

USE CASE II

SONGS 2023

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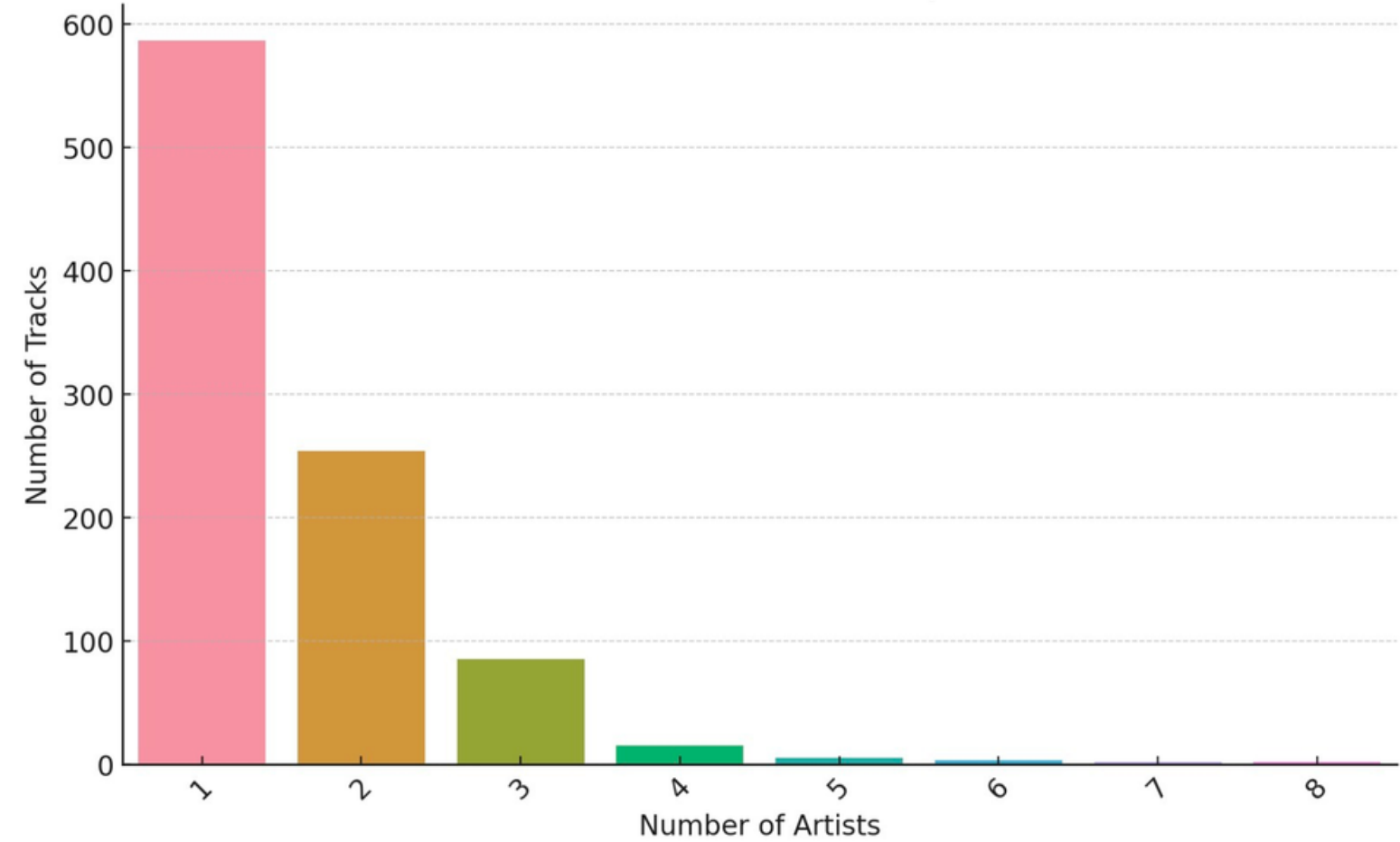


General Overview

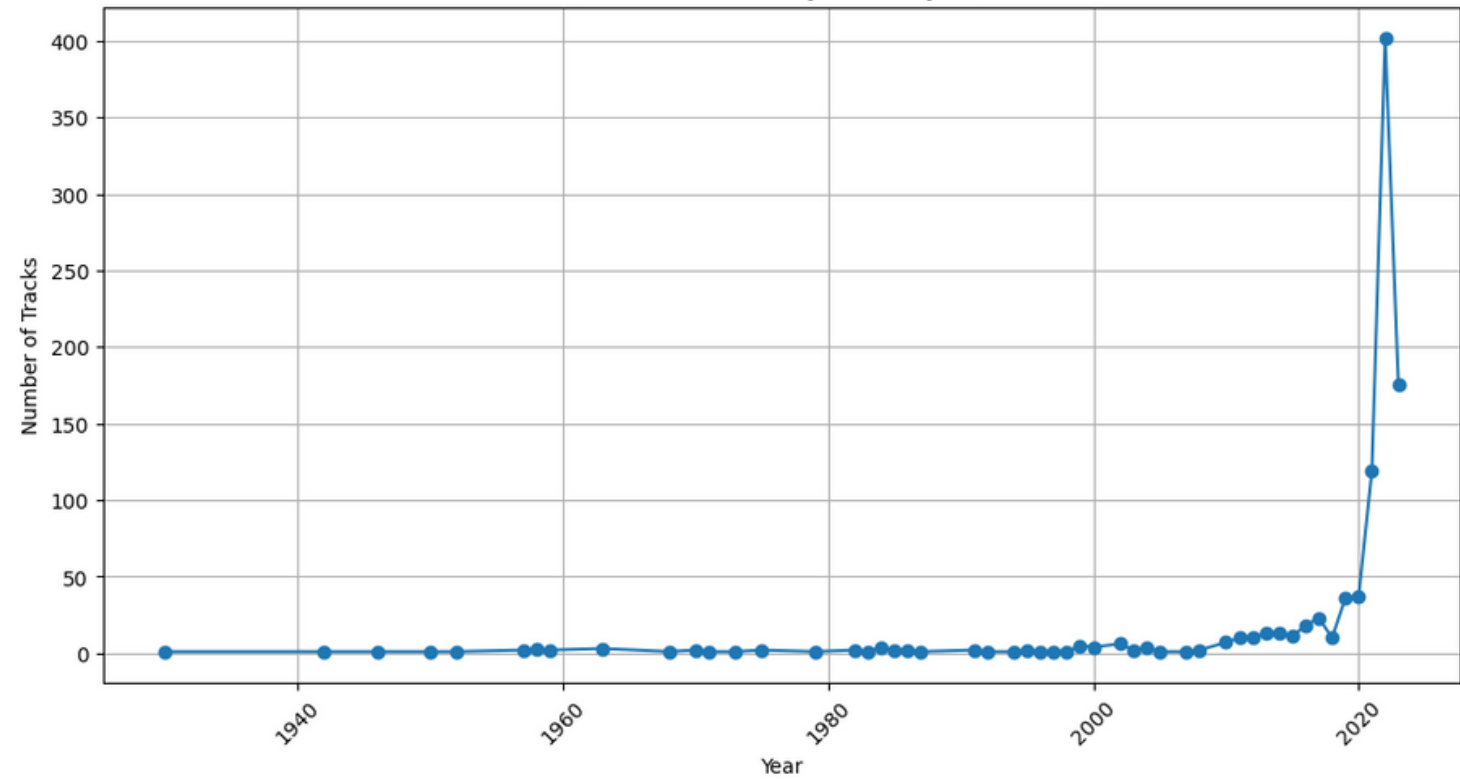
Sub-Categories	Numerical Variables	Categorical Variables
Artist and Track Popularity Metrics	<ul style="list-style-type: none">artist_count,in_spotify_playlistsin_spotify_chartsin_apple_playlistsin_apple_charts,in_deezer_chartsstreamsin_deezer_playlistsin_shazam_charts	
Release Date Information	<ul style="list-style-type: none">released_yearreleased_monthreleased_day	
Musical Features	<ul style="list-style-type: none">bpmdanceability_%valence_%energy_%acousticness_%instrumentalness_%liveness_%speechiness_%	
Track and Artist Information		<ul style="list-style-type: none">track_nameartist(s)_name
Musical Key and Mode		<ul style="list-style-type: none">key,mode

