have anything in common?” The top ten streaming artists of  2023 are: Taylor Swift, Morgan Wallen, SZA, Zach Bryan, Olivia Rodrigo, Drake, Luke Combs, J. Cole, Lil Uzi Vert and Kanye West, with Taylor Swift being the most streamed artist and Kanye West the least *(figure 2a.)*. Nine of the top artists mostly use the C key in their music while Swift does not use the C key in any of her music *(figure3a.)*. Instead, she mostly uses the G key which is used by other artists just not as much as Swift uses it. However, Taylor and the other top artists all use the A, B, C, E, and F keys *(figure 3b.)*.

Finally, “Why is a 'mid' Taylor Swift song from 2019 gaining massive popularity again in 2023?” Taylor Swift's fan base has grown significantly since 2019 because of the different ways she engages with her fans. Such as holding various contests allowing fans to engage in direct ways with promotional campaigns. With Taylor current Eras Tour being one of the biggest Tour in the last decade with all sold out venues this could cause Swifties to relisten to old songs as well as new fans to discover her older work *(figure 4b.)*. Taylor fans are loyal and are continuing to grow worldwide so it is no surprise that her older songs are gaining so much attraction, especially Cruel Summer *(figure 4a.)*.

In conclusion, while we were initially trying to uncover any hidden trends in how musical artists rise and stay on top of the music industry, we did not find any conclusive evidence that artists use a secret formula to gain and maintain their popularity. Instead, we found that there are likely more extrinsic factors for a music artist’s success. For example, how well an artist knows their own fanbase and caters to them or by creating a unique musical style enjoyed by many. Which brings up an interesting finding in that a music artist does not necessarily need to follow any known formula but rather create their own trends and build up their success.

A graph with blue dots and red line

Description automatically generated

**Figure 1a.**

A graph with blue dots and red line

Description automatically generated

**Figure 1b.**

A graph of a number of artists

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**Figure 2a.**

A colorful pie chart with numbers and a few letters

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**Figure 3a.**

A colorful pie chart with numbers and a triangle

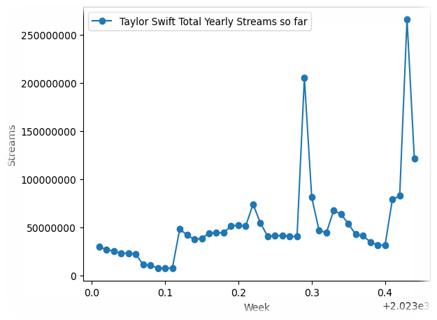
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**Figure 3b.**

A graph with blue dots and white text

Description automatically generated

**Figure 4a.**



**Figure 4b.**

**Citations**

Nidula, Elgiriyewithana. (2023). Most Streamed Spotify Songs 2023[Dataset]. [https://www.kaggle.com/datasets/nelgiriyewithana/top-spotify-songs-202](https://www.kaggle.com/datasets/nelgiriyewithana/top-spotify-songs-2023)3

Conor Van Eden. (2023). Best Songs on Spotify for every year (2000-2023) [Dataset].

<https://www.kaggle.com/datasets/conorvaneden/best-songs-on-spotify-for-every-year-2000-2023/data>