







User18.wav	155.5680
User19.wav	147.6622
User20.wav	158.6690

In order to create a speech recognition algorithm, criteria to compare speech files must be defined hence by combining both the steps (average pitch and formant analysis) it is possible to correctly pick out the suspected user voice i.e. here user03.wav as shown in [Table\(2\)](#). As discussed before all voice files are compares with reference wav file based on average pitch. The top most likely matches in our case user03.wav user08.wav and user14.wav are then compared by the differences in their formant peak vectors (here user03.wav, user07.wav and user18.wav) in [Table 2](#). The speech file which is common in both steps is suspected user's voice.

**Table 2**

Pitch analysis		Formant analysis	
Wave file Name	Is Suspected user's pitch match ?	Wave file Name	Is Suspected user's formant match ?
User01.wav	No	User01.wav	No
User02.wav	No	User02.wav	No
User03.wav (Ref. file)	Yes ✓	User03.wav (Ref. file)	Yes ✓
User04.wav	No	User04.wav	No
User05.wav	No	User05.wav	No
User06.wav	No	User06.wav	No
User07.wav	No ✗	User07.wav	Yes ✓
User08.wav	Yes ✓	User08.wav	No ✗
User09.wav	No	User09.wav	No
User10.wav	No	User10.wav	No
User11.wav	No	User11.wav	No
User12.wav	No	User12.wav	No
User13.wav	No	User13.wav	No
User14.wav	Yes ✓	User14.wav	No ✗
User 15.wav	No	User 15.wav	No
User16.wav	No	User16.wav	No
User17.wav	No	User17.wav	No
User18.wav	No ✗	User18.wav	Yes ✓
User19.wav	No	User19.wav	No
User20.wav	No	User20.wav	No

#### 4. Conclusion

Anyone can be the victim of harassing, annoying, obscene, or threatening telephone calls. This paper proposed an idea for detection of such suspected user on GSM network and discussed about the speech recognizer. The analysis and implementation of proposed system was carried on MATLAB. System design followed the major sub-parts: Speech Editing, Speech Degradation & Enhancements, Pitch & Formant Analysis and Detection of suspected subscriber/user. The implemented speech recognition system at GSM network generated favorable results. Proposed system can be useful to find out the suspected users which are related with threatening or harassing phone calls.

Time required for continuous scanning and sorting for reference speech file is one of the limitations of system. Since implementation of speech recognition system is not easy at academic level. Hence this issue that needs to be

tackled by the industrial organization in this field, which will help to make investigation easier than existing technologies.

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