

VOICE RECOGNITION BOT WITH IMAGE PROCESSING

Abstract:-

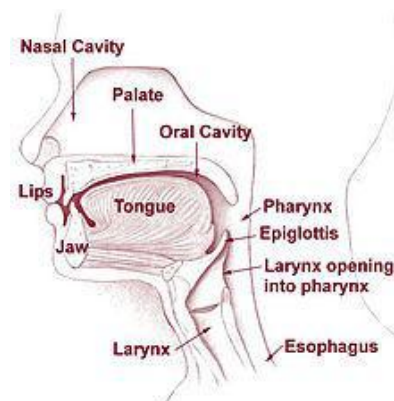
This project is based on HRI (Human-Robot-Interface) & HCI (Human-Computer-Interface) technologies. Interacting with the robot, which connotes some anthropomorphic (human-like) appearance using Natural Language (NL), is one of the most prominent technologies in the field of “Artificial Intelligence (AI)”. This report covers almost all the parameters which are to be taken into consideration while designing “Speech Recognition (SR)” based system. Here we have chosen mobile robot because this type of robot is getting popular as a service robot in social context, where main challenge is interacting with the human. Two types of approaches has been chosen for Voice User Interface (VUI) implementation-1) Using Hardware SR system 2) Using software SR system & this has been included in chapter 1. Here Hybrid architecture has been used for general robotics design & for communication with the SR system, & also created grammar for the speech, which is chosen for the robotics activity in the predefined arena. Chapter 2 comprises of various complex algorithms like HMM, TOR, cross-correlation, auto-correlation, Viterbi decoding & many more DSP based algorithms for speech processing and synthesis. One of the important goal of this project is to introduce suitable interface for novice user. Chapter 3 contains the analysis of speech, where various parameters of speech as well as speech models like Filter-bank & LPC are included. In chapter 4, for the analysis results of different speech parameters as well as image processing parameters platform like MATLAB 2013 is used. Also various platforms like VB.NET, MY-SQL, JAVA and various microcontrollers / DSP processors like low power Atmega128, Atmega32, ADSP-2100 family, HM2000 etc. can be used for implementing Speech Processing and Synthesizing. In last phase of this project, an image processing module (IP) will be implemented & interfaced with the speech-recognition module, which will add the image detecting capability to the existing SR based mobile robot, which will enhance its applications and usability to great extend

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EYE MOVEMENT BASED WEAPON CONTROL SYSTEM

Abstract:-

During our training period, we learned about new software like AVR, MATLAB, which enriched our knowledge of programming. This project requires the basic knowledge of electronics and soft skills. Eye movement based control military application is basically based on the eye-movement. Eye position is tracking and at the same time the application is moving as per the position of the eyes. Main aim behind to make this project is to make our military system technically advance. Basically using this concept we can make other application like control of home appliance or wheelchair controlling. So basically such type of applications are used for the Physically handicapped people. This application is based on MATLAB and controlling of Motors using ATMEGA-168. Eye tracking is technique where by an individual's eye movements are measured. So based on eye movement, application movement controlled using microcontroller.

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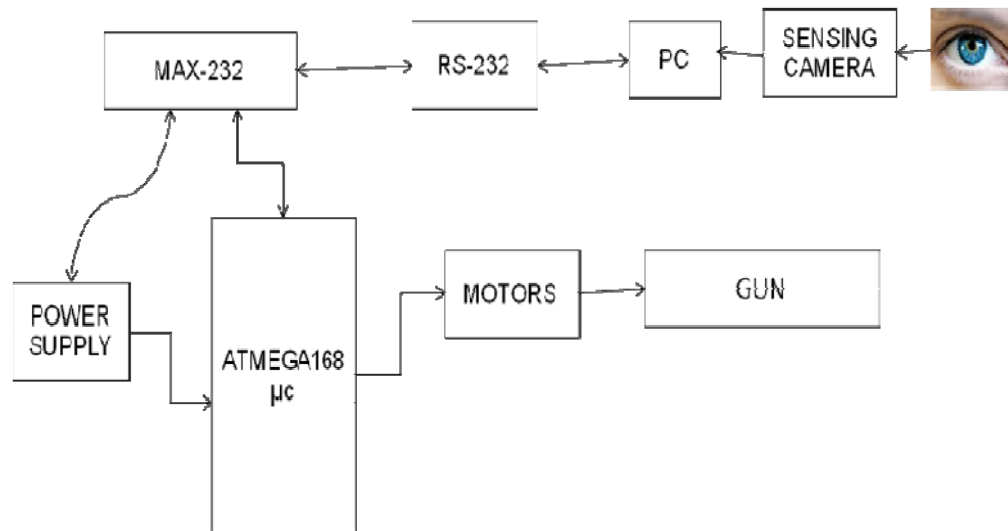
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SOLAR POWERED CAMERA EQUIPPED UNMANNED AIR VEHICLE

