Exploratory Data Analysis: Music

November 26, 2021

The Dataset

For this assignment we will be using the 'Spotify' dataset. Each row represents a song.

There are 16 columns. 13 of which are song attributes, one column for song name, one for artist, and a column called "target" which is the label for the song.

Here are the 13 track attributes: acousticness, danceability, durationms, energy, instrumentalness, key, liveness, loudness, mode, speechiness, tempo, timesignature, valence.

Information on what those traits mean can be found here: https://developer.spotify.com/web-api/get-audio-features/

To Receive full points for this assignment you must summarize your findings in a latex report, and send to Mr. Merrick **by February 16**.

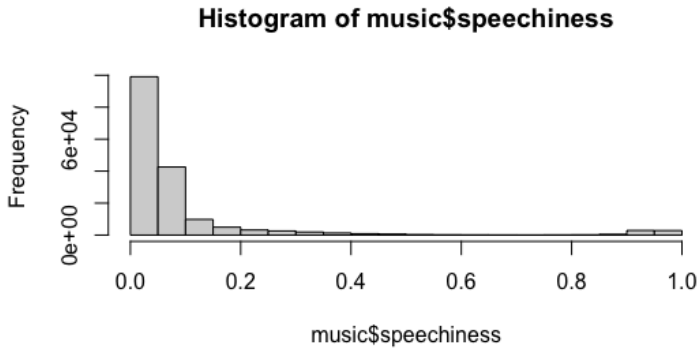
1. What is the average danceability of songs from Spotify?

   Solution: 0.5367576

2. Is the average danceability of songs a good representation of a typical observation? Use the data to present an argument.

   Solution: Yes, because the distribution of danceability is roughly symmetric.

3. Visualize the average speechiness of a song using a histogram.

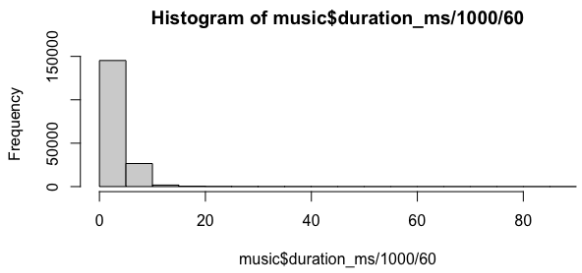


Solution:

4. What proportion of songs are from the year 1970 or earlier?

Solution: 0.4215576

5. Visualize the distribution of durations **in minutes** for songs.



Solution:

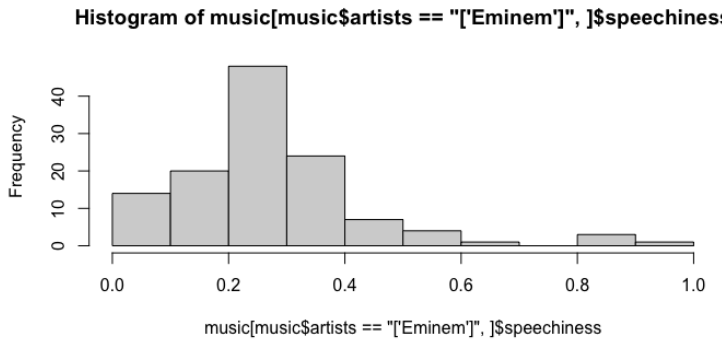
6. Mr. Merrick claims that a typical song has a duration of about 3.9 minutes. What is concerning about Mr. Merrick's claim?

Solution: Since the distribution for song durations is heavily skewed. Mr. Merrick's claim is likely too large.

7. What is the average energy of all Justin Bieber songs?

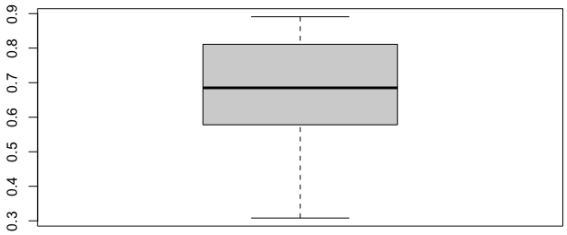
Solution: 0.5734

8. Visualize the distribution for the speechiness of Eminem's songs.



Solution:

9. Visualize the distribution for the danceability of all Justin Timberlake songs.



Solution: