Seasonal Mood Changes are Real

CS210 Project

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In this project, I delved into my personal Spotify 'Liked Songs' playlist to uncover insights about my music preferences. My analysis spanned exploring the top genres, identifying my favorite artists, and discerning the emotional soundtracks that resonated with me during different months, as well as observing how my music tastes evolved with the changing seasons. The data for this project originated from my Spotify account, and I didn't use Spotify or any other platform's API to visualize/process my data.

For data cleaning and preprocessing, I utilized the pandas library to manipulate the data, which involved handling missing values, parsing timestamps into a datetime format for time-based analysis, converting data types to the appropriate formats for analysis, and removing any duplicate song entries along with Selenium and Beautiful Soup for web scraping..

The exploratory data analysis (EDA) incorporated the use of pandas for data handling, matplotlib and seaborn for visualization. I conducted a thorough genre analysis to determine which genres dominated my playlist and carried out an artist analysis to see which artists appeared most frequently. I also explored how my song choices varied from month to month, which might indicate different emotional or thematic preferences, and investigated how my music taste changed with the seasons to reflect potential yearly patterns. To illustrate these findings, I employed various charts and graphs to depict genre distribution, artist popularity, and seasonal trends.

Additional notes in my analysis include the potential for sentiment analysis of song lyrics to further understand the emotional undertones of my music preferences and the use of Spotify's audio features like danceability, energy, and valence to comprehend the characteristics of the songs I prefer.

In conclusion, this project has been a comprehensive analysis of my Spotify listening habits, using data science techniques to unravel the patterns and preferences in my musical taste. It's an insightful application of analytics to my personal dataset, demonstrating how data can reflect individual preferences and emotions in music.