General Overview

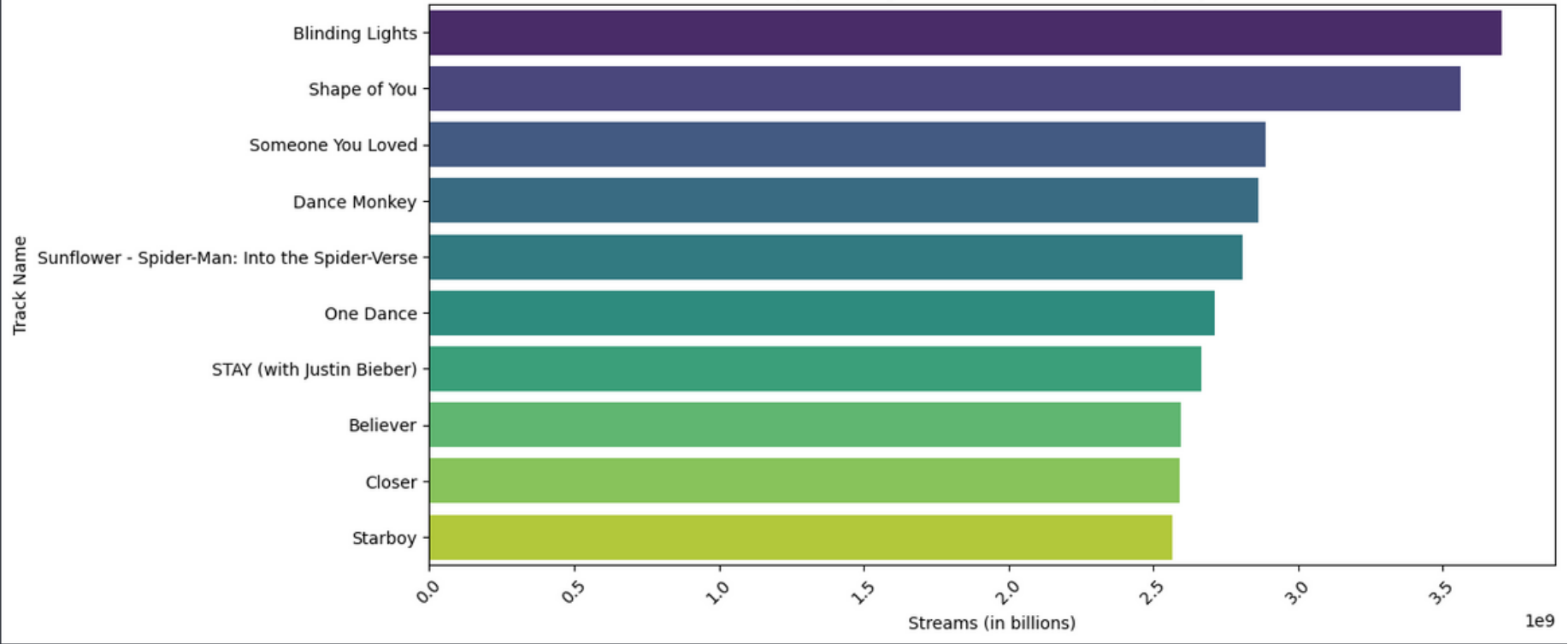
Distribution of Artist Count per Track



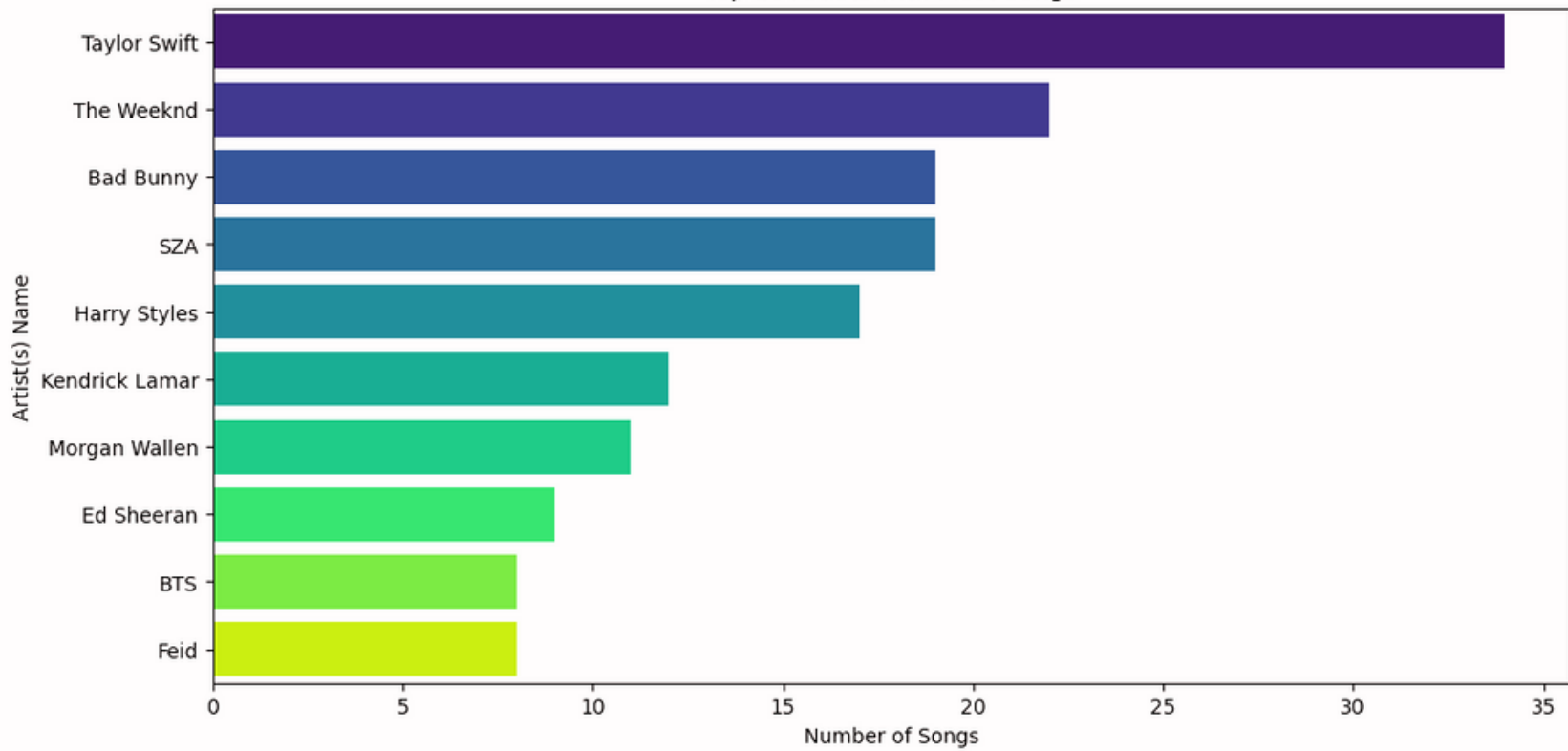
