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Our Analysis

Taylor Swift Popularity:

Product of Skill or Personal Life?

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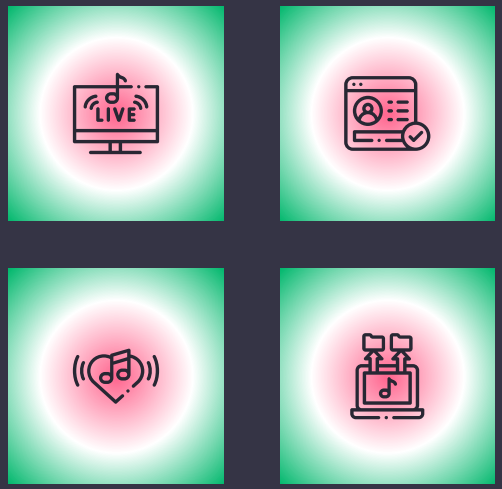
What is the reason for her popularity?

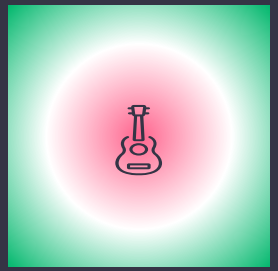


Is it because the musical features of her music are **more uniquely different** compared to other artists?

Or is it due to other factors? (Character, social media, countenance, fashion, etc.)

Our hypothesis is that Taylor Swift's Spotify musical features would have to be **significantly unique** to other artists' features to determine popularity.

Artists of Comparison - via Spotify



Country

Luke Combs

Morgan Wallace

Zach Bryan

Pop

Doja Cat

Miley Cyrus

Olivia Rodrigo

Collected from Spotify API:

The Data Dictionary

Popularity 0:01

How popular a track is

Energy 0:04

Perceptual measure of intensity and activity.

