# METHODOLOGY

For performing the task, as per stated in the problem statement, I collected the data from the Github “<https://github.com/Jakobovski/free-spoken-digit-dataset>” .

The system so designed in this task can showcase the following results:

* The data will be classified into the 9 index of 3 persons’ recording.
* We can probably guess the ethnic race using this.

The backend system is mostly designed on Python. All the data collection and analysis was done with the help of python scripts. The entire architecture used in this system is broken into several modules, each performed by single python script having its own specific function.

# DATA COLLECTION AND INSERTING INTO THE DATASET

## The data collection was done from the Github link. I, at first, loaded the data, which was in .wav format, to the data set for all the 1500 recording given. Next I tried finding the feature matrix of the recordings given using librosa library. I extracted the mfccs (  Mel-frequency cepstral coefficients ) of all the given recordings in order to get a index for all the recordings that would in turn help me to get the independent and dependent variable of the data.

# DATA ANALYSIS

The librosa library was used to merge all the given recording as a single python list. For that I iterated all the file and stored their location as well as the mfccs as X (Dependent Variable) and the index no(1st numeric term of the extracted file name ) as the Y (Independent Variable). Then I used the GBC(Gradiet Boosting Classifier) classifier to classify the classes. I printed the Train Loss and Remaining Time for our convenience. Then I put some of the .wav files in a test folder that I created to test the trained data

# RESULTS

At the end of this mini project we were able to get the index no of the random recordings and the outut are almost the same as the required training set