Number of track by release year

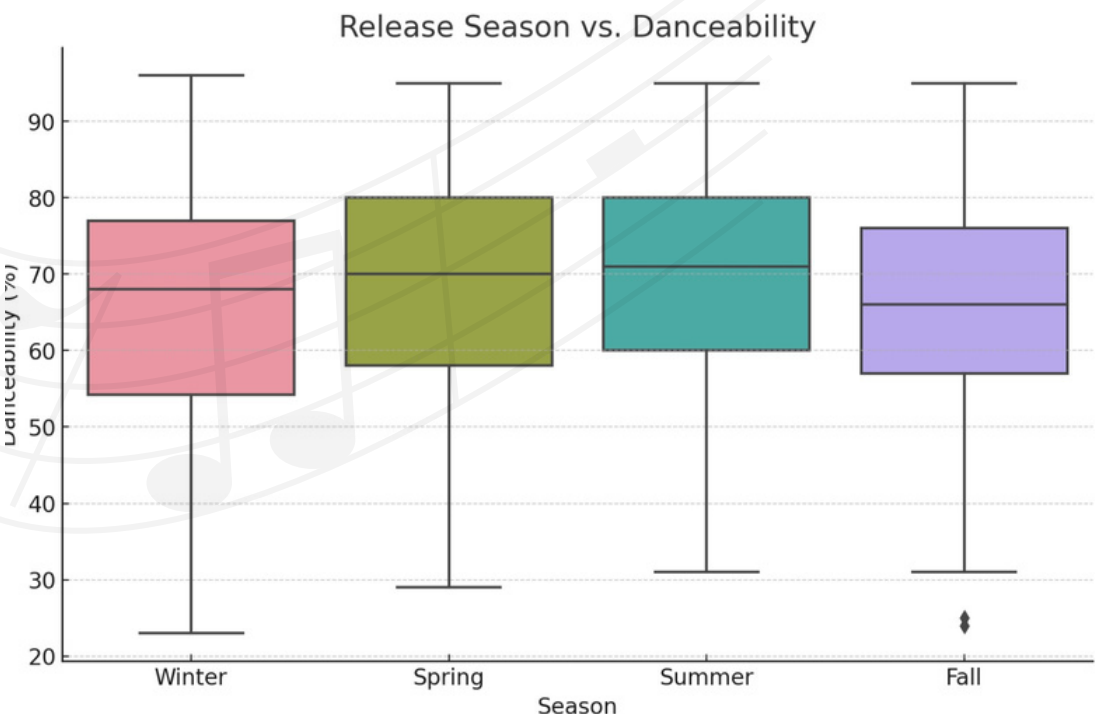
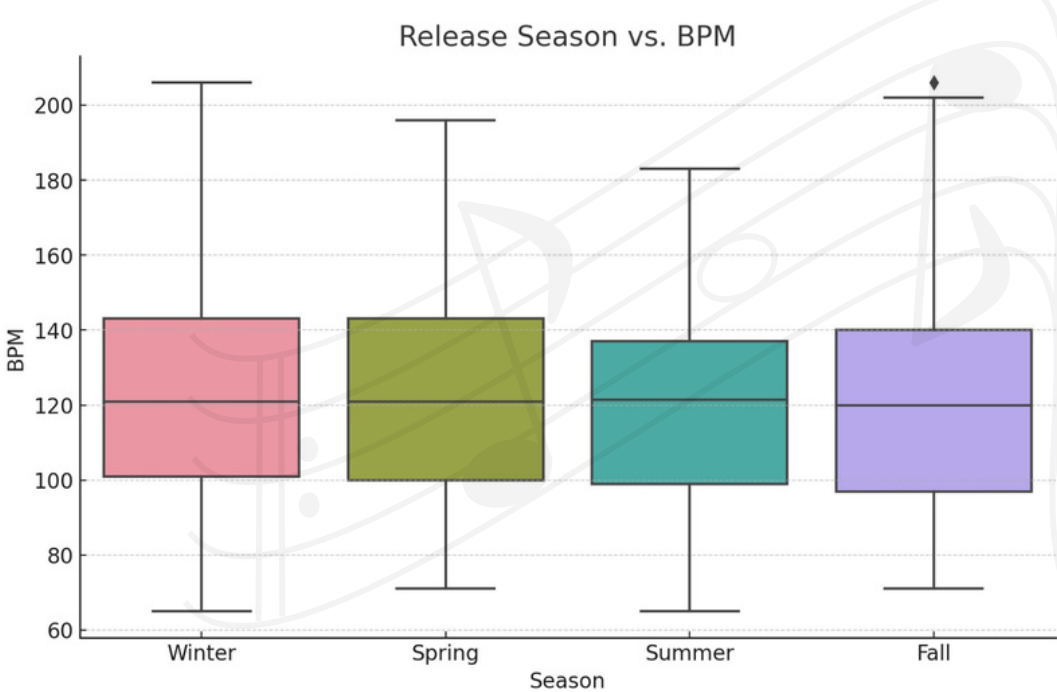