Danceability 0:02

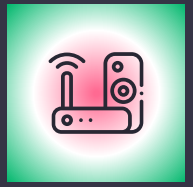
How suitable a track is for dancing

Loudness 0:05

Averaged across track

Acousticness 0:03

How acoustic a track is



Release Date 0:06

When track was released

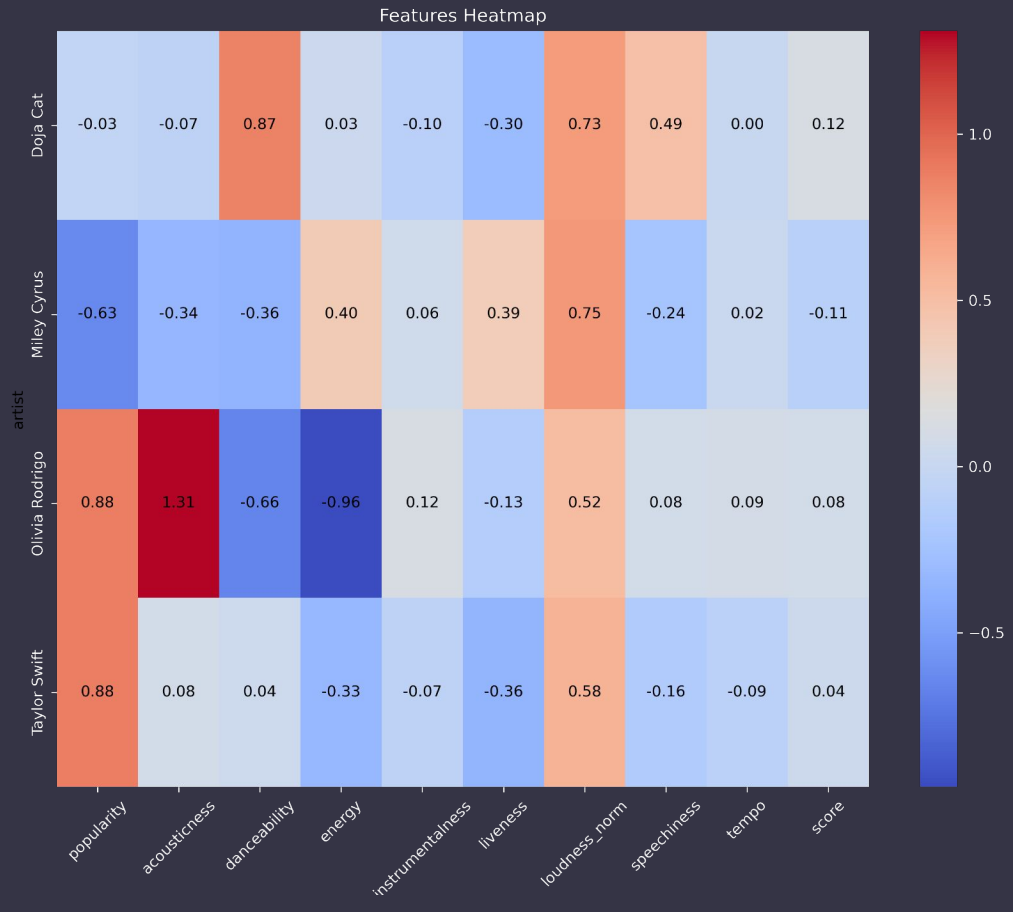
Feature Score Equation

Overall Feature Score =
(Popularity x 2) + Acousticness + Danceability +
Energy + Loudness + Liveness +
Instrumentalness + Speechiness + Tempo
/ 9 (total amount of weight)

*each feature was standardized.

Pop Artists based on Feature Score

#1	Doja Cat 0.121742	
#2	Olivia Rodrigo 0.077040	
#3	Taylor Swift 0.036838	
#4	Miley Cyrus -0.110367	


Features Heatmap
artist
Doja Cat
Miley Cyrus
Olivia Rodrigo
Taylor Swift
-0.03 -0.07 0.87 0.03 -0.10 -0.30 0.73 0.49 0.00 0.12
-0.63 -0.34 -0.36 0.40 0.06 0.39 0.75 -0.24 0.02 -0.11
0.88 1.31 -0.66 -0.96 0.12 -0.13 0.52 0.08 0.09 0.08
0.88 0.08 0.04 -0.33 -0.07 -0.36 0.58 -0.16 -0.09 0.04
popularity
acousticness
danceability
energy
instrumentalness
liveness
loudness_norm
speechiness
tempo
score
1.0
0.5
0.0
−0.5

How is Taylor's Music Unique?

 # Acousticness
Different from Olivia and Miley.

 # Danceability
Significant to all.

 # Energy
Significant to all.

*used the Mann-Whitney U test to compare

Taylor Swift's "Cruel Summer" Sentiment

The lyrics in "Cruel Summer" are about:

- An **intense, casual** relationship.
- Summer fling vibes.
- Possibly about her secret boyfriend then, Joe.

What fans are saying:

"It's such a **quintessential Taylor song**: a catching pop song with such good, interesting, story-driven lyrics."

"Cruel Summer is a four-year-old song but has had crazy high streaming numbers since tour started. A few other songs have done this in recent history, **thanks to tiktok**."

"Taylor has written the part 'ooh oh oh~' deliberately with the objective of **making it a chant** for the crowd, as she already has done on the **eras tour**"

Cruel Summer Scores

#1	Popularity	
#1	Energy	
#1	Speechiness	
#1	Tempo	

Olivia Rodrigo's "vampire" Sentiment

The lyrics in "vampire" are about:

- Making mistakes.
- Feeling used.
- Being warned about an ex.
- Olivia fans believed it was about Taylor Swift (Olivia says NO).

