

**1. Project Title:**Implementation of high speed carry skip adder

**Project Guide:** Ms.Aparna Nair M K

**Project Team:** Ayisha ,Chaithra K V,Chaithra B,Ananya

**Abstract:**

This project presents a high speed carry skip adder (CSKA) structure that brings down the delay compared with the conventional one. The proficiency of existing CSKA (Conv-CSKA) structure is improved by applying concatenation and incrementation plan. The AND-OR-Invert (AOI) and OR-AND-Invert (OAI) logic gates are used for the skip logic to replace the multiplexer logic. The proposed structure (CI-CSKA) is evaluated by comparing its speed and area parameters with those of different adders designed by Verilog HDL, simulated and synthesized by Cadence tool and the proposed system is implemented on FPGA .

**2.Project Title:**Smart walking stick and navigation system for visually impaired people

**Project Guide:** Mr.Ramachandra Ballary

**Project Team:** Ahana Rai,Madhusoodana S,Abhishek K,Ananthesh V

**Abstract:**

The blind's ability to navigate in a particular place and organize their daily activities is of vital importance for their well-being. In the present scenario, a blind person is compelled to rely on another person and cannot travel independently to any place without the help of others. This project proposes a scheme that provides a moderate budget and efficient navigation aid for visually impaired people which gives a sense of artificial vision by providing information about the environmental scenario of static and dynamic objects around them. The system is intended to provide benefits in two domains - private space and public space. It consists of a simple walking stick equipped with ultrasonic sensors to give information about the environment like, object detection, pit sensing and water sensing. It also includes GPS/GSM system, vibrator and a remote control. The GPS system is used by the user to know the current location and also to notify his friend or relative about the current location. This could result in a better movement of the user. A voice module will be attached so that the stick can alert the user about the obstacles. GSM is used to send the message about the current location to his friend or relative and the current location announcement which involves text to speech conversion is given to the user by the system. In case of blind person with hearing disability the object detection is indicated using an vibrator. Remote control is used to locate the stick .

**3.Project Title:**Character recognition using artificial neural networks

**Project Guide:**Mr.Shivaprasad

**Project Team:** Aisiri C.S ,Chaya Patil,Areefa

**Abstract:**

Recognition of characters has been one of the active and challenging areas of research in the field of image processing and pattern recognition. In this paper, the main importance is given to recognition of English alphabets(i.e., A,B,C,I,L) in a given scanned text document with the help of Neural Networks. These texts are recognized by projecting on different sized grids. The first step is image acquisition which acquires the scanned image followed by noise filtering, smoothing and normalization of scanned image, rendering image suitable for segmentation where image is decomposed into sub images. Feature Extraction improves recognition rate and misclassification. The features extracted from the characters are used for training the neural network and to classify the characters.

**4.Project Title:**Android based voice interactive home

**Project Guide:** Mr.Mahabaleshwara Bhat

**Project Team:** Akshatha,Darshini,Krithika

**Abstract:**

In the recent years, Home Automation systems have seen rapid changes due to introduction of various wireless technologies. Automation systems are supposed to be implemented in existing home environments, without any changes in the infrastructure. The automation is based on recognition of voice commands and uses a microcontroller. This paper presents the overall design of ‘Android based Voice Interactive Home’, which we are currently developing. The system is connected to the android phone via Bluetooth module HC-05. The system recognizes voice commands given by the user and transfers it to microcontroller which detects the voice command and proceeds with the switching accordingly. We are using Atmega328p Microcontroller module which is programmed using Arduino software. The home automation system is intended to control all lights and electrical appliances in a home or office using voice commands.

