

# Phase 1 Project: Data Analysis on Spotify Data

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# Introduction

Spotify is a digital music service that gives you access to millions of songs. Artists upload their songs or albums, and people get access to their music through the app. Songs and artists with the most streams generate royalties or investments in exclusive content.

# Problem Statement

Spotify seeks to use song features, artist popularity, and release trends to predict high-stream songs, optimize playlists, and increase overall user engagement and revenue. Spotify identifies songs with the most streams and also predicts which songs are likely to be hits based on the artist's popularity or time of release. It also understands how listener preferences change over time. From this dataset, we want to get the analysis on most popular artist, the most popular songs, the average streams per year, the songs with the highest stream counts, and which top artists consistently produce hits.

# Data Analysis on Spotify Data

This project explores Spotify's streaming data to uncover patterns, trends, and insights about music consumption. Spotify is one of the world's largest music platforms, with millions of songs and billions of daily streams. Understanding how people interact with music on Spotify is valuable not only for artists and record labels, but also for fans who want to see which songs and artists dominate global listening habits.

# Objectives

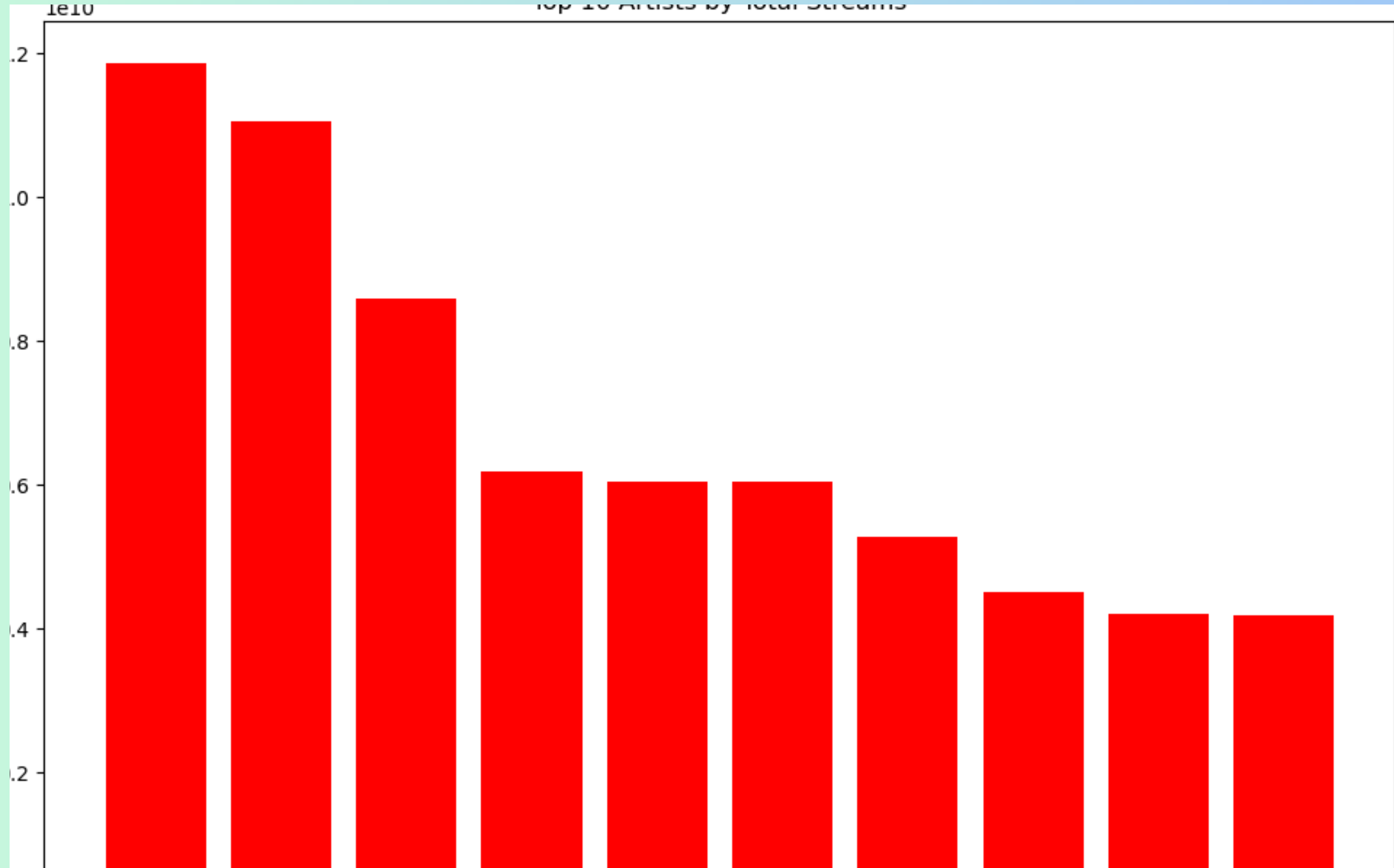
1. Clean and prepare the dataset for analysis.
2. Perform data analysis using descriptive statistics (mean, variance)
3. Identify the most streamed songs and most streamed artists.
4. Calculate the average number of streams per year to examine streaming trends over the years.
5. Visualize results with charts (bar plots, line graphs, etc.) for easier interpretation.
6. Summarize findings into meaningful conclusion .



