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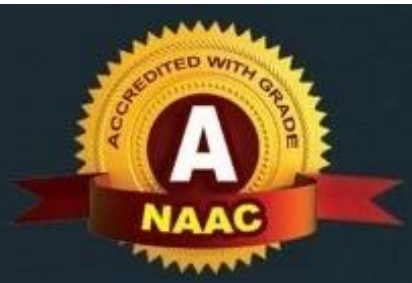
Technical Magazine



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Department of Electronics & Instrumentation Engineering

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

WARANGAL - 506015

(An Autonomous Institute under Kakatiya University, Warangal)

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SCOPE

Technical Magazine

Electronics & Instrumentation Engineering

Department of Electronics & Instrumentation Engineering
KAKATIYAINSTITUTEOFTECHNOLOGY&SCIENCE
Warangal-506015
(An Autonomous Institute under Kakatiya University, Warangal)

DEPARTMENT OF ELECTRONICS & INSTRUMENTATION ENGINEERINGKAKATIYAINSITUTEOFTECHNOLOGY &SCIENCE:WARANGAL-15

VISION

ToprovidequalityeducationinElectronics&InstrumentationEngineeringbynurturing the students with strong technical, analytical, practical skills and ethics to makethem engineering professionals who cater to the societal needs with a high degree of integrityandsocial concern.

MISSION

1. Toprovideprogressiveandqualityeducationalenvironmentwiththehelpofdedicated faculty and staff by fully utilizing the information technology aiming atcontinuousteachingand learningprocess.

2. To produce engineering graduates fit for employability with a competence to design,develop,invent and solveinstrumentation engineeringproblems.

3. To make the studentsethicallystrongbyinculcatingsenseofbrotherhood.

4. To make the students research oriented by providing latest technical knowledge andthuscaterto thechangingneeds of industryandcommerce.

EDITORIALBOARD

PREFACE

This magazine summarizes the current state of Electronics and Instrumentation Engineering, providing an arena for the student community to showcase their technical talents in a great way. Keeping in view of the present era of technological revolution in the field of Instrumentation Engineering, the students of E&IE department, KITS Warangal presents you **SCOPE**.

We acknowledge the essential contribution of the reviewers, whose efforts are deeply appreciated.

We feel that such technical magazine is very well required as it helps in updating the knowledge of future engineers.

The Department of E&IE is very much thankful to the Management for their continuous support and encouragement for making the Technical Magazine **SCOPE**.

ProgramOutcomes(POs)

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals,andan engineeringspecializationto thesolutionof complexengineeringproblems.
2. **Problem Analysis:**Identify, formulate, review research literature, andanalyze complex engineeringproblems reaching substantiated conclusions using first principles of mathematics, natural sciences, andengineeringsciences
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 publichealthand safety, andthecultural, societal,andenvironmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methodsincluding design of experiments, analysis and interpretation of data, and synthesis of the information toprovidevalid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understandingof thelimitations.
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 professionalengineeringpractice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions insocietal and environmental contexts, and demonstrate the knowledge of, and need for sustainable devel-opment.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of theengineeringpractice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverseteams,and in multidisciplinarysettings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineeringcommunity and with society at large, such as, being able to comprehend and write effective reports anddesigndocumentation, makeeffectivepresentations,and giveand receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering andmanagement principles and apply these to one's own work, as a member and leader in a team, to man-ageprojects and in multidisciplinaryenvironments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independentand life-longlearning in thebroadestcontext of technological change.

PROGRAMSPECIFICOUTCOMES(PSO's)

PSO1: Anabilityforimmediate professionalpractice asanElectronics &InstrumentationEngineer.

PSO2: Anabilitytousefundamentalknowledgetoinvestigatenewandemergingtechnologiesleadingtoinnovationsin the field ofElectronic&Instrumentation Engineering.

Mini Project Abstracts

Distance measurement using ultrasonic sensor

ABSTRACT

Distance measurement of an object in the path of a person, equipment, or a vehicle, stationary or moving is used in a large number of applications such as robotic movement control, vehicle control, blind mans walking stick, medical applications, etc. Measurement using ultrasonic sensors is one of the cheapest among various options. In this project distance measurement of an obstacle by using ultrasonic sensor and a microcontroller is presented.

T.Srivarshini
B19EI039

PLAGIARISM ANALYZER

ABSTRACT

Plagiarism relates to the act of taking information or ideas of someone else and demand it as your own. Basically it reproduce the existing information in modified format. In every field of education, it becomes a serious issue. Various techniques and tools are derived these days to detect plagiarism. Various types of plagiarism are there like text matching, copy paste, grammar based method etc. This paper proposes a new method implemented in a program ,where we utilize a text set to identify the copied part by comparing with some existing multiple files. Here we put the concept of a machine learning language i.e k-NN. It helps us to identify whether a paper is plagiarized or not.