**5.Project Title:**IoT based non invasive blood glucose ,pulse rate and temperature measurement

**Project Guide:** Dr.Roshan Joy Martis

**Project Team:** Ananya B,Anujna Jain,Apoorva K,Gayathri A

**Abstract:**

A system is designed and developed to obtain pulse rate and body temperature of human body which is capable of measuring the parameters using different sensors. Heart related diseases are increasing day by day; therefore, an affordable and portable pulse rate and body temperature

measuring device is essential for taking action in proper time. Such a device is essential where there is no doctor or clinic nearby and patients are unable to recognize their actual condition. Pulse rate measurement is done by a device that takes sample of heartbeats and computes the Beats per Minute (bpm). Similarly, body temperature also being an important parameter is measured. Pulse rate and body temperature are digitally sensed using arduino. Mainly arduino is used because it can sense the environment by receiving input from variety of sensors and can affect its surroundings by controlling lights, motors, and other actuators. The microcontroller on the board is programmed using the Arduino programming language. The obtained values are displayed on LCD display. These measured values can be then connected to internet using IoT. Thus, the information can be used to determine health condition of the person under test. This system is beneficial to the patients and society where the implementation of such system will save hospital bill, waiting time and reduce traffics in the hospital. Pulse rate and body temperature measurement device is developed for which real time data could be observed by the doctor .

**6.Project Title:**Intelligent agriculture monitoring system using cloud computing and Rasperry-pi

**Project Guide:** Ms.Nisha G.R

**Project Team:** Maithri,Nishanth,Eshan,Anjana A

**Abstract:**

Climate changes and rainfall has been erratic over the past decade. Due to this in recent era, climate-smart methods called as smart agriculture is adopted by many Indian farmers. Smart agriculture is an automated and directed information technology implemented with the IoT (Internet of Things). IoT is developing rapidly and widely applied in all wireless environments. In this paper, sensor technology and wireless networks integration of IoT technology has been studied and reviewed based on the actual situation of agricultural system. A combined approach with internet and wireless communications, Remote Monitoring System (RMS) is proposed. Major objective is to collect real time data of agriculture production environment that provides easy access for agricultural facilities such as alerts through the Message Service and advices on weather pattern, crops etc.

**7.Project Title:**Customised waste management using IoT monitoring for smart cities

**Project Guide:** Mr.Vyasaraj

**Project Team:** Divya,Jashwitha ,Kavitha,Krithi

**Abstract:**

In the present day scenario, many times we see that the garbage bins or Dust bin are placed at public places in the cities are overflowing due to increase in the waste every day. It creates unhygienic

condition for the people and creates bad smell around the surroundings this leads in spreading some deadly diseases and human illness, to avoid such a situation we are planning to design “customized waste management using raspberry pi3”. In this proposed system there are dustbin located in the city, this dustbin is provided with low cost embedded device which helps in tracking the level of the garbage bin and detects whether that garbage bin is full or not. When the level reaches the threshold limit, the device will transmit the level. These details can be accessed by the concern authorities from their place with the help of Internet and an immediate action can be made to clean the dustbins.

**8.Project Title:**X-Bee based robot for industrial gas monitoring

**Project Guide:** Mr.Naveena C

**Project Team:** Chaithra Kakathkar,Varun Kumar R,Adithya K.P,Kavyashree V

**Abstract:**

A gas monitoring system plays an important role in almost all the chemical and process industries as it prevents accidents. Many of the existing gas monitoring systems employ distributive sensing, an expensive and a complex process. The system discussed in this paper presents an alternative approach which consists of a mobile robot capable of moving through keypad controller. It can quickly scan hazardous gasses, smoke, fire, in all the parts of an industrial complex and can immediately send data to the concerned people.

**9.Project Title:**Automated detection and classification of epileptic seizures

**Project Guide:** Dr.Roshan Joy Martis

**Project Team:** Akshay H S,Muhammad Irshad,Amulya B.J,Mokshith Kumar

**Abstract:**

The unpredictability of the occurrence of epileptic seizures contributes to the burden of the disease to a major degree. An automatic system that detects seizure onsets would allow patients or the people near them to take appropriate precautions, and could provide more insight into these phenomena, thereby revealing important clinical information. Electroencephalography (EEG) is an electrophysiological monitoring method to record electrical activity of the brain. EEG is most often used to diagnose epilepsy, which causes abnormalities in EEG readings. Longterm EEG recordings of an epileptic patient contain a huge amount of EEG data. The detection of epileptic activity is, therefore, a very demanding process that requires a detailed analysis of the entire length of the EEG data. An automated classification of EEG signals for the detection of epileptic seizures using higher-order spectral analysis and feature extraction using Principal Component Analysis and classifying using decision tree algorithm has been done.

