



MENU

ANALYSIS

CONTACT

DATA ANALYSIS

SONG MOOD ANALYSIS

Play that funky music RIGHT!



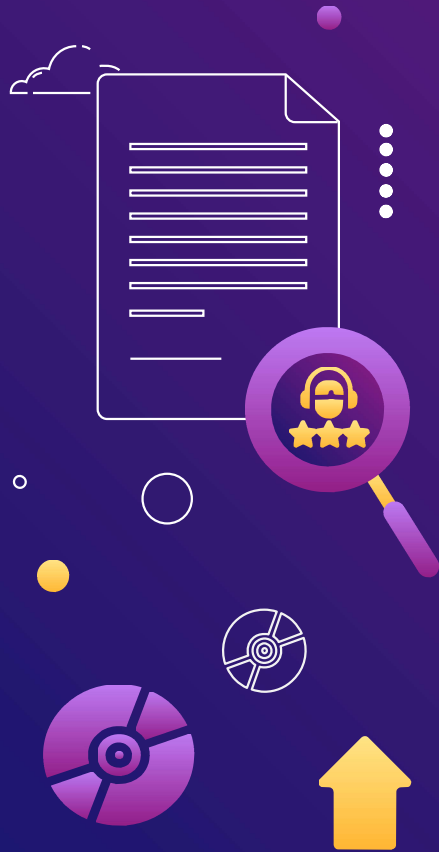


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HELLO

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Andi Cameron
Zach Ellsworth
Jamee Jenkins



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INTRODUCTION

Music can greatly alter the mood of the listener. It can help hype up a crowd at a party, or soothe as you wait on hold or in an elevator. Music triggers emotional responses whether positive or negative





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01

THE QUESTION



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PURPOSE

MUSIC

As connoisseurs of the music industry, we recognize the vast range of emotional release that music can induce.



LANGUAGE

The purpose of this study is to examine the language of music and attempt to anticipate the effects on a listener.



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QUESTIONS TO ANALYZE



ATTRIBUTES

How can rhythm, loudness, or other attributes of a song prompt an emotional response?



IMPORTANCE

Which attributes are most important in determining the emotional resonance of a song?



PATTERNS

Is there a pattern of attributes that could affect individuals similarly?





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02

WHAT WE DID



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DATA PREPROCESSING

DANCEABILITY

The higher the value,
the easier it is to
dance to the song

LOUDNESS

The higher the value,
the louder the song

TEMPO

The higher the value,
the faster the song is
played

id character varying (22)	danceability double precision	energy double precision	loudness double precision	valence double precision	tempo double precision	acousticness double precision
7lmeHLHBe4nmXzuXc0H...	0.47	0.978	-5.399	0.503	117.906	0.0261
1wsRitfRRtWyEapl0q22o8	0.599	0.9570000000000001	-5.763999999999999	0.489	103.68	0.0129
1hR0fIFK2qRG3f3RF70pb7	0.315	0.97	-5.4239999999999995	0.37	149.749	0.0234
2lbASgTS0DO7MTuLAXIT...	0.44	0.9670000000000001	-5.83	0.574	96.75200000000001	0.163
1M0TmnYQZ6fcM0c56Hd	0.426	0.929	-6.729	0.539	127.059	0.00162
1M0TmnYQZ6fcM0c56Hd	0.426	0.929	-6.729	0.539	127.059	0.00162
2g12s0D01MTuLAXIT...	0.44	0.9670000000000001	-5.83	0.574	96.75200000000001	0.163