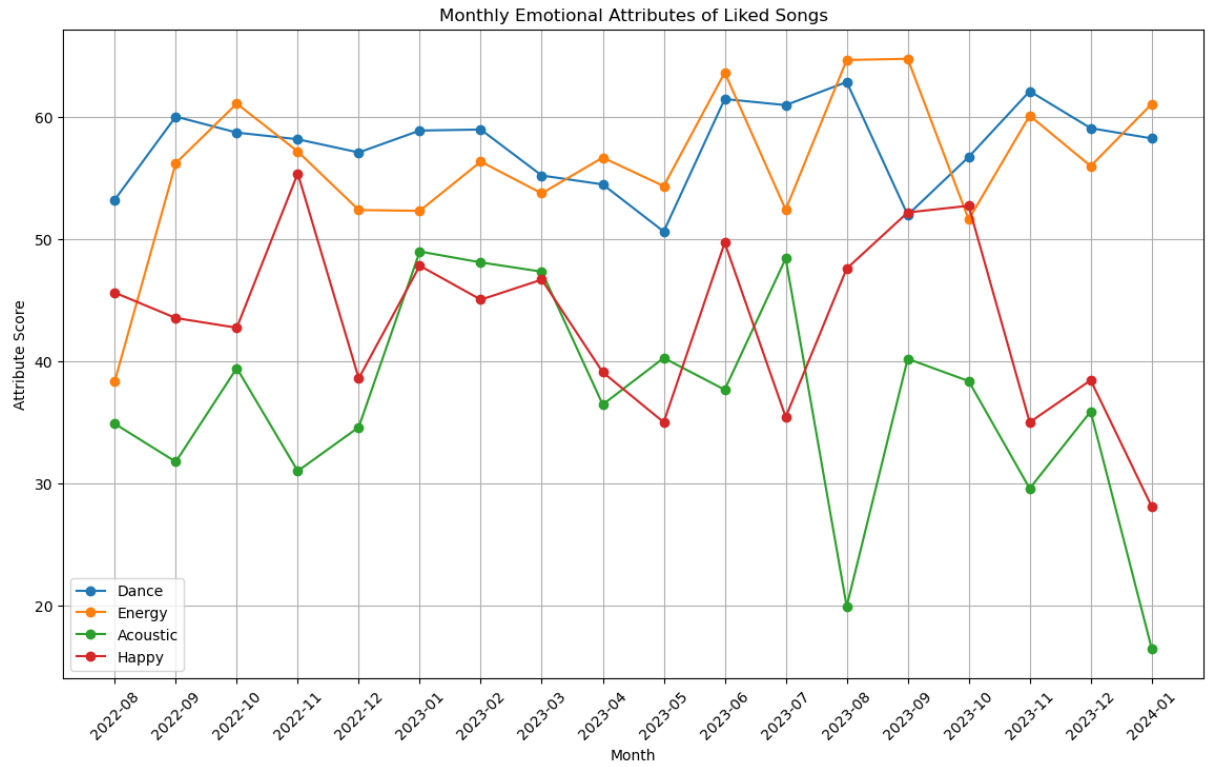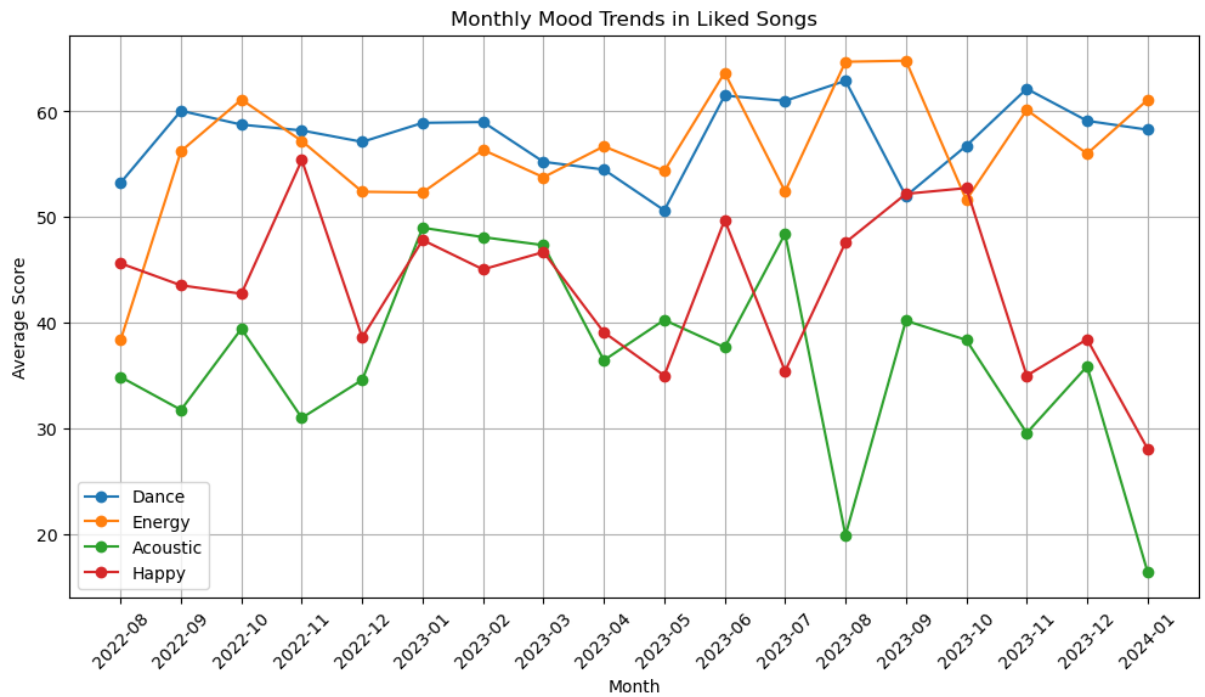Without further