CONTENTS

Vision of the Institute

To be one among the premier institutions of the country for professional Education in producing technocrats with Competent skills, Innovative ideas and Ethics strong to serve the nation.

Mission of the Institute

- To provide an environment most conducive to learning with state of the art infrastructure, well equipped Laboratories and research facilities to impart high quality technical education.

- To emphasize on innovative ideas and creative thinking and prepare them to meet the growing challenges of the industry.

- To inculcate the leadership qualities, multi-disciplinary approach, ethics and lifelong learning in graduates to serve the diverse societal needs of our nation.

Vision of the Department

To produce technically competent Electronics & Communication Engineers with a motive to meet the needs of the industry and evolving society through advanced research, professional ethics and lifelong learning.

Mission of the Department

- To enrich the technical skills of the students through effective teaching-learning practices, continuous assessment methods and eminent faculty.

- To continuously enhance creative thinking, research ability and innovative skills of students through training on core and multidisciplinary technologies and skill enhancement programs.

- To inculcate leadership qualities, ethics, social responsibility and gratitude through outreach programs.

Program Educational Objectives (PEOs)

PEO-1: Attain the global and local opportunities and reach greater heights in their chosen profession by demonstrating technical expertise.

PEO-2: Gain recognition by exhibiting problem solving expertise for addressing significant problems of industry and society.

PEO-3: Become good leaders with ethics and support, contribute and encourage diversity and inclusiveness in their workplace and society.

Program Outcomes (POs)

PO-1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO-2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO-3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO-4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO-5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO-9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multi disciplinary settings.

PO-10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi disciplinary environments.

PO-12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

**PSO-1:** Responsive to ideas: Apply the knowledge on core Electronics and Communication Engineering in order to develop skills to analyze, design and develop innovative solutions for the real world problems.

PSO-2: Domain Expertise: To develop interpersonal skills to demonstrate proficiency using the latest hardware and software solutions by maintaining professional and societal responsibilities.

Professor Desk

A hearty welcome to the Department of Electronics and communication engineering. The department has well qualified and dedicated faculty. The department strives to Impart knowledge and training of the highest standard. The objective of the department is to prepare students for a successful career in Industry, Research and Academics to meet the needs of growing technology. Our efforts are to develop the ability among students to synthesize data and technical concepts for application to product design. We provide an opportunity for students to work as members of a team on multidisciplinary projects. Mechanical engineering department provides students with a sound foundation in the mathematical, scientific and engineering fundamentals necessary to formulate, solve and analyze engineering problems and to prepare them for higher studies as well as research. We promote student awareness for life-long learning and to introduce them to professional ethics and codes.

For the overall development of the student; department of Electronics and communication engineering is associated with memberships of professional bodies such as IEEE, IETE, IEI. We formulated a Electronics Engineering Students association. Various activities of these chapters provide student to gain knowledge and interact with students and staff of other colleges/universities as well as Industry Engineers. Students have taken part in various competitions and won National Level top positions.

RASPBERRY PI BASED SMS SERVER
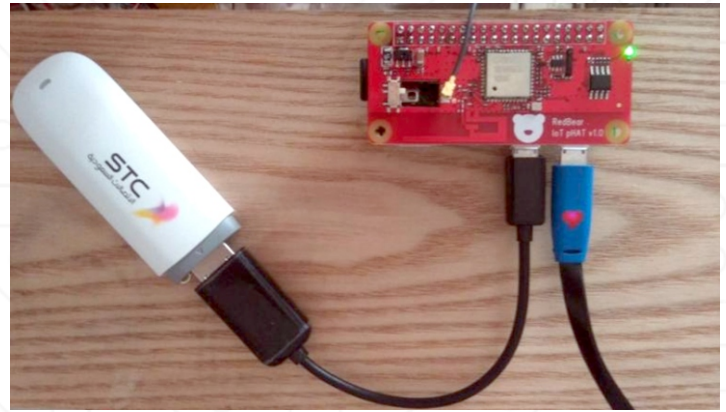
Raspberry Pi, developed by Raspberry Pi Foundation in association with Broadcom, is a series of small single-board computers and perhaps the most inspiring computer available today. From the moment you see the shiny green circuit board of Raspberry Pi, it invites you to tinker with it, play with it, start programming, and create your own software with it. Earlier, the Raspberry Pi was used to teach basic computer science in schools but later, because of its low cost and open design, the model became far more popular than anticipated.

It is widely used to make gaming devices, fitness gadgets, weather stations, and much more. But apart from that, it is used by thousands of people of all ages who want to take their first step in computer science.It is one of the best-selling British computers and most of the boards are made in the Sony factory in Pencoed, Wales.

Until recently, for sending an SMS we had to use third-party services from the Internet. We had to log on to a third-party server, copy and paste the message in the text box, pull up the mobile phone numbers, or copy and paste the group of mobile phone numbers separated by commas and then press send.In some rare cases, the SMS would not reach the destinations. So the guys at our company decided to buy an SMS server to create own facility for sending mass SMSes.

