GR. NO.	NAME OF STUDENTS	TITLE OF PROJECT	ABSTRACT
1	Vrajesh Prajapati Jayganesh Rajaraman Meghna Bhagat	Design of a Real-Time Stand-Alone system for load-resonant inverter using DSP TMS320F28335	As the need for more complex control and friendly user interface is increasing, digital control implementation is crucial in modern energy conversion systems and power electronic converters. Load resonant inverters can be controlled by a quasi square wave of variable pulse width generated by digital signal processor (DSP). It is used to store the required commands for generating the necessary waveforms to control the frequency of the inverter through proper design of switching pulses. In this paper, a digital controller has been implemented which possess advantages of phase shift control while providing rapid frequency tracking for load resonant applications. The paper discusses two applications 1) Induction Heating 2) Switching Mode Power Supply (SMPS).
2	Ankita Chavan Kalyani Bhopi Varun Dixit	The Camera based Black-Box System with Online Data logging Approach	Road accidents are increasing day by day and hence the cases pending in the court relating to these accidents are on rise.Existing systems strive to detect and avoid such accidents but fail to produce evidence.This project talks about the idea to record such accidents using a 360 degree camera installed in car, which records ambient videos continuously and stop recording the video after some time of the emergency detected by smart-phone. The video recorded by the camera gets stored in the cloud. As soon as the net connectivity is lost, it stores the videos in the data logger interfaced with the smart-phone.These videos can act as evidence for such accidents.
3	Shruti Karandikar Pratik Khandalkar Shubhankar Kulkarni	Wi-Fi based data transfer from any portable storage media	This project presents a new and effective idea for transferring or streaming data from a storage device like pendrive or hard-drive, using wi-fi technology over a smart-phone or laptop. The main functionality of the proposed system is to transfer data without any cable connection or even Internet connectivity. The heart of the system is the Raspberry Pi(B+Board), which runs on a Debian based operating system. The main task to control the data transfer is done by the Broadcom's BCM2835, ARM based processor on Raspberry Pi board. The read data is then populated on a FTP Server created by the device. Each user acts as a FTP client and connects to the device's Wi-Fi network.The network is generated by interfacing TP-link's TL-wn725n wi-fi adapter to the Pi board. Key-words: Wireless data transfer,Wireless FTP, Portable media storage device, Wi-Fi Hotspot,Ad-Hoc mode.
4	Aditi Chaudhari Mrugesha Naik Swaraj Patil	Voice Controlled TV Remote	This Project presents a system to control TV operations using speech recognition technologies of mobile devices. Conventional method to perform TV operation involves the use of remote. Our system aims to use speech to perform TV operation which eliminates the need to press exact buttons to perform desired operation. Users can command through mobile devices to do something via speech commands such as 'channel up','channel down','volume up','volume down','swicth on & off ' etc. They are then immediately executed. It is of very convienet system for elderly people to operate TV based on speech commands.

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5	Madhurima Vartak Saahil Deshpande Kosha Parekh	Oil Spill Cleansing Drone/Device	Oil spills are responsible for death of a large proportion of marine wildlife. The oil spill cleansing drone is a device which can help clear oil spills without causing added pollution or destruction of life and can be used over a relatively long period of time without necessary human supervision.This device has an inbuilt oil water separator tank designed on the principle of density based separation. The pump draws in the upper oil layer in the spill affected area and transfers it to the separator tank. The level of collected oil is monitored and notified accordingly. Using multiple drones like these we can achieve successful cleaning up operations of the ocean waters, thereby taking a step towards conserving the marine ecosystem.
6	Aditya Menon Ameya Prabhu Vikraant Pai	Game Theoretic Optimization of Spectrum Allocation in Cognitive Radio	Among the many problems faced in the world of wireless Technology, one of the most significant is spectrum scarcity.This Paper proposes an algorithm for the efficient utilization of the vacant Bandwidth in the licensed spectrum and allotting the spectrum to unlicensed users. A conventional radio when operating in a particular communications mode always follows the same procedure and either succeeds or fails at a given task. A cognitive radio, by contrast, can use knowledge of radio technology and policy, representations of goals, and other contextual parameters to reason about a failed attempt to satisfy a goal and attempt alternate courses of action depending upon the circumstances. This paper aims at using concepts of Game Theory to optimize the allocation of channels and use the punish and forgive strategy to ensure higher spectrum utilization.
