Project Title:- Invisible Braille Reader

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1. Description:- A portable device which would help blind people read books directly from any text file. The device would consist of hand glove with mini actuators present at the fingertips which would give a vibrotactile Braille impression on the respective fingers of the blind person.

2. Motivation:- We felt the need of making the lives of blind people easier. In a situation where Braille books are expensive and not easily available it becomes difficult for them to access information. Moreover they feel uncomfortable using conventional Braille reader/books among normal people.

3. Implementation:-

1. Our device would consist of two modules, module A and module B.
2. Module A: It would be taking an input in the form of pdf or text file from an SD or microSD card. The device would be processing the data and converting it into braille language and relaying the data to module B using WIFI or bluetooth.
3. Module B: It would recieve the processed data from module A and send the signals to microactuators.

4.Material Required & estimated cost

- o   microactuators arrays (4) - Rs 2000
- o   rasberry pie - Rs3000
- o   microcotroller - Rs1000
- o   bluetooth modules (2) - Rs 2000
- o   battery packs(2) - Rs2000
- o   miscellaneous(2)- Rs1000

Total Cost - Rs11000

5.Learning Objective

- ·   image processing
- ·   signal processing
- ·   use of microcontrollers
- ·   use of wireless technology
- ·   creating tactile display
- ·   braille language

6.Timeline

1st week (1st may-7th may) : learning Image processing , use of microcontrollers , Braille script and coding rasberry pie.
2nd week (7th may-14th may): Start working on microactuators. Finish coding and integrating bluetooth module with microcontroller.
3rd week (14th may-21st may): Complete the module A and module B and integrating them. Percentage completion 90%.
4th week (22nd may-31st may): Debugging and work on aesthetics.