The proposal was moved and eventually the SMS server was bought and put into operation. But how much the entire system cost, I was spellbound. That is when all decided to make a cheap and efficient Raspberry Pi based SMS server at a fraction of the cost. In this article, we will design an Raspberry pi based SMS server using a GPRS shield, pin details of which include +5V, Tx and Rx.

If can buy a GPRS shield for US$ 4.7 however the video instructions provided by the vendor would most likely be in Mandarin. So, in all probability, if would not be able to understand the audio instructions and face problem while soldering the surface-mount diodes LED1 and LED2.To solve that problem, In this marked the polarity of the diodes as shown in The positive rail comes from the edge of the PCB, where D1, R1, D4 and R3 have been marked.All surface-mount resistors (R1, R2 and R3) are 4.7-kilo-ohm each. The diode and capacitor should be mounted on the other side of the PCB. Fortunately, you can avoid soldering this kit by ordering the assembled kit from here (We recommend users to see the video instructions from here as it really helps to understand how to use this GPRS shield.) Do clip the antenna on the module.

BALIBOYENA SNIGDHA
15F11A0411

IoT BASED MANHOLE DETECTION AND MONITORING SYSTEM
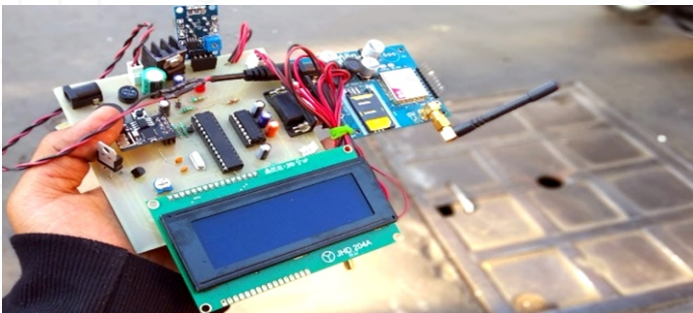
The sewage system must be monitored in order to maintain the city clean. Uneven sewage system monitoring causes drainage to become clogged. Blockages in the sewer system are a major source of sewer flooding and pollution. Workers may be involved in an accident as a result of their ignorance of the situation inside the manhole. To get the necessary output from the module, this model uses a regulator circuit, sensor driver circuit, microcontroller, serial communication devices, and IoT module. Overflowing drains in the sewage system are one of the most prevalent difficulties identified, which become more severe during the monsoon seasons when the authorities are ignorant of the overflowing drains. It is unsanitary for the adjacent residents and creates waterlogging, which leads to bug breeding. Our answer to this problem is an IoT system that warns municipal officials about overflowing drains immediately by email or

notification at the city control centre, as well as citizens via social media or a mobile app. The essential component of this system is a low-power IoT-based portable gadget that is mounted below the manhole cover.

For a clean and healthy environment, many Indian cities have an underground drainage system that is controlled by the Municipal Corporation. The water in the drainage system is occasionally mixed with pure water due to poo upkeep Infections and diseases can be spread through the drainage system. Because of climate change, drainage is affected throughout the year, and the environment is dynamic, people's daily lives are disrupted. To fix all drainage system concerns and to send Blynk notifications to the municipal corporation informing them of the state of the drainage system so that officials can take the necessary steps to restore the drainage system. A gas sensor was used to detect the gas produced within the bio-waste drainage system, preventing it from escaping. The pressure inside the drainage system produced an explosion. The purpose of this design is to track the drainage system using the sensor. When the sewage system is obstructed, water overflows, or the drainage lid is removed, sensors monitor the drainage and send the data to a nearby municipal corporation official via integrated Wi-Fi, where the water overflow and gas value are presented live in the cloud for later examination. The Blynk Server also provides the drainage's GPS location.

The sewage system exhibits instability and uncertainty due to multivariable, nonlinear, temporal variation, and random treatment processes. This model's purpose is to create a low-cost, customizable solution for detecting obstructions and stinky or foul-smelling gases.

Two ultrasonic sensors detect the water level, and if the difference between the two levels exceeds the threshold value, an alert message is delivered to the person in charge. The Arduino microcontroller is connected to the sensors' output. It looks at the previously set threshold level and sends a GSM alarm message to the person in control, which is tracked via IoT. Thing-speak, an IoT server analytics solution, displays the graph for clog detection and gas detection on the monitor.

The most significant benefit of this technology is that it can save sewage workers from dying from harmful gas exposure.

On the other side, the ARM family offers unique hardware logic control, real-time performance, and synchronicity, allowing it to collect many sensor data simultaneously and boost system real-time performance significantly. In the IoT world, the Raspberry Pi board has surpassed the MCU in terms of multi sensor data collection. In an IoT setting, however, different industrial WSNs use a significant number of complicated and diverse sensors. At the same time, each sensor has its own readout requirements, and different users have applications that necessitate different sensor kinds. It involves the development of complicated and time-consuming sensor driver code and data collection procedures for each sensor that is newly connected to the interface device, providing several challenges to researchers.

