SYNOPSIS

1.	**Title of the Project**	VOICE STUTTER DETECTION AND CORRECTION Project Reference No.: 46S_BE_0218
2.	**College and Department**	Sahyadri College of Engineering & Management, Mangalore-575007 (Computer Science and Engineering)
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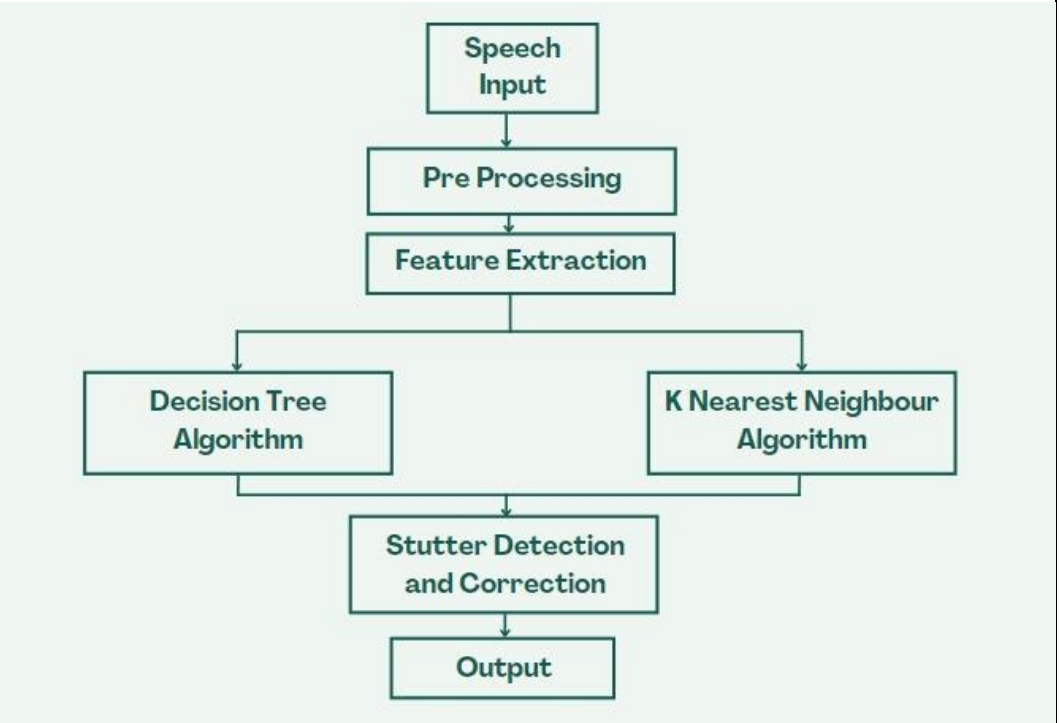
4.	**Keywords**	Speech analysis, speech processing, real time correction.
5.	**Introduction**	There are various possible causes for voice disorders, including functional problems with the vocal cords, neurological conditions, vocal cord injury, and psychological conditions. It can be categorized into speech disorders, language disorders, swallowing disorders, social communication disorders, and cognitive-communication disorders. Stuttering is one of the very common speech disorders that affects children and some adults. It is a repetitive and involuntary disruption in the flow of speech characterized by prolongation of sounds, syllables, and words. Stuttering is caused by a combination of genetic and environmental factors. It may also be more common in people who are under a lot of stress or who have a history of trauma or abuse. The Speech Therapy System can be used to detect stuttering in people by analysing their speech patterns. The system can identify stuttering by analysing the repetitions, prolongations, and interruptions in the person's speech. The system will check if the pronounced word has a stuttering problem or not. The stuttered word of one person might be different from the other person.
6.	**Objectives**	• The expected outcome of voice stutter detection and correction is a smoother, more fluent speech with fewer stutters and other speech abnormalities. • The technology should be able to identify stuttering and other speech impediments, and then use natural language processing and machine learning algorithms to correct them.

		• To involve developing user-friendly software interfaces or creating assistive technology that can be used in different environments.
7.	**Methodology**	1. Pre-processing: This involves removing background noise from the audio signal, segmenting the audio signal into individual words, and normalizing the volume of the signal. 2. Feature Extraction: This involves extracting features such as pitch, duration, and energy of the audio signal. These features can be used to identify stuttering patterns. 3. Classification: This involves using machine learning algorithms to classify the audio signal as stuttered or non-stuttered. The accuracy of this classification can be improved by providing more training data. 4. Stutter Detection and Correction: Once the stutter has been detected, it can be corrected by either removing the stutter or substituting it with a different sound. This can be done by using speech synthesis or by using a speech-to-text conversion tool. 

8.	**Results and Conclusions**	Voice stutter detection and correction are important areas of research in the field of speech processing and machine learning. Stuttering is a communication disorder that affects many individuals worldwide, and can significantly impact their quality of life. Therefore, there is a need for accurate and reliable algorithms that can detect and correct stuttered speech in real-time. Several machine learning algorithms can be used for voice stutter detection, these algorithms can predict the correct words and generate the corrected version of the speech output in real-time, making communication easier and more fluent for individuals who stutter.
9.	**Scope for Future Work**	● Using software to detect stuttering in real-time and providing feedback or corrections to the speaker. Real-time correction could be particularly helpful for people who stutter in social or professional situations where fluent communication is essential. ● To analyze individual speech patterns and identify specific types of stuttering, it may be possible to develop more personalized treatment plans that are tailored to everyone's needs. ● Provide assistive technology which includes software's that helps with speech therapy exercises, or tools that make it easier for people who stutter to communicate in certain situations.