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A SURVEY ABOUT DEAF AND DUMB ASSISTING DEVICE

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Abstract: In this paper we tend to represent sensible forearm band for deaf and dumb patient. concerning 9 billion individuals within the world are deaf and dumb. The communication between a deaf traditional visual individuals. This creates a awfully very little area for them with communication being a basic side of human life. The blind individuals will speak freely by suggests that of traditional language whereas the deaf-dumb have their own manual-visual language referred to as language. language may be a non-verbal sort of intercourse that is found amongst deaf communities in world. The languages don't have a typical origin and thence tough to interpret. The project aims to facilitate individuals by suggests that of a forearm band based mostly communication interpreter system. So in order to get a valid Signal to the person we are having a vibration sensor, switch, and sound sensor given as an input to the MCU (Micro controller Unit). We are interfacing a buzzer to the unit which will get an alert system to the third person. And the switch is act as calling bell alarm for the system. In order to feel the alert signal we proposed a vibration motor where they can able to get a alert occurrence at any situation.

Index Terms **- Deaf and Dump, Sign language,** ***Adriano Uno Board, LABVIEW software***

I. INTRODUCTION

Deaf and Dumb suggests that unable to listen to and speak. These square measure the individuals with disabilities. everybody ought to have responsibility to assist them and lift them. however still the discrimination goes on and it's terribly clear. It might prefer to provide associate example, In the CSE(government officials Examination) her education and social wants. It begins at intervals their family and this suppression continues throughout their life in faculties, colleges, community and geographic point. To be terribly specific, a number of the challenges are: Lack of job opportunities: though, at this time some non-public companies square measure willing to rent deaf individuals however still there's ways to travel ahead (in terms of provision to accessibility to data, angle of hearing employees etc).

Education: Lack of signing interpreters and lecturers UN agency understand signing inconvenience to data publically offices and personal companies as a result of most of the knowledge is on the market in verbal mode. Lack of caption or sub-titles in TV serials, news (again a barrier to access media).

Deaf and dumb drawback was is also from birth owing to their sequence or by premature birth and a few might occur thanks to injury, accidents or thanks to over exposure of sound

II.LITERATURE SURVEY:

K.NaveenKumar,P.Surendranath&K.Shekar[1] **:**This paper work focuses on finding a technique that aids the visually impaired by letting them hear what is represented as text, This paper also provides a way for the people with Hearing impairment to read which is in audio form by speech to text and we also provides a way for the vocally impaired to represent their voice by the aid of text to voice. All these solution were modulated in single system using prevailed 2005, 3 boys UN agency have passed the examination wasn't appointment as IAS officers simply because they're deaf. This should not continue. They face several issues in their day to day life like transportation, Communication, level of dependency, social stigma and lots of things. The terribly initial drawback is suppression of Deaf individuals raising voice for his or raspberry-pi. The keywords used in this project are Raspberry-pi, Assistive device, Tesseract Optical Character Recognition OCR speak, Open CV, Google API. The advantage is that the device can be taken away easily and is of loss weight.

SunitaV.Matiwade,Dr.M.R.Dixit[2] **:** This paper aimed to growing an digital support device which could translate sign language into text and speech so that it will make the communiqué take place among the mute groups with the overall public. The keywords used in this challenge are Hand Gloves, signal language, flex Sensor,ARM7TDMI, LM386, voice section. This undertaking have recognized hand

gesture of sign language for alphabet A to Z with logic levels as per price of flex sensor. This machine is used for verbal exchange between deaf and dumb people with regular person.

Piyush Patil, Jayesh Prajapat[3] : This paper is to make bigger an advanced technique of verbal exchange for deaf human beings with the assist of IOT .This gadget could make right use of recent technology that is based totally on Embedded Linux board named Raspberry Pi with an brought advanced function of changing speech to text in Real Time. Normal character will speak into raspberry pi device and it will stumble upon the sound using speech reputation module. After that the Speech will be transformed into textual content and sent to the deaf character's Mobile Application by the usage of Wi-Fi, Bluetooth or Cloud Server according to the situation.

Anish Kumar,Rakesh Raushan,Saurabh Aditya,Vishal Kumar Jaiswal,Mrs. Divyashree Y.V.[4]: This paper provide a method for a blind man or woman to study a text and it can be carried out through shooting an photograph via a camera which converts a textual content to speech (TTS). It presents a way for the deaf human beings to read a text by using speech to textual content(STT) conversion technology. Also, it gives a method for dumb people using textual content to voice conversion. The gadget is provided with four switches and every switch has a specific function. The blind people can be capable of examine the words using by Tesseract OCR (Online Character Recognition), the dumb people can speak their message through textual content with the intention to be examine out by way of speak, the deaf human beings can be able to listen others speech from text. All these functions are implemented with the aid of the use of Raspberry Pi. The keywords used for this challenge are Raspberry Pi, Tesseract OCR(Online Character Recognition), speak, Speech to text (STT),Text to Speech (TTS).