A. ASHOK
16F11A0401

SMART BANK LOCKER SYSTEM

In today's modern world, security plays an important role. Every person has precious accessories like gold, jewellery or cash. It is not enough to have these accessories, but security of this is very important, for this purpose we keep them in bank lockers. Still we often hear or read in newspaper that some fake person has access the locker of another person and have stolen money. In order to overcome this type of frauds, authentication of the person who wants to use the locker is very important. In this project; We are designing advance security systems for banking which will ensure the genuine access of the locker overcoming all the misuses. For this we are using

unique password technique, password verification and lastly the OTP verification. The unique password technique to be applied in bank security system because this kind of technique is effective and fast, and after entering the first door user has to enter OTP which is being sent through android application so that IR is disabled and second door is opened, if the user enters the first door and crosses the IR without entering the OTP provided the alarm signal would be raised to make an alarm. After verification of the OTP, he has entered second door will be opened, and the person can Access locker only and only if he clears the three-security level.

In today's modern world, security plays an important role. Every person has precious accessories like gold, jewellery or cash. It is not enough to have these accessories, but security of this is very important, for this purpose we keep them in bank lockers. Still we often hear or read in newspaper that some fake person has access the locker of another person and have stolen money. In order to overcome this type of frauds, authentication of the person who wants to use the locker is very important. In this project; we are designing advance security systems for banking which will ensure the guanine access of the locker overcoming all the misuses. Electronic Lockers offer an easy, secure and convenient facility for customers or staff members to store any personal items such as valuables, handbags, laptops, shopping bags, or any other items. The objective of this project to design three level "BANK LOCKER SECURITY SYSTEM USING ANDROID APPLICATION" by using Android phone, Bluetooth module, Buzzer, Atmega32 microcontroller and android application. User has to open first two doors before the lockers by entering unique password on keypad in android application provided to him. LCD of android phone is used to see the password that the user will entered while opening the second gate and also simultaneously particular locker will get open. When locker gets open, an SMS would be sent on user's cell his phone to inform that his locker has been opened. In case if someone tries to cheat him by opening his locker in his absence, he will be alerted via SMS.

DASARI HARSHAVARDHAN
17F11A0414

ELECTRONIC VOTING MACHINE (EVM) USING FINGER-PRINT SENSOR
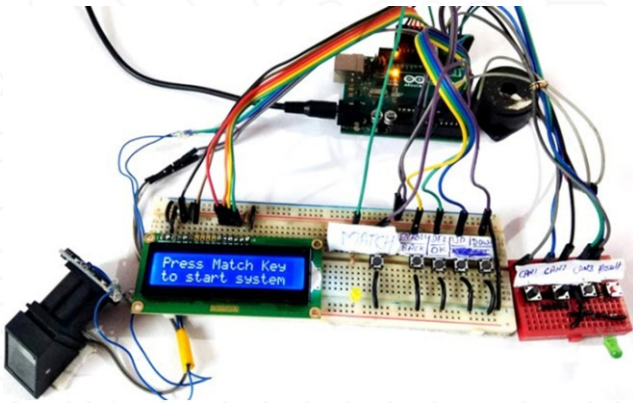
In electronic voting system we use finger print device for voting verifications. Finger-print based electronics voting system has its own advantages like people don't have to carry ID cards, there is no need of complex process just place your finger on biometric. When someone placed finger on finger-print sensor then data is passed onto the controlling unit of verification. The controller fetches the data from the storage device and compare with current users' data. if the finger-print is matched with the already stored finger-print, then the users is allowed to cast his/her vote. All the instructions are displayed on the LCD, just follow the instructions and you are able to cast your votes.

The e-voting is known as electronic voting. It is a voting and by using the electronic resources to help and taken care of the tasks and counting votes. The ranges of internet services are included in e-voting and it depends on the situation. The amount of automation may vary from simple task to a solution that can have voter registration, votes input, local, vote data services, tabulation and administration of elections. Admirable e-voting system should be done the greatest number of tasks and full fill the set of standard establishments through regular bodies. A ballot is an electronic device used in an election in order to cast the votes. The election officers verify a person's right to vote by comparing their personal information with the data listed on the electoral roll. If a person has the right to vote, the election documents and the ballot paper are provided to the voter. The voter then fills out the paper ballot in the polling booth and puts their completed ballot in the ballot box. The box has to be totally locked and sealed until counting session starts so as to ensure that the ballot papers cannot be manipulated.

Once the voting has formally finished, the ballot boxes will be opened under close supervision and the ballot papers will be tallied according to the national voting laws. It requires more papers, more power for security, and time for counting.

EVMs were first utilized as a part of the by-election to north assembly constituency of Kerala in 1981. EVM has a Control Unit and the Ballot Unit. A five-meter cable connects the two unit. Control Unit is placed in Presiding Officer's compartment or with a Polling Officer. The Balloting Unit will be kept inside the voting compartment. Primarily, the voter needs to get his voter ID checked and verified with the list. If he is eligible, then he will be permitted to vote. The voter then can make his choice by pressing the switch on the balloting unit to a particular party. Illegal voting can be done as one candidate can poll the vote of other members in the electoral list.