ado, let's see how my mood changes with my music taste.
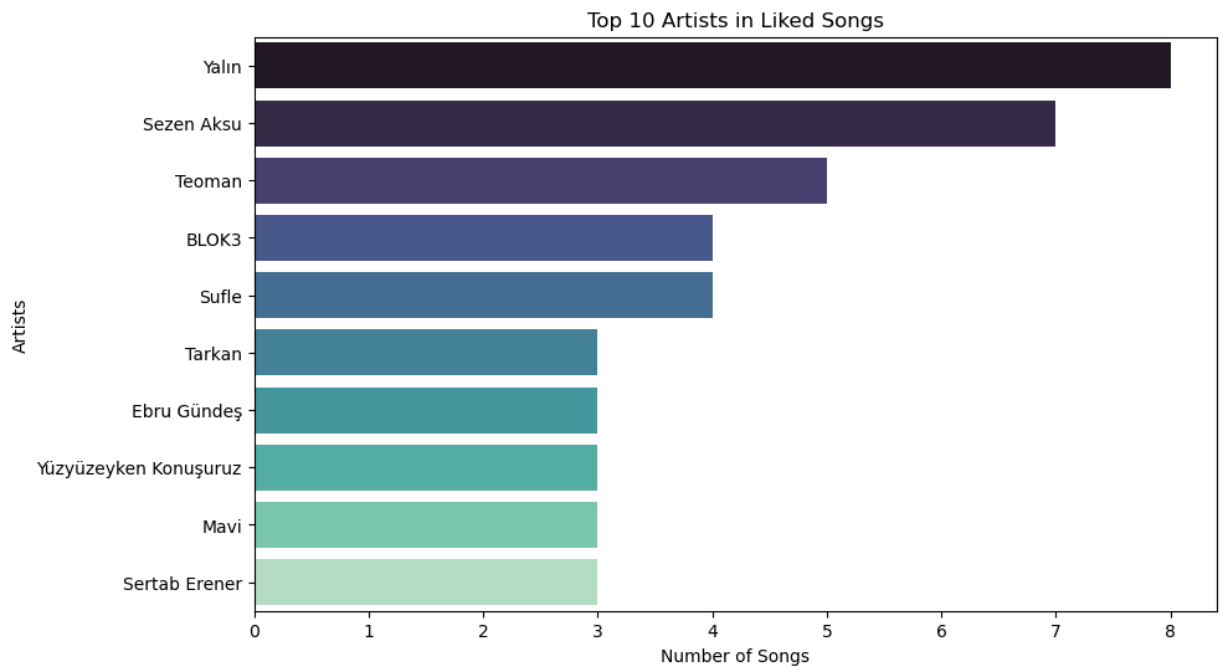
(Figure 1)
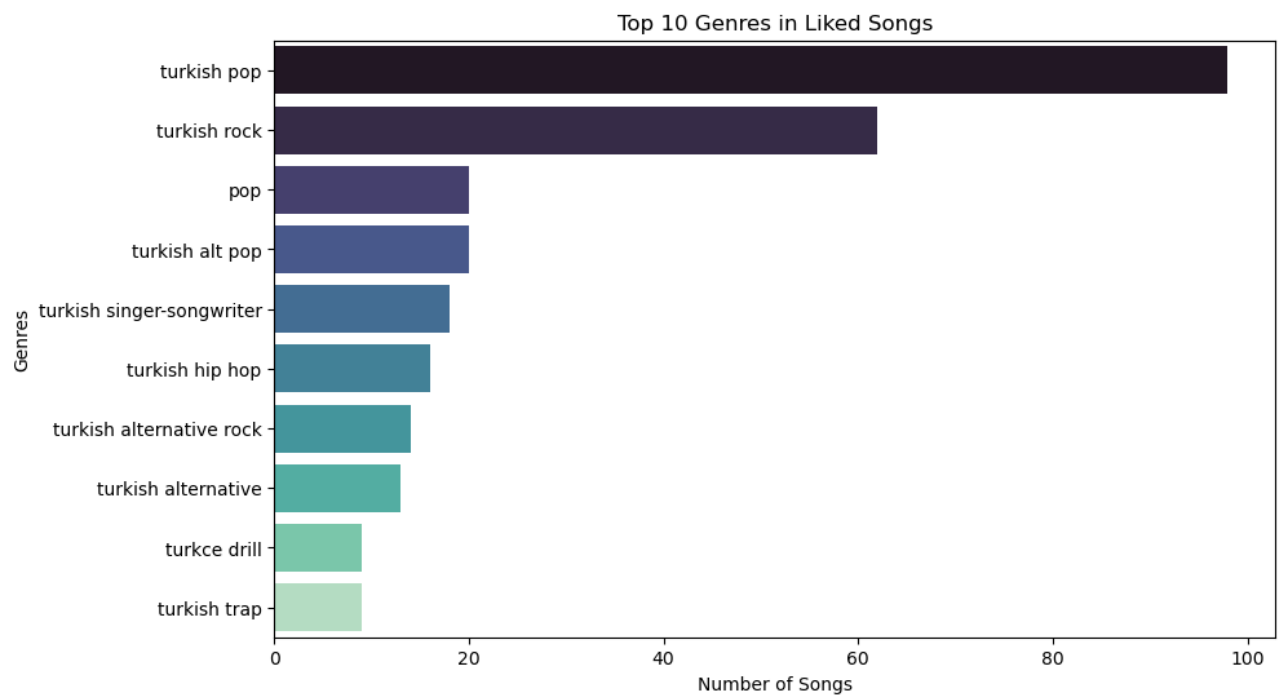
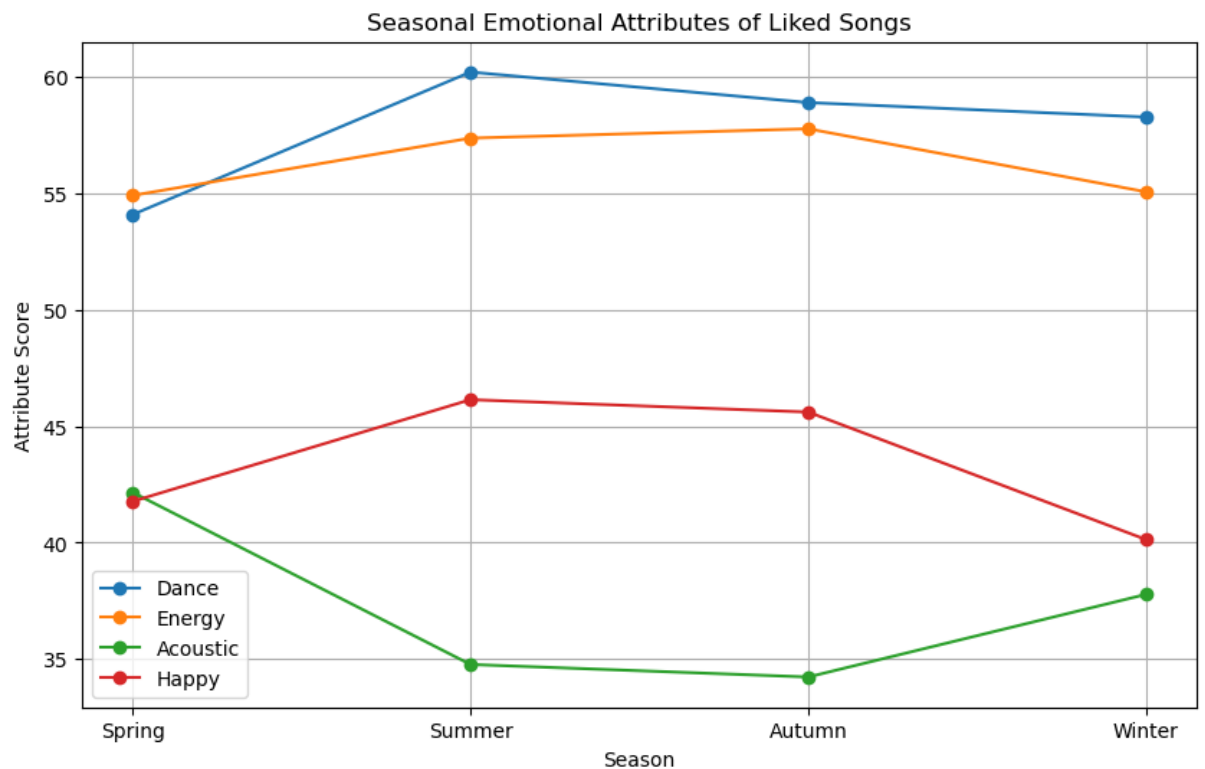(Figure 2)