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DATA PREPROCESSING CONT

ENERGY

The higher the value, the more energetic the song

VALENCE

The higher the value, the more positive mood of the song

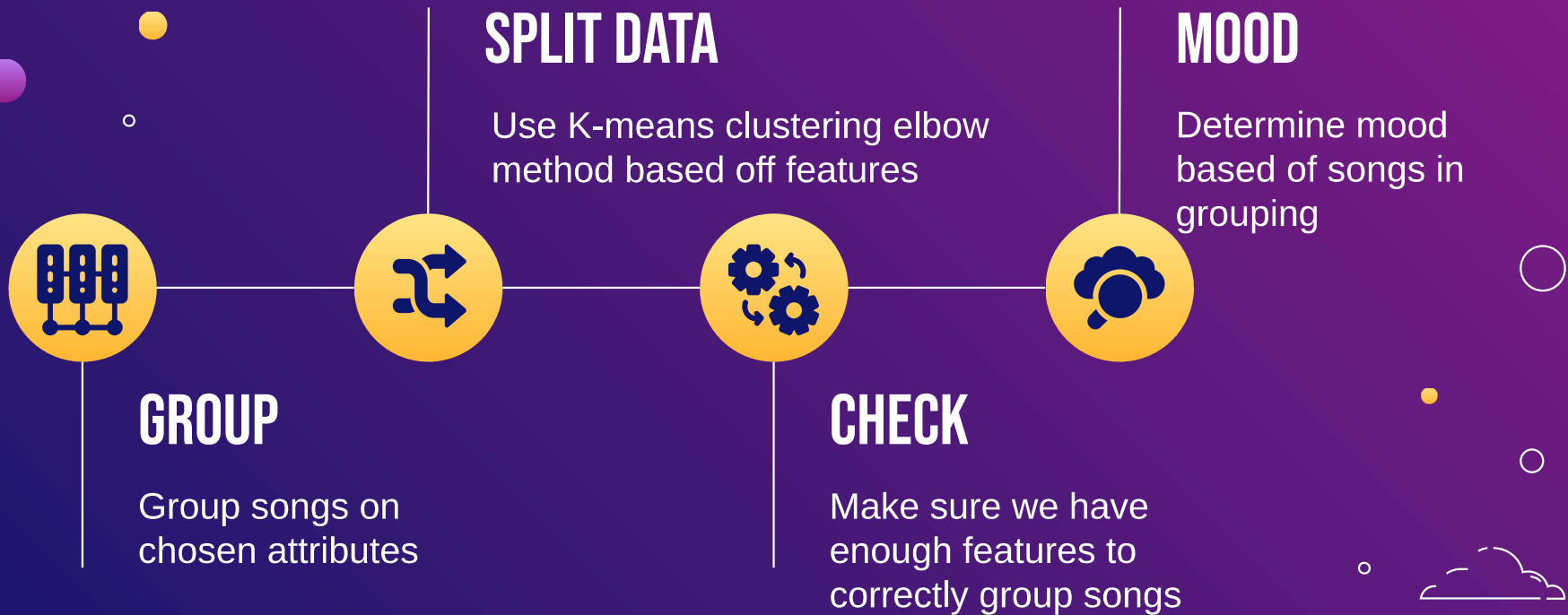
ACOUSTICNESS

A higher value would indicate acoustic instruments and a lower value would indicate electronic instruments

id character varying (22)	danceability double precision	energy double precision	loudness double precision	valence double precision	tempo double precision	acousticness double precision
7lmeHLHBe4nmXzuXc0H...	0.47	0.978	-5.399	0.503	117.906	0.0261
1wsRitfRRtWyEapl0q22o8	0.599	0.9570000000000001	-5.763999999999999	0.489	103.68	0.0129
1hR0fIFK2qRG3f3RF70pb7	0.315	0.97	-5.4239999999999995	0.37	149.749	0.0234
2lbASgTSOD07MTuLAXIT...	0.44	0.9670000000000001	-5.83	0.574	96.75200000000001	0.163
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1M0TmnY0Z6fcM0c56Hd	0.426	0.929	-6.729	0.539	127.059	0.00162
2g12s0D03MTuLAXIT...	0.44	0.9670000000000001	-5.83	0.574	96.75200000000001	0.163

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DATA ANALYSIS & MACHINE LEARNING





