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DSP Project

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**Silence Modifier User Manual**

Overview

This software works as a silence modifier for an audio file containing music or speech separated by multiple silences. The program has the functions of silence detection, replacement, and removal. The user is able to set the parameters defining a piece of silence, replace these silences with certain length of new silences, and choose the desired kind of silence (safe noise or complete silence). In addition, the software is interactive in the way that it will provide error information whenever the user inputs something incorrect. The user will also be able to save the audio file after modification.

Instructions

1. *Enter the name of audio file.* At the beginning of the program, the software prompts the user to enter the name of the audio file that he or she wants to modify. The user does not need to include the suffix of the audio file, since the software automatically searches the files in the computer and match the appropriate file. If the file is not found, the software will prompt the user to choose another file name, until a workable file is found.

2. *Playback the original audio file.* To make it easier for the user to define their own criteria of silence, the software offers the option to playback the original audio, but the user can also choose not to play it.

3. *Choose the minimum length of silence.* The user is then prompted to enter the minimum length of silence (in seconds) he or she wants to modify.

4. *Choose the maximum length of silence.* The user is them asked to enter the maximum length of silence (in seconds) he or she wants to modify. If the user accidentally enters the higher bound to be smaller than the lower bound, the software will remind the user of the mistake and prompt him or her to enter another number.

5. *Choose the loudness threshold of silence (sensitivity).* Since different users have different definition of silence. Sounds with lower loudness than the user’s input are considered silent.

6. *Choose the type of replacement.* In the case of phone calls, telephone companies use safe noises to make users aware that the call is still on. Similarly, the user can choose to have customized length of safe noises to replace the original silences. Of course, the user is also able to choose to have complete silences.

7. *Playback the modified audio file.* The modified audio file will be played to let the user hear the actual effect of the silence modifier.

Reminder: If no qualified silence is found in the audio file, the software will remind the user of that, and it will not play the unchanged audio again. However, the user will still be given the option to save the audio file again.

8. *Choose whether to save the modified audio.* The final step of the software is to let the user decide whether he or she wants keep the new audio file. In addition, the user can specify the name of the file he or she wants to save it as. At the end, the software will display whether the file is saved, and thank the user.