Top Spotify Songs in 73 Countries

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Introduction

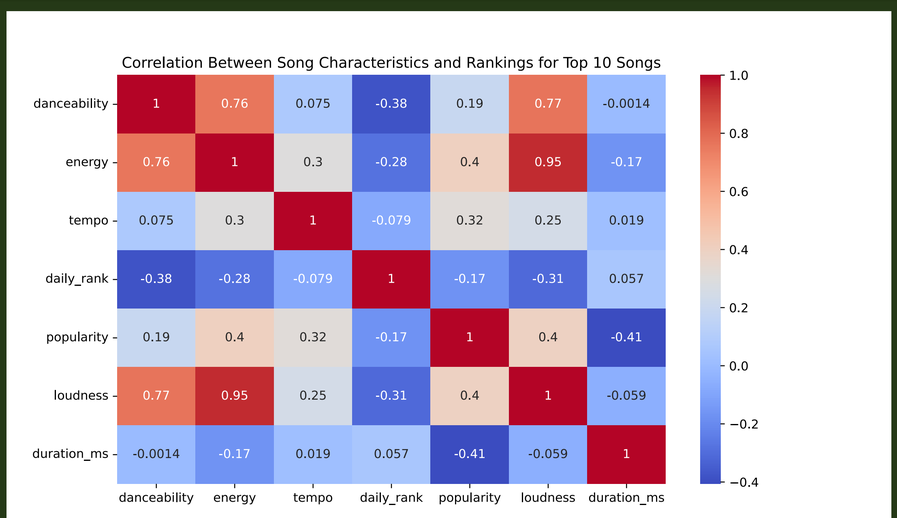
Music is a huge constantly changing industry, where the success of a song can depend on several factor. Those factors may be related to current trends in the world of music, but also to listeners.

Goals

The goal was to find out which songs and genres are popular in different countries, analyze some changes in rankings of songs, and, most importantly, predict song popularity based on the information given and machine learning.