E.BalaBrahmaiah
B19EI056

AUTOMATIC TEMPERATURE CONTROL SYSTEM FOR POLY-HOUSE.

ABSTRACT

What is polyhouse: A polytunnel; a greenhouse or tunnel made of polyethylene, used to grow plants that require a higher temperature and/or humidity. This study is designed for microcontroller-based system to monitor the data greenhouses, especially to ensure that a constant temperature inside the greenhouse to ensure the crop. The desired value in embedded database system set up in an ideal environment for data greenhouse temperature control, greenhouse crops in the process of growth under control. To address the growth of greenhouse crops in the process of temperature controlled environment is not ideal; at the same time improve the efficiency of control and cost-effective system. This project focuses on the structure of the control system, hardware, software design and system control strategy. The control system has a simple hardware structure, cost-effective, easy to use and maintenance, temperature and humidity data, and other advantages of good stability. The availability of suitable temperature and relative humidity is must. These conditions are created in polyhouse during off-season, so that the required vegetables and fruits etc. May be grown in them in sufficient quantity. The importance of polyhouse is further enhanced due to the possibility of production of creeper vegetables. During daytime, the solar energy enters the house after

reflecting from the transparent surface of the polyhouse. This energy helps in increasing the temperature of polyhouse. During this process some energy enters the earth, which comes back in the house in the night and increase its temperature**.**

J.Chinmai
B19EI005

AUTO WATER PUMP SWITCHER

ABSTRACT

In many Places time for water deliver isn't always but fixed. It. can both be in early morning hours or on each time in a whole day. This creates many troubles for a concerned individual you want to rouse early, virtually to switch on your motor pump and wait till your water tank is filled up. The biggest disadvantage of this tool is the overflow of water from overhead tank and overrunning of

water pump. So, designed a smooth idea which truly turns on or off your pump in keeping with your water supply. The controller tool works on a 555 IC with a water-level sensing of arrangement. So on every occasion the incoming water is sensed or discovered the relay circuit truly switches the Pump On and while the water supply is off the relay switches off the motor. Hence, this could be a smooth and a low-charge automated water pump motor controller that makes your everyday water pump related problem quite smooth.

E.Dattasri
B19EI008

Automatic Irrigation System using an Arduino Uno

ABSTRACT

Everyone of us likes a little greenery in our houses, don't we? Plants require really low maintenance and can be left for days without supervision but our long trips extending over a week or 2 can be detrimental for the health of plants due to the lack of moisture in the soil. In such situations, the plant may wither or die due to the absence of proper watering. In order to solve this problem, in this project, we are making an Automatic Irrigation System with an Arduino Uno which will irrigate your plants automatically and keep them healthy even when you are out of the town for weeks or months. In this project, a Moisture sensor will be used to maintain the optimum level of moisture for your plants. This system can be implemented, both for your garden or for your Indoor plants thus taking care of your leafy pets when you are away.

Tejaswini Thogaru
B19EI056

ANTI-SLEEP DETECTION ALARM

ABSTRACT

In today's world where everyone is caught up in their hectic schedules, we often tend to feel sleepy during driving due to lethargy of the daily activities. There is a lot of technological advancement and hence we shall address the issue of driver drowsiness with the help of a detection system. If a driver must travel a long distance and is driving during the night, it is very commonly observed that the driver may fall asleep. This could lead to a hazardous road accident. As of now, there is a high demand of devices that can effectively detect driver drowsiness and thus, save lives. We have implemented components such as IC 555 timer used as a switch, transistor and a relay along with a tilt sensor. This device will detect the level of inclination of the driver and alert him/her with the help of a buzzer that is driven by the transistor. An LED light is also placed in the detector which lights up instantly as the buzzer starts beeping. When the driver is active and no longer tilted, the buzzer goes off and the LED
light turns off.

R.Tejaphanindra
B19EI046

Automatic hand sanitizer

ABSTRACT

"Prevention is better than cure" is the most effective measures to prevent the spreading of the COVID-19 and to protect the mankind. There was a long-lasting impact on the people due to
this pandemic situation. So many researchers and doctors are working on it. It is important to maintaining social distancing, wearing masks, using sanitizers frequently is also needed. It is essential to use sanitizer frequently mainly while going out especially in public places such as markets, hospitals, malls…etc. The project "Automatic Sanitizer Dispenser" is to make less
contact with the materials like dispenser in public places. Therefore, the spreading of the virus can be controlled to some extent. In this there will be a contact less sanitization and it offers a
standard amount that is enough to clean both the hands.