**10.Project Title:**IoT based garbage monitoring system

**Project Guide:** Ms.Prabhs G.S

**Project Team:** Chaithra N,Chaithra K ,Ashwitha D

**Abstract:**

The main concern with the environment is waste management which in addition to disturbing the balance of the environment also has adverse effects on the health of the society. The detection, monitoring and management of wastes is one of the primary problems in present days. The traditional way of manually monitoring the wastes in waste bins is a complex, cumbersome process and utilizes more human effort, time and cost which is not compatible with the present day technologies. This project IoT Based Garbage Monitoring system is a very innovative system which will help to keep the cities clean. This system monitors the garbage bins and informs about the level of garbage collected in the garbage bin via a web page. By implementing this project, overflowing of garbage from the garbage bin can be avoided and garbage disposal problem can be minimized

**11.Project Title:**Smart rubber tapping machine

**Project Guide:** Ms.Sangeetha B.L.

**Project Team:** Harikrishnan V,Ashweej Kumar,Kumara Govinda

**Abstract:**

Rubber tapping is the process of extraction of latex from rubber trees. Rubber tree tapping is considered to be a skill oriented job. During the tapping process, the tapper has to make a downward half spiral incision on the tree bark to extract the white milky liquid called latex. On a typical day, a rubber tapper has to tap about 500 to 800 rubber trees manually with a tapping tool within a specified time of the day. Availability of skilled laborers who could accomplish this mammoth task is getting scarce as days pass by. Even though cheap unskilled labor is available, without appropriate time and training they would end up damaging the tree. The automated rubber tapping machine designed here would replace the manual labor required for the tapping process. Also with the IoT to control using the timing of the tapping process, higher yield of rubber latex could be obtained.

**12.Project Title:**Power system monitoring and optimization

**Project Guide:** Ms.Nirupama k

**Project Team:** Chinmaya,Akshay Kumar,Dakshath,Chethan V

**Abstract:**

As concerned to the present scenario we can only estimate the overall consumption of electric power in particular location or area. But now as the availability of the power is too low it is the

crucial time for us to save the power. So to overcome this problem we have designed our system in such a way that power consumption of each device connected to this system can be measured in terms of units. Thus we can monitor the power consumption of each device, and if the consumption extends our estimated threshold we can turn off the device or limit the usage .

**13.Project Title:**Smart LPG stove

**Project Guide:** Mr.Shrikanth Rao S.K.

**Project Team:** Hareesha,Hariprasad K N,Dhananjaya M,Charan Kumar

**Abstract:**

Energy wastage is one of the most serious problems at present. In present LPG system there are several disadvantages like most of the energy wasted when flame is greater than the vessel diameter, leakage of gas is one problems with current LPG cooking system, we don't have a option to set the ON period of the stove so that we can do other works during cooking process, overflow of food from vessel is unavoidable and we are least known about remaining gas in the cylinder. One of the major challenges at the present moment is the improvement of the current cooking system in urban areas where LPG is main source of cooking and to install LPG stoves in rural areas where LPG is less known.

The system proposed consists of seven major modules namely, automatic adjustment of flame size in accordance with vessel diameter, automatic turn OFF of system when given time has elapsed, automatic turn OFF of system when gas leakage is detected, gas level indicator module and overflow of food from the vessel is detected, send the message to the registered mobile number when there is a gas leakage and gas level low in the cylinder using GSM module.

