

# Music recommendation based on binary search tree using the Spotify data

## Goals

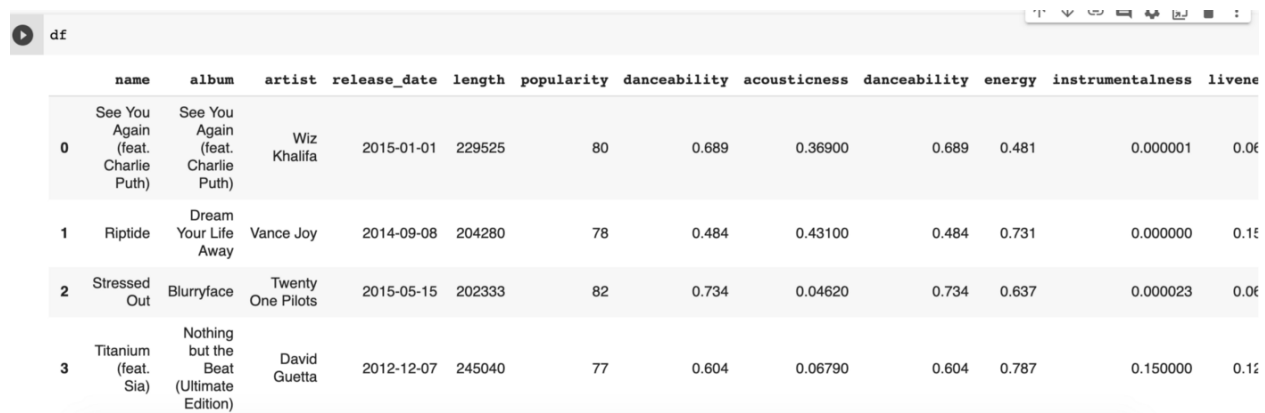
- Get the top 1000 popular songs from Spotify API
- Generate a tree graph based on the numeric properties e.g. danceability, valence, energy, tempo
- Ask user some questions, each question is related to the song property
  - Do you prefer quiet songs? (If so, loudness < 0.5 (range: 0 - 1))
  - Do you prefer dance songs? (If so, danceability > 0.5)
  - ...
- Do the binary search and recommend songs based on the user's response

## Data source:

- Spotify API

<https://developer.spotify.com/documentation/web-api/>

- Data will look like this:



The screenshot shows a Jupyter Notebook interface with a DataFrame named 'df'. The DataFrame contains 12 columns: name, album, artist, release\_date, length, popularity, danceability, acousticness, energy, instrumentalness, and liveliness. The first four rows of data are displayed, showing songs like 'See You Again' by Wiz Khalifa, 'Riptide' by Vance Joy, 'Stressed Out' by Twenty One Pilots, and 'Titanium' by David Guetta.

	name	album	artist	release_date	length	popularity	danceability	acousticness	energy	instrumentalness	liveness
0	See You Again (feat. Charlie Puth)	See You Again (feat. Charlie Puth)	Wiz Khalifa	2015-01-01	229525	80	0.689	0.36900	0.689	0.481	0.000001
1	Riptide	Dream Your Life Away	Vance Joy	2014-09-08	204280	78	0.484	0.43100	0.484	0.731	0.000000
2	Stressed Out	Blurryface	Twenty One Pilots	2015-05-15	202333	82	0.734	0.04620	0.734	0.637	0.000023
3	Titanium (feat. Sia)	Nothing but the Beat (Ultimate Edition)	David Guetta	2012-12-07	245040	77	0.604	0.06790	0.604	0.787	0.150000