Aadhar card system was introduced in India years back. Now a day's, Aadhar services are very easy, popular and realistic. Since each Aadhar card comes with a unique identification number, details of a person and biometrical identifications, government of India is allowing many services which are purely dependent on this Aadhar process. Hence in this system, a unique number enrolled for each person and the fingerprints taken during the enrolment of the Aadhar card is utilized as identification during the election process.

CH SAI LAVANYA
15F11A0421

INTELLIGENT ALCOHOL DETECTION SYSTEM FOR CAR
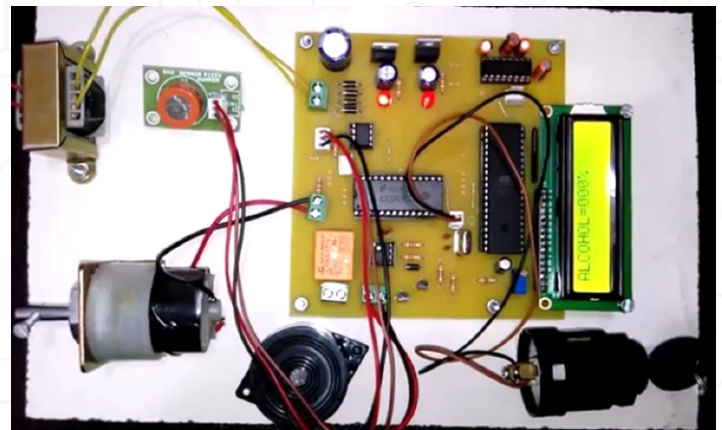
The purpose of this project is to develop vehicle accident prevention by method of alcohol detector in an effort to reduce traffic accident cases based on driving under the influence alcohol.

This project is developed by integrating the alcohol sensor with the microcontroller 16F877A. The alcohol sensor used in this project is MQ-2 which to detect the alcohol content in human breath. An ignition system which will produce spark plugs is build up as a prototype to act like the ignition starter over the vehicle's engine. The ignition system will operate based on the level of blood alcohol content (BAC) from human breaths detected by alcohol sensor. The main purpose behind this project is "Drunk driving detection". Now a days, many accidents are happening because of the alcohol consumption of the driver or the person who is driving the vehicle. Thus Drunken driving is a major reason of accidents in almost all countries all over the world. Alcohol Detector in Car project is designed for the safety of the people seating inside the car. This project should be fitted / installed inside the vehicle.

This paper presents the progress in using a alcohol Detector, a device that senses a change in the alcoholic gas content of the surrounding air. The sensor will then analyse the number of alcoholic vapours and offer the user some indication of the amount of alcohol present. This device is more commonly referred to as a breath analyser; as it analyses the alcohol content from a person's breath. The device is mostly used by law enforcement to determine whether an individual has been driving under the influence of alcohol. Police breathalysers measures the Blood Alcohol Content, or BAC, of an individual. The unit designed for this project is a simpler version of the Breathalyzer used by police. It will not accurately determine the BAC level of a person. The microcontroller is interfaced with a MQ-2 alcohol gas sensor, which serves as the analog input signal to the controller. There is a LCD attached to six output pins that will function as a display. Depending on the amount of alcohol present, the MQ-2 sensor will analyse its contents and consequently the sensor output voltage will increase. If output voltage increases enough, input pins on the microcontroller will change from active low state to active high state. According to the output of the microcontroller the motor will be driven with the help of L293D as driver ICAt first, the value of 400 BAC is set in the keypad of the microcontroller. lcd, heat sink L293D, mq2,

motor, capacitors resistors are all connected together. The alcoholsensor senses the alcohol level in the air. When the sensed level goes beyond 400 the control will not be sent to the motor and the car will not start. On the other hand, if the sensed level is below 400 bac the control will be given to the motor and the car will start. The sensed level depends upon the sensitivity of the alcohol sensor. The alcohol sensor is placed in one of the five ports (RA) in the microcontroller. It senses the alcohol level in the human breath. This value is then sent to the ADC that is connected internally to the microcontroller. This ADC is used to convert the analog values to the digital values and those digital values are in turn sent to the microcontroller. The least alcohol level is initially set in the keypad and the digital value from the ADC is compared with the value that is present in the keypad. The alcohol sensor takes at least five to ten seconds to sense the value. If the sensed value is less than or equal to the value present in the keypad the control will be sent to the motor and the car will be started. If the sensed value is greater than the keypad value then the car will not start. The sensed value will decrease with time and when the value goes below the set value the car will start. LCD is also connected to the microcontroller which shows all the sensed values.

EIGA MAHENDRA
16F11A0421

## VHDL IMPLEMENTATION OF 1553 PROTOCOL USING ACTEL IP CORE
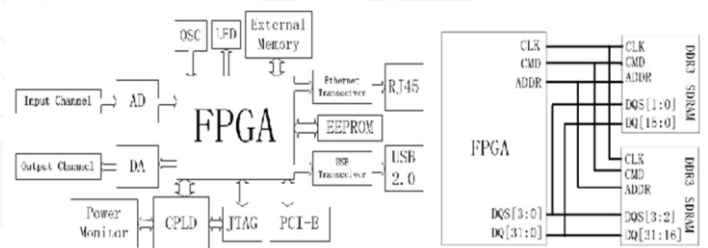
To implement a MIL-STD-1553 compatible system, the options that exist are to use a stand-alone integrated circuit or an IP core. Today, with most digital logic being implemented on FPGAs, the choice of an IP Core is advantageous. One such IP core is Core1553BRM from Axtel. Core1553BRM provides a complete, MILSTD-1553A and B Bus Controller (BC), Remote Terminal (RT) and Monitor Terminal (MT) and is compatible with legacy 1553 solutions. This paper involves study of 1553 architecture and study of various features of Core1553BRM IP core from Axtel and implementation on FPGA. A Bus Controller (BC)

and Remote Terminal (RT) are implemented on Axtel FPGA and data transfer between the BC and RT is demonstrated. Today the use of digital techniques in spacecraft equipment has greatly increased, as have the number of subsystems and the volume of data processed by them. Because analog point-to-point wire bundles are inefficient and cumbersome means of interconnecting the sensors, computers, actuators, indicators, and other equipment onboard the spacecraft, a serial digital multiplexed data bus was developed. MIL-STD-1553 defines all aspects of the bus which is widely used in aircraft systems also. The 1553 multiplexed data bus provides integrated, centralized system control and a standard interface for all equipment connected to the bus. The bus concept provides a means by which all bus traffic is available to be accessed with a single connection for testing and interfacing with the system. The standard defines operation of a serial data bus that interconnects multiple devices via a twisted, shielded pair of wires. The system implements a command-response format. MIL-STD-1553 gives an effective solution for implementation of Telemetry and Telecomm and in a spacecraft system. The main onboard computer of a spacecraft can act as a Bus Controller and all other subsystems can implement a 1553 remote terminal. This paper involves the study of 1553B Protocol and implementation of a BC and RT using IP cores in Axtel FPGA. services without using them right? That's why AWS came up with an amazing free-tier option.

The MIL-STD-1553 can be implemented in two ways, they are, stand alone integrated circuit and using IP Core. If it is implemented by using stand alone integrated circuit then the overall circuit size in the satellite is going to increase. Implementations based on stand-alone integrated circuit along with discrete components increase circuit size. An IP core implementation shall be useful in reducing the overall circuit size. So in order to decrease overall circuit size, a single chip solution i.e. implementation using IP Core is done. Since the most digital logic in the satellite is being implemented on FPGAs, the 1553 protocol can be implemented on the same FPGA by using an IP Core on the same which utilizes the FPGA effectively & decreases the overall circuit size in satellite, hence the choice of an IP Core is advantageous.

KUMMARAGUNTA AKHIL
17F11A0446

NETWORK MONITORING SYSTEM
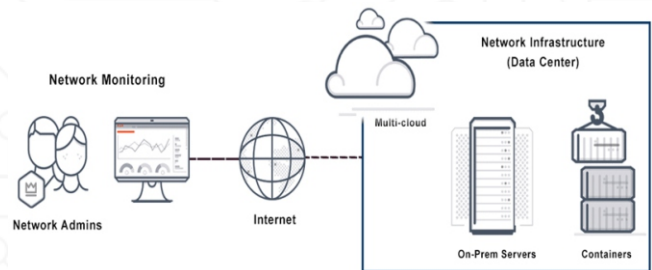
Network monitoring system supervises all computers in network. It consists of two programs client & server each run on different terminals which having different operating system that is platform independence like windows or Linux. Server program have task manager which shows process running on all clients. By using this task manager server can stop any process running on client terminal forcefully. It also capture remote desktop screen of client for observing whatever activity perform at that instant. It also provides chatting facility between client and server. If client having any difficulty he can chat with server. Client can ask question to server and server can reply .

The network monitoring system refers to supervising all the computers in a network, be that LAN, WAN, MAN or GAN. Security was not a priority for the original designers of the local area network protocols. Networks were assumed to be private, isolated and physically secure, or else completely public. This assumption is no longer true because of the growing commercial use of the internet and computers connected in small network for the purpose of sharing; a considerable amount of private information is now being sent over public networks. "NETWORK MONITORING SYSTEM" is the client-server based project. In this project administrator can keep the track of user's running processes, time of login and time of logout. Administrator can capture snapshot of clients desktop and can also chat with them.As the numbers of workstations are more in the network, it is the difficult task for the network administrator to off each and every workstation computer individually. To simplify this in our project there is a provision for remote shutdown, reboot and logoff the workstation from the server. In addition to all this finally the report of login and logoff from particular workstation can be generated on server computer. This project also provides file transfer.

Remote Task Manager from SmartLine, Inc is a systems control interface that can be run from any remote Windows NT/2000/XP computer. It is the leading enterprise remote control solution for

corporate networks. Remote Task Manager significantly reduces the total cost of network management in enterprise environments by enabling IT personnel to control tasks, processes, services, devices, shared resources, events and computer performance over LAN, WAN and the Internet. The periodic distribution of new programs, patches and updates represent a large portion of an administrator's duties. The challenge is to find the right tool to do the distribution with a minimum of fuss and muss. It turns out that you can do a pretty good job at simple software distribution with minimal effort by just doing remote file copies combined with creating jobs in each remote system to install the just copied file(s).