**14.Project Title:**Hand gesture and sign recognition using image processing

**Project Guide:** Mr.Shivaprasad

**Project Team:** Bindu N,Manoj Kumar K,Darshan J M,Naveen C V

**Abstract:**

Computer recognition of sign language is an important research problem for enabling communication with hearing impaired people. This project introduces an efficient and fast algorithm for identification of the number of fingers opened in a gesture representing an alphabet of the Binary Sign Language. The system does not require the hand to be perfectly aligned to the camera. The project uses image processing system to identify, especially English alphabetic sign language used by the deaf people to communicate. The basic objective of this project is to develop a computer based intelligent system that will enable dumb people significantly to communicate with all other people using their natural hand gestures. The idea consisted of designing and building up

an intelligent system using image processing, machine learning and artificial intelligence concepts to take visual inputs of sign language's hand gestures and generate easily recognizable form of outputs. Hence the objective of this project is to develop an intelligent system which can act as a translator between the sign language and the spoken language dynamically and can make the communication between people with hearing impairment and normal people both effective and efficient. The system is we are implementing for Binary sign language but it can detect any sign language with prior image processing.

**15.Project Title:**VLSI based denoising of ECG signal

**Project Guide:** Ms.VelloreeKhuraijam

**Project Team:** Pooja N ,Poojitha V,Prathiksha K S,Shreedhini

**Abstract:**

Heart disease is one of the major causes of deaths worldwide. Electrocardiogram (ECG) technique is used to detect abnormal heart rhythms and to investigate the cause of chest pains. This technique detects and records heart's electrical activity. There should be more accuracy in recording the ECG signal because it contains very low frequency and amplitude signals. It provides valuable information about the functional aspects of the heart and cardiovascular system. A common problem in ECG interpretation is removal of unwanted artifacts and noise. There are various artifacts which get added in these signals and change the original signal; therefore the need to remove these artifacts from the original signal is significant. The main focus of this project is to reduce the noise created by electronic gadgets and instruments in vicinity of the ECG recording machine. In this work, an efficient technique is designed using software to filter the Electrocardiogram (ECG) signal. A low pass IIR filter has been designed and simulated to reduce

interference in ECG signals. This technique has been tested on ECG waves from the MIT-BIH Arrhythmia database. In order to remove the unwanted noises, ModelSim and MATLAB software has been used .

**16.Project Title:**Eco-Friendly cooling system

**Project Guide:** Ms.Rajani Rai B

**Project Team:** Rashmi D S,Rashmitha C K,Rohith B L,Sinchana Poojary B

**Abstract:**

Air cooling is the process of altering the properties of room temperature and humidity to more favourable conditions. Thermally comfort surrounding has an influence on the health and activities of the human beings thus increasing his working efficiency. Air coolers provide increased air flow thus reducing the temperature to favourable condition. But the major problems with the existing

systems are the increased power consumption and the coolant used.

The emission of coolant chemicals such as Chlorofluorocarbons (CFC's) and Hydrofluorocarbons (HFC's) has an adverse affecton the environment leading to global warming. As a solution to the existing problem a eco-friendly cooling designed. This system is compact in size and suitable for living rooms. This system is an application of ultrasonic mist maker and thermo electric agitator. Here the process of misting or fogging is used to control humidity, temperature and improves the air quality.

**17.Project Title:**Design of an embedded high efficiency and intelligent smart trolley

**Project Guide:** Mr.Vinay P.

**Project Team:** Rajani K R,Shreya N,Raksha Nanya,Sindhoora N M

**Abstract:**

Despite the presence of E-commerce people tend to buy many products only in super markets and malls for the sake of their own satisfaction among the difficulties faced by the customers. One difficulty is to follow queue through the billing process. Though their intent is just to buy one or two products waiting to bill products consumes time and also inconvenient these days as people live in a busy environment. As per survey money and average time spent on each customer is high especially in overcrowded supermarkets. The main aim is to satisfy the customer and also reduce the time spent on the billing process which is to complete the billing process in the trolley rather than waiting in a queue even for one or two products. The customer have to add the products after a short scan in trolley and when the work is done the finalized amount is displayed in the trolley. The ultimate goal is to mitigate the time consumption in purchase by getting rid of queue ensuring customer's comfort and shrinking the tediousness of barcode scanning and eliminating the waging of billers, there by accomplishing both customers and shopkeeper demands.

