**TECHNICAL REQUIREMENTS DOCUMENT**

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Approved Product Name: SPEECH ANALYZER

Version: MRD 0.1

Author: Group 2

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1. **GENERAL INFORMATION :**
   1. **PURPOSE:**

The main motive to determine the different characteristics of an audio format and to differentiate those to determine the gender and to evaluate when it is silent. This would help us to extract relevant information for various scenarios and would able to determine accurate conclusion during analysis.

* 1. **SCOPE:**

The project scope is to do determine the gender using voice data which can be further used for different analysis.

1. **TECHNICAL REQUIREMENTS:**
   1. **PROCESS:**

When it comes to analysing there are ‘n‘ number of ways of implementation. The major requirement for this project is to obtain the dataset from the android application. After obtaining the dataset the processing starts i.e. visualizing and removing the outliners to obtain a proper structured or semi structured data. The more attributes considering during the processing stage more refined data would be. We would use the machine learning process to analysis the data and then train the machine to determine the gender with provided dataset.

* 1. **SYSTEM REQUIREMENT :**

Since the data would be huge, we would require server to manage and update as per requirement. Also, we can use google collab for the same problem or an IDE like juypter notebook with a server using the local system as a server might crash it. The project mainly deals with the software applications. The whole project would be coded with python based on that we would use the libraries. For instance, to get the required attributes from the wav file we would use pyaudio. We would train the machine to determine the difference audio characteristics one it comes to timber and pitch to differentiate the gender. Provide the required analysis details to the android application.

**Operation Workflow:**

1. Copy the Datasets into the relevant FilePath.
2. Convert the Audio Files into .WAV format.
3. Run the R Program Code to access the relevant features.
4. Save the .CSV file into the File path of Jupyter Notebook.
5. Run the .IPYNB file with Jupyter Notebook.
6. Look at the predicted results.