Abstract:-

Venturing into a very technical project such as this was very bold daring, as some would say, it was a difficult project. Nevertheless there was a very strong enthusiasm and willpower to proceed and see the project through to the end. There was probably an anxiety and thrill to undertake a project which by every indication was likened to rocket science. Assuredly many would agree a project of the likes of rocket science is always exciting or at least sounds so, which means it might also have been a good motivation in this case. The successful implementation of each phase required programming, mathematical and engineering skills and wit. This meant that the project could be considered farfetched, notwithstanding the fact that each phase mentioned could by itself constitute a separate project. However, the system sees several possible and potentially save civilian applications in disaster regions as an early warning system. The potential bestowed by such a successful project, leaves a feeling of satisfaction for creating something difficult but very useful and very affordable.

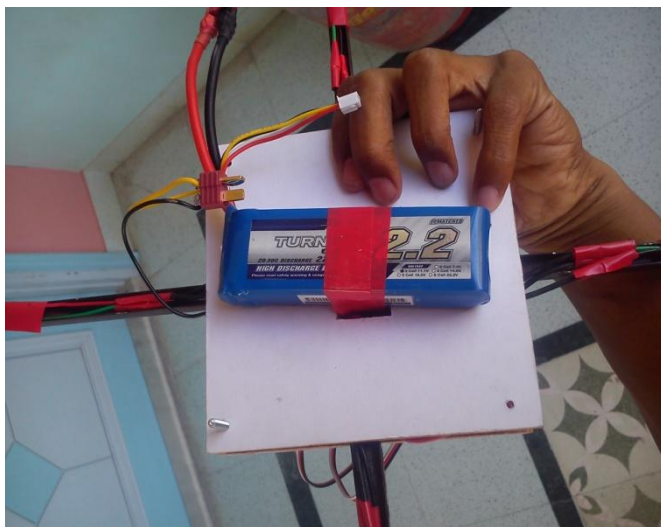
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ARM ROBO FOR FARMING

Abstract:-

We would like to conclude during this project as a very great and enriching experience to interact with the interesting field of robotics and their application

During project period, we learned about new software like bascom, proteius, which enriched our knowledge of programming. This project requires the basic knowledge of robotics parts and their different parameter

During the first part of our project, we made learned about the robotics arm's, and degree of freedom. During this first part we also study about the types of joint and kinematic of robot.

During the second part we study about ATmega 8 AVR microcontroller and also its pin-diagram, we design the circuit block-diagram of our project.

During the third part we study about stepper-motor for movement of arm's and also study about the sensor for sense the object. The result of this project we get knowledge of robots and their different application.

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EARTHQUAKE DETECTION INSTRUMENT USING **MICROCONTROLLER**

Abstract:-

An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. Earthquakes are recorded with a seismometer, also known as a seismograph. The moment magnitude of an earthquake is conventionally reported, or the related and mostly obsolete Richter magnitude, with magnitude 3 or lower earthquakes being mostly imperceptible and magnitude 7 causing serious damage over large areas. Intensity of shaking is measured on the modified Mercalli scale. Here we are presenting Microcontroller based An Earthquake Detection instrument to reduce its destructive losses by providing warning system. This instrument will first sense the vibration caused by earthquake event and enable alarming system using microcontroller system. Thus I conclude our training with a very nice and wonderful experience gained at k R system & services - 51, Vatva, Ahmedabad under a peaceful kind and friendly environment.