When we take a a look at my top 10 artists (figure 1) and top 10 genres (figure 2)in my liked songs it appears that I really enjoy Turkish artists and their music.

(Figure 3)

(Figure 4)

(Figure 5)

There's a really interesting pattern that I see when I track how my tastes in music change throughout the year. Although my taste for danceable music fluctuates, it appears that as

spring approaches, I'm driven to more rhythmic beats. I feel like moving because of something about the March to May regeneration.

My energy levels peak from June to August when summer heat settles in, and this is reflected in the music I listen to. I love lively, celebratory music that fits the mood of the season. It seems as though choosing songs with more energy and vibrancy is a direct result of sunny days.

My playlist changes from September to November as fall arrives. I find myself gravitating toward more acoustic music, which seems to fit with the season's contemplative vibe. My taste in music seems to be more subdued as a result of the falling leaves.

Winter sometimes reminds me of a quieter time of year because of its shorter days and colder climate. I see a decrease in my preference for upbeat, danceable music from December to February. My music tends to slow down and become more about comfort than energy since it's a time for reflection and maybe a little coziness.

The music I like is a clear reflection of these changes in my attitude. Every season has its own unique speed, and I find that my musical tastes usually follow that rhythm. It's like dancing with the seasons.

Yearly Trends in Liked Songs
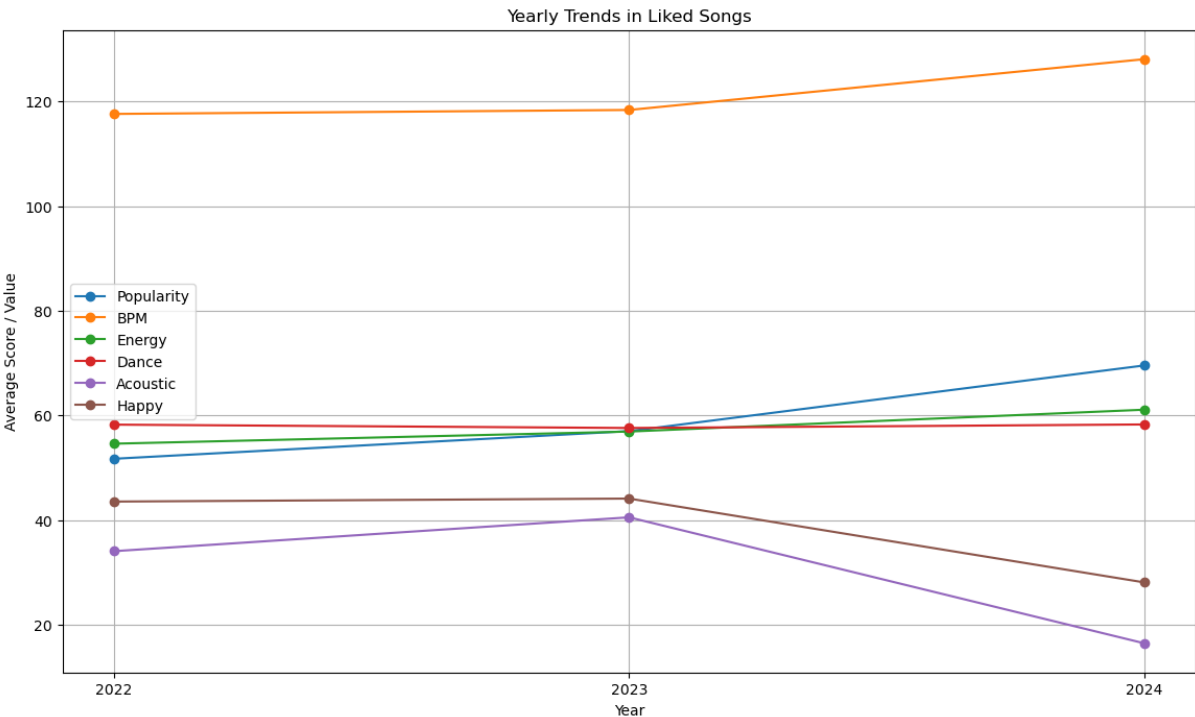
(Figure 6)