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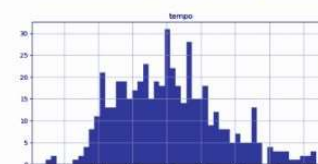
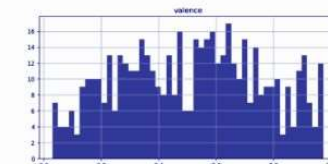
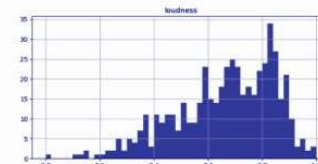
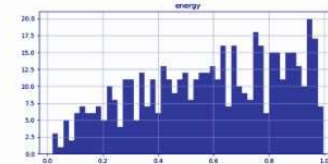
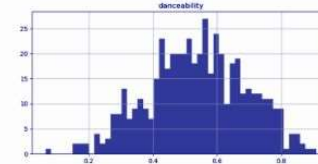
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DATA ANALYSIS

	Danceability	Energy	Loudness	Valence	Tempo	Acousticness
Mean	0.540939	0.591070	-10.166142	0.515204	121.336214	0.316986
Standard Deviation	0.151960	0.258203	4.126904	0.247071	29.497190	0.316747
Minimum	0.065700	0.019200	-25.189000	0.030500	49.179000	0.000003
25% Percentile	0.436000	0.390000	-12.624000	0.313750	98.366750	0.023375
50% Percentile	0.545000	0.613000	-9.592500	0.535000	120.000000	0.000000
75% Percentile	0.653250	0.814250	6.750000	0.701500	139.000000	0.000000
Maximum	0.909000	0.996000	-2.584000	0.974000	207.000000	0.000000

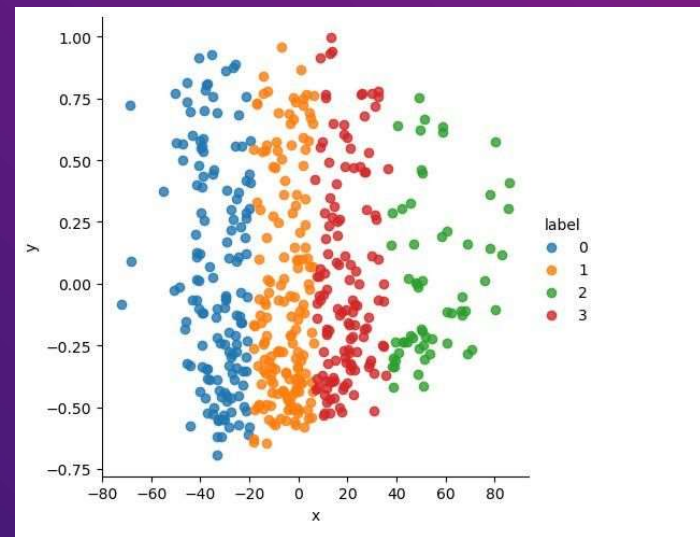
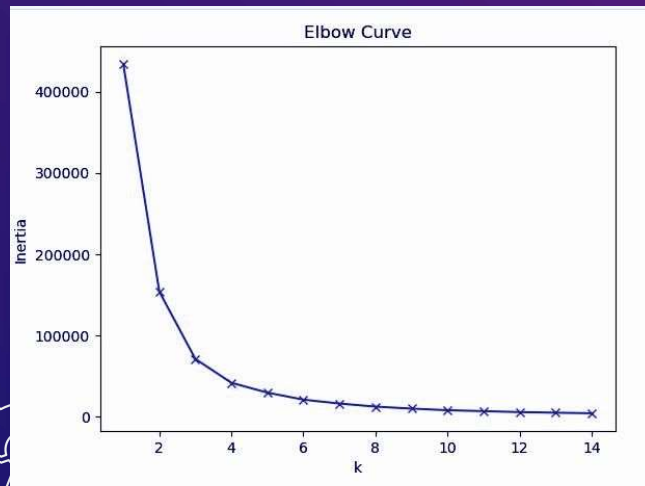