**18.Project Title:**Identity card based biometric voting

**Project Guide:** Ms.Rashmi A V

**Project Team:** Sanchitha N,Vishwitha A,Krithika K C

**Abstract:**

India is a democratic country. The main objective of democracy is to "vote", by which the people of the country can elect their leaders who run the government of that country. In developing countries like India, the election commission follows the manual voting mechanism which is implemented by the electronic voting machine. This machine is placed in the poll booths and is monitored by the higher officials. There could be manual mistakes such as spelling mistake, change of address etc., during the issue of the card also the voting process is time consuming and requires a lot of human



resource who has to be trained before the commencement of the election. In order to overcome these problems there is a requirement of a better voting system with enhanced security that is compatible with the current trend. In the proposed method, an identity card is created which contains all the details of the voter such as his/her fingerprint, facial features, name, etc. A copy of the same details is maintained in the admin system as a main database. From this main database a voters database is extracted who are eligible for voting. During the voting phase, only the person who completes the biometric authentication process is allowed to vote. The casted vote is stored in an encrypted form in the admin system; only the authorized official can decrypt this on the result counting day. This system will provide better security when compared to the present EVM's. Since the casted votes are stored in an encrypted form it will be difficult for the intruders to tamper them. Also, this is a user friendly system and requires less human resource. This system brings a transparent and fraud free system for voting .

**20.Project Title:**Arecanut tree climber and pesticide sprayer

**Project Guide:**Mr.Shreyas H.

**Project Team:** Sharath Shetty ,Shashwath Rai,Rakshith,Vikram

**Abstract:**

The people in rural areas of Karnataka and Kerala mainly depend on agriculture for their livelihood. The main crops grown are arecanut and coconut. For spraying and applying pesticides on the crown, skilled labourers have to climb manually up the tree. Such a process looks easy, but in reality it is a laborious and dangerous task. It requires skill to climb a arecanut tree. Skilled arecanut tree climbers have become scarce and farmers are finding it difficult to harvest the nuts. Sourcing skilled labour for agricultural sector has become a tedious job in today's time. There is a need for mechanization of the farming process in order to cope with the lack of manpower. There is a need to invent a machine to address both efficiency and safety. The design of the device has to be simple enough for villagers to operate, yet work efficiently to appeal to the majority. The automated arecanut tree climber and pesticide sprayer machine designed here would replace the skilled manual labour required for the pesticide spraying process.

**21.Project Title:**Electricity theft detection using wireless technology

**Project Guide:** Mr.Suhandas

**Project Team:** Yogeesha B,Venkatakrishna P S,Harshith Kumar Rai N

**Abstract:**

Many households indulge in different forms of electricity theft and illegal tampering of electric metering devices. These lead to distribution system faults and overload as well as loss of revenue by

the distribution companies/government. An effective protection plan against power theft needs to effectively face the issues of detection and identification simultaneously. In this scheme of power theft detection, unapproved tapping on distribution lines are detected. However, present systems are not able to detect unapproved tapping on distribution lines. But in this system, it is able to recognize which distribution line has tapping. Here we use GSM and ARDUINO to deliver the messages to electricity board as well as to the customer.

**22.Project Title:**IoT based industrial automation

**Project Guide:** Mr.Vyasraj

**Project Team:** Supreeth K S,Sharavan G S,Nithin A,Prajwal M S

**Abstract:**

Advancement of technologies such as IOT will help in controlling and monitoring electrical appliances through laptop/computer using internet connection. IOT based Industrial Automation System is designed with low cost and wireless remote control to assist and provide support to the Industries. By using this system, it is possible to control many devices such as fan and electric bulb through web page and system will automatically monitor the Environmental condition in Industry to generate suitable Alerts/Alarms. The controlling section and monitoring section is separately represented in the web page. Thus, the manual intervention for the system will be reduced and efficiency of the system will be enhanced