Looking at this graph, I'm seeing some interesting trends in my music choices over the years. For starters, it seems like the songs I'm into are gaining popularity. Each year, I'm leaning a bit more towards the tracks that are hitting the charts, which is pretty cool because it feels like my tastes are in sync with the broader music scene.

My BPM preference is holding steady, with just a tiny uptick. I guess I have a sweet spot for how fast a song's beat goes, and that hasn't changed much, whether I'm working out, chilling, or just need something playing in the background.

Now, when it comes to Energy, I'm on a slight rise. Maybe I'm looking for more oomph in my music as time goes on—a bit more zest and bounce. It's like my playlist is gradually getting a boost in its pulse.

Danceability is interesting; it's pretty much stable but has dipped ever so slightly. I still want my beats to be danceable, but maybe I'm not as focused on the 'get up and go' aspect as I used to be.

Acoustic tunes are taking a backseat, though. Each year, I find myself drifting away from that unplugged sound. I'm not sure why—perhaps I'm just riding the wave of more electronic beats nowadays.

And on the Happy scale, there's a noticeable slide down. It's not like I'm choosing sad songs, but it looks like I'm opening up to a wider range of emotions in music, exploring different moods and narratives that aren't just about being upbeat.

Overall, these yearly trends are like a time capsule of my changing music taste. It's like watching a slow-motion shift in what I'm drawn to, and it's fascinating to think about how this might play out in the future.

(Figure 7)

(Figure 8)