GROUP

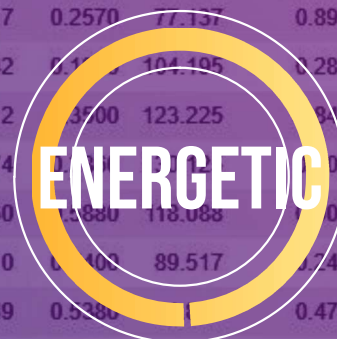
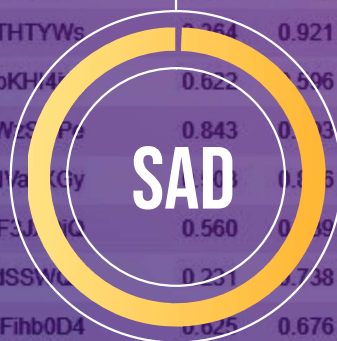
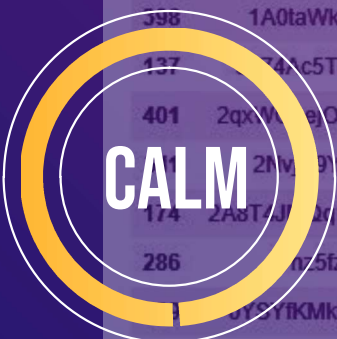


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SPLIT DATA



MOOD



	id	danceability	energy	loudness	valence	tempo	acousticness	label
146	7qCU1BGUeMw09K9DdxXZOV	0.521	0.425	-11.943	0.4580	163.332	0.399000	Energetic
81	75qoLt38t0tJMfArhH8n0f	0.602	0.685	-6.690	0.5490	98.007	0.525000	Sad
398	1A0taWkwkAt7i0RL7Ja5yV	0.439	0.149	-15.917	0.2570	77.137	0.892000	Sad
137	74Ac5TPH544Zdh06na1X	0.547	0.220	-15.942	0.1100	104.195	0.281000	Calm
401	2qxVWjOG5sE6qmC9v9ER	0.561	0.116	-14.612	0.3500	123.225	0.948000	Calm
174	2Nv9YfXNgXoK6CyyiZm	0.319	0.596	-12.574	0.0000	100.020	0.000000	Happy
174	2AsT4Jm1VAPZXqTHTYWs	0.084	0.921	-4.460	0.4800	118.088	0.01520	Calm
286	0z5fzfoEI7IQbKH4f	0.622	0.596	-9.010	0.4400	89.517	0.740000	Sad
215	0Y5YfKMk0JBI7mmWzSPs	0.843	0.003	-8.849	0.5380	100.000	0.475000	Sad
215	11CncGAYp8AHeZ1NfaXGy	0.000	0.000	-5.560	0.4610	107.415	0.185000	Calm
454	4WAMmqDol0S9z17F3Uj0C	0.560	0.009	-16.732	0.6010	201.672	0.473000	Energetic
309	2Nf9tO72meJ0NPqvdSSV6	0.231	0.738	-10.796	0.1960	140.800	0.000298	Happy
156	3gDe0R03dmJd4HqFihb0D4	0.625	0.676	-12.367	0.7620	144.527	0.461000	Happy
49	6AGrDsrNVFeTTi4sQHfqsY	0.417	0.365	-12.711	0.3070	172.692	0.741000	Energetic
366	31iMcUhWGu45qB4p43NOp9	0.365	0.185	-10.789	0.0898	152.464	0.674000	Happy



DATABASE

Using PgAdmin and SQLAlchemy, 2 tables were joined using id (song id).