Top Songs and Genres

Country	Song	Song Genre	Artist	Artist Genre
AE	greedy	Pop	Tate McRae	Pop
AR	La_original.mp3	Dance-pop	Emilia, TINI	Pop
AT	Liebe Grüsse	Hip hop	RAF Camora, Ski Aggu	Hip hop
AU	Is It Over Now? (Taylor's Version) (From The Vault)	Electropop	Taylor Swift	Pop
BE	Si No Estás	Pop	iñigo quinter	Pop
BG	К'ъв със як	Pop	Djordan	Pop
BO	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	rap
BR	Let's Go 4	Funk	Dj GBR, Mc IG, MC Ryan SP, MC PH, Mc Davi, Mc Luki, Mc Don Juan, Mc Kadu, TrapLaudo, MC GP, MC GH do 7	Rave funk
BY	Прощание	Alternative rock	Три дня дождя, MONA	Alternative pop
CA	Is It Over Now? (Taylor's Version) (From The Vault)	Electropop	Taylor Swift	Pop
CH	Si No Estás	Pop	iñigo quintero	Pop
CL	ANDO	Hip hop	Jere Klein, Gittobeatz	Reggaeton
CO	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
CR	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
CZ	Dopamin	Hip hop	Viktor Sheen	Hip hop
DE	Familia (feat. Morad)	Hip hop	Luciano, Morad	Hip hop
DK	555 (feat. KESI)	Hip hop	Gilli, KESI	Hip hop
DO	Hecho Por Mi	Trap	Drei, It's Different, Lito Kirino, 24hrs	Pop
EC	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
EE	üksinda	Pop	villemdrillem, Karl Killing	Hip hop
EG	سيبك من اللي خلع - من فيلم حمص وحلاوة	Pop	Mahmoud El Leithy, Essam Sasa	Shaabi
ES	Si No Estás	Pop	iñigo quintero	Pop
FI	Silkkii (feat. Joalin)	Finnish drill	DAVI, Joalin	Electronic
FR	Petit génie	Pop	Jungeli, Imen Es, Alonzo, Abou Debeing, Lossa	Pop
GB	Lovin On Me	Rap	Jack Harlow	Rap
GR	G63	Hip hop	TOQUEL, Bloody Hawk	Trap
GT	Según Quién	Sierreno	Maluma, Carin Leon	Latino
HK	滴	Cantopop	Keung To	Cantopop
HN	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
HU	Rampapapam	Pop	DESH, Young Fly, Azahriah, Lord Panamo	Pop
ID	penjaga hati	R&b	Nadhif Basalamah	R&b
IE	Stick Season	Indie	Noah Kahan	Indie
IL	יהיה טוב	Pop	Jasmin Moallem	Pop
IN	Tu hai kahan	Hip hop	AUR	Hip hop
IS	prettyboi um jólin	Pop	PATRi!K	Pop
IT	EVERYDAY (feat. Shiva, ANNA, Geolier)	Pop	Takagi & Ketra, Shiva, ANNA, Geolier	Pop
JP	Show	J-pop	Ado	J-pop
KR	Seven (feat. Latto) (Explicit Ver.)	K-pop	Jung Kook, Latto	K-pop
KZ	Расстояние	Hip hop	Ulukmanapo, Bakr	Hip hop
LT	Strangers	Pop	Kenya Grace	Pop
LU	Si No Estás	Pop	iñigo quintero	Pop
LV	Strangers	Pop	Kenya Grace	Pop
MA	DELLALI (feat. Hamza)	Hip hop	ElGrandeToto, Hamza	Hip hop
MX	Que Onda	Corrido	Calle 24, Chino Pacas, Fuerza Regida	Corrido
MY	Seven (feat. Latto) (Explicit Ver.)	K-pop	Jung Kook, Latto	K-pop
NG	Holy Ghost	Afrobeats	Omah Lay	Afrobeats
NI	Según Quién	Sierreno	Maluma, Carin Leon	Latino
NL	Si No Estás	Pop	iñigo quintero	Pop
NO	Si No Estás	Pop	iñigo quintero	Pop
NZ	Water	R&b	Tyla	R&b
PA	MONACO	Latino	Bad Bunny	Reggaeton
PE	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
PH	ERE	Opm	juan karlos	Reggaeton
PK	Tu hai kahan	Hip hop	AUR	Hip hop
PL	BFF	Hip hop	bambi, Young Leosia, PG$, @atutowy	Pop
PT	Si No Estás	Pop	iñigo quintero	Pop
PY	Según Quién	Sierreno	Maluma, Carin Leon	Latino
RO	Tigara	Pop	MOOD	Pop
SA	Standing Next to You	K-pop	Jung Kook	K-pop
SE	Si No Estás	Pop	iñigo quintero	Pop
SG	Seven (feat. Latto) (Explicit Ver.)	K-pop	Jung Kook, Latto	K-pop
SK	Dopamin	Hip hop	Viktor Sheen	Hip hop
SV	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
TH	Standing Next to You	K-pop	Jung Kook	K-pop
TR	Ateşe Düştüm	Alternative pop	Mert Demir	Alternative pop
TW	Seven (feat. Latto) (Explicit Ver.)	K-pop	Jung Kook, Latto	K-pop
UA	LALALALA	K-pop	Stray Kids	K-pop
US	Is It Over Now? (Taylor's Version) (From The Vault)	Electropop	Taylor Swift	Pop
UY	La_original.mp3	Dance-pop	Emilia, TINI	Pop
VE	PERRO NEGRO	Reggaeton	Bad Bunny, Feid	Reggaeton
VN	Standing Next to You	K-pop	Jung Kook	K-pop
ZA	iPlan	gqom	Dlala Thukzin, Zaba, Sykes	gqom