K.SUPRAJA
B19EI055

AURDINO BASED WIFI-CONTROLLED ROBOT

ABSTRACT

Robots play a very important role in human life. Robots are a machine which reduces
the human efforts in heavy works in industries, building etc. and makes life easy. The main of this project is to design a WI-FI controlled robot. WI-FI controlled robot is controlled by using joystick placed at transmitter side. A transmitting device is used which contains (Blynk android-application). This transmitter part will transmit command to robot so that it can do the required task like moving forward, reverse,turning left, turning right and stop. All these tasks will be performed by using joystick that isplaced on transmitter. The receiver (ESP8266 WI-FI Module) receives the signal and sends thesignal the microcontroller which allows the robot to move in left, right, and backward.

ABHIRAM S
B19EI028

Traffic light controller using Arduino

ABSTRACT

This project is a simple three-way version of the traffic light controller using Arduino and very few components. It is an electronic project by which we will get knowledge about traffic lights and how they work. It is a simple version of a traffic light system where we have demonstrated it for three sides or ways. It has a circuit diagram and the code for the traffic controller system. Nowadays, everyone prefers a personal vehicle. Hence, the number of vehicles on the road is increasing continuously, which results in traffic jams. A traffic light controller helps to manage the traffic and to maintain proper traffic management. Roads without any supervision or guidance can lead to traffic conflicts and accidents. These systems are placed at the intersections of the road or at the crossings to avoid congestions and accidents.

Rithin K
B19EI033

TEXT TO SPEECH CONVERTER USING ARDUINO

ABSTRACT

The Text-to-speech system converts normal text into speech. This tech enables the system to speak out the text in

a human voice. There are many examples of Text to speech conversions like announcements at public transport, customer care calls, voice assistants in our smartphones, or the navigation menu of any machine. We can even find the Text-to-speech converter in Microsoft Word where we set it to speak out the text written in the document. The system uses an open-source hardware Arduino as a module to generate the phonetics of the text given as input to the Arduino in the form of source code. The code is compiled and written using a smartphone application. Then the code is processed by the Arduino and the corresponding phonetics are created which are available in the library of the Arduino. Then the amplifier circuit comprising of IC LM386 is used in its maximum gain for the amplification of the output and clear sound. The output of an amplifier is then provided to the speaker which gives the output audible to human ears. The goal of this project is to make the impaired people enable a new to speak out their voice with the help of this device.

Pranitha B
B19EI030

OBSTACLE AVOIDING ROBOT BY USING ULTRASONIC SENSOR

ABSTRACT

Now a days, many industries are using robots, as they have high level of performanceand it is a great help for human beings. The most crucial part of building mobile robots isdetecting and avoiding obstacles. It is an autonomous robot. It is an autonomous robot which iscontrolled by an Arduino microcontroller. This obstacle avoidance robotics is used for detect
the obstacle and try to avoid the collision. Obstacle avoidance is a robotic discipline aimed atmoving vehicles depending on sensory input. Mainly the design of this robot consists of many sensors. The primary requirement of this autonomous robot is obstacle detection. This robotgets the information from surroundings through sensors which are present on the robot. For
obstacle detection we use some of sensing devices like bump sensors, infrared sensors,ultrasonic sensors etc. We are using ultrasonic sensor because it is most suitable for obstacledetection, low cost and has a high ranging capability. Distance sensors are used to identifyobstacles. Sensory information is used to detect the changes and adapt movement since it is
invariable.

P.SaiTeja
B19EI018

PASSWORD BASED DOORLOCKING SYSTEM USING ARDUINO UNO

ABSTRACT

In this digitally dependent world, the security is more most concern for the every one of
us.As well all are facing the fear of robbery, people cannot keep their valuable things safely even at their own houses, banks or in any other places. They are always in fear of losing their valuable things. Old traditional locking system is not that safe as password-based door locking system.
So,in this project we have work for all these problems and this project provide much more
lock security as compare to traditional lock security. We have replaced the old traditional lock
system with password. This project will be also easy to the users at low cost.it will be also easy to implement and give safety in any places like our houses, institution, bank or any other public
places. If the users forgot the password, then he/she will change or reset password, which gives
more flexibility to the users.