MAMIDI CHAMUNDESWARI
15F11A0455

INTELLIGENT WIRELESS MOBILE PATIENT MONITORING SYSTEM
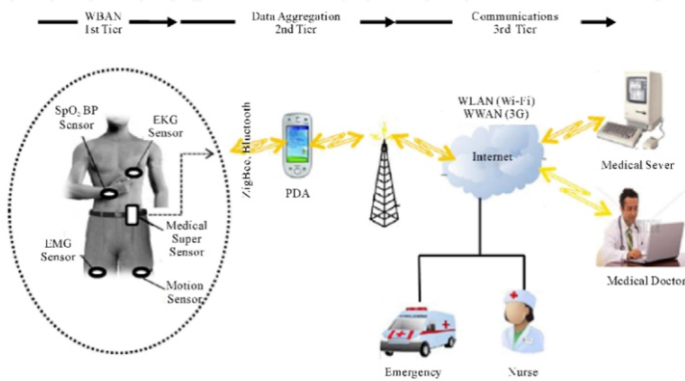
Nowadays, Heart related diseases are on the rise. Cardiac arrest is quoted as the major contributor to sudden and unexpected death rate in the modern stress filled lifestyle around the globe. A system that warns the person about the onset of the disease earlier automatically will be a boon to the society. This is achievable by deploying advances in wireless technology to the existing patient monitoring system. This paper proposes the development of a module that provides mobility to the doctor and the patient, by adopting a simple and popular technique, detecting the abnormalities in the bio signal of the patient in advance and sending an alert SMS to the doctor through Global system for Mobile (GSM) thereby taking suitable precautionary measures thus reducing the critical level of the patient.

Worldwide surveys conducted by World Health Organization (WHO) have confirmed that the heart related diseases are on the rise. Many of the cardiac related problems are attributed to the modern lifestyles, food habits, obesity, smoking, tobacco chewing and lack of physical exercises etc. The post-operative patients can develop complications once they are discharged from the hospital. In some patients the cardiac problems may reoccur, when they start doing their routine work. Hence the ECG of such patients needs to be monitored for some time after their treatment. This helps in diagnosing the improper functioning of the heart and take precautions.. Some of these lives can often be saved if acute care and cardiac surgery is provided within the so-called golden hour. So the need for advice on first hand medical attention and promotion of good health by patient monitoring and follow-up becomes inevitable. Hence, patients who are at risk require that their cardiac health to be monitored frequently whether they are indoors or outdoors so that emergency treatment is possible. Telemedicine is widely considered to be part of the inevitable future of the modern practice of medicine. It is gaining more and more momentum as a new approach for patient's surveillance outside of hospitals (at home) to encourage public safety, a ciliate early diagnosis, treatment, and for increased convenience. Defined as the "use of advanced Tele Communication technologies " to exchange the information about the patient's health care status and provide health care services across is now currently being used by doctors, hospitals and other healthcare providers around the world with conventional mode of treatment. Telemedicine systems are already available to enable the doctor to monitor a patient remotely for home care emergency applications. Nowadays, Wireless networking is an emerging technology that will allow users to access information and services electronically, regardless of their geographic topography. The use of wireless communication between mobile users has become increasingly popular due to the advancements in computer and wireless technologies. Implementation of wireless technology in the existing ECG monitoring system eliminates the physical constraints imposed by hard-wired link and allows users to conduct own check up at anytime anywhere. The usage of mobile phone has been recognized as a possible tool for telemedicine since it has become a commercially available household article. In the recent past, it has been shown that a bio signal acquisition unit

connected to a computer, vital signs can be transmitted from an ambulance to a hospital in a store-and-forward mode or in real-time mode. Moreover, newer cellular access technologies, such as Third generation (3G), and others provide much higher data transmission speeds (rates) than basic second generation (2G) GSM cellular system offering future telemedicine solutions endless choices for high-end designs. These relatively new wireless technologies are deployed mostly in or around crowded high income metropolitan areas for our proposed scheme. But the majority (80.8%) of the 3.7 billion cellular phone users in the world are still 2G GSM users. Hence, we describe a telemedicine system based on mobile messaging service namely: Short Messaging Service (SMS), which is an integral part of the original 2G GSM cellular system and subsequent generations since all new phones are SMS capable.

