

# Instructions

## Glossary

- `track_id` of type `string` corresponds to the song's unique ID.
- `track_name` of type `string` corresponds to the song's name.
- `track_artist` of type `string` corresponds to the song's artist.
- `track_popularity` of type `float` corresponds to the song's popularity (0-100) where higher is better.
- `track_album_id` of type `string` corresponds to the song album's unique ID.
- `track_album_name` of type `string` corresponds to the song album's name.
- `track_album_release_date` of type `string` Date when album was released.
- `playlist_name` of type `string` Name of playlist
- `playlist_id` of type `string` Playlist ID
- `playlist_genre` of type `string` Playlist genre
- `playlist_subgenre` of type `string` Playlist subgenre
- `danceability` of type `float` describes how suitable a track is for dancing based on a combination of musical elements including tempo, rhythm stability, beat strength, and overall regularity. A value of 0.0 is least danceable and 1.0 is most danceable.
- `energy` of type `float` measured from 0.0 to 1.0. Represents a perceptual measure of intensity and activity. Typically, energetic tracks feel fast, loud, and noisy. For example, death metal has high energy, while a Bach prelude scores low on the scale. Perceptual features contributing to this attribute include dynamic range, perceived loudness, timbre, onset rate, and general entropy.
- `key` of type `float` estimates the overall key of the track. Integers map to pitches using standard Pitch Class notation . E.g. 0 = C, 1 = C#/D♭, 2 = D, and so on. If no key was detected, the value is -1.

- `loudness` of type `float` describes the overall loudness of a track in decibels (dB). Loudness values are averaged across the entire track and are useful for comparing relative loudness of tracks. Loudness is the quality of a sound that is the primary psychological correlate of physical strength (amplitude). Values typical range between -60 and 0 db.
- `mode` of type `float` indicates the modality (major or minor) of a track, the type of scale from which its melodic content is derived. Major is represented by 1 and minor is 0.
- `speechiness` of type `float` detects the presence of spoken words in a track. The more exclusively speech-like the recording (e.g. talk show, audio book, poetry), the closer to 1.0 the attribute value. Values above 0.66 describe tracks that are probably made entirely of spoken words. Values between 0.33 and 0.66 describe tracks that may contain both music and speech, either in sections or layered, including such cases as rap music. Values below 0.33 most likely represent music and other non-speech-like tracks.
- `acousticness` of type `float` describes a confidence measure from 0.0 to 1.0 of whether the track is acoustic. 1.0 represents high confidence the track is acoustic.
- `instrumentalness` of type `float` predicts whether a track contains no vocals. "Ooh" and "aah" sounds are treated as instrumental in this context. Rap or spoken word tracks are clearly "vocal". The closer the instrumentalness value is to 1.0, the greater likelihood the track contains no vocal content. Values above 0.5 are intended to represent instrumental tracks, but confidence is higher as the value approaches 1.0.
- `liveness` of type `float` detects the presence of an audience in the recording. Higher liveness values represent an increased probability that the track was performed live. A value above 0.8 provides strong likelihood that the track is live.
- `valence` of type `float` represents a measure from 0.0 to 1.0 describing the musical positiveness conveyed by a track. Tracks with high valence sound more positive (e.g. happy, cheerful, euphoric), while tracks with low valence sound more negative (e.g. sad, depressed, angry).
- `tempo` of type `float` represents the overall estimated tempo of a track in beats per minute (BPM). In musical terminology, tempo is the speed or pace of a given piece and derives directly from the average beat duration.
- `duration_ms` of type `float` represents the duration of song in milliseconds.

# Tasks

1. Show in a graph the 10 artists with the most songs in the dataset.
2. Show in a graph the top 10 most popular songs.
3. Show in a graph the 10 least popular songs.
4. Show in a graph the number of albums that were released per year between 2000 and 2023.
5. Show in a graph the number of albums that the top 10 artists released.
6. Show in a graph the longest 10 songs
7. Show in a graph the 10 most danceable songs of artists with the most songs.
8. Show in a graph the 10 loudest and most popular songs.