What fans are saying:

"THE SONG IS AMAZING"

"Is getting **past the teen angst**, and is instead **looking back on her life**, realizing and analyzing what happened. it's truly **a masterpiece** and she's done it once again"

"I **can't stop singing** BLOODSUCKER, FAME-F*CKER, BLEEDING ME DRY LIKE A GODDAMN VAMPIRE"

vampire Scores - EDIT

#1	Popularity	
#1	Energy	
#3	Speechiness	
#4	Tempo	

What does “Best” mean?

	album	artist	score
0	Hot Pink	Doja Cat	0.291380
1	Planet Her	Doja Cat	0.279404
2	Scarlet	Doja Cat	0.269243
3	GUTS	Olivia Rodrigo	0.234863
4	Lover	Taylor Swift	0.201466
5	SOUR	Olivia Rodrigo	0.194110
6	ATTENTION: MILEY LIVE	Miley Cyrus	0.115963
7	Endless Summer Vacation	Miley Cyrus	0.094545
8	Planet Her (Deluxe)	Doja Cat	0.078650
9	SHE IS COMING	Miley Cyrus	0.056855
10	Midnights	Taylor Swift	0.052652

Swift’s *Midnights* won Best Pop Vocal Album of the Year (Grammys 2024)

However, Midnights comes in 10th using weighted score.

Country Artists based on Feature Score

#1	Morgan Wallace 0.124940	
#2	Zach Bryan -0.043593	
#3	Luke Combs -0.057495	
#4	Taylor Swift -0.139977	

Country: How is Taylor's Music Unique?

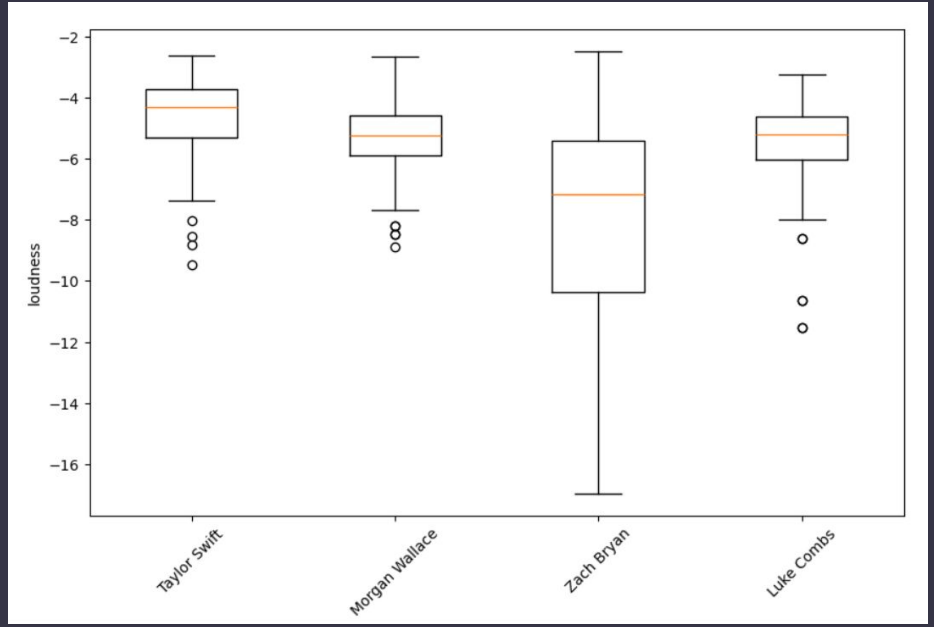
 # Speechiness
Different from Zach and Luke.

 # Loudness
Significant to all.

 # Acousticness
Different from Zach and Morgan.

 # Energy
Significant to all.

How is Taylor's Music Unique?



Loudness is actually unique to pop music as it is more loud due to the way it's recorded and how artists are mic'd up.

