# Classifying Speech

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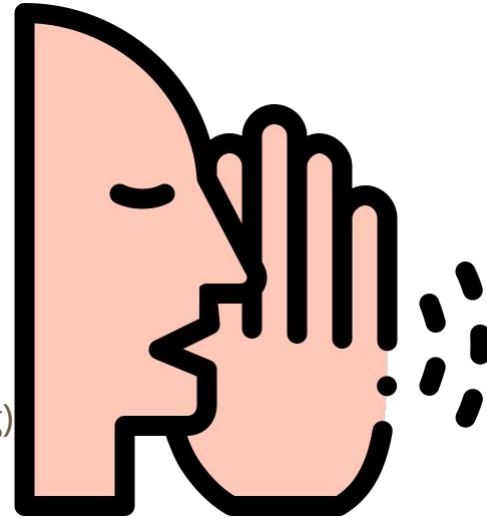
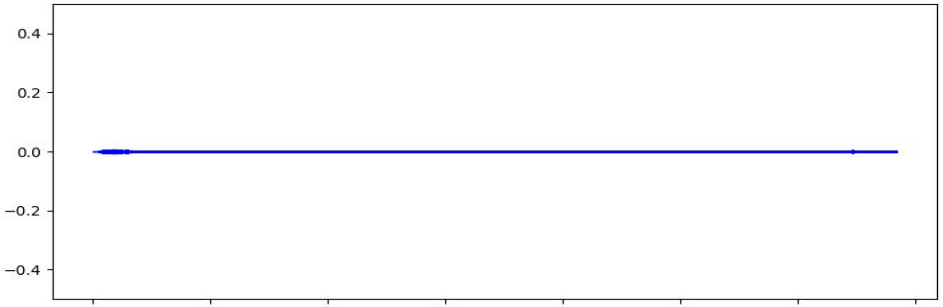
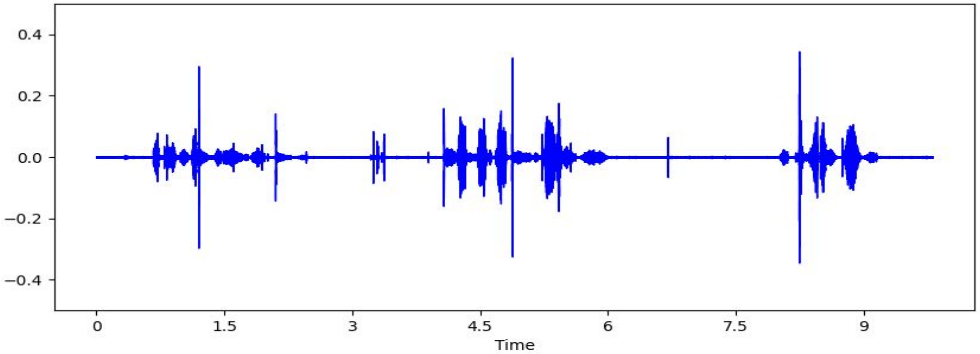
# Our Project

- Our goal is to create a program to classify the type of speech present in a voice file
- Possible outcomes  of the program
  - Talking
  - Not talking
  - Whispering
- Each group member provided multiple different audio files
  - Multiple 10s samples of each audio(talking, not talking, and whispering)

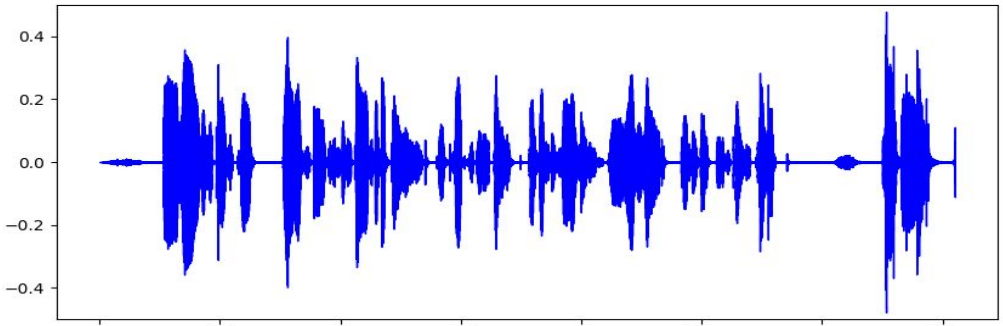





Not Talking



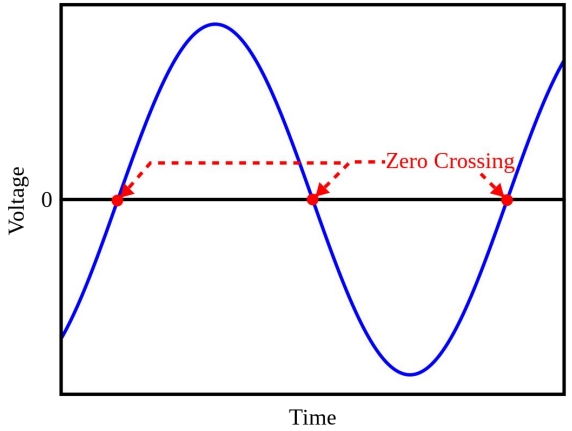

Whispering

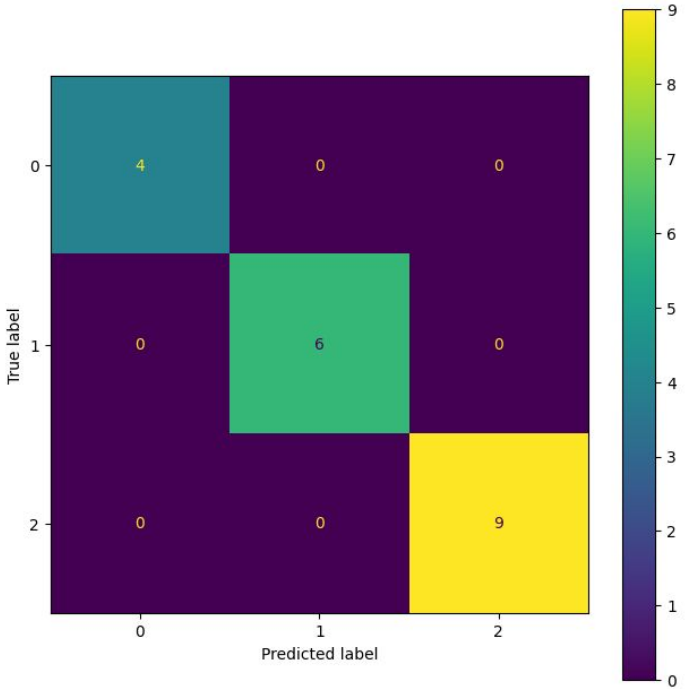



Talking

# Methods

- Utilized zero crossings, MFCC, amplitude, RMS, spectral contrast
- Based off of the assignment 4 code, which detected features.
- Used the audio files we recorded to test the code
- Used the decision forest from assignment 4






# Confusion Matrix

# Results


- Could be utilized for auto captioning and audio description in television or videos
- What we learned:
    - The features are easily distinguishable between the three types of speech
- Could be used by smart devices and voice assistants
    - Alexa has a whisper mode where it detects if the user is whispering or not to it and will respond in the same manner
    - We could detect more types of speech, did only three because of time constraints
    - **UPDATE:** Added code, most important features were the Mel Spectrogram and MFCC