Pop Genre Classification

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Summary

Objectives:

- ➔ To build a classification algorithm that correctly identifies pop songs.
- ➔ To determine what features are important when classifying pop songs.

According to the models:

- ➔ Speechiness, danceability, acousticness, and popularity were the most significant features that correlated strongly with our model and labels (whether the song is pop or not pop).

Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions

Business Problem

- ➔ Build a classifier that can identify pop songs.

- ➔ Determine what features of a song are important when classifying songs as pop or not pop.

Data

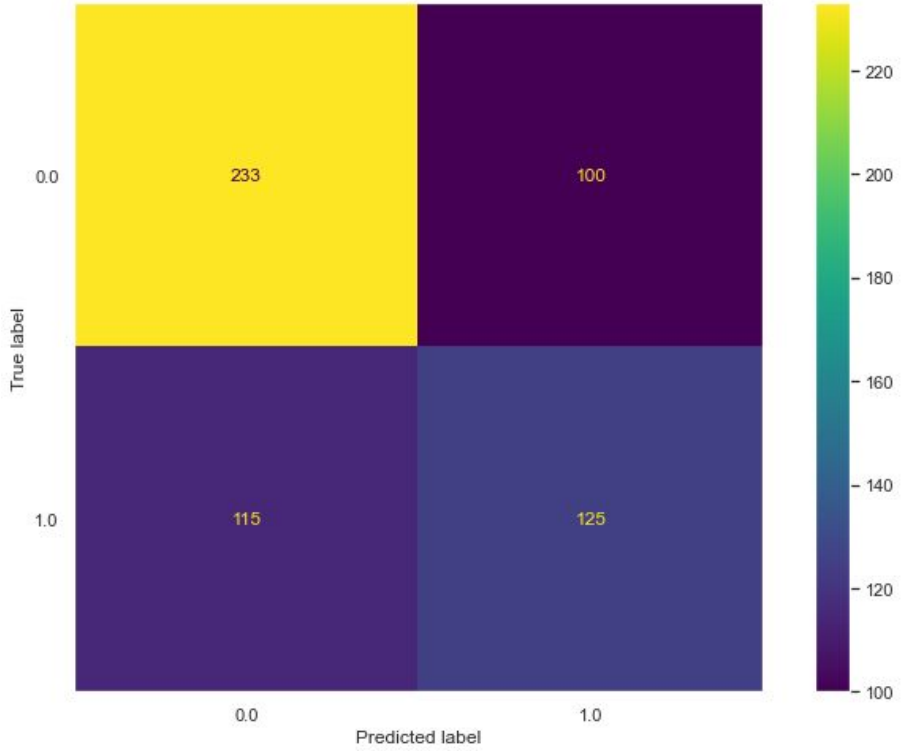
- The initial dataset was gathered from Kaggle, and lists the top 100 songs from Spotify from each of the last 24 years (excluding 2024).
  - 14 columns
  - 2385 records

- The final dataset contains scaled numerical data and a “pop song” column (our target), that identifies each record as pop or not.

Modeling

- ➔ Many models were ran, but selected the Support Vector Machine (SVM) model based on its high precision score.
- ➔ Models were evaluated based on precision, in an effort to reduce false positive case from occurring.

Modeling Results

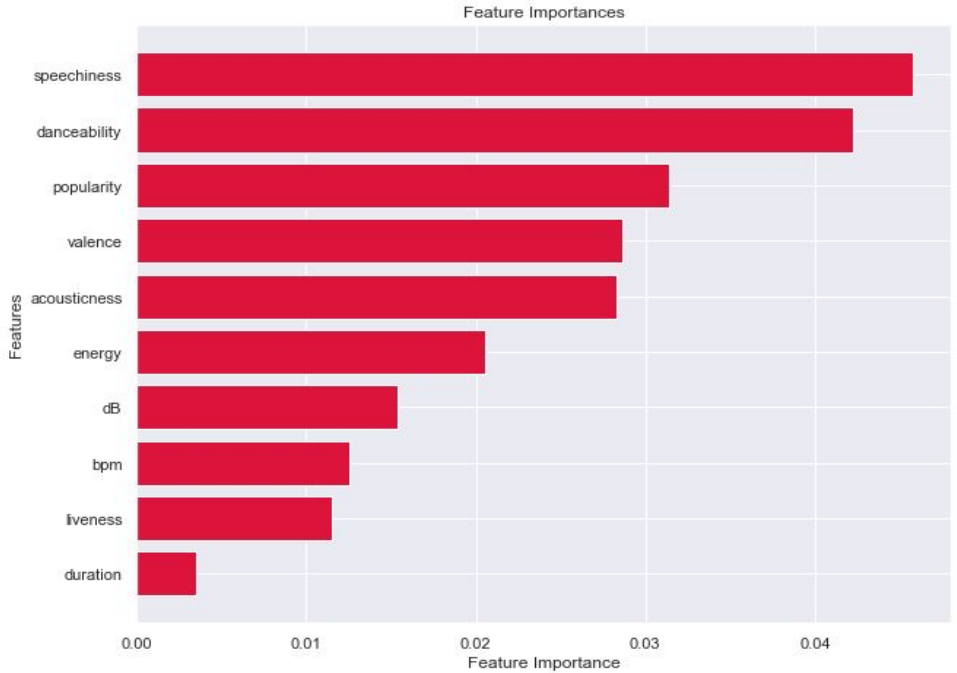


➔ The model is 55% precise, and 62.5% accurate.

➔ The model reduced the false positive count to 100.

Modeling Results (cont.)

- ➔ Speechiness, danceability, and popularity are the most important features to this model.
- ➔ Speechiness, danceability, and acousticness highly correlated with the target.



Conclusions

- The SVM model is best for classifying pop songs, and the most important features are:
  - Speechiness
  - Danceability
  - Popularity
  - Acousticness

- Further work could include:
  - Adding more song data to better train the algorithm.
  - Reduce the complexity of the model to only the important features.
  - Increase the range of hyperparameters for model tuning.

Thank You!

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