

A close-up photograph of a person's hands holding a black smartphone with a red case. The phone screen displays the green Spotify logo. The background is a blurred, light-colored surface.

BUILT FOR  
HYPE RECORD LABEL

# THE SPOTIFY POPULARITY PREDICTOR

Presented by Shawn Samuel





# Can we predict if a song will be popular on Spotify?



# Presentation Flow

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## Topics To Cover

Business Understanding  
Data  
Methods  
Results  
Next Steps

# Business Understanding

*Who is this for?*

- Record Labels
- Music Marketing Agencies
- Distributors

*What is important?*

- Optimize on Precision (↓ False Positives)
- Consider F1 Score ( ↓ False Negatives)

# Why Spotify?

345 Million Users

70 Million Songs

60,000 songs  
added/per day

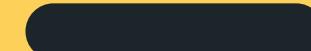


# THE DATA



*175,000+ Songs*

Between 1920 - 2021



*19 Features Per Song*

Including columns like energy, danceability, tempo, loudness, release date, etc.

*From Kaggle*

Created by Yamac Ay through  
Spotify API

*Proprietary Popularity*

Adapting Spotify's own  
popularity metric

# METHODOLOGY

## ● **Data Preparation**

Clean data and prepare for analysis and modeling

## ● **Dive Into Modeling**

Test and tune models like Logistic Regression, Random Forest, Gradient Boosting, etc.

## ● **Define Target**

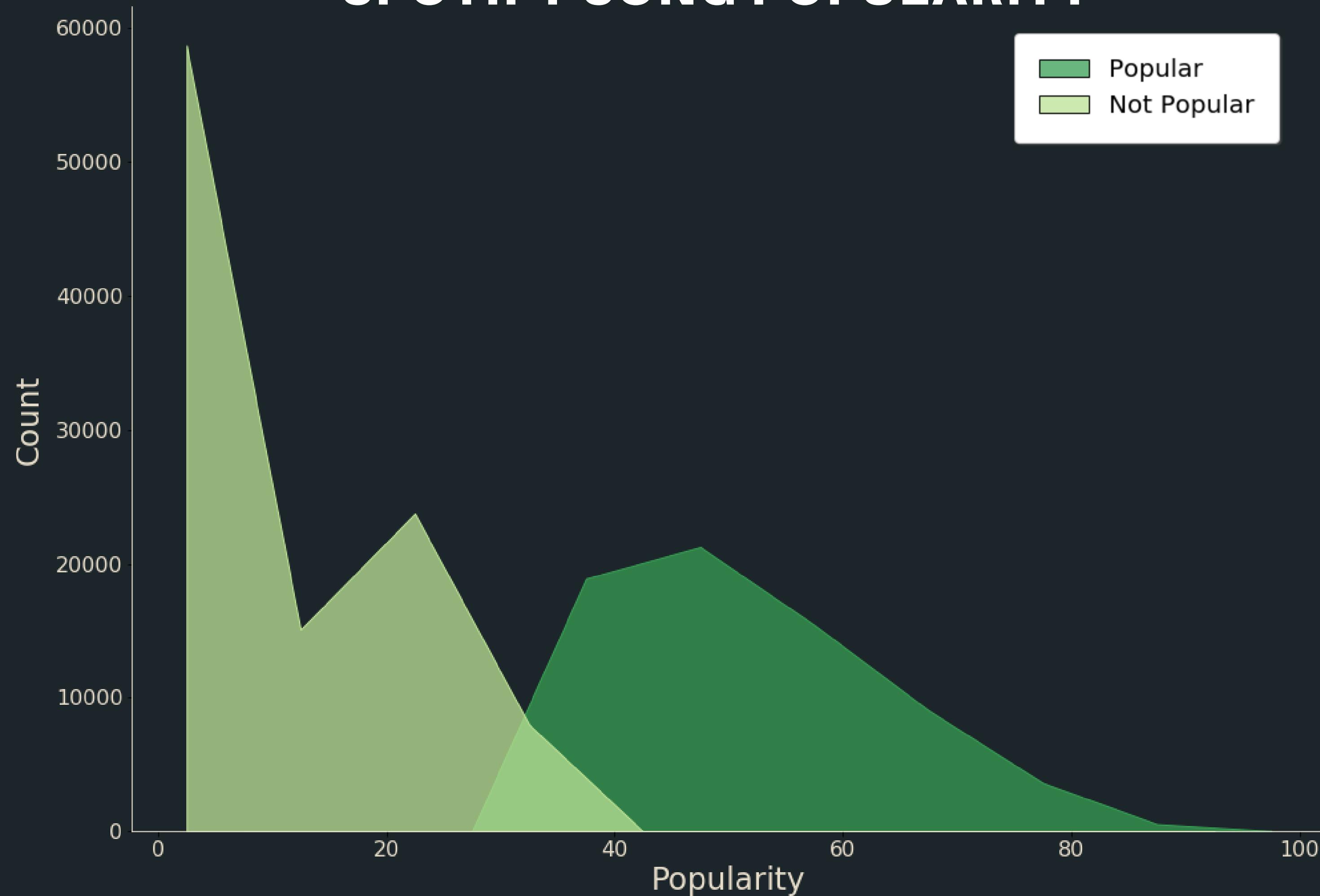
Engineer Spotify's proprietary popularity rating into a binary feature