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STEGANOGRAPHY –INFORMATION HIDING IN DIGITAL IMAGE

Abstract:-

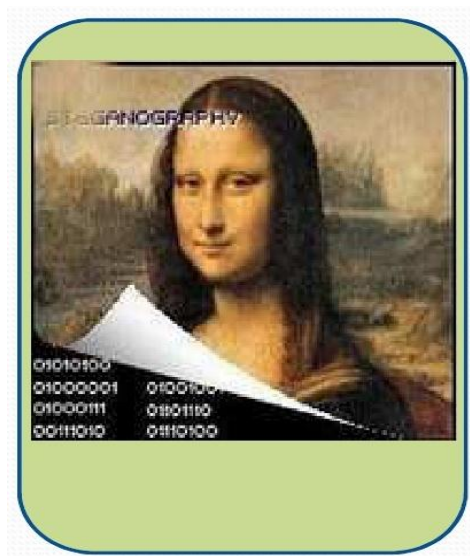
The goal of the “Steganography- Information Hiding in Digital Images” is The Internet as a whole does not use secure links, thus information in transit may be vulnerable to interception as well. The important of transmission is being an issue now days. Some solution to be discussed is how to passing information in a manner that the very existence of the message is unknown in order to repel attention of the potential attacker. Besides hiding data for confidentiality, this approach of information hiding can be extended to copyright protection for digital media. In this research, we clarify what Steganography is, the definition, the importance as well as the technique used in implementing Steganography. We focus on the Least Significant Bit (LSB) technique in hiding messages in an image. The system enhanced the LSB technique by randomly dispersing the bits of the message in the image and thus making it harder for unauthorized people to extract the original message. Here the language used is embedded ‘c’ and MATLAB 7.4 version and the LCD is used for monitoring the status of the project. Moreover the project is advantageous.

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SENSOR BASED SOLAR TRACKING

Abstract:-

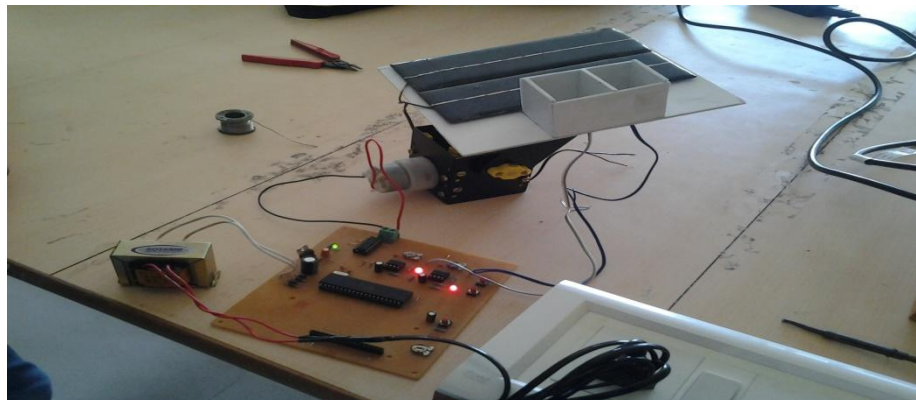
Solar energy is rapidly gaining notoriety as an important means of expanding renewable energy resources. As such, it is vital that those in engineering fields understand the technologies associated with this area. My project will include the design and construction of a microcontroller-based solar panel tracking system. Solar tracking allows more energy to be produced because the solar array is able to remain aligned to the sun. This system builds upon topics learned in this course. A working system will ultimately be demonstrated to validate the design. Problems and possible improvements will also be presented. The main objective of this project is development of an automatic solar tracking system whereby the system will cause solar panels to keep aligned with the Sunlight in order to maximize harvesting solar power. The system focuses on the controller design whereby it will cause the system to track the maximum intensity of Sunlight. When the intensity of Sunlight is decreasing, this system automatically changes its direction to get maximum intensity of Sunlight. LDR light detector acts as a sensor used to trace the coordinate of the Sunlight by detecting brightness level of Sunlight. While to rotate the appropriate position of the panel, a DC-gear motor is used. We have also used 555 timer IC for detecting LDR resistance changes, motor driver and microcontroller as a main processor. This project is covered for a single axis and is designed for low power and residential usage applications. From the hardware testing, the system is able to track and follow the Sunlight intensity in order to get maximum solar power at the output regardless of motor speed.

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SUBMERSIBLE PUMP CONROL USING GSM MODEM

Abstract:-

We would like to conclude this project as a very great and enriching experience to interact with the interesting field of Microcontroller and GSM communication. During our project, we learned about GSM modem working and Basic C programming. This project requires basic knowledge of microcontroller interfacing and basic C language. In the first part of our project we learned and searching about different topics and component of my project and also do some simulation in Proteus like LCD interfacing, Relay interfacing, GSM modem interfacing with microcontroller. Result of this task not only improve our knowledge but also our personality skill also develop because of great effort of respected faculty members they guide us very well and teach us how actually project doing in proper manner. Thus I conclude our first part of our project is very nice and wonderful experience under a peaceful kind and friendly environment of our college.