Top 10 Genre Trends Over Seasons
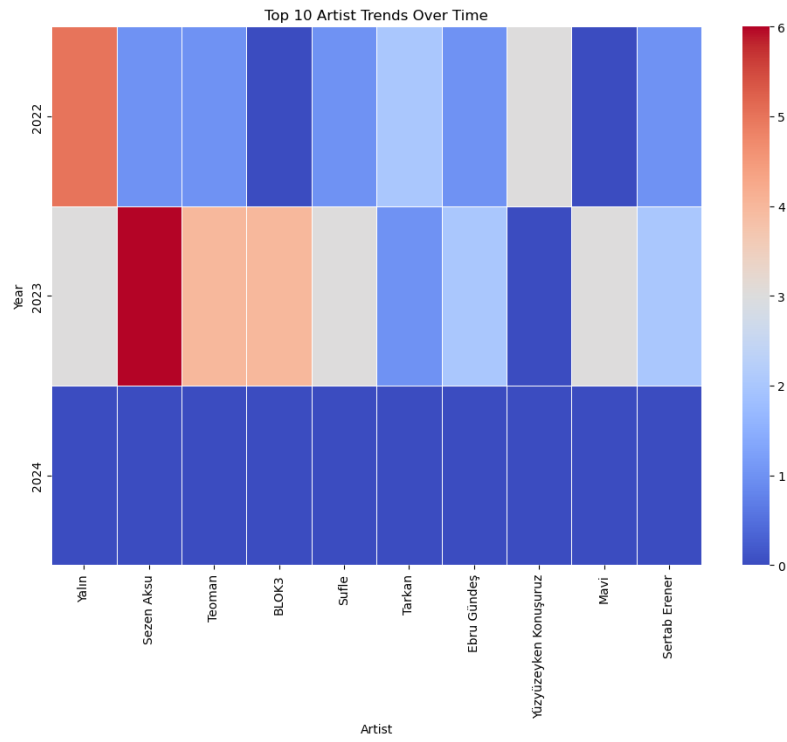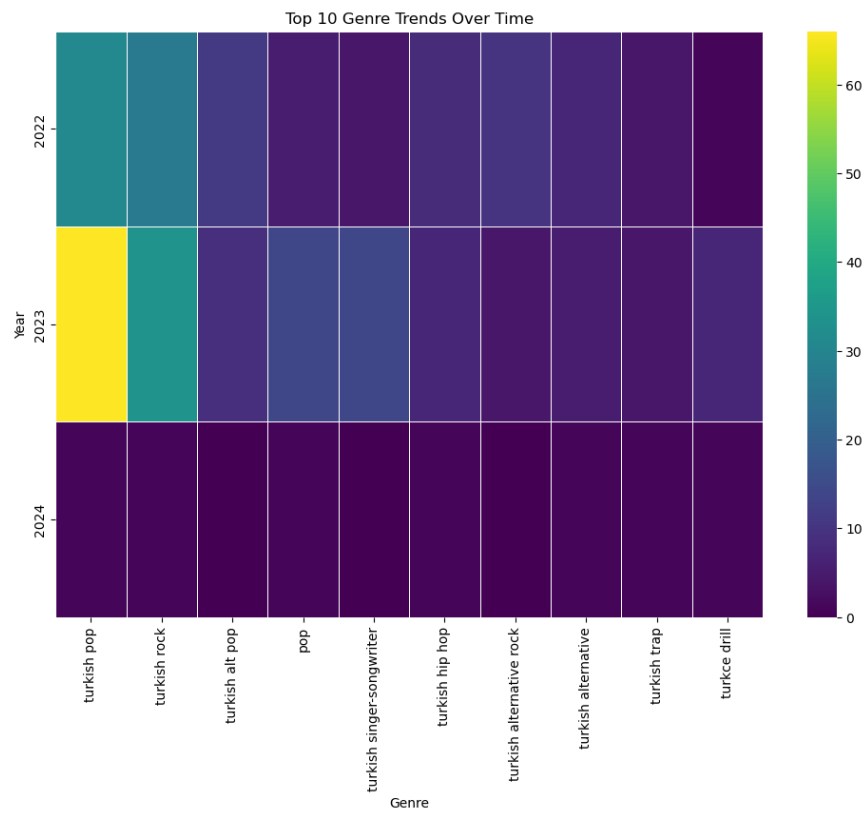
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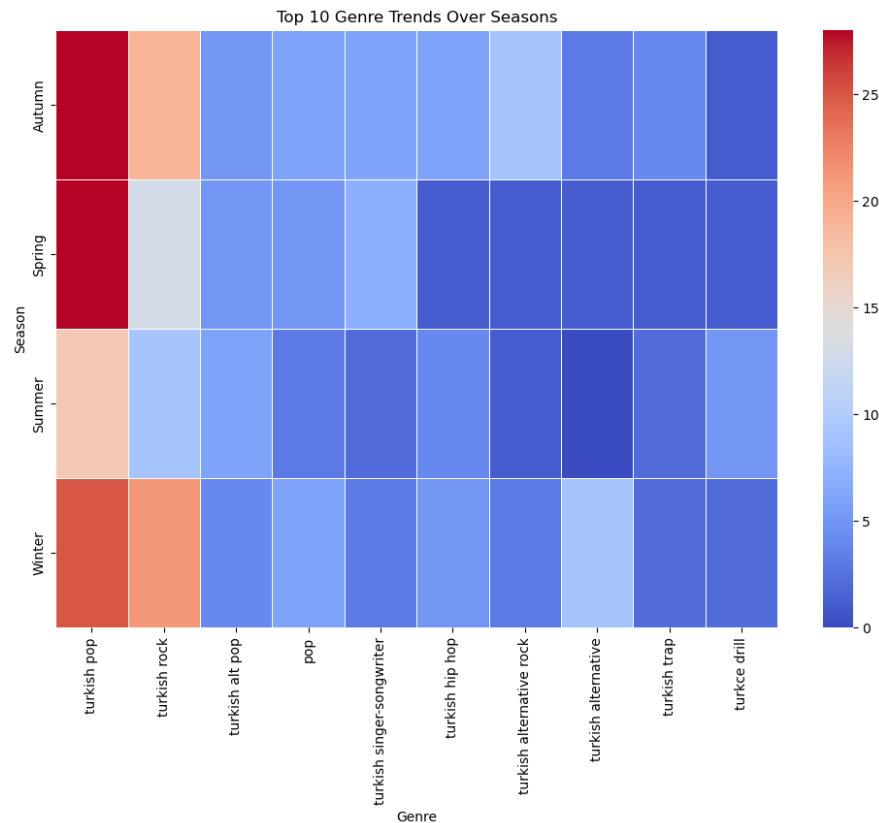
Looking at these heatmaps, I'm getting a clear picture of my musical journey over time, and it's fascinating to see my shifts in artist and genre preferences.