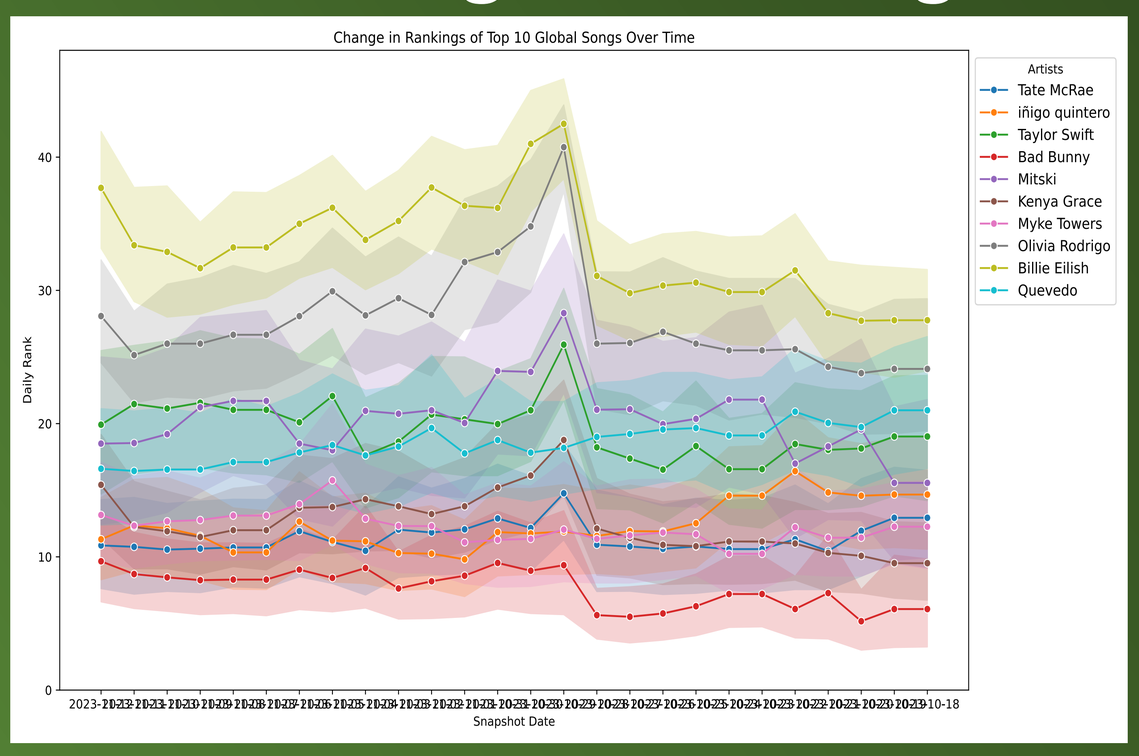
A subset of relevant song characteristics, including danceability, energy, loudness, daily rank, tempo and popularity is selected. The correlation matrix of these characteristics is computed and visualized as a heatmap. Heatmap shows that there is no really correlation between daily rank and features like energy and danceability. Yet there is some correlation in popularity, loudness, energy and tempo.

Data and methods

In this project, the Kaggle dataset "Top Spotify Songs in 73 Countries" was used. It contains information about the top 50 songs in 73 countries. The dataset didn't need much modification and was overall ready for use. However, for finding the most popular songs in each country, the 'daily_rank' column had to be modified to find the song with the minimum average daily rank.

This table displays songs with the best daily ranking over time (snapshots were taken between 18.10.23 - 12.11.23). To summarize, for most countries, it's their local or similar-to-local song. In other cases, the best-ranked songs were globally viral songs. The top genres that appeared the most were HIP-HOP, POP, K-POP, and Reggaeton. In Latin-American countries Reggaeton dominated, while in Asia, there was more K-POP. In other countries, the results were mixed, but mostly the genres were the same.

Changes in rankings



Predicting future popularity

Predictive models are implemented using Random Forest, Linear Regression, and Gradient Boosting. The features include danceability, energy, key, valence, and tempo. The dataset is split into training and testing sets. The best-predicted popularity was 83 with Gradient Boosting, 77 with Linear Regression, and 75 with Random Forest. In this situation, Random Forest had the smallest predicted popularity, but its mean absolute error was low as well, so it should still be better than Linear Regression and almost the same as Gradient Boosting. For this popularity, the song had a tempo of 100 bpm, danceability and energy at the 0.8 level, valence at 0.9, and the second song key."