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PLC BASED MOTOR SPEED CONTROLLING FOR PRODUCT COUNTER

Abstract:-

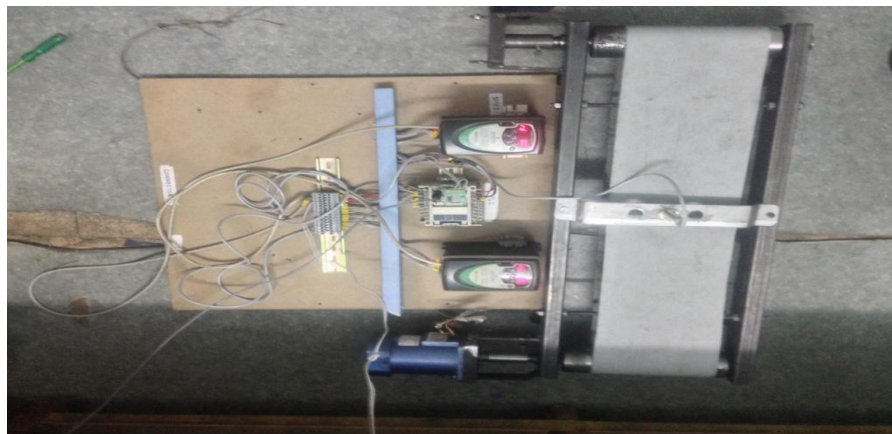
From this Project we conclude that how can we control the three phase induction motor by system(computer) by using components like PLC, SCADA, DRIVES, INDUCTIVE TYPE SENSOR, MCB SWITCH, AND COMMUNICATION CABLE. We also conclude that there are many type of different company's which manufacturer of PLC like Alenbradely, Siemens, Schneider, Delta, ABB, Omron, Mitsubishi, etc. These companies are also leading manufacturer of SCADA software like winc, Rs view, In touch, ABB Codesys, Mx developers, etc. We also learned that about different types of configured AC Induction Motors. We learned that this project system is applies in different industries like chemical factories, power plants, Food and milk manufacturing factories, Automobile manufacturing factories, Pharmaceutical Industries, Oil and Petroleum industries and many more like these. By using this project system we can get more efficiency of major components at primary base like motors, than other machineries like Boilers, Transformers, and Generators etc. By using this project system there is a becomes large decrement in time consumption in any process of manufacturing or any other by manually control system. This system's major benefit is that process in charge and production manager can control the production system form their desired computer system, and the other beneficial thing is that production manager can see the work of the process in charge at any time, but process in charge can't see the manager's allocated separate part, by this system's locking features. This whole system is also able to run in automatic mode by giving proper programming. This thing is very beneficial for which industries work in shift, they can apply automatic mode in night time and that's why require less man power. It gives them large benefit.

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BANK LOCKER SECURITY SYSTEM BASED ON GSM AND RFID

Abstract:-

The main goal of this project is to make a locker security system using RFID and GSM technology which can be organized in bank, secured offices and homes .In this system only authenticated person can recover money from locker. We can make a locker security system based on RFID(Radio -frequency identification) and GSM technology containing door locking system using RFID and GSM technology which can activate, authenticate user to open the locker .The main advantage of using passive RFID and GSM is more secured than other systems .This system consists of microcontroller ,RFID reader , GSM modem, keypad and LCD .The RFID reader reads the ID number from tag and sends to the microcontroller where it checks whether he or she is valid person or not .If the ID number is valid then microcontroller allow to person entering the password through keypad. The microcontroller will verify the passwords entered by the keypad and passwords store in microcontroller. If these two passwords are matched then locker will be opened otherwise it will remain in locked position. At that time This system is more secured than other systems because only authentic person can open the locker.

