ASSISTIVE DEVICE FOR THE DIFFERENTLY ABLED (BLIND, DEAF AND MUTE)

VIT® Vellore Institute of Technology (Deemed to be University under section 3 of UGC Act, 1956)

15BCE1148, 15BCE1255, 15BCE1263 | Dr. Karmel A | SCSE

Objective

The aim of this project is to combine three different hardware used by differently abled people into a single device. This device is one solution to multiple problems. For this we chose to help people with 3 disabilities namely- seeing, hearing and speaking. For the visually impaired we are accumulating an image to text and text to audio module. For people who can't hear a solution is provided people by converting audio to text and projecting it for reading. For vocally impaired we represent their voice by text to audio conversion technique. Our project is based on the use of python on raspberry pi 3 and uses camera, speakers, mic and projector as the additional hardware.

Design

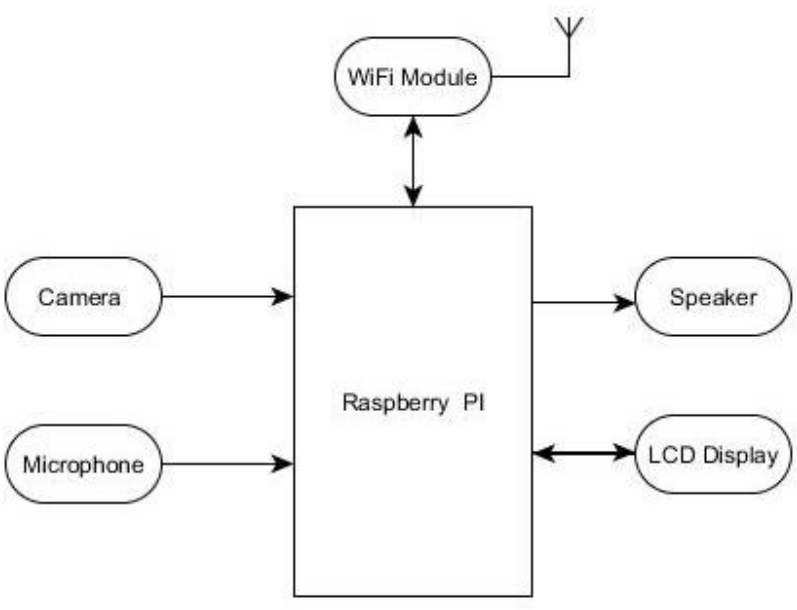

Figure 1 The system architecture with all modules

Methodology

BlindModule:

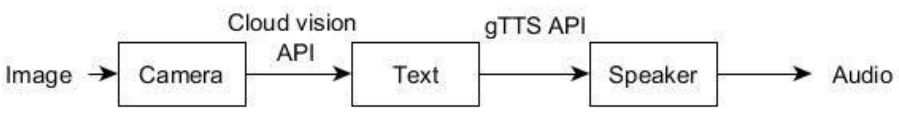

Figure 2 Working of Blind Module

Deafmodule:

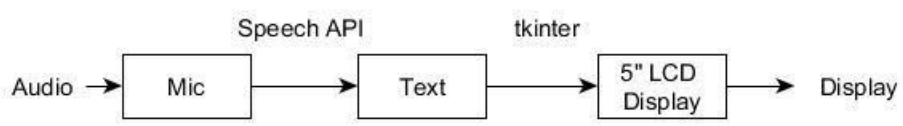

Figure 3 Working of Deaf Module

Dumbmodule:

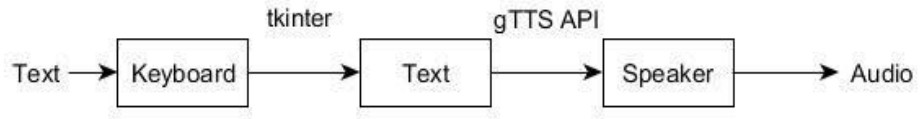

Figure 4 Working of Dumb Module

Result

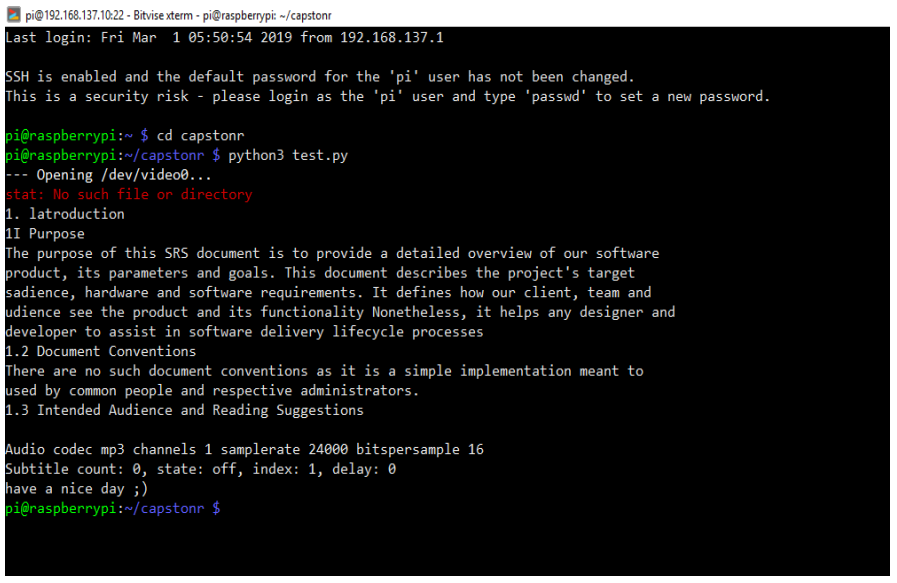

Figure 5 Conversion of gained text from image to audio

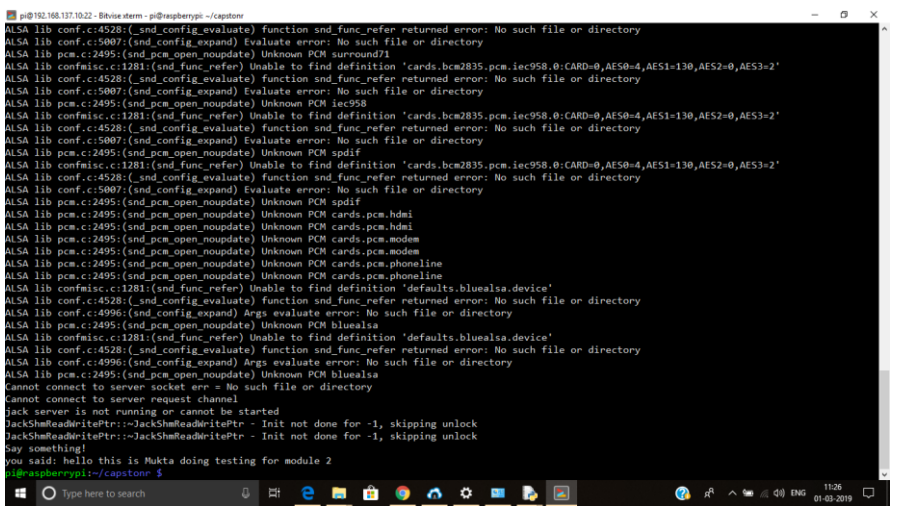

Figure 6 Conversion of Audio to text

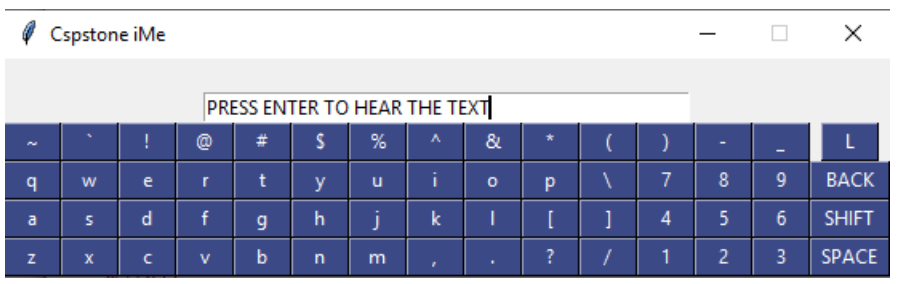

Figure 7 On-screen Keyboard (text to speech)

Conclusion

The device proposed in this paper can be a major help in solving a few of the many challenges faced by the differently abled.

Contact

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