7	Jash Mistry Darshit Pandit Kshitija Murudi	Congestion Avoidance By Collision Detection Using VANET	In a world where every device is being automatically controlled,our project aims at automatically redirecting traffic via a VANET(Vehicular Ad-Hoc Network). VANET is an emerging technology which has the potential to revolutionize road traffic and safety. VANET has a wide range of applications. Our project aims at creating a VANET having two entities - Road Side Units(RSUs) and Cars(vehicles). A network of RSUs is set up to broadcast messages to vehicles. Whenever some unfortunate mishap leads to disruption of traffic on a road,the RSU will sense this. It will broadcast this information to all such RSU's in its network. These RSU's will further send this information to all the vehicles in its coverage.Thus, long traffic jams can be averted.
8	Harsh Mehta Sonali Mukherjee Kanika Sabharwal	Intelligent Surveillance System using Action Detection	In a world of increasing crime, passive or dead surveillance is not enough. Active surveillance, where cameras themselves can detect suspicious actions can narrow down the search and decrease chances of human error considerably. Using the current system, the crime can only be viewed after the event, not during, unless one is paying complete attention to numerous live video feeds at once. The system we propose uses action detection by template matching to filter out frames of a video which are suspicious without any human intervention. The database of templates serve as markers to filter out similar parameters. These frames are then stored with a time-stamp to serve as evidence of a crime.
9	Shreya Ambetkar Nehal Bavise Namita Jadhav	Solar Grass Cutter	This project is a lawn mower that will allow the user to cut the grass with minimal effort. Unlike other robotic lawn mower in the market, this design requires no perimeter wires to maintain the robot within the lawn. With the help of bluetooth, robot can be operated. This design is still in the prototype stage due to financial and time constraints. This project is mainly a proposal for reducing the manpower and usage of electricity.

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10	Shruti Patel Rasika Punde Prachi Sapkal	Smart Surveillance System using Raspberry Pi	The world is experiencing a vast implementation of security which plays a vital role in day to day life. The aim of the project "Smart Surveillance Monitoring System using Raspberry Pi" is to provide high level active security. Whenever there is an intrusion in the premises under surveillance for example take it at home, PIR (Passive Infrared) sensor will sense and send signal, thereby turning Raspi Camera on and simultaneously videos will be captured and uploaded to dropbox. The user is alerted through email and can check the images or videos which are uploaded to the dropbox on receiving the email notification.
11	Rahul Rajjak Pratik Mistry Bikram Singh	Speak For Me- A Means for Deaf to Communicate	Gestures have been proven to be intuitive and natural with a minimal learning curve, and can be used in interactive applications. This system involves the mute making a gesture which is recorded by the sensors. The gesture is converted to equivalent speech which is spoken out and is also printed on a display. We also propose to add the SMS and the calling facility into the system. The addition of these facilities allows bi-directional communication between the user and the doctors/relatives. We will also incorporate the gestures of the Sign Language, so that a mute can communicate with any citizen normally, without the use of any translator. We extend the use of this system to the dentists operating room where the patients cannot talk during a surgery. The patient can make the gesture and the corresponding speech is played, so the doctor will understand if the patient is in pain or otherwise. Later we will also extend the usage of the system for senior citizens to contact loved ones in case of emergencies. By means of predefined gestures, the senior citizens can quickly call or message predesignated contacts.
12	Shubhankar Sakalkale Pratik Sawant Jaskeet Singh Wasan	Counterfeit currency detection using image processing	Counterfeit notes are one of the biggest problems occurring in today's world. Use of counterfeit currency is increasing every year and so is the similarity of these notes with the original ones. The aim of this project is to use a unique technology which is QR code generation to verify the originality of the given note. This project also aims at verifying the security features stated by RBI using Image Processing techniques to get more accuracy over the results.
13	Pooja Harne Vidya Kokate Rupali Roy	Garbage Management System	With increase in population, the scenario of cleanliness with respect to garbage management is degrading tremendously. The overflow of garbage in public areas creates unhygienic condition in the surroundings. It may spread several serious diseases amongst the people living nearby. It also degrades the valuation of the area. To avoid this and to enhance the cleaning, Garbage Management System is proposed in this paper. This paper presents a system to identify a garbage full condition which will be decided by sensors (weight and level) in a timely manner and to alert the control room about the same.The role of control room is to find current status of vehicle and to send the SMS to the driver along with garbage container's position. The Driver would then go to specified location and collect the garbage. With the help of system we can provide solution to the current issues in Garbage Management System.