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GSM BASED DIGITAL NOTICE-BOARD

Abstract:-

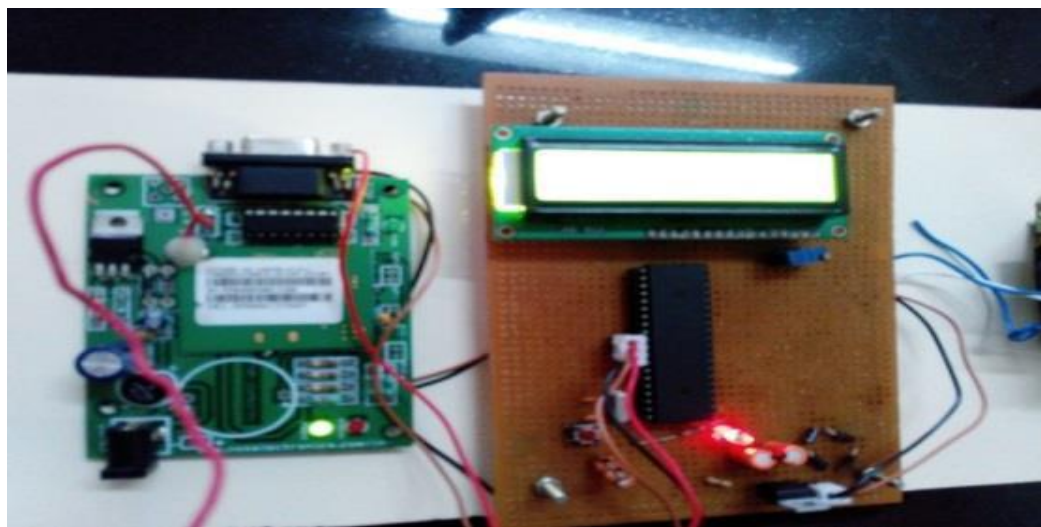
The main aim of this project will be to design a SMS driven automatic display board which can replace the currently used programmable electronic display. It is proposed to design receiver cum display board which can be programmed from an authorized mobile phone. The message to be displayed is sent through a SMS from an authorized transmitter. The microcontroller receives the SMS, validates the sending Mobile Identification Number (MIN) and displays the desired information. Started off as an instantaneous News display unit, we have improved upon it and tried to take advantage of the computing capabilities of microcontroller. Looking into current trend of information transfer in the campus, it is seen that important notice take time to be displayed in the notice boards. This latency is not expected in most of the cases and must be avoided. It is proposed to implement this project at the institute level. It is proposed to place display boards in major access points. The electronics displays which are currently used are programmable displays which need to be reprogrammed each time. This makes it inefficient for immediate information transfer, and thus the display board loses its importance.

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ARM CONTROLLED ROBO-ARM USING ZIGBEE

Abstract:-

In today's world there is an increasing need to create artificial arms for different in human situations where human interaction is difficult or impossible. They may involve taking readings from an active volcano to diffusing a bomb. Here we propose to build a robotic arm controlled by natural human arm movements whose data is acquired through the use of accelerometers and flex sensors. For proper control the flex sensor is used for finger movements.. The development of this arm is based on ATmega32 platform along with a personal computer for signal processing, which will all be interfaced with each other using zigbee wireless communication. Finally, this prototype of the arm may be expected to overcome the problem such as placing or picking hazardous objects or non-hazardous objects that are far away from the user.