## ● **Derive Results**

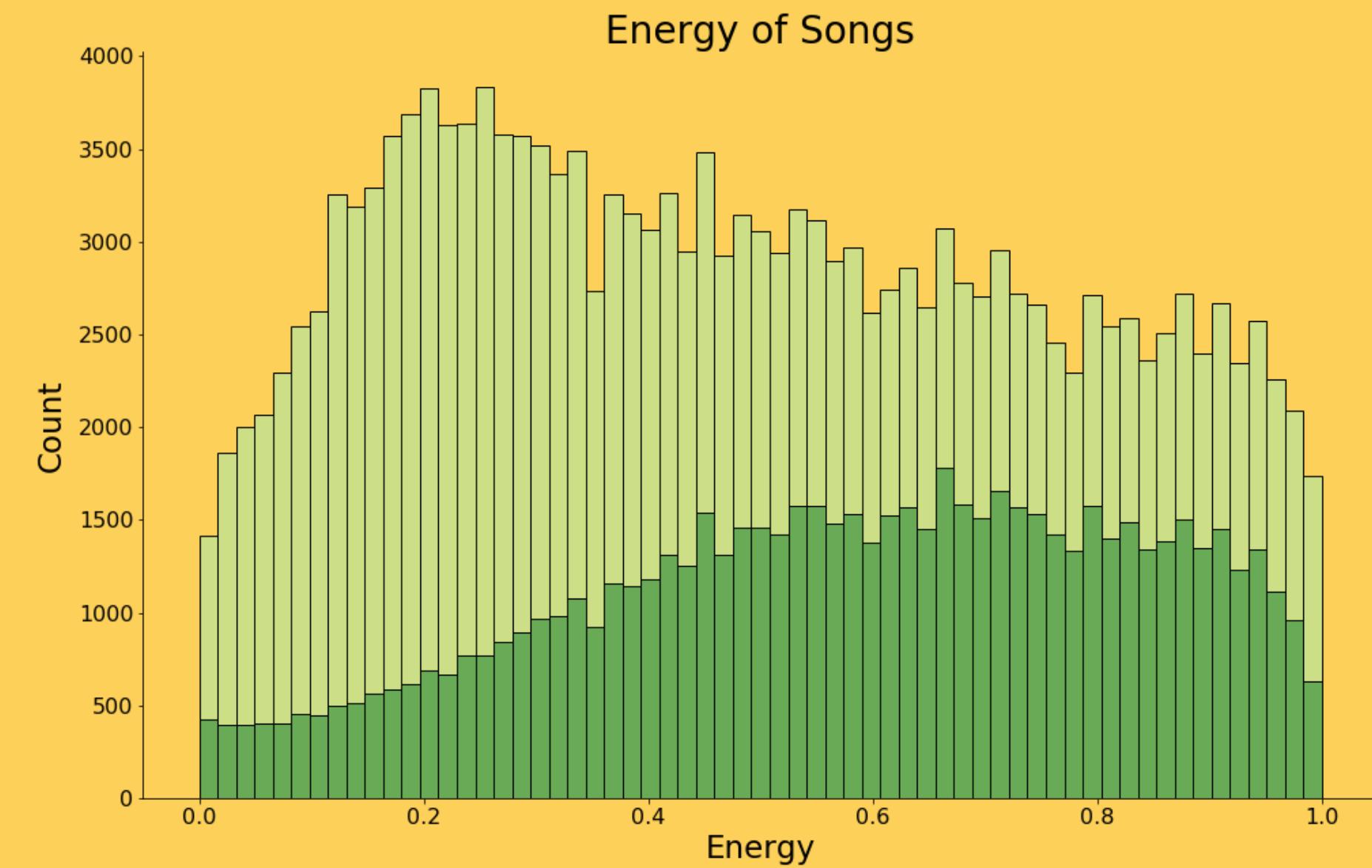