JAGGA YAMINI
16F11A0428

SOLAR POWER ENVIRONMENTAL AIR POLLUTION & WATER QUALITY MONITORING SYSTEM BASED ON IOT
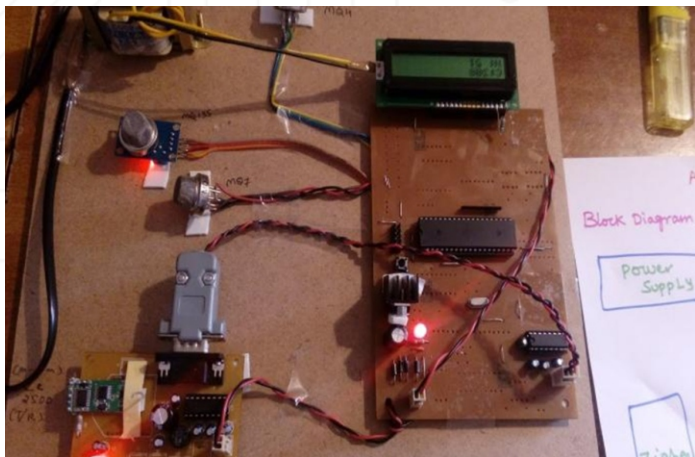

Water and air pollution fears for the green globalization. In order to ensure the safe supply of the drinking water the quality needs to be monitor in real time. In this system we present a design and development of a low cost system for real time monitoring of the water quality in IoT(internet of things) an IOT Based Air Pollution Monitoring System in which we will monitor the Air Quality over a web server using internet and will trigger a alarm when the air quality goes down beyond a certain level, means when there are sufficient amount of harmful gases are present in the air like CO2, smoke, alcohol, benzene and NH3. It will show the air quality in PPM on the LCD and as well as on webpage so that we can

monitor it very easily. In this IOT project, you can monitor the pollution level from anywhere using your computer or mobile. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller. Finally, the sensor data can be viewed on internet using IP address.

In the 21st century, there were lots of inventions, but at the same time were pollutions, global warming and so on are being formed, because of this there is no safe drinking water for the world's pollution. Nowadays, water quality monitoring in real time faces challenges because of global warming limited water resources, growing population, etc. Hence there is need of developing better methodologies to monitor the water quality parameters in real time. The water quality parameters pH measures the concentration of hydrogen ions. It shows the water is acidic or alkaline. Pure water has 7pH value, less than 7pH has acidic, more than 7pH has alkaline. The range of pH is 0-14 pH. For drinking purpose it should be 6.5-8.5pH. Turbidity measures the large number of suspended particles in water that is invisible. Higher the turbidity higher the risk of diarrheoa, collera. Lower the turbidity then the water is clean. Temperature sensor measures how the water is, hot or cold. Flow sensor measures the flow of water through flow sensor. The traditional methods of water quality monitor involves the manual collection of water samples from different locations. The main objective of IOT Air Monitoring System is that the Air pollution is a growing issue these days. It is necessary to monitor air quality and keep it under control for a better future and healthy living for all. Due to flexibility and low cost Internet of things (IoT) is getting popular day by day. With the urbanization and with the increase in the vehicles on road the atmospheric conditions have considerably affected. Harmful effects of pollution include mild allergic reactions such as irritation of the throat, eyes and nose as well as some serious problems like bronchitis, heart diseases, pneumonia, lung and aggravated asthma. Monitoring gives measurements of air pollutant and pollution concentrations, which can then be analyzed interpreted and presented.

NAKKA THANESH BABU
17F11A0457

# GREENHOUSE MONITORING AND CONTROL SYSTEM WITH AN ARDUINO SYSTEM
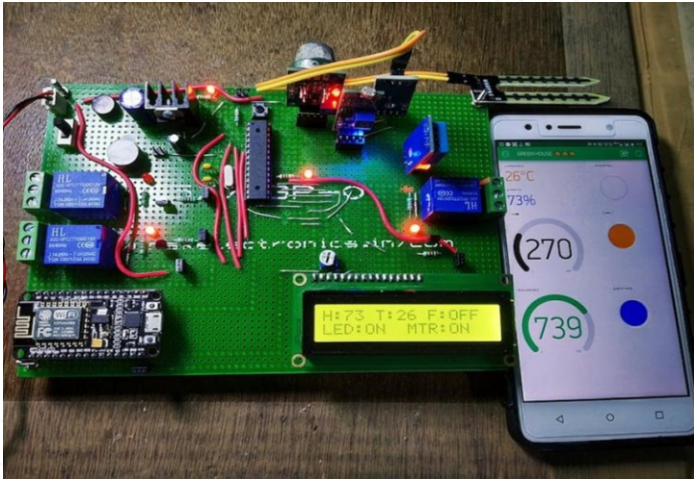
Agriculture is a major part of our lives as human beings. A lot of research has been carried out in order to be able to develop a monitored and controlled greenhouse system/environment that will help in solving the main problems relating to agriculture which is to enable the increase in the crops being cultivated all year round in the comfort of a small space like the home, and also to reduce human interaction in a small scale greenhouse environment. So accordingly, an automated greenhouse monitoring and control system was proposed for the sole purpose stated above. The methodology used in building the greenhouse monitoring and control system is a wired connection. The system was built using a number of connection wires, sensors, LCD, a cooling system, a power bank, LEDs, LDRs, Arduino board among a few other components. The result obtained was a fully functioning system that was set to monitor the greenhouse environment.