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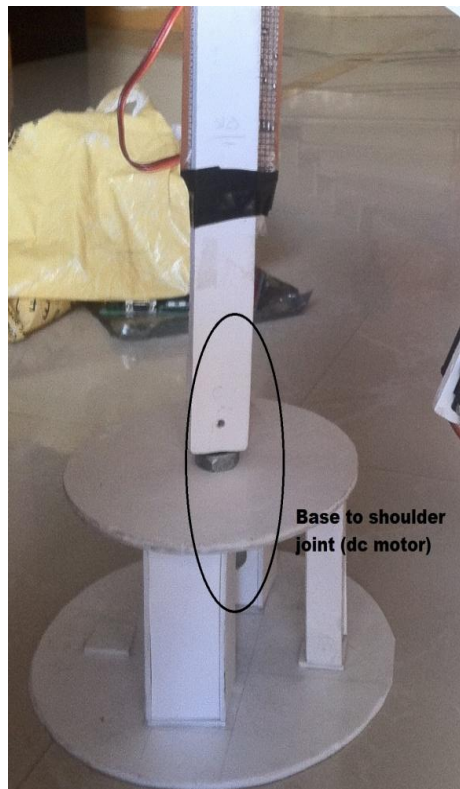
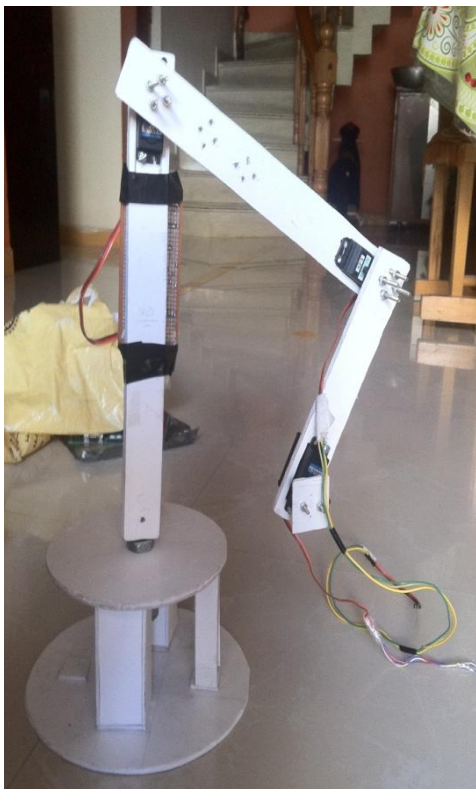
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AUTOMATION OF CHEMICAL MIXING PROCESS USING PLC AND HMI

Abstract:-

The automation in the chemical mixing process is to provide the maintain quality and quantity, increasing productivity, reducing cost, increasing safety in work place and the time saving. This process are using in the various field. Such as Chemical field, Pharmaceutical field to make the syrup, Cold drinks system, Color paint system, Beverage system.

Through this automation of mixing process, we provide a better solution in different industries. Automatic chemical mixing process is based on programmable logic controller (PLC) & Human machine interface (HMI). The process of chemical mixing are monitoring & controlling by the human machine interface (HMI). This is connected to the programmable logic controller (PLC) by means of communication cable.

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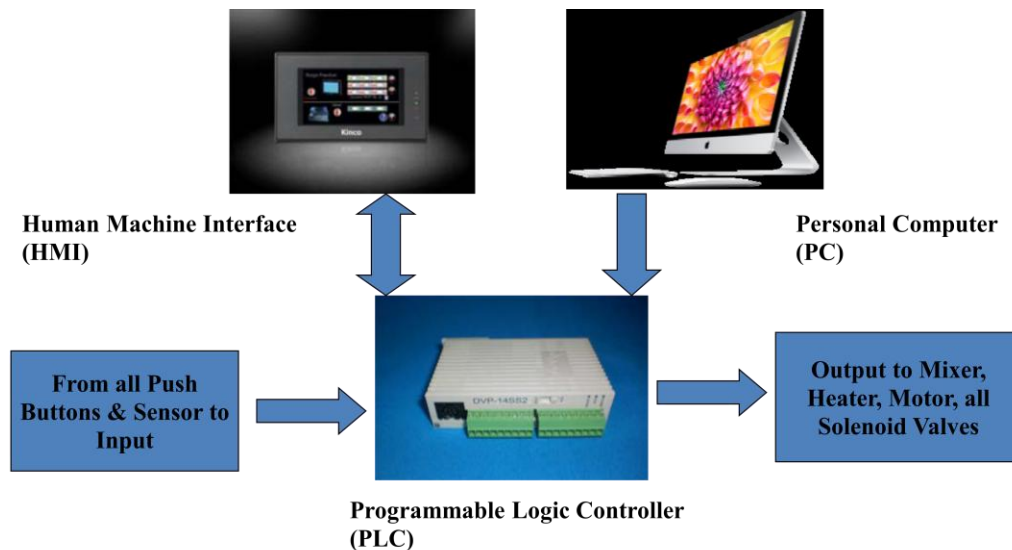
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GLOVE BASED COMPUTER MOUSE

Abstract:-

One of the important parts of our body is our hand which is most frequently used for the interaction in Digital Environment and thus complexity and flexibility of motion of hands are the research topics. To recognize these hand gestures more accurately and successfully data glove is used. Here, gloves are used to capture current position of the hand and the angles between the joints and then these features are used to classify the gestures. The gestures classified are categorized as clicking, rotating, dragging, pointing and ideal position. Recognizing these gestures relevant actions are taken, such as air writing and 3D sketching by tracking the path helpful in virtual augmented reality (VAR). The results show that glove used for interaction is better than normal static keyboard and mouse as the interaction process is more accurate and natural in dynamic environment with no distance limitations. Also it enhances the user's interaction and immersion feeling.