Plan for Automation in AWS

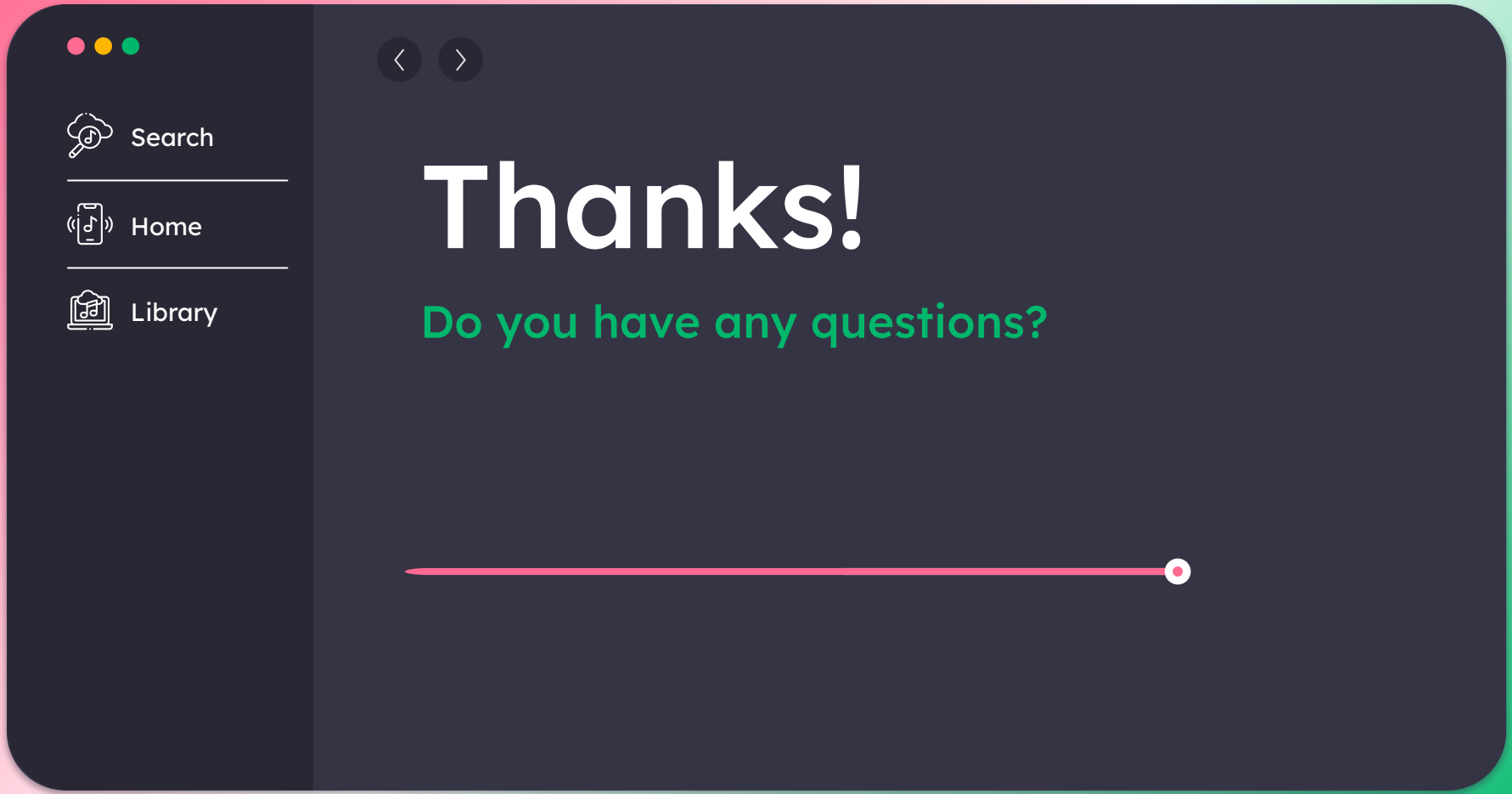
Glue	Connect Spotify API and Obtain Data from Top Artists
S3	Ingesting and Storing Data
Redshift	Storing in Data Warehouse
Tableau	Create visualizations
AWS Sagemaker	Conduct Analysis

Conclusion & Next Steps

Conclusion:
We will accept or reject our hypothesis upon further analysis.

Next Steps:

- Look at qualitative information of Taylor's popularity.
- Enhance our current analysis.
- Automating in AWS.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