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14	Manoj More Jiger Jain	Quadcopter Unmanned Aerial Vehicle (UAV) Pick and Drop	Gestures have been proven to be intuitive and natural with a minimal learning curve, and can be used in interactive applications. This system involves the mute making a gesture which is recorded by the sensors. The gesture is converted to equivalent speech which is spoken out and is also printed on a display. We also propose to add the SMS and the calling facility into the system. The addition of these facilities allows bi-directional communication between the user and the doctors/relatives. We will also incorporate the gestures of the Sign Language, so that a mute can communicate with any citizen normally, without the use of any translator. We extend the use of this system to the dentists operating room where the patients cannot talk during a surgery. The patient can make the gesture and the corresponding speech is played, so the doctor will understand if the patient is in pain or otherwise. Later we will also extend the usage of the system for senior citizens to contact loved ones in case of emergencies. By means of predefined gestures, the senior citizens can quickly call or message predesignated contacts.
15	Rakesh Rathod Sunil Nagare	Digital Signal Transmission over MIMO-OFDM System	The increased data rates and reliability required to support emerging multimedia applications require new communications technology. We present results regarding Digital signal transmission over orthogonal frequency division multiplexing (OFDM) . The aim of this project to analyse different types of images using different modulation.
16	Shreyas Joshi Dhananjay Sonawane Mohit Sanghai Dilip ade	Robotic arm control using android device	With the development of modern technology and Android Smartphone, Smart Living is gradually changing peoples life. Bluetooth technology, which aims to exchange data wirelessly in a short distance using short-wavelength radio transmissions, is providing a necessary technology to create convenience, intelligence and controllability. Robots have replaced humans in performing repetitive and dangerous tasks which humans prefer not to do, or are unable to do because of size limitations, or which take place in extreme environments such as outer space or the bottom of the sea. So,remote controlling of robots have become an integral part of robotics field. This project describes how to control a robotic arm using Android device through Blue-tooth communication and components of the mobile and robot.We are developing the remote buttons in the android app by which we can control the robotic arm motion. This paper also describes how to operate the robotic arm in various modes of operation. Thus It is shown that Android Smartphone can provide a platform to implement Bluetooth-based application for Smart Living.
17	Meghna Agrawal Mohammad Shaban Pritesh Wani	Android Based Medicine Vending Machine	There are many medicines available in market which can help in such situations but due to non availability at the time of need, may cost a life. Our advanced system idea covers the development of a touch screen android based medical vending machine intended for use in remote areas which provides basic medicines on the basis of symptoms.
18	Adarsh Chokhani Prathamesh Nivalkar Niketan Thorat	Fire and Smoke Detection using Image Processing	This project presents a system to detect fire and smoke with the use of computer vision-based techniques. Conventional fire and smoke detectors work on the principle of heat sensing. Our project aims to detect fire and smoke simultaneously with the help of video provided by the ordinary cameras. This method can be used to reduce the false alarm rate and to increase the spontaneity of the system.The key features of our system are as follows : Reducing false alarms caused by existing fire detection methods, Monitor large open areas, Simultaneous Fire and Smoke detection (by identifying gray cycle pixels) for accurate results, Scalability option available.

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19	Zareen Ahmad Yash Goliya	Harvesting Radio Energy	Wireless technologies have brought about drastic changes in our world. The omnipresence of cellular towers ensures seamless connectivity in even rural areas. Unfortunately, most of the energy used for radio communications in these towers is wasted. This is due to the fact that cellular BTS do not employ very directional antennas. Hence there is an urgent need to harvest this unused or wasted energy. This project proposes a prototype that will capture and harvest this unused energy. This prototype is a triple-band coplanar rectenna. A rectenna is a device consisting of an antenna and a rectifier. The antenna captures the RF energy and the rectifier converts this RF energy to DC energy. This energy is then stored in a capacitor and is used to drive a load. In our project, we demonstrate a light emitting diode as the load. The novelty of our project lies its triple-band characteristics. It can harvest energy from GSM 900 (Downlink), GSM 1800 (Downlink and Uplink) and WiFi (2.4 GHz). Our project has several applications ranging from extending life of wireless sensor nodes to illumination of off-the-grid houses.