Top 10 Songs with Most Streams on Spotify



Top 10 Artists with Most Songs



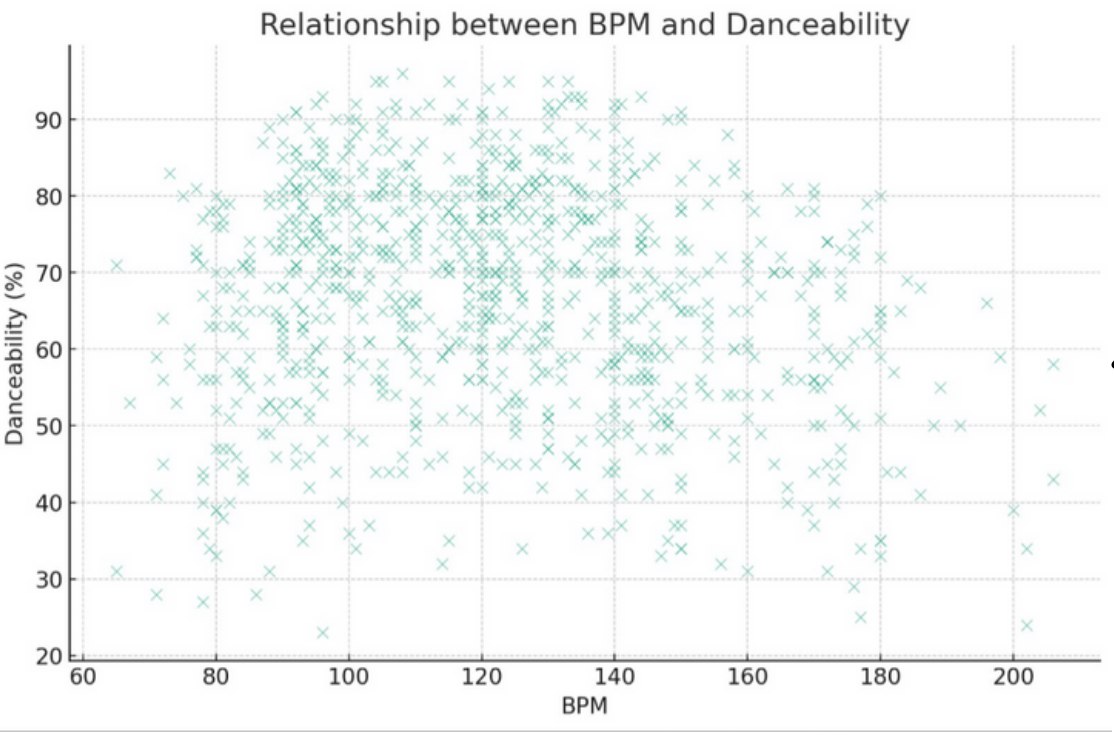


BPM Observations:

- **Minor differences** in average BPM across seasons.
- Higher average BPMs in Spring and Winter compared to Summer and Fall.
- Data does **not support hypothesis of significantly higher BPM in summer.**

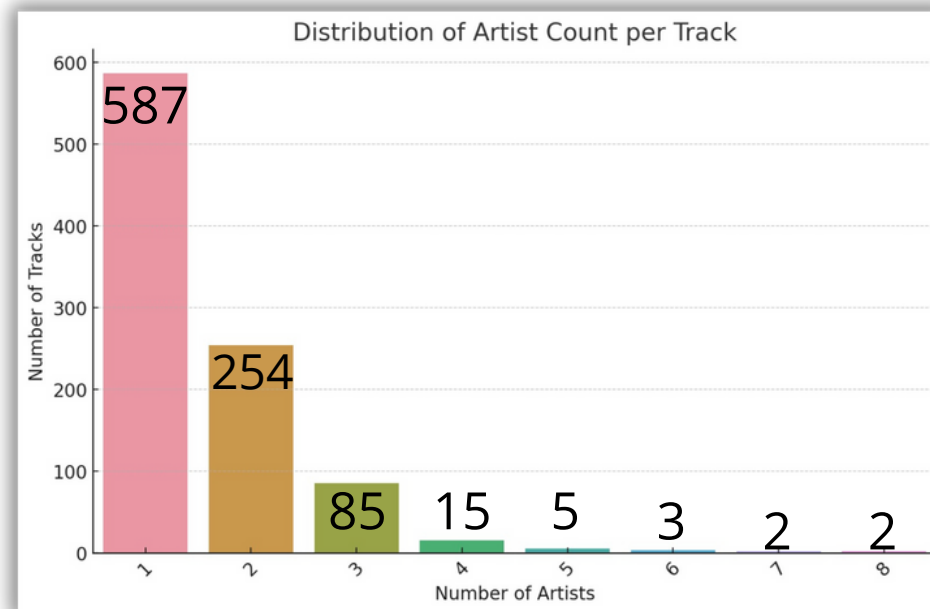
Danceability Observations:

- Summer tracks have a **marginally higher average** danceability.
- Suggests a potential preference for more danceable music in summer.
- Variations in danceability are mild and do **not indicate a strong seasonal trend.**