**23.Project Title:**Li-Fi based data transmission system

**Project Guide:** Dr. Roshan Joy Martis

**Project Team:** Sushmitha P M,Yashashwini,Pratheek S,Sandhya

**Abstract:**

Light emitting diodes (LED) are used in different areas in day-to-day life. The advantage of the device is that it can be used to transmit data in addition to the lightening capability. This is the Visible light communication (VLC) technology in which rapid pulses of light are used to transmit information wirelessly. VLC acts as a complementary technique to overcome limitations of the crowded radio frequency spectrum. Unlicensed wide bandwidth, high security and dual- use nature are some of the important characteristics of VLC. Li-Fi is one of the application of VLC and subfield of optical wireless communication. It can transfer data through LEDs. It is a high speed and low cost wireless communication system compared to Wi-Fi. In Li-Fi, by using various color of LEDs, different bandwidth and speed can be obtained. Light is analogous not only to illumination but also to speed. It is typically implemented using white LED light bulbs which are normally used for illumination by applying constant current through LED. By varying the flickering rate of the

LEDs, the optical output can be made to vary at extremely high speeds. It cannot be perceived by human eye and appears to be constant. Li-Fi is also much secured since light cannot pass through walls. It uses visible light portion of the electromagnetic spectrum to transmit information. Hence the visible light communication solves the problem of radio frequency congestion. This project addresses how a Li-Fi based data transmission system is designed and implemented. The data can be transmitted at very higher data rates compared to other technologies .

**24.Project Title:**Computer vision based quality control using Python

**Project Guide:** Ms.Sowmya Anil

**Project Team:** Pavithra,Bhavya,Prathvi

**Abstract:**

Agriculture is backbone of our country. It plays an important role in the economic development of India. Consumers concern over food quality and safety is increasing and hence the food industry has begun to pay much more attention to the development of rapid and reliable food-evaluation systems over the years. As a result, there is a great need for manufacturers and retailers to operate effective real-time assessments for food quality and safety during food production and processing.

Computer vision, is a nondestructive assessment approach with the capacity to estimate the characteristics of food products Computer Vision has the advantage of being fast, and easy to use. Specifically, computer vision systems are feasible for classifying fruits into specific grades, detecting defects and estimating properties such as color, size and surface defects. Fruit grading by human is inefficient, labor intensive and prone to error. The computer vision system not only speeds up the time of processing but also minimizes the error. This project describes operations and performance of an automated quality verification system for fruits.

**25.Project Title:**Wireless animatronic hand using control glove

**Project Guide:** Mr.Suhandas

**Project Team:** Karthik S J,Chethan PK,Akshay BK,Nikhila Bhat

**Abstract:**

Animatronics refers to the use of robotic devices to emulate the human or an animal, or bring life-like characteristic to an otherwise inanimate object. In this project, animatronic hand is developed using XBEE wireless module and Arduino UNO. The user wears a glove to control the animatronic arm wirelessly by motion sensing using flex sensors attached to the glove. The sensory data from the user's hand is recorded and with the help of an Arduino UNO, the corresponding analog signals is processed and transmitted to the receiving Arduino UNO which in turn controls the animatronic hand using servo motors.

**26.Project Title:**Implementing Intelligent Traffic control System for congestion control,Ambulance Clearance and stolen vehicle detection

**Project Guide:** Mr.Gurusandesh M

**Project Team:** Preetham,Nithin kumar,Shrikanth Yadav,Prajwal SP

**Abstract:**

In this project an intelligent traffic control system is implemented using Microcontroller NodeMCU and RFID module.Each individual vehicle is equipped with special RFID tag (placed at a strategic location), which makes it impossible to remove or destroy. Here RFID reader, microcontroller NodeMCU with WIFI module system-on-chip are used to read the RFID tags attached to the vehicle. It counts number of vehicles that passes on a particular path during a specified duration. It also determines the network congestion, and hence the green light duration for that path.

If the RFID-tag-read belongs to the stolen vehicle, then a message is sent using WIFI to the police control room. Also, when an ambulance is approaching the junction, it will communicate to the traffic controller in the junction to turn on the green light. This module uses WIFI modules and microcontroller NodeMCU system-on-chip for wireless communications between the ambulance and traffic controller. The prototype was tested under different combinations of inputs in our wireless communication laboratory and experimental results were found as expected.