- Spotify_track_info lists the id, name of song, and the artist
- Spotify_features lists the id and the chosen attributes: energy, loudness, valence, tempo, and danceability

Sample table was created to show the top 100,000 songs due to size limitation

spotify_track_info	
id	string
name	string
artists	string

spotify_features	
id	string
danceability	float
energy	float
loudness	float
valence	float
tempo	float





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DASHBOARD

Visualization and dashboard
produced through plotly
python libraries and
[dash]GitHub hosted at:

<https://neuralburst.io/MusicGroup>



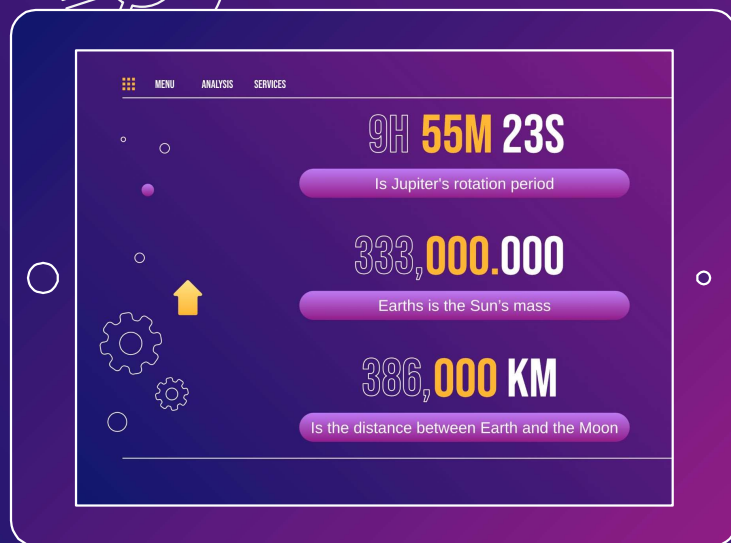


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INTERACTIVITY





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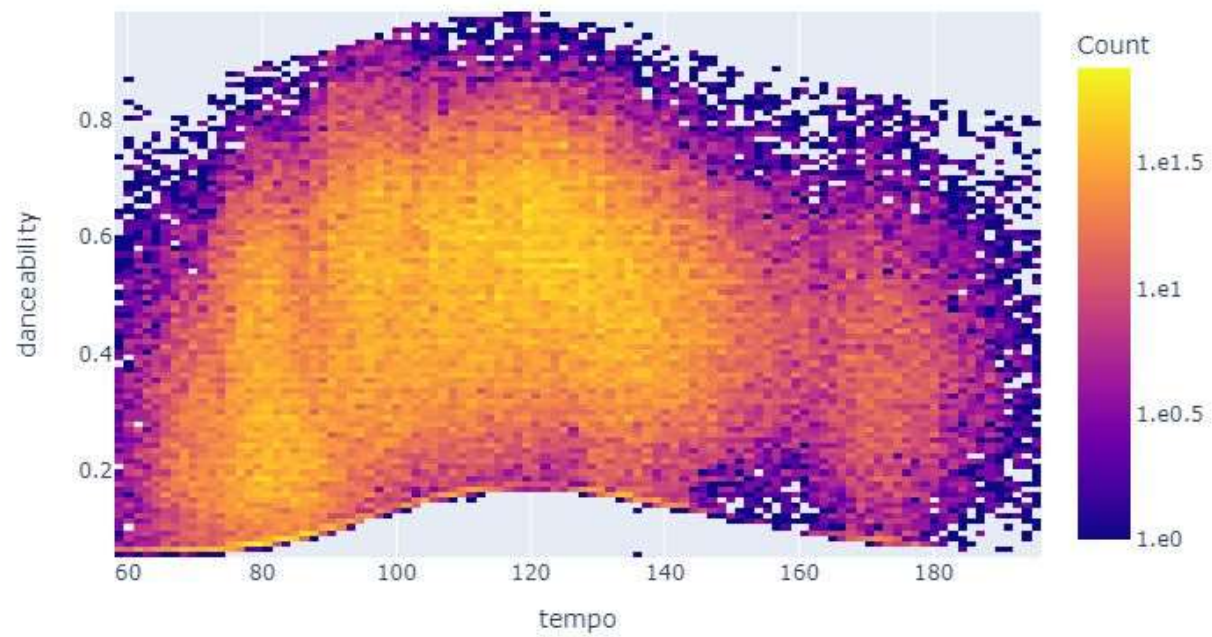