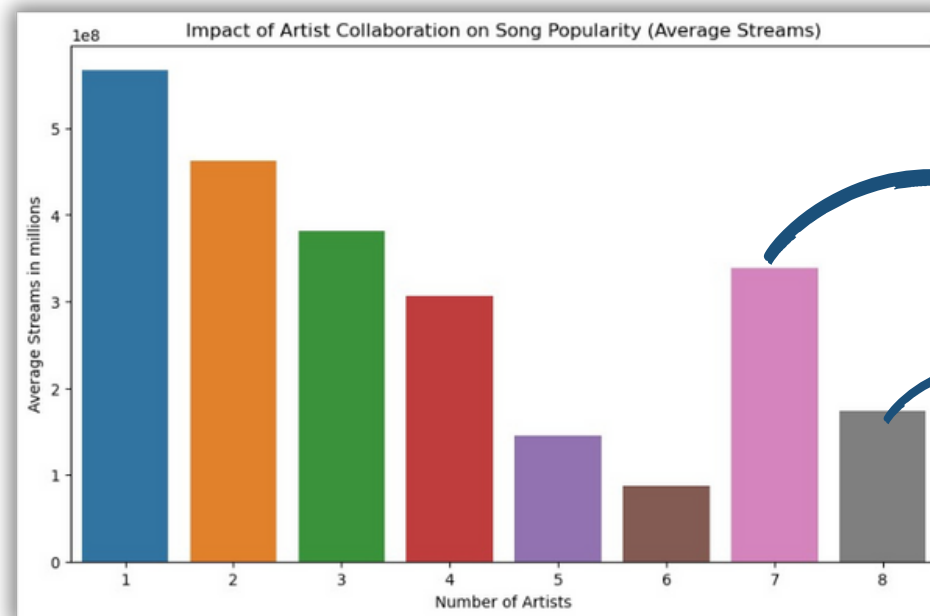


BPM vs. Danceability:

- No relation between BPM and Danceability.
- Slight inclination towards more danceable tracks in summer.
- BPM and danceability show **weak seasonal influence.**
- Musical characteristics in the dataset remain **relatively consistent across different seasons.**



- Most tracks are **solo** artist (61.59 %)
- Only a **few tracks** contain more than 5 artists (7)



Track Name	Artist(s) Name	Streams
Los del Espacio	Big One, Duki, Lit Killah, Maria Becerra, FMK, Nicki Nicole, Tiago PZK	123,122,413
We Don't Talk About Bruno	Adassa, Mauro Castillo, Stephanie Beatriz, Encanto - Cast	432,719,968
Se Le Ve	Arcangel, De La Ghetto, Justin Quiles, Lenny Tavárez, Dalex, Dimelo Flow	223,319,934
Cayó La Noche (feat. Cruz Cafuné, Abhir Hathi, ...)	Quevedo, La Pantera, Juseph, Cruz Cafuné, Abhir Hathi, Juseph, Cruz Cafuné	245,400,167

- Tracks with a **solo** artist have the **highest average streams**.
- Interestingly, tracks with more than 6 artists have high average streams



Trends of songs attributes over the year

- **Stabilization in danceability** suggest a **broader range of music** styles gaining popularity.



- **Peaks in energy** in the 1990s and 2000s correspond with the popularity of **dance and electronic** genres.

- **Decreased acoustiness** from the 1940s to the 2000s indicates a **shift from acoustic to electronic** music production.

- **Valence** reflects the **cultural mood swings**, with upbeat music from the **disco and funk era** standing out.

- **Music trends** have oscillated over the decades, with a general movement towards **more rhythmic and energetic compositions**.
- **The industry** shows responsiveness to listener preferences, technological capabilities, and cultural movements.
- Overall, there's an adaptability among artists and producers to create music that resonates with the changing dynamics of listener consumption.

Predicting Song Popularity Through an Imaginary "Hit Score"

- The "Hit Score" is a creative metric combining danceability, energy, valence, and playlist inclusions to speculate on a song's potential popularity.

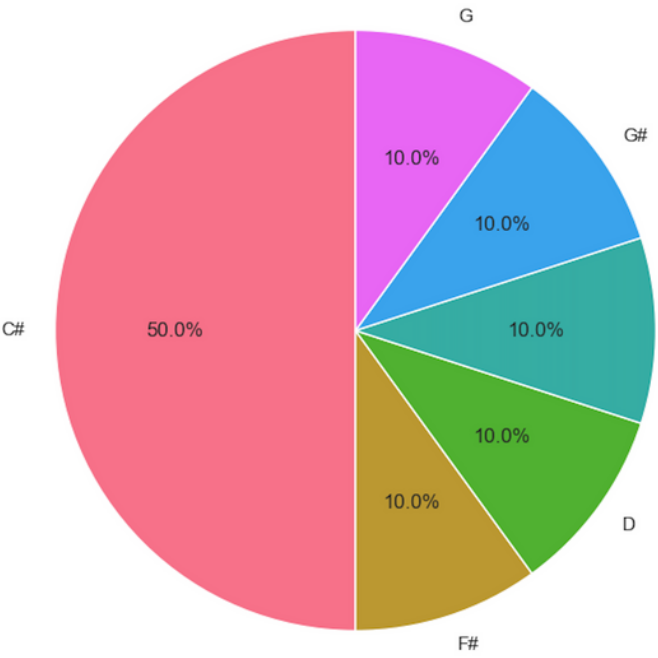
	track_name	artist(s)_name	Hit Score	streams	Top Stream Placement	released_year
423	Super Freaky Girl	Nicki Minaj	83.824663	428685680	351.0	2022
795	That That (prod. & feat. SUGA of BTS)	PSY, Suga	83.547923	212109195	580.0	2022
757	Get Lucky - Radio Edit	Pharrell Williams, Nile Rodgers, Daft Punk	83.300000	933815613	163.0	2013
754	There's Nothing Holdin' Me Back	Shawn Mendes	80.170543	1714490998	51.0	2016
682	Malvada	Z?????? Fe	79.312309	154119539	693.0	2022

- A blend of high danceability, energy, positive valence, and significant playlist presence are potential indicators of a song's hit potential.
- The "Hit Score" is a speculative, fun way to explore the multifaceted nature of song popularity.
- Although hypothetical and simplified, the "Hit Score" initiates discussion on the quantifiable elements that contribute to a song's appeal and market performance.