We designed and created a 3D Wireless Mouse implemented on a glove. It is able to track each finger and palm's orientation with minimal delay, and it is able to transmit the calculated orientation data to the computer wirelessly. It has four main parts, on each finger there is a Finger Board. They are connected to the Main Board which sits on the palm. The Zigbee is stacked on top of the Main Board. The receiver end is consisted of a Receiver Board and the Zigbee. Although we proposed accurate positional tracking of each finger, we later find it hard to accomplish with the limited time and current performance of the system. Further optimization on the stability of the orientation data needs to be made before we can attempt positional calculation. Nevertheless, our design on orientation is very successful. We hope to improve the system in terms of stability and even lower latency in future work.

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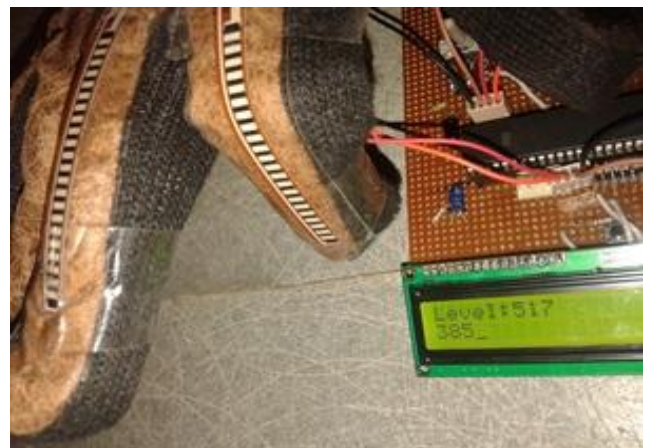
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SPEECH CONTROLLABLE HOME APPLIANCES

Abstract:-

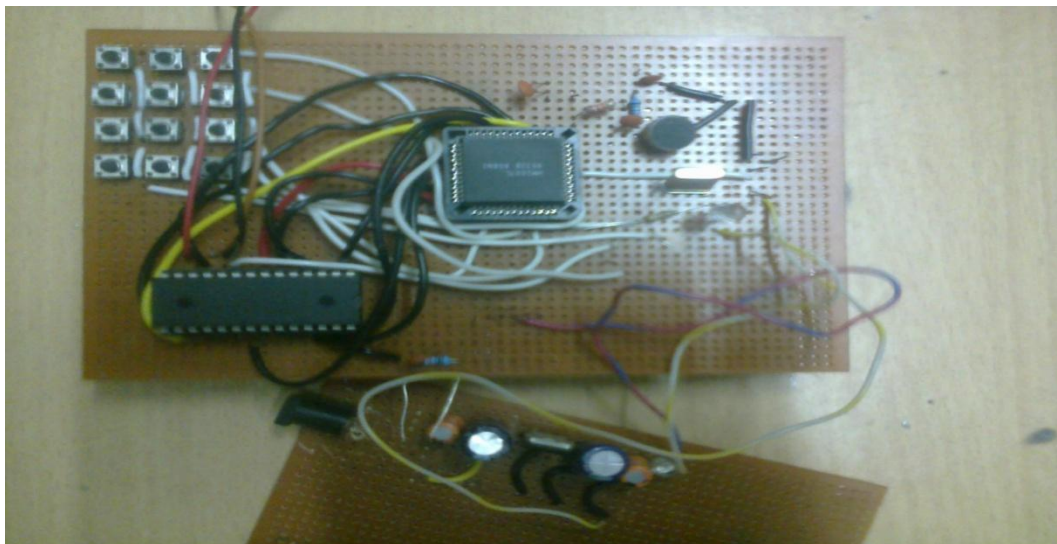
The main purpose of the study was to develop an automatic speech recognizer. Home appliances such as A.C, Refrigerator, PC, Fan etc. can be controlled by microphone which is connected with server & server gives command to devices. server based on microcontroller system. Reliable speech recognition is a hard problem, requiring a combination of many techniques; however modern methods have been able to achieve an impressive degree of accuracy. This project attempts to examine those techniques, and to apply them to build a simple voice recognition system. The project was started with three goals in mind. First, to be able distinguish 'yes' from 'no'. Second, to be able to recognize a vocabulary of 20 words, spoken individually, And third, to be able to recognize combinations of two or more words from this vocabulary spoken in close succession. The project is implemented in Matlab and was successful in achieving the first goal. It has been able to differentiate between a spoken 'yes' and a spoken 'no' with 100% accuracy among 24 samples taken from 8 different people. The method used is a simple one, involving a simple count of the frequency of zero crossings, but it is quite applicable to the voice recognition problem in general.