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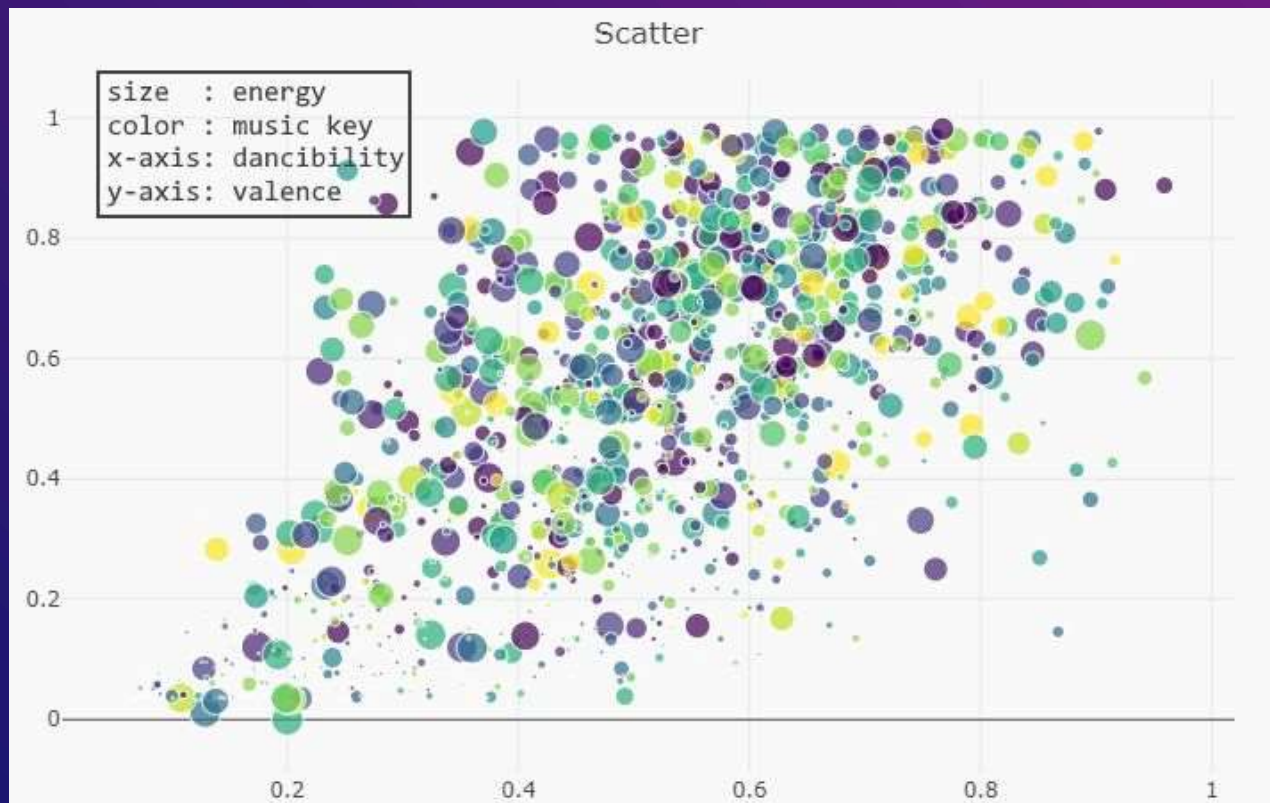
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WHAT WE FOUND









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RESOURCES





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RESOURCES/TECHNOLOGIES



SOURCE DATA

Kaggle: Spotify 1.2M+
Songs with track features

Obtained through the Spotify API

DATABASE MANAGEMENT

pgAdmin/postgreSQL
Python
VS Code
SQLAlchemy
Quick DBD for ERD development

VISUALIZATIONS

Google Slides
Javascript
Flask
Python
VS Code

ANALYSIS

Jupyter Notebook
Python

STORAGE

GitHub

DATA PREPROCESSING

Python
pgAdmin/postgreSQL





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THANKS!

DO YOU HAVE ANY QUESTIONS?



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