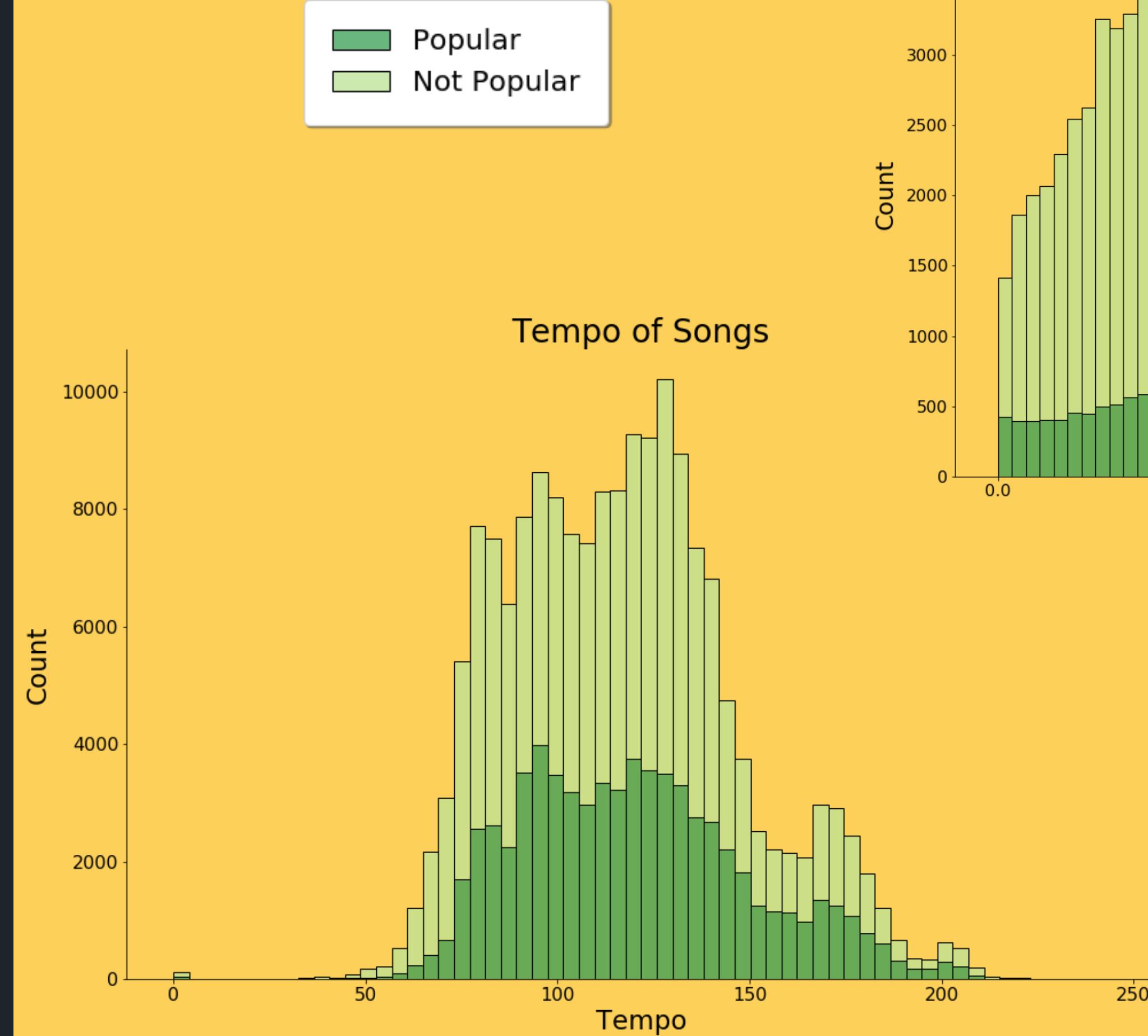
Interpret scores and feature importance to make recommendations