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HOME/INDUSTRIAL AUTOMATION SWITCH BOX & INTERFACE DESIGN

Abstract:-

We would like to conclude this project as a very great and enriching experience to interact with the interesting field of Microcontroller and relay card. Main purpose of the project is to control all the appliances of home through one smart relay switch box. In this we can implement the semi PLC based your own design. In home automation, we can remove existing switch board in our house and it can be replaced by this automation system. Main purpose of industrial automation is one can operate industrial equipment's at one place only. Result of this task not only improve our knowledge but also our personality skill also develop because of great effort of respected faculty members they guide us very well and teach us how actually project doing in proper manner. Thus I conclude our first part of our project is very nice and wonderful experience under a peaceful kind and friendly environment of our college.

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UTILIZATION OF RENEWABLE ENERGY SOURCE

Abstract:-

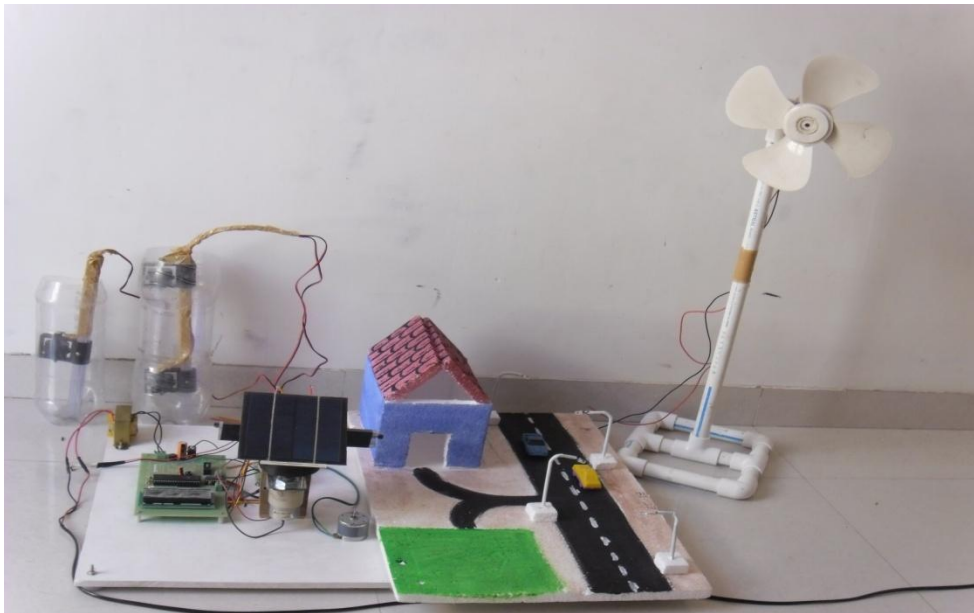
The Aim of the project utilizes the solar energy and wind power as resources for mankind Renewable Energy Source. Offers energy efficiency exist over wide geographical area, in contrast to other energy sources using of solar energy to generate electricity. Our project is based on solar tracking system and converting wind energy into the electrical energy. To realize this project, an extensive research and studies have to be done on solar panel, solar tracking system and conversion from mechanical to electrical energy. It is crucial to find out right program and source code to interface all that. Solar tracking system is used to convert light into electrical with following the direction of the sun. As the use of this technology grows, it would be the biggest revolution in the world of energy conversion and we can also save the energy sources using this technology.

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AUTHENTICATION AND SECURITY SYSTEM FOR INDUSTRIAL AREA

Abstract:-

This project is aimed at making an embedded system, a combination of hardware and software by making the use of RFID technology and VB programming language. It is a system which can be controlled without human interference and also manually controlled in case of failure. This project aims at detecting (identifying) the vehicles automatically. It also makes the use of software program to handle the database which is updated every time. We can have the record of each and every vehicle along with their ID number so that it can be referred later when ever required. All the parts of the project that were implemented work correctly and can be easily demonstrated.

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