Starting with the artist trends, I can see that my taste has some consistent favorites but also some newcomers. In 2022, I was all about certain artists, giving them a lot of playtime. But as the years roll on, I'm either diversifying my choices or some artists are just naturally falling out of my rotation. It's like my playlist is a living thing, evolving with my mood and the music scene.

Now, onto the genre trends. Back in 2022, I was really into certain genres, like Turkish pop, which totally dominated my listening habits. Fast forward to 2024, and it's clear that my tastes have broadened or shifted quite a bit. I'm giving more time to different styles, which probably reflects how I'm growing and changing as a person. My music taste is like my personal soundtrack—it adapts to who I am at the moment.

And when I break it down by seasons, the picture gets even more colorful. Each season seems to have its own flavor. In the winter, I'm leaning into one genre more heavily, while in the

summer, I'm all over the place with my genre picks. It's like each season has its own mood, and my music is there to match it.

These heatmaps are like a mirror, showing me how my music taste is part of my story. It's more than just background noise; it's a reflection of my life's rhythm, and I'm the one setting the beat.

I implemented machine learning in order to find out and predict what I might listen seasonally. below, you can find some recommandations based on my music taste for each easons. I hope you will enjoy them.

MOOD BASED RECOMMENDATION FOR EACH SEASON

Average Moods/Season:

Season	Dance	Energy	Acoustic	Happy
Autumn	59.160000	58.626667	33.386667	45.213333
Spring	54.370370	55.296296	43.037037	41.518519
Summer	60.425000	58.125000	34.475000	46.975000
Winter	57.722222	55.611111	36.958333	39.513889

Spring Recommendation

	Song	Artist	Season
244	Beni Hatırladın mı	Cem Adrian,Birsen Tezer	Autumn
135	Unuttun Mu Beni	Nahide Babashlı	Winter
119	Arada Bir	Kibariye	Spring
88	Nazar Değmesin	Gülşen	Spring
103	Esmer Günler	Nilüfer	Spring

Summer Recommendation

	Song	Artist	Season
231	Ayrılık Zor	Tarkan	Autumn
93	Cevapsız Sorular	maNga	Spring
160	Shallow	Lady Gaga,Bradley Cooper	Winter
22	Sevdanın Rengi	Özcan Deniz	Autumn
241	Diğer Yarım	ATE	Autumn

Autumn Recommendation

	Song	Artist	Season
160	Shallow	Lady Gaga,Bradley Cooper	Winter
231	Ayrılık Zor	Tarkan	Autumn
93	Cevapsız Sorular	maNga	Spring
88	Nazar Değmesin	Gülşen	Spring
22	Sevdanın Rengi	Özcan Deniz	Autumn

Winter Recommendation

	Song	Artist	Season
231	Ayrılık Zor	Tarkan	Autumn
88	Nazar Değmesin	Gülşen	Spring

	Song	Artist	Season
244	Beni Hatırladın mı	Cem Adrian,Birsen Tezer	Autumn
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