Kanwal Yousaf, Zahid Mehmood, TanzilaSaba,AmjadRehman,Muhammad Rashid , Muhammad Altaf,and Zhang Shuguang[5] : The proposed software, named as vocalizer to mute (V2M), uses computerized speech recognition (ASR) method The hidden Markov model toolkit (HTK) is used for the process of speech recognition. The software is likewise incorporated with a 3D avatar for imparting visualization support. To recognize the speech of Deaf-mute and convert it right into a recognizable shape of speech for a ordinary person. The quantitative and qualitative analysis of consequences also found out that face-to-face socialization of Deaf-mute is progressed by the intervention of mobile technology. The participants also suggested that the proposed mobile software can act as a voice for them and they can socialize with pals and family by way of using this app.

Amanpreet Singh Khajuria,Sonakshi Gupta[6] : This interacting device is a microcontroller based machine which is largely outline for lessening the verbal exchange area between dumb and regular people. This machine can be therefore configured to paintings as a smart tool. In this paper, At mega 328 microcontroller, voice module, LCD show and flex sensors are utilize. The tool considered is essentially residing of a glove and a microcontroller based system. Data gloves are used to come across the hand motion and microcontroller based system will interpret the ones few manoeuvre into human region voice. The statistics glove is supplied with 4 flex sensors located on the glove. This machine is beneficial for dumb people and their hand manoeuvre will be transformed into speech signal due to the date glove worn on the hands. The Key words used right here are Gesture Remembrance; Data forearm band; Flex Sensor; Adriano UNO; At mega 328; Voice module.

Prof. Prashant G. Ahire, Kshitija B. Tilekar,TejaswiniA. Jawake, PramodB. Warale[7]:International Conference on Computing Communication control and automation.Thesystemismainlyconsistsoftwomodules,firstmoduleisdrawing out Indian Sign Language(ISL) gestures from real-time video and mapping it with human-understandable speech. Accordingly, second module will take natural language as input and map it with equivalent Indian Sign Language animated gestures. Processing from video to speech will include frame formation from videos, finding region of interest (ROI) and mapping of images with language knowledge base using Correlational based approach then relevant audio generation using Google Text-to-Speech(TTS) API. The other way round, natural language is mapped with Equivalent Indian Sign Language gestures by conversion of speech to text using Google Speech-to-Text (STT)API, further rmapping the text to relevant animated. The keywords are Correlationa lbased approach, Region of Interest, Region growing, STT, TTS, ISL.

Suganya R,Dr.T.Meeradevi[8] :The proposed add this paper is to implement a system without handheld gloves and sensors and by capturing the gestures continously and converting them to voice and the other way around , thus making the communication simpler for deaf and dumb people by a handheld embedded device in conjunction with the hardware setup. The effectiveness of the work is verified under MATLAB environment and further in future dedicated voice output are becoming to be produced a bit like the text and thus the gesture images captured.The keywords used here are communication aid, signing , MATLAB.

NikitaP.Nagori,Mrs.Vandana Malode[9]: Kinect sensor is that the first of its kind; it's used on a large-scale, depth camera. it's device which may view in 3Dimensions.Microsoft made the device mainly as a game controller and is operated by the businesses own software for analyzing its 3Ddata, including proprietary computation for, scene analysis,feature tracking, motion tracking, gesture recognition and skeletal tracking. The effectiveness of labor is completed in matlab and verified using Kinect. Kinect using Matlab could even be an honest solution for converting signing to speech and this is often often often often often the thought of this paper which is described here in details .The keywords used here are signing ,GestureRecognition ,MATLAB, Microsoft Kinect.

Aruljothy.S,Arunkumar.S,Ajitraj.G, Yayad Damodran.D,Jeevanantham.J, Dr.M.Subba[10] :Inthisproject, amethodisproposedthatmakestheuseofhandgesturesforrecognitionof Indiansignlanguage.A sign language consists of various gestures formed by physical movement of body parts i.e. hands,arms and countenance .Hand gesture recognition system provides us an innovative, natural, user friendly way of interaction with the pc which is more familiar to the citizenry . The communication between the dumb and visually impaired person are made only by their expressions and their hand gestures. This project presents various methods of hand gesture and signing recognition for blind and dumb person. The keywords used here are Gesture recognition, sign language, Image processing technique.