# Findings and Results

- Taylor Swift is the most popular artist in Spotify with 1.18 billion streams.
- The most streamed song on Spotify is Shape of You with 3.5 billion streams.
- The average stream count for this data is 468.98 million streams.
- The average streams per year was the highest between 2012 and 2018, with streams above 1 billion showing that during this period, massively popular songs were released.
- Most hit songs were released around 2018.
- On average, songs in this dataset were released around mid-June
- The latest songs from this data are from the year 2023, while the oldest dates to 1930
- The streams feature shows high variance, indicating that some songs are extremely popular while others have very few streams.

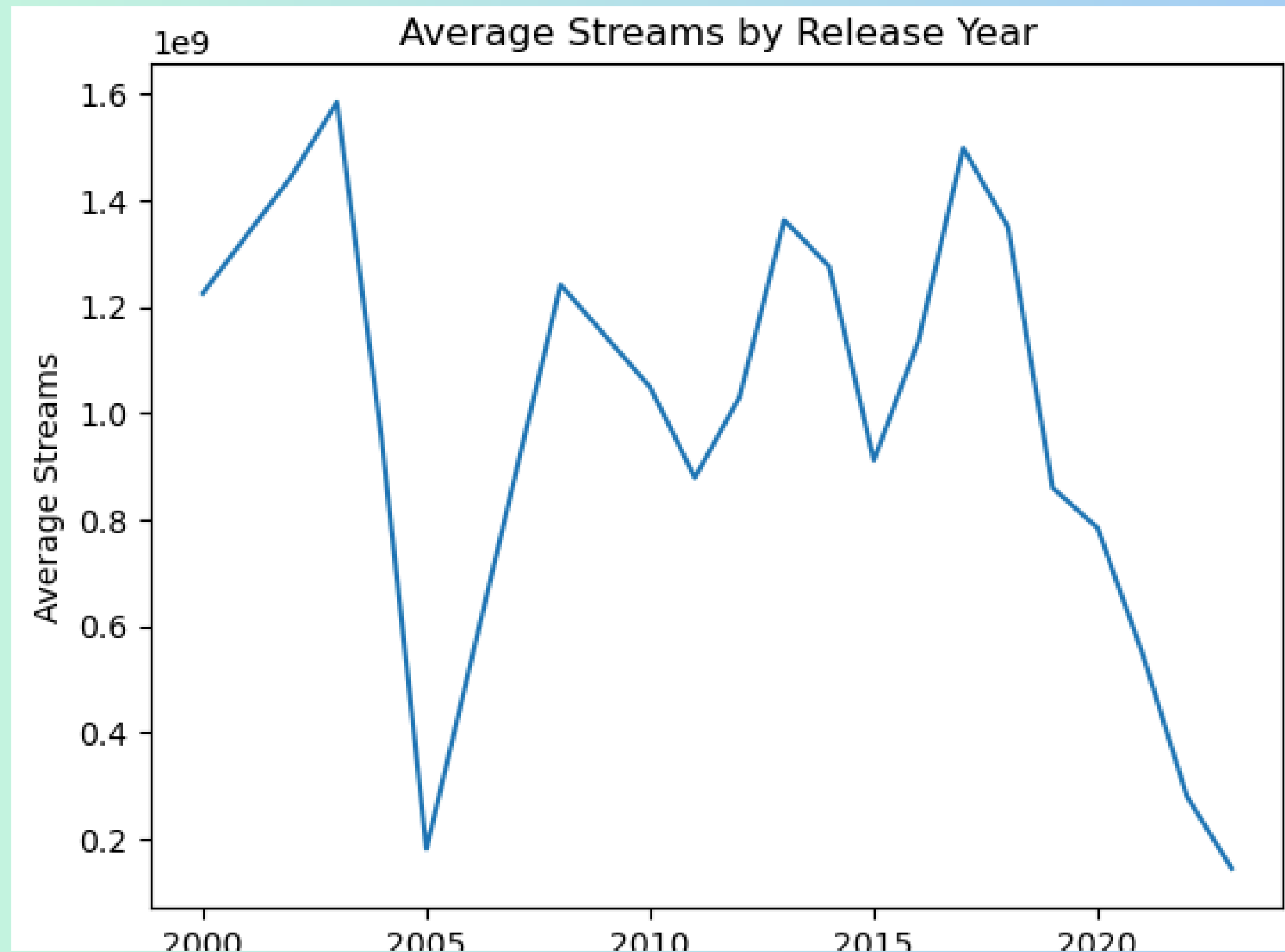
# Bar chart showing most popular artists on Spotify by streams



Taylor Swift is the most popular artist in Spotify with 1.18 billion streams, followed by Ed Sheeran with 1.1 billion streams, then Bad Bunny with 858 million streams. Eminem follows with 618 million streams, then The Weeknd with 603 million streams. Taylor Swift captures attention on Spotify and has the most streams.