# SPOTIFY SONG POPULARITY

TARGET

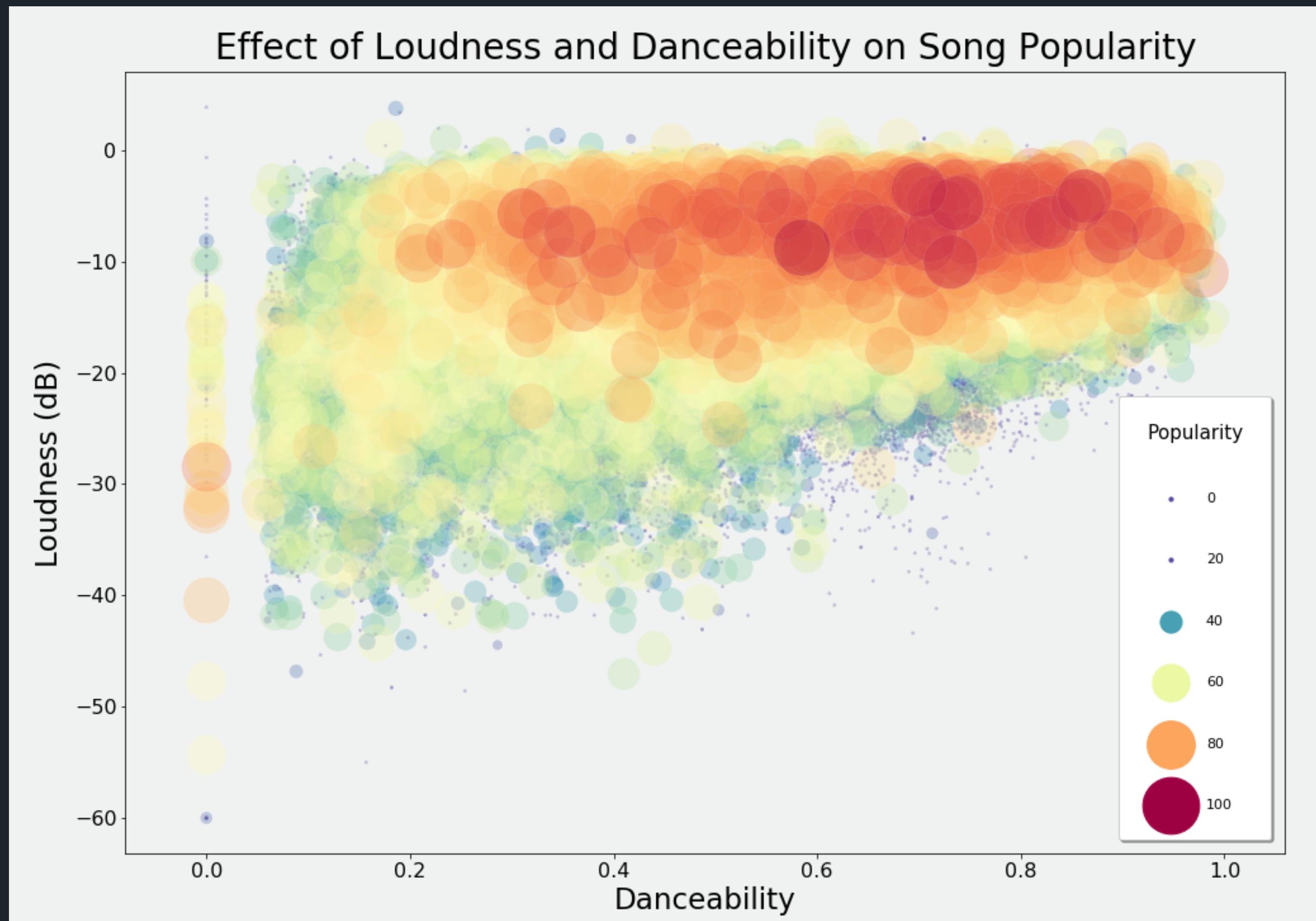
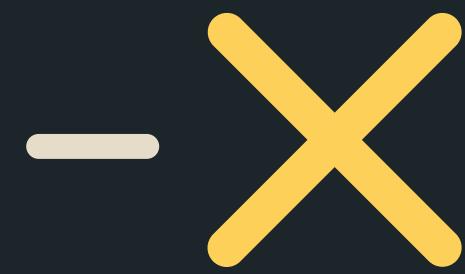


# FEATURES



# RESULTS

Precision: 73%



# Future Work



Engineer dropped  
features (eg. what is the  
effect of release date)

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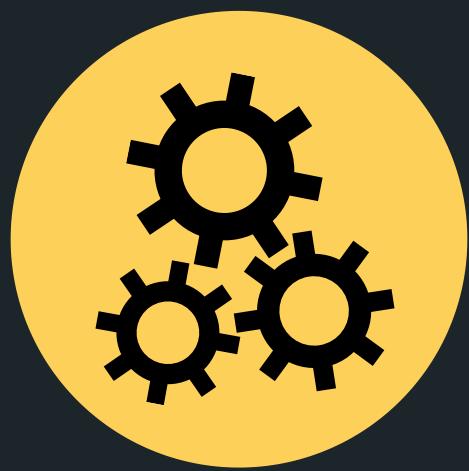


Tune XGBoost Model for  
a more balanced score

# Future Work



Engineer dropped  
features (eg. what is the  
effect of release date)



Tune XGBoost Model for  
a more balanced score



Pair with lyrics database  
to see the effect of lyrics  
on popularity



# THANK YOU

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