# VOICE ACCESSED WRITING MACHINE

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## ABSTRACT

*The innovative idea of our project is to convert speech into textual matter without any difficulty and hassles. The major advantage is that the system can write the spoken contents on the paper using pen. The pen writer with the sensor is designed for two purpose , first to listen the voice or speech of the user , later after getting the instructions the plotter or the writing machine attached with it start writing accordingly on the paper . The converted speech which is letters or symbols are send into the Arduino. This is transmission via a ESP8266 Wi-fi module. According to the input given to Arduino the plotter will plot the letters and characters. The main motive behind our project is that it is an efficient system for managing time, to ease of the lives of handicap.*

**Keyword :** - *Arduino,ESP8266 Wi-Fi module, Plotter,*

## 1. INTRODUCTION

Voice accessed writing machine is a new concept which includes a pen writer with voice sensor which helps a person to produce written notes without continues physical effort. The writing machine is a mechanical plotter which is used to write the characters after recognizing it. The word or speech we speak is first converted into G-code by using google translation mechanism . This specific G-code is then transferred to the writing machine is by using a Wi-Fi module attached to it. After receiving the G-code the plotter recognize and identifies the co-ordinates of each character and write the alphabet. This is the basic idea of our project Voice Accessed Writing Machine.

The main objective of our project is to build a voice base plotter machine that will write on behalf of human with much more precision, error free and much more faster than the speed of humans. We think that it work faster than the normal speed of humans. Our next objective is that it could help the handicapped and blind people to write based on their voice commands without errors. This system will also help the students to save their time from unnecessary writeups. It would help the teachers and professors to make their lecture notes easier and faster. The scope of this project is that to ease of the lives of handicap and blind persons as an efficient system for managing time. Human efforts are less required here . It will easily replace the need of stenographs, our speech to text system directly acquires and converts speech to text . A speech to text machine can also improves the system accessibility by providing data entry options for the blind, deaf or physically handicapped users . It is flexible enough to use in various areas . The proposed Voice Accessed Writing Machine has high resolution , repeatability and error correction is within limit.

## 2. LITERATURE SURVEY

[1] M Aditi ,S Karpagam, B Nandini, B S Murugan proposed AUTOMATED WRITING AND DRAWING MACHINE. Now more and more individuals are turning to robots to do their work, because robots are more versatile, accurate, reliable and also reduce human efforts. Robotic arms were programmed robot with similar function of a human arm. Target of this project is to develop a robotic arm which helps the physically handicapped person to write. The mechanism is programmed with speech recognition system and makes the user to write what he speaks. These robotic arms are programmed to write down the words that a patient or individual pronounces to the microphone. To perform these writing operations, the robotic arm is to be fitted with a pen. It can also make you draw small sketches. It will be a low cost device that can be programmed to enable the people who are physically challenged to write. Here the paper describes the basic design structure of an automated writing arm .

[2] Reshma Laxman Katkar, Sunny Nahar proposed AUTOMATIC PEN WRITER WITH VOICE SENSOR . A new type of pen coming now that is a Automatic Pen Writer With Voice sensor. By using this mechanism a person can produce written notes without consciously writing includes more physical efforts. These words are claimed to be arise from a subconscious, spiritual or supernatural source. Automatic writing machine is a mechanical plotter with pen which is used to write the characters, words from document. The pen is used to write the documents stored in the hard-disk through a voice sensor. These automatic pen writer concept features all the traditional elements like auto writing machine, pen, hard-disk, voice sensor, battery units etc. all in an innovative manner.
Automatic pen writer with senor is designed for two main purpose, first is to listen the voice of a user and search the document in the hard-disk and start writing the document and the other purpose is to just listen the user voice carefully and write it accordingly.

[3] Marek Pluta proposed VOICE COMMAND CONTROL SYSTEM , In most communication purposes humans use speech as their fastest and most straight way of data exchange. It is very convenient to make computers able to understand and speaks human language. So far, personal computers are not powerful enough to perform fully such tasks, mostly because of complexity and variability of spoken language. It is quite easy to make the computer speak synthetic speech engines were good enough to be understood by humans few years ago. Even more simple is to record and store a set of phrases, and then play appropriate phrase in a desired situation. But for a computer, understanding of human speech is much more difficult. Powerful systems with sophisticated software, based on large vocabulary and grammar rules databases, are able to perform it to some degree. However, there are many areas, where a full speech recognition is not needed. Instead, only a limited command set is required. These reduces a problem from two-step: pattern recognition – linguistic analysis, to just first of them, as in limited command set there is only a recognition problem, making use of common personal computers are possible .

[4] B Raghavendhar Reddy, E Mahender proposed SPEECH TO TEXT CONVERSION USING ANDROID PALTFORM For the past years , designers have processed speech as a wide variety of applications which are ranging from mobile communications to automatic reading machines. Speech recognition process reduces the overhead caused by other alternate communication methods. The speech is not been used much in the field of electronics and computers due to their complexity and variety of speech signals and sounds generated. However, with the new modern processes, algorithms, and methods can process these speech signals easily and recognize the text. This paper is going to develop an on-line speech-to-text engine. The system acquires speech at the run time through a microphone and processes that the sampled speech to recognize the uttered text. The recognized text are be stored in a file. The next step is developing this on android platform using eclipse workbench. This speech-to-text system directly acquires and converts the speech to text. This can be supplement with other larger systems, giving the users a different choice for their data entry. The speech-to-text system can also improves their system accessibility by providing their data entry options for blind or physically handicapped users. Voice SMS is an application developed in this work that allows a user to record and convert the spoken messages into a SMS text message. The user can sends messages to their entered phone numbera. Speech recognition is done through the Internet, connecting to the Google's server. This application is adapted to the input messages in English language. the speech recognition for Voice uses a technique which is based on the hidden Markov models (HMM - Hidden Markov Model). It is currently the most successful and the most flexible approach to speech recognition method.