[Veekshita R R,Meghana R#1,Varsha Iyengar G,Thejaswini BR,Latha M[11] :This project proposes a wearable device to help patients who are bedridden or have trouble in muscle strength to hold a mobile device.In this project a board is designed which is helpful for housebound people to communicate with people.The device contains two modes that is Keyboard mode or regular mode and Special mode(head mode).Hence this system provides a voice which is understandable by both dumb people as well as normal person. The keywords used are Arduino board, APR 9600 (Audio,play,Record),AAC(Augumentative and Alternative Communicative)device

VikramSharmaM, VinayKumarN, ShrutiCMasaguppi, SumaMN, DRAmbika[12] :This paper describes a replacement method of developing wearable sensor gloves for detecting hand gestures which uses British and Indian signing system. The outputs are produced within the text format using LCD and audio format using APR9600 module. The hand gesture or the hand signs are converted to electrical signals using flex sensor.These electrical signals are processed to supply appropriate audio and text output.Previously designed devices weren't accurate in tracing the hand gestures.The paper employs method of tuning so as to enhance the accuracy of detecting hand gesture. The keywords are Glove, hand gesture recognition, British and Indian signing , Flex sensor, disabled people.

G.Sabaresh M.E,A.Karthi M.E[13] :This paper shows an approach for outlining and executing a savvy glove for hard of hearing and unable to talk individuals. There are a couple of looks into done keeping in mind the top goal to locate a less demanding route for non-vocal individuals to talk with vocal individuals and convey what needs be to the hearing scene. Advancements are made in gesture based communication yet basically in American Sign Language. This exploration plans to create up a communication via gestures interpreter in sight of savvy glove interfaced remotely with microcontroller and content/voice showing gadgets. An approach has been created and modified to listen to the gesture based communication. The keywords are signing , glove and gesture recognition.

Nitesh S. Soni,Prof. Dr. M. S. Nagmode,Mr. R. D. Komati[14] :The proposed system helps non-sign language speakers in recognizing gestures utilized in American Sign Language. The system described during this paper is implemented using MATLAB. during this approach, firstly, the signs are captured employing a webcam. the pictures captured are then processed further and thefeatures are extracted from the captured images using PCA. Comparison of the features is completed using Euclidean Distance with the training sets. MinimumEuclidean distance helps to recognise the character.This system will enable non-sign-language speakers to raised understand and communicate with those with impaired hearing .The keywords are signing , Euclidean Distance,PCA.

Nitesh S. Soni,Prof. Dr. M. S. Nagmode,Mr. R. D. Komati[14] :The proposed system helps non-signlanguage speakers in recognizing gestures utilized in American SignLanguage. The system described during this paper is implemented using MATLAB. during this approach,firstly, the signs are captured employing a webcam. the photographs captured are then processed further and thefeatures are extracted from the captured images using PCA. Comparison of the features is completed using Euclidean Distance with the training sets. MinimumEuclidean distance helps to recognise the character.This system will enable non-sign-language speakers to raised understand and communicate with those with impaired hearing .The keywords are signing , Euclidean Distance,PCA.

Suvarna Nandyal, Shireen Kausar[15] :The main part of the work is Raspberry on which all the activities are carried out. The work provide the assistance to visually impaired person by letting them to hear what is present in the text format. The stored text format is spoke out by the speaker. For the people with hearing impairment the audio signals are converted into text format by using speech to text conversion technique. This is done with the help of AMR voice app which makes them to understand what the person says can be displayed as the text message . And for people with vocal impairment, their words are conveyed by the help of speaker .The keywords used are Raspberry, Tesseract OCR(optical character recognition technique), epeak, speech to text, Bluetooth device, LCD display, AMR voice app.

III. ADVANTAGE:

The important key factor of this project is to facilitate this people and to fix them with more confidence to manage their issues by themselves. The primary advantage is that the device can be carried out easily because of its low weight.

IV.DISADVANTAGES:

In our society we have people with disabilities. The technology is developing day by day but no significant development are undertaken for the betterment of these people. About nine billion people in this world are deaf and dumb. Communications between deaf-mute and a normal person have always been a challenging task. Sign language helps deaf and dumb people to communicate each other .But not all people understand sign language.

V.PROPOSED MODEL:

This project is about the deaf and dumb people, they can't hear and speak for themselves. The introduced embedded device help them to feel and react to the things happening in their surroundings. The device starts vibrating according to its features developed. The device can hang in their neck along with the vibrating motor with it. For example If a stranger tries to enter their house without their knowledge the device start to vibrate and they can able to sense it. If the person wants to cross the road the device will help them, through vibrating while the red signal goes on. If a person cross by and if someone calls their name they knew it by the means of vibration. The developed device help them to run their routine life.

VI.CONCLUSION:

In this proposed system, the introduced embedded device plays a major role in the life of deaf and dumb people. This device alert them by vibrating. The important key factor of this project is to facilitate this people problems and to fix them with more confidence to manage their issues by themselves. The primary advantage is that the device can be carried out easily because of its low weight.

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