

The image features a dark navy blue background. In the top-left corner, there are several parallel teal lines that form a corner-like shape, extending towards the center. In the bottom-right corner, there are several parallel teal lines that form a diagonal shape, extending from the bottom edge towards the center. The title 'Melody in Emotions' is written in a large, white, sans-serif font, centered horizontally in the upper half of the image. Below the title, the author's name 'DANISH JAMES' is written in a smaller, teal, sans-serif font, also centered horizontally.

# Melody in Emotions

DANISH JAMES

# Objective

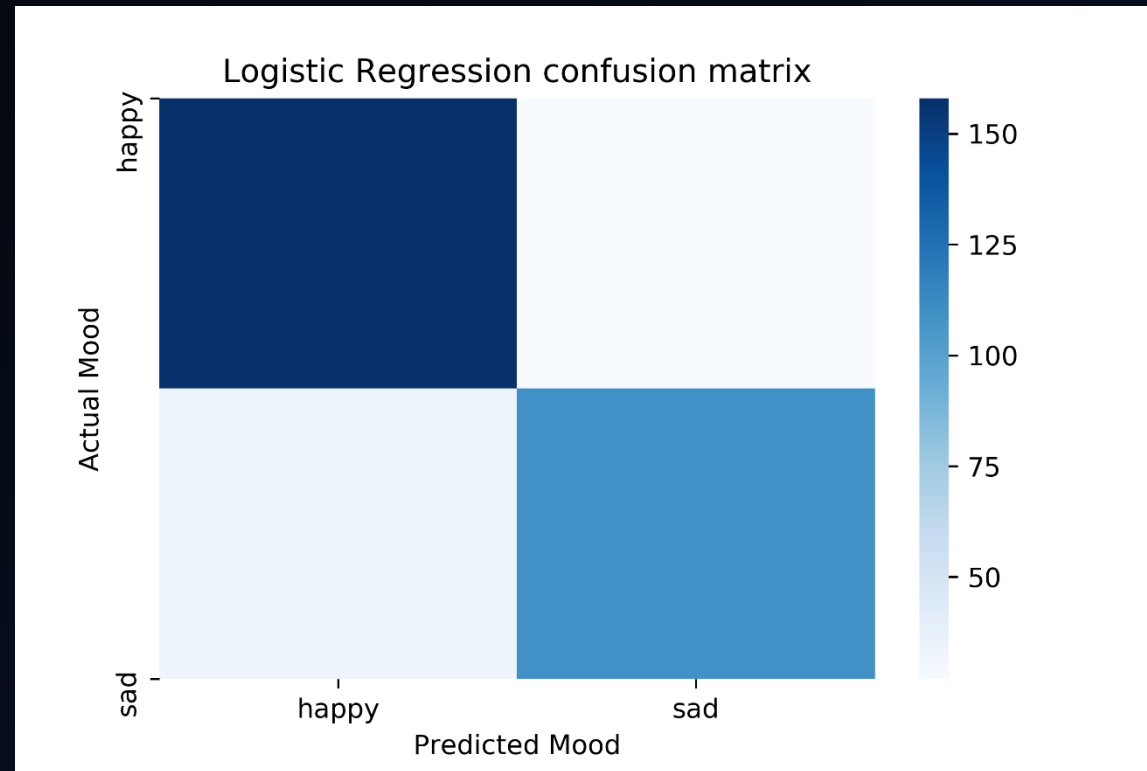
- Musical taste varies depending on emotional state
- Can we determine what emotion a song invokes?
- Analyze low level features from Spotify to classify songs by emotion

# Methodology

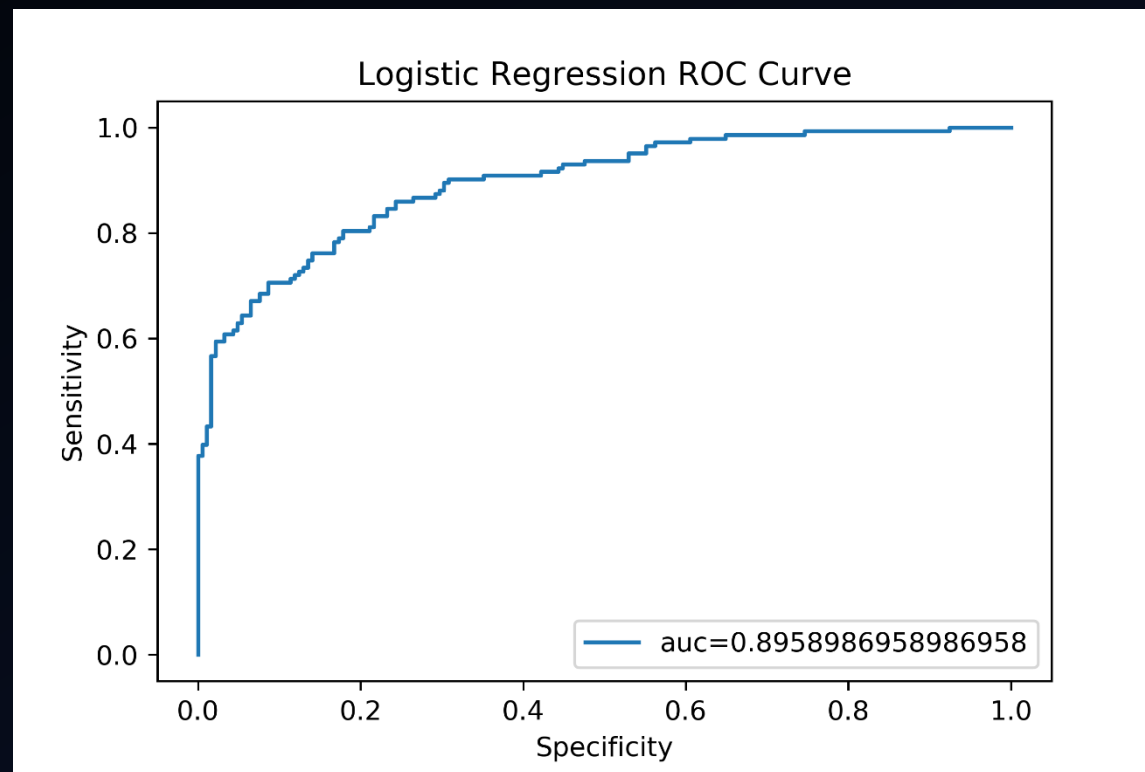
- DATA
  - Audio features pulled from Spotify API
- TOOLS
  - Python, Pandas, Numpy
  - Spotify API via Spotipy
  - Sklearn, matplotlib, seaborn

# Results

- Best model was Logistic Regression



# Results



# Conclusion

- Model does a good job at predicting happy verses sad
- Is slightly better at predicting happy songs overall
- Very low rate of false positives and negatives

## Further Work

- Self-curated playlists to appropriately capture more than two emotions
- Implement audio sample analysis & lyrical analysis
- Final goal of website for playlist analysis and recommendation

Thank you





# Appendix

- <https://developer.spotify.com/documentation/web-api/>
- Utilized ~3,000 songs, pulled from the various curated Spotify mood playlists
  - Playlists had issues with duplicate songs between playlists
  - Not all songs had audio samples to pull so full audio analysis could not be conducted on the entire dataset
- Other models utilized include KNN, Random Forest, and Naïve Bayes
  - Random Forest was also a good model, chose Logistic due to its simplicity and fast run time