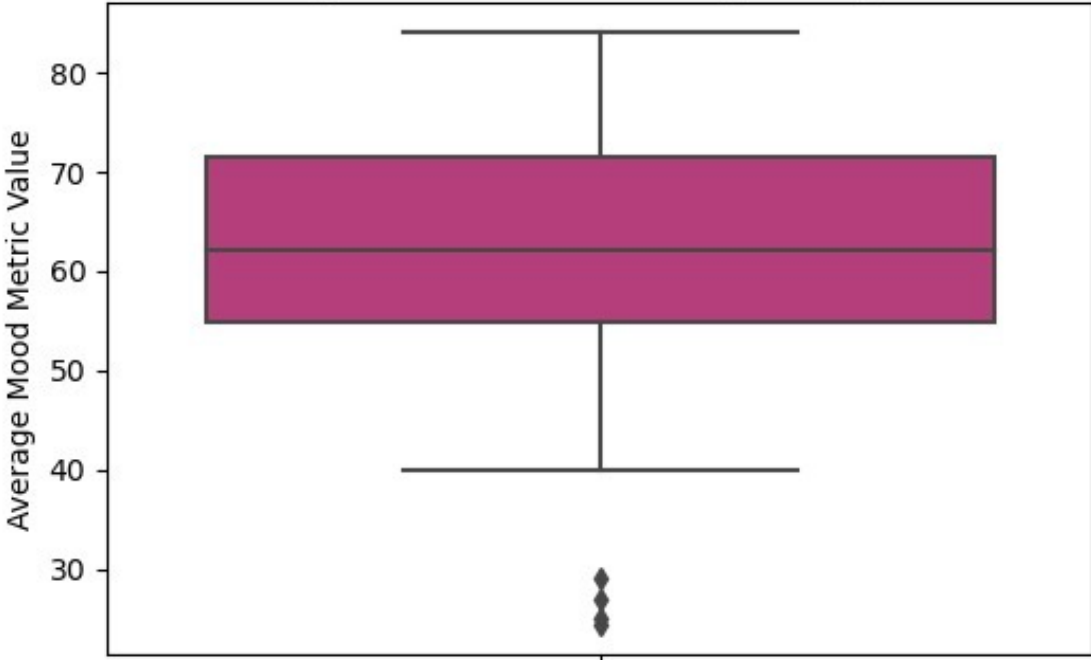
Top 10 Songs Analysis

	track_name	artist(s)_name	key	streams
55	Blinding Lights	The Weeknd	C#	3703895074
179	Shape of You	Ed Sheeran	C#	3562543890
86	Someone You Loved	Lewis Capaldi	C#	2887241814
620	Dance Monkey	Tones and I	F#	2864791672
41	Sunflower - Spider-Man: Into the Spider-Verse	Post Malone, Swae Lee	D	2808096550
162	One Dance	Drake, WizKid, Kyla	C#	2713922350
84	STAY (with Justin Bieber)	Justin Bieber, The Kid Laroï	C#	2665343922
140	Believer	Imagine Dragons	A#	2594040133
725	Closer	The Chainsmokers, Halsey	G#	2591224264
48	Starboy	The Weeknd, Daft Punk	G	2565529693

Key Distribution of the top10 Streamed Songs



Average Mood Metric for Songs in Key of C#

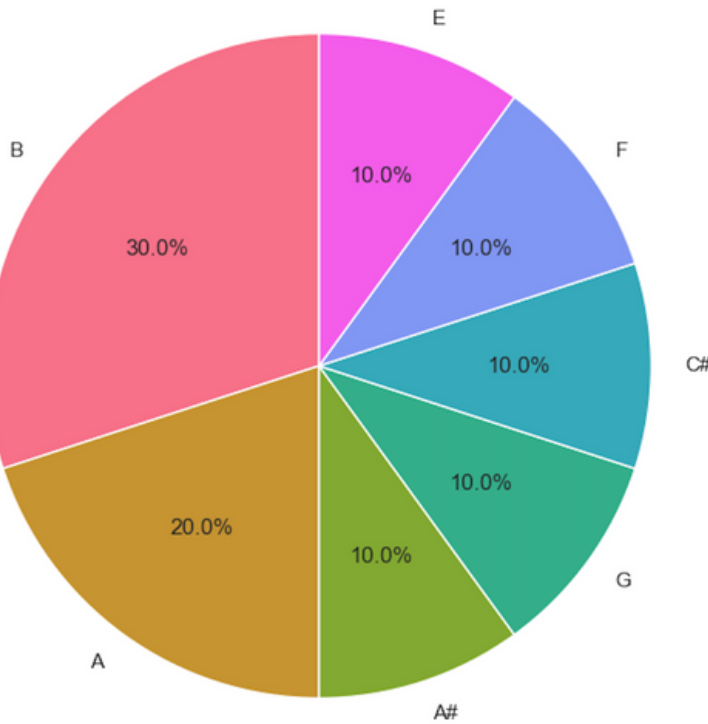


- While C# is the most common key among the top 10 streamed songs, songs in C# overall do not have the highest mood metric. This contradicts the idea that songs in C# are popular because of their associated mood