20	Karan Chudasama Sanjeeth Baliga Adithya Beemanapalli	Software Hardware Co-design for Digital Power Electronics	Grid-tied inverters are the key components of distributed generation system because of their function as an effective interface between renewable energy sources and utility. Grid-connected PV inverters are needed to extract the energy from the PV modules and feed it into the utility grid while ensuring the power quality follows certain grid interconnection standards. This paper presents the hardware and software design of a Grid-Connected Solar Microinverter which is intended to produce a maximum power output of 215W with an input of 20-25V from the solar panel and is based on the Microchip Grid Microinverter design. The novelty in our hardware design is that the board has been designed in two layers as against the four layer design of Microchip. Also certain modifications have been proposed in the MPPT and PLL algorithms in the software design of the Microchip Grid Microinverter design to improve the conversion efficiency.
21	Jaimin Shah Apurva Dashputre Rajesh Chilka	Remote Health Monitoring Based on Internet of Things(IoT)	The development of the Internet of Things will greatly facilitate the process of patient's diagnosis and monitoring. Wireless sensors will be implemented on the patient's body, his physiological parameters, such as heart rate, can be monitored remotely and continuously. The measured data will be sent to patient's app via Bluetooth and then to a PHP webserver. It can then be loaded into a database such as MySQL for storage and processing. This will be helpful for monitoring health of people in remote places where medical help or hospitals are not present. This idea can be implemented in 'Digital India' programme.
22	Darshan Baburajan Vinay Gandhi Akshay Gawande	Hand-Drawn Circuit Recognition and Simulation	Hand-drawn sketch is a natural and traditional way to express peoples thoughts and meaning and is of common use in many different fields.Sketch comprise of text and graphics. Recognition of hand-drawn graphical entities such as circuit diagrams, flow charts, tables, block diagrams etc. will add another dimension to human computer interface. Our project is a step towards developing a system of offline circuit recognition and simulation using digital image processing and neural networks.

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23	Divya Bandpalle Sumit Mayekar Amol Naik	Digital Stethoscope	Stethoscope is a special device to hear heartbeat sound and monitor pulmonary disease. The most common type of stethoscope used these days is the acoustic stethoscope. However, the problem with this acoustic stethoscope is that the sound level is very low. It is hard to analyze the heart sound and difficult to be diagnosed. In this paper, a digital stethoscope, which is based on embedded processors, is designed to fulfill the shortcomings from auscultation. It converts acoustic sound into electrical signal and this signal is amplified and heard on speakers, also the amplified sound can be heard on the headphones if required. Heart Beats per Minute (HPM) is displayed on LCD. The cardiac sound waveform is displayed as well. It has applications for the detection of cardiac murmurs which offers signal amplification and also added functionalities like storage, analysis and visual representation of sound signals.
24	Rituraj Joshi Ravi Kala Prakhar Maheshwari	Touch View:- Controlling LED Matrix display using android application.	The main aim of the project is to interface mobile touchscreen with LED matrix display using an Android application. By interfacing we imply that whatever shape drawn or text typed on the touchscreen of our mobile will be displayed on the LED matrix. The work is composed of two aspects: the software and the hardware. The former is mainly the android application and Code Vision AVR, while the hardware is composed of Atmega 32 Microcontroller, Wi-Fi module and the LED display matrix with all related electronic components.
25	Shreyas Kunder Harshad Gaikwad	Automated Fire Extinguishing Robot	Firefighting is an important and hazardous job.A fire fighter can be able to extinguish fire quickly, averting the damages and reduce losses. Technology has joined the gap between firefighting and machines using some effective method.The purpose of this thesis is to establish a system that can detect fire and extinguish it in the shortest time subject to a few effective factors. In this case, the system aims to put out the fire before it spreads increasing the security of home, laboratory, office, factory and building that is important to human life.On its own independent of any human. This system can detect abnormal and dangerous situation.First, we design a system with extinguisher .This system includes avoidance obstacle, fire detection and others. We implement some computer program to detect only fire. We implement the system and if fire accident is true, the fire extinguisher system can find out the source of the fire by the proposed method and move towards the source to fight the fire using extinguisher.