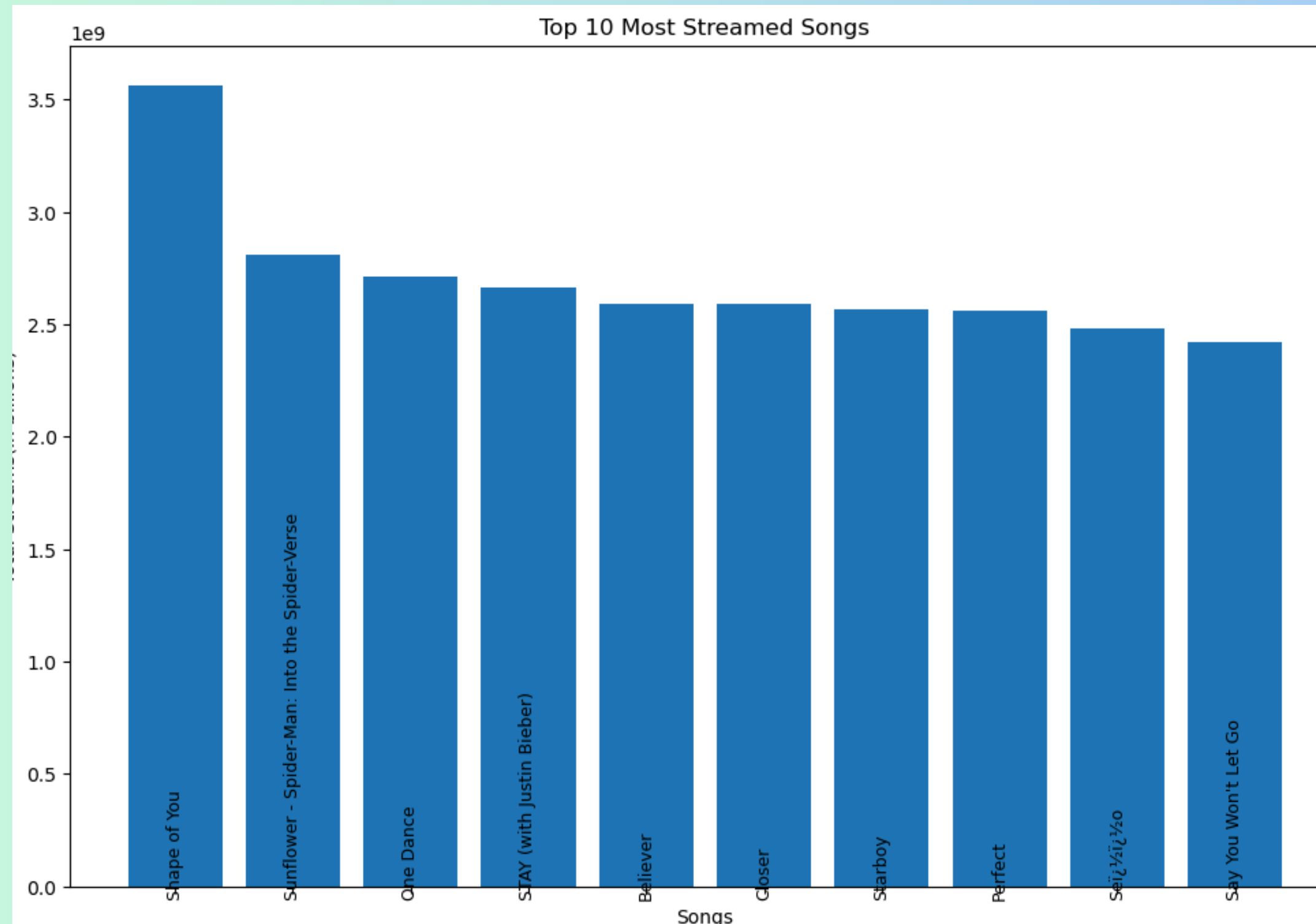


# Trendline showing average streams per release year



Songs like Numb and Mr.Brightside released in 2003, had the most streams in average over the years, with both songs having more than a billion streams in 1 year. It is also clear that songs released in 2005 did not get as much streams, hence a sharp drop. There is a huge stream growth in songs released from 2010 to 2020, showing that the most popular songs on Spotify were released during this time.

# Bar chart showing top 10 most streamed songs



The top 5 most steamed songs on Spotify is Shape of You with 3.5 billion streams, Sunflower with 2.8 billion streams, One Dance with 2.71 billion streams and Stay with 2.6 billion streams. Shape of You by Ed Sheeran is the most-streamed song on Spotify.

# Conclusion

In conclusion, the average streams per year tend to increase for newer release years, reflecting Spotify's growth and the popularity of streaming in the 2010s and 2020s. Most popular artists also have the most streams, meaning the streams are mostly influenced by the popularity of the artist. Popular artists also influence the number of streams, and songs featured with popular artists are likely to have more streams too.