In this time and day, everything can be monitored and controlled automatically. Unfortunately, in an important sector like agriculture, the manual process is still very active, meaning the automatic monitoring and control of a greenhouse system hasn't completely scaled through just yet, especially when it comes to small scale farming. The reason whereby the automation of a greenhouse system hasn't been put to a full-fledged use may be in view of several reasons, such as the absence of technical know-how, high cost and the requirement of high maintenance. Agriculture has stood out amongst the most important occupations of individuals since the early advancement of humans and sadly,

even to date, manual interventions in farming are inescapable. When it comes to a greenhouse monitor and control system, it is a very important part of agriculture as it can be used to grow plants under a controlled climatic condition for ideal plant produce, it is also to a great degree important in the sense that it shields plants from weather extremes by having a controlled climatic environment, it broadens the developing season and also empowers you to sow plants earlier and harvest plants later. In the case of this project, there will be the presence of an automatic greenhouse which will involve the system being closely controlled and monitored in a set climatic condition which is needed for optimum farm/plant produce.

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GSM BASED SMART SECURITY SYSTEM USING ARDUINO
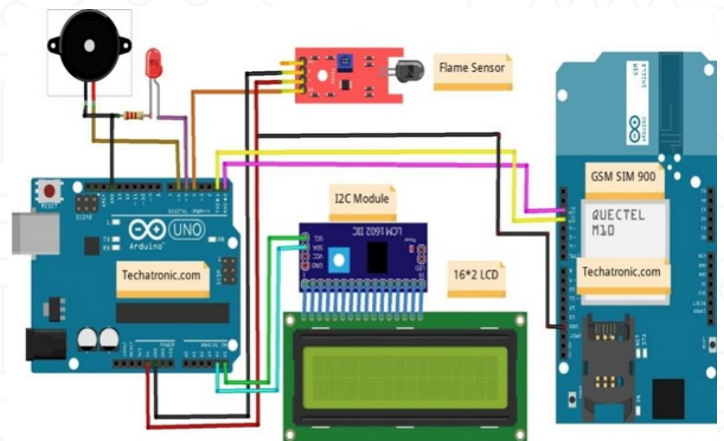
The need for security cannot be overemphasized in today's modern world, where residential and industrial fire outbreaks, gas leakages, over-current destructions, theft, suffocation from gas accumulations etc. are increasing alarmingly and becomes a major source of threat and environmental hazards. Current security systems in developing countries (if and when available) treat security as only intrusion based, and are of high operational and setup cost and thus the need for a smart and more integrated security system. The GSM based smart security system using Arduino presented employs the Passive Infrared (PIR), MQ2, MQ7 and the DHT 11 sensors in monitoring intrusion, combustible gases, carbon monoxide and temperature threats respectively and also incorporates remote monitoring and control capability. The concept of remote monitoring and control is implemented via the use of

SMS and mobile phone calls respectively made possible by utilizing the SIM900 GSM module interface. The two operational modes - internal and external mode reduces the overall operational cost of the system and thus Remote monitoring (SMS), is used only when the owner is actually away, while audio and visual forms of alarms are utilized if he is close by the property. The entire system is controlled by the powerful Arduino Uno. The system resulted in a cost saving, smart, portable and a more efficient way of implementing security alarm systems. Security entails the condition of not being threatened, especially; physically, psychologically or emotionally. A security system is a system designed to detect intrusion or unauthorized entry into a building or an area. They are used in residential, commercial, military, and industrial properties for protection against burglary (theft) or property damage, as well as personal protection against intruders. Some security systems serve a single purpose of burglary protection. Combination systems provide protection for a number of threats and not just a single threat. Conventional security systems tend to treat security as only burglar/intrusion inclined and, in the process, ignoring other potential threats. In today's society, threats ranging from; over-current destruction, suffocation arising from accumulation of carbon monoxide, fire (which can result from leakage and accumulation of combustible gases), leakage

of dangerous gases etc., are all rampant, these threats also need to be monitored. The 'modern and smart' security systems which do in fact cover other potential threats and do function smartly by incorporating other forms of alarms notably phone-based alarms for remote monitoring, costs a fortune to set up, operate and maintain, owing to the nature of software design, type of materials used etc.

This design signifies a major improvement in terms of using cheaper materials, easier to maintain components and cheaper operating cost than other systems of the same kind, as notifications via text messages and calls are only made when owner is actually away. The GSM based smart security system using Arduino can be adopted at home, offices, institutions (educational, military, commercial, industrial, etc.). Much more importantly, considering

the building arrangements in Nigeria, it is better suited to this terrain. It consists of various types of sensors used for the task of monitoring. In this work, the threats being monitored are those of intrusion (burglary), fire and dangerous gases. The system is fully controlled by the 'powerful' Arduino Uno board. The Arduino Uno board, continuously monitors all sensors, and if any security threat is detected from these sensors, then a combination of three alarms are triggered, namely; visual, audio and/or phone-based alarm. The system offers a 'safe' security system, in that only the user can activate or deactivate the two operational modes, through a phone call made only from his phone to the system, unlike other systems. This capability means that the security system is in itself minimally prone to attack.

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BRAIN TWISTER

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