# Predicting Song Popularity with ML

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# Overview

**Rabbitt Record Company wants to know…**

- **Can you predict song popularity using audio statistics?**
- **What features most influence song popularity?**

# The Data

- From Kaggle
- Top 2000 tracks on Spotify from 2000-2019.
- 18 descriptive audio statistics

# Classification:

**Which category does a song belong to?**

**Class A**

**80th percentile in popularity**

**Class B**

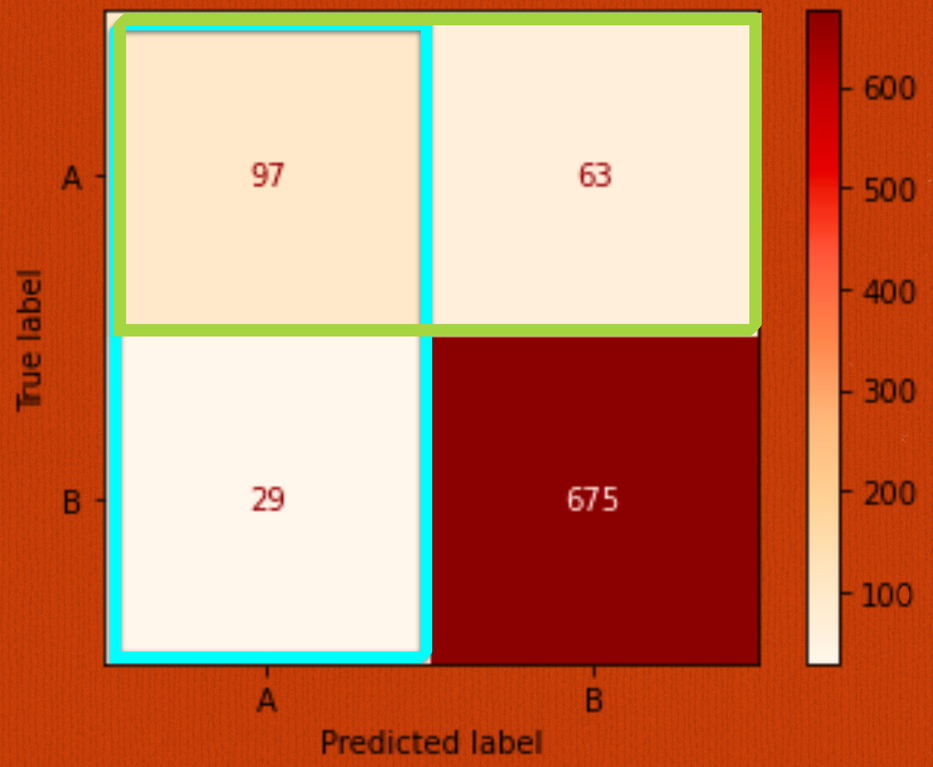
**< 80th percentile in popularity**

# Results

**Confusion Matrix**

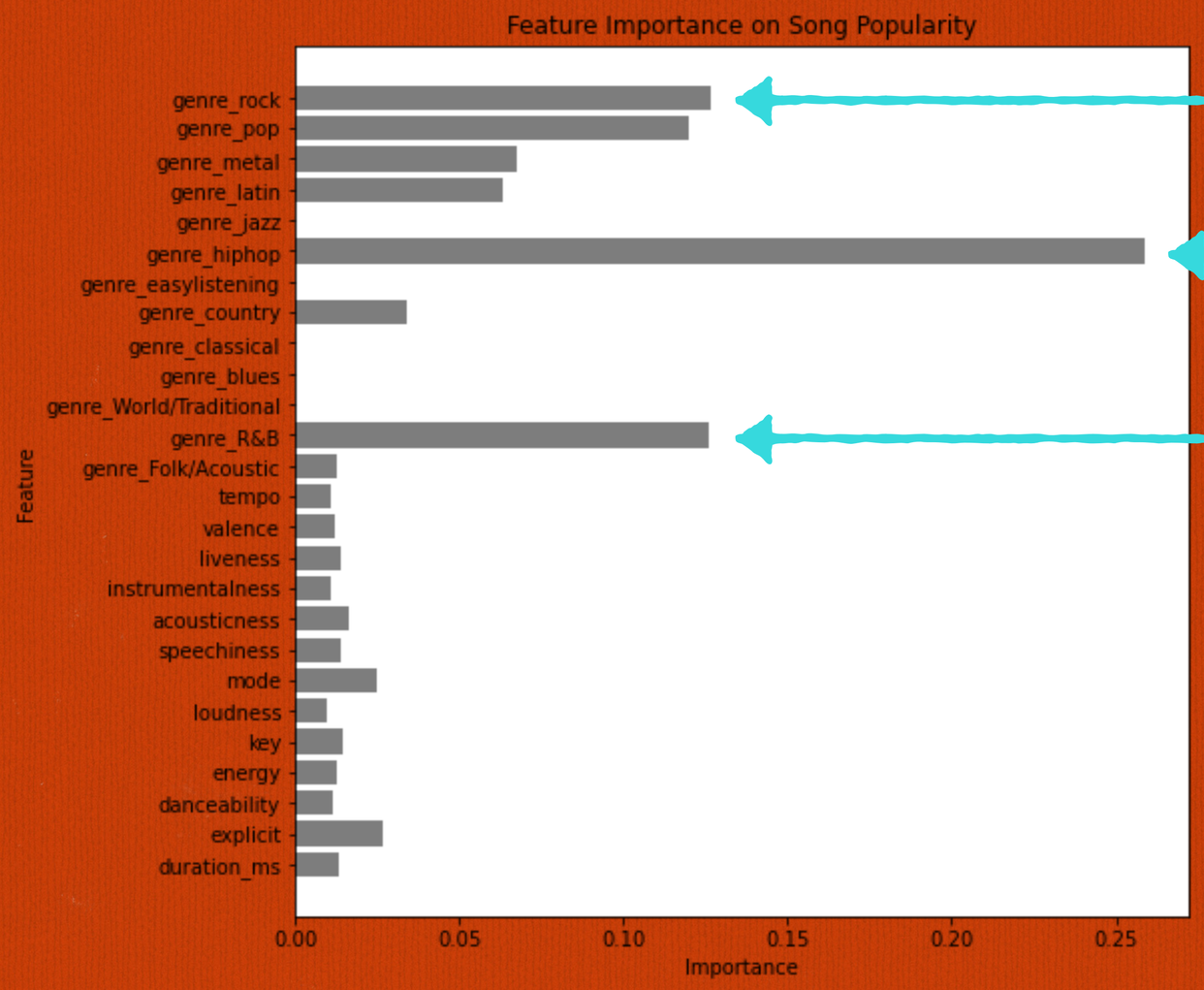
| | | Predicted | |
|---|---|---|---|
| | | Positive | Negative |
| Ground-Truth | Positive | True Positive | False Negative |
| | Negative | False Positive | True Negative |

**Final Model Predictions**




**Precision: 77%** **Recall: 63%**

# Results




**Rock Genre**

**Hip-hop Genre**

**R&B Genre**

**Has the highest importance in predicting song popularity**

# Conclusions

- Of all the predictions our model made, **89% were correct.**
- **77% certainty** new song will be popular
- Consider **Hip-hop, R&B, and Rock** genres

# Limitations and Future Analysis

- Explore additional classification models
- More extensive hyperparameter tuning
- Find more recent top songs
- Explore linear regression

Thank
You

# Questions?

**You can reach me at:**

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**For a more detailed analysis and methods behind this presentation, please visit:**

**https://github.com/trabbitt90/Song-popularity-with-ML**