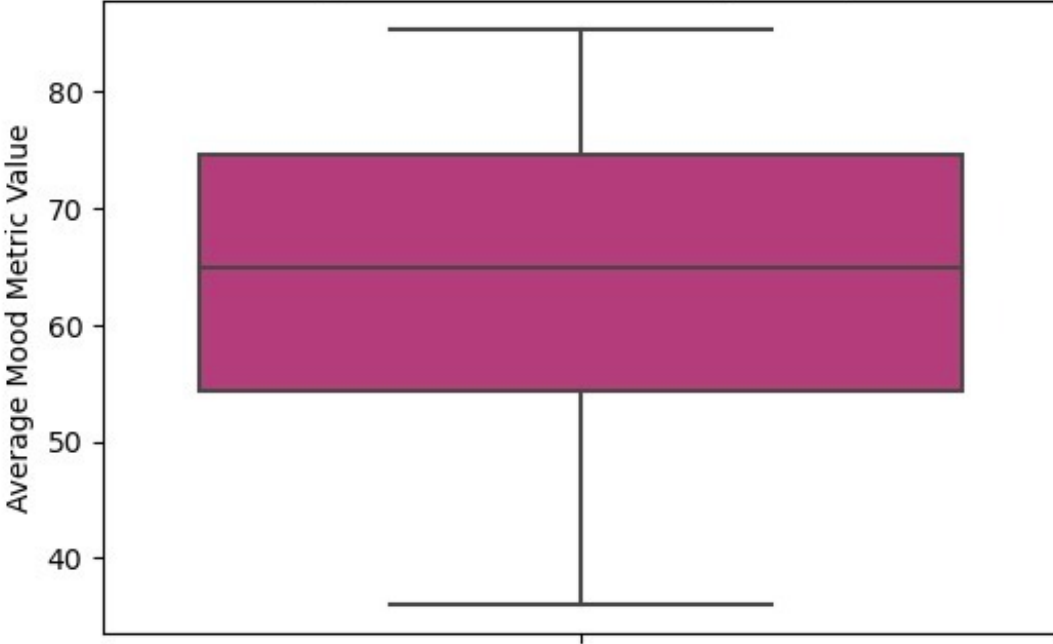
Last 10 Songs Analysis

	track_name	artist(s)_name	key	streams
123	Que Vuelvas	Carin Leon, Grupo Frontera	A#	2762
393	Jhoome Jo Pathaan	Arijit Singh, Vishal Dadlani, Sukriti Kakar, V...	G	1365184
142	Gol Bolinha, Gol Quadrado 2	Mc Pedrinho, DJ 900	B	11956641
68	Overdrive	Post Malone	C#	14780425
30	Rush	Troye Sivan	F	22581161
248	Danger (Spider) (Offset & JID)	Offset, JID	B	24975653
104	New Jeans	NewJeans	E	29562220
193	Better Than Revenge (Taylor's Version)	Taylor Swift	B	30343206
150	Mi Bello Angel	Natanael Cano	A	31873544
577	Phantom Regret by Jim	The Weeknd	A	31959571

Key Distribution of the 10 Least Streamed Songs



Average Mood Metric for Songs in Key of B



- Songs in B, despite being more common in the last 10 streamed songs, have a higher mood metric on average across the dataset. This suggests that while B may be less common in top hits, it is not due to a less positive mood profile in the music.

Creative Metric: "Cultural Resonance Score (CRS)"

- The "Cultural Resonance Score" (CRS) combines **speechiness**, **energy**, and a "**Multi-Platform Engagement Factor**" to estimate a song's potential **cultural impact**.

	track_name	artist(s)_name	CRS
630	Mr. Brightside	The Killers	69.686448
624	Smells Like Teen Spirit - Remastered 2021	Nirvana	67.258597
757	Get Lucky - Radio Edit	Pharrell Williams, Nile Rodgers, Daft Punk	65.500000
720	Wake Me Up - Radio Edit	Avicii	63.469383
199	Take On Me	a-ha	62.368998

- High CRS** scores reflect songs with **engaging energy**, **lyrical depth**, and **broad** engagement across platforms.
- The CRS offers a novel perspective on a song's potential influence on cultural moments and movements by combining song characteristics with engagement metrics.

Conclusion

To concisely encapsulate the findings from our analysis:

- **BPM and Seasons:** Examination revealed no significant correlation between BPM and seasonal variations, debunking the hypothesis of higher BPM in summer.
- **Artist Count and Popularity:** While songs by solo artists show the highest popularity, an unexpected increase in popularity is noted for tracks featuring more than 7 artists, despite limited data points.
- **Trends in Song Attributes:** Historical analysis indicates a shift from acoustic to energy-driven music, suggesting a transition from traditional instruments to electronic sounds since the 1940s.
- **Hit Score:** A predictive metric for pre-release hit potential showed no substantial impact of mood on streaming success.

In overall the analysis showed a different result when we were anticipating the opposite