[5] Ahmed Y Abdelhamid, Mohamed A Abdeldayem, Mohamed H Mabrouk proposed LOW COST X-Y CORE POSITIONING SYSTEM USING STEPPER MOTOR The X-Y positioning is an important task in the industrial applications, as this system is widely used for welding, cutting or for pick and place applications. This studied X-Y core positioning system is a type of parallel X-Y position device, which is due to less moved masses are potentially capable of fast acceleration and therefore faster positioning than the traditional stacked systems. The kinematic model of a X-Y core positioning system is derived , which is used for the accurate position control in X-Y stage of the cart using a low cost stepper motor and low cost controller . This design of X-Y core positioning system has 8 pulleys and two open ended derive-belts . It have a double size of all the designs that are introduced in this area has advantages of very fast design, simplicity and flexibility. The proposed system is very much simple, rugged, and cost effective. The experimental results show that the proposed system has a high resolution, repeatability and error is within acceptable limit. The proposed strategy uses to control the positioning in a X-Y stage enable accurate cart positioning with the maximum error percentage less than 5%.

## 3. PROPOSED SYSTEM


**Fig-1:** Simplified block diagram

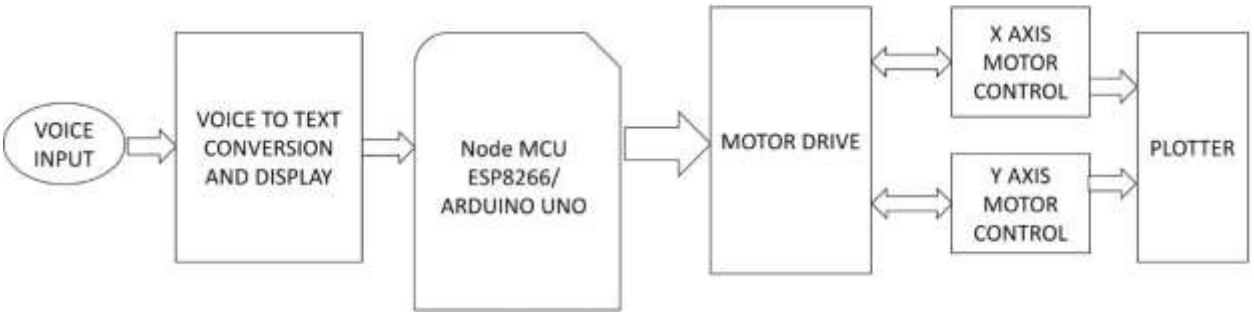


**Fig-2:** Detailed block diagram of voice accessed writing machine

The figure 1 shows the simplified block diagram of our project voice accessed writing machine which includes the voice input section which is the user .The commands or speech from this user section is directed towards the micro controller section .Then the microcontroller drives the plotter via motor drives attached to it.
Figure 2 shows the detailed block diagram of voice accessed writing machine the voice input from the user section may contains speech or any other types of commands are firstly converted into a textual matter or G-code. This process is usually done by using Google speech to text conversion. The G-code obtained is later send to the microcontroller section . The microcontroller we used here is Arduino microcontroller . It is a board of microcontroller based on Atmega. This microcontroller board contains 14 digital input and output pins and 6 analog pins. The G-code signals are transmitted to the microcontroller section is via Wi-Fi module. The W-Fi module we used here is ESP8266 Wi-Fi module. It has an operating ranges from 2.4GHz-2.5GHz. The operating voltage required for this module ranges from 3V -3.6V. After receiving the G-code the Arduino is programmed according to the corresponding codewords related to the G-code. The programming for Arduino is done through Arduino programming. The programmed microcontroller drives the Motor driver or motor shield .The motor shield we proposed to use in our project is L239D.
It can operate 2 motors with speed control and direction or 4 motors with speed control only. The X and Y coordinates movements are according to the stepper and servo motor we used .The X axis and Y axis motors are driven according to the commands from the microcontroller. The plotter we used here is the pen and it is controlled by the axis control motors . After receiving the accurate commands the plotter is moved and plots the letter or alphabet on the paper .

## 4.RESULT

The prime idea of our project is to convert human speech into textual matter without any difficulty and hassles. The major advantage is that it can write down the spoken contents on a paper . The word or speech we speak is first converted into G-code by using google translation mechanism . This specific G-code is then transferred to the writing machine is by using a Wi-Fi module attached to it. After receiving the G-code the plotter recognize and identifies the co-ordinates of each character and write the alphabet.This will helps the blind and handicapped to write based on their voice commands without errors.

**Fig-3:** Plotter accessed by driving motors

## 5. CONCLUSIONS AND FUTURE SCOPE

By this project minimizing the human effort is the best goal. By this product one can do his writing works and other activities in same time. Through this product output is written on the paper by just giving the voice . People who cannot use direct pen and paper method are useful by this product. We know that time is very precious we can save time and human effort by using this product. . It is flexible enough to use in various areas . The proposed Voice Accessed Writing Machine has high resolution , repeatability and error correction is within limit.

## 6. REFERENCES

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