L. NavyaSri
B20EI067L

IoT BASED AIR QUALITY DETECTION AND MONITORING SYSTEM

ABSTRACT

Wireless Sensor Network (WSN) is one of the efficiently used area and it. Is not

justlimited to particular aspects like detection of fire, pollution of water and air or detectionleakage of gas but there are many more areas where we can use wireless sensor network.We shall use the shared information if WSN is used in contact with the IoT. Internet ofThings is the interconnection of objects that are used to collect and transfer the data amongembedded systems. The collected data is sent at any particular distance location where thedata can be accessed and if required and at later stage further can processing can be done.As per the sensors display on the computer screen, the WSN based air monitoring systemcollects the required data. The received data can be transferred to any node where theInternet connection is available. The long-range transmission of data can also be done by using IoT communication.The proposed mini project is focused on development of IoT based system to detectthe air pollutants using ESP8266 module, useful for air pollution monitoring an air quality assessment.

Nikhitha. P
B19EI022

IoT BASED SMART ATTENDANCE MANAGEMENT SYSTEM
ABSTRACT

The scope of this proposed project is to provide a technical solution and to assist the various educational institutions to access the attendance and monitor easily in an organised manner. The proposed module uses a fingerprint scanner-based sensing mechanism which will avoid impersonation of attendance. Smart Transportation, Smart Energy, Smart healthcare and smart waste management are the few areas where the Internet of Things has proven cost- effective and efficient in solving inherent problems and weaknesses. Based on the Internet paradigm of things, a cloud-based end-to-end intelligent attendance system prototype was developed, which attempts to solve the problems of manual attendance system by automatically generating attendance records, reports, Monitoring and alarms for educational institutions generated by different stakeholders. The system helps to store student's attendance in the cloud instead of any local system to avoid any storage issue or local failure of infrastructures.

P. Uday Teja Reddy
B19CI001

IoT based smart vehicles for fuel consumption

ABSTRACT

IoT is completely employed in run-of-the-shop impacts and its position is creating little by little. This paper sets the gospel and updates of an IoT and open rested vehicle energy works out, for case, satisfying energy checking and GPS by and large around the fresh arrangement. The proposed IoT trick checks how monster energy is by exercising an ultrasonic energy finder. Right when the vehicle tank of energy comes to a specific position, the automobilist cautions through open new development and looks for the closest siphon area for reloading energy. The proposed structure employed GPS following for showing the continuing area of the vehicle and seeing the closest material siphon locale. By no means, similar to a normal construction for the energy position checking. It contrasts by seeing the energy position giving give the declaration to withdraw the vehicle from e any spot with the upgrade of (IoT). hence restores the data of energy entering inside the tank. The essential backing off driving this gimmick is to help energy theft feting password and track the material siphons hard our region likewise show the expenditure of the energy as shown constantly.

S. Deepika Reddy
B19CI035

EMBEDDED AIR POLLUTION DETECTION IN VEHICLES
ABSTRACT

The primary reason for this breach of emission level being the incomplete combustion of fuel supplied to the engine which is due to the improper maintenance of vehicles. This project uses smoke detection and temperature sensors which can detect the abrupt environment condition continuously.Abuzzeralertwillalsobegiven.Thissendsasignaltomicrocontroller.Theaimof the project is to monitor the pollutants by using the pollution detection circuit. This pollution control circuit consists of various sensors like smoke sensor, temperature sensor and all of them are integrated and connected to a Controller. It is a real time work where a demo application has been made in which Atmega controller is used and a controller board is made where all these devices get integrated and workaccordingly.

K.VARSHA
B19CI045

IOT BASED SMART GARBAGE BIN
ABSTRACT

Garbage containers in public spaces frequently overflow, resulting in unsanitary circumstances. Most people do not dispose the trash properly in waste bins. As a result, waste builds up around the waste bin, causing a foul odour. Improper garbage management pollutes the environment. This project represents a smart trash management system that sends a flash message to municipal officials via their website. The ultrasonic sensor linked to the bin will verify the bin's status, such as whether it is full or not.

Sensor Based Garbage Collection Bins are used to determine the status of waste bins, such as whether they are empty or full, in order to modify the waste collection schedule and save money. Real-time waste management system uses smart dustbins to verify whether the bins are full or not. Through this system, the information of all smart dustbins can be viewed by the concerned person from anywhere and at any time. It will provide real-time updates on the status of each trashcan, allowing those who are concerned to make informed decisions.

M.SAI NIKSHITHA
B19CI002

AUTOMATIC PILL REMINDER FOR EASY SUPERVISION
ABSTRACT

The scope of this proposed project that organizes, schedules and delivers patient medication with the touch of a button. The proposed module utilizes the Arduino as a platform to notify and alert the user to take medicine 1 or 2 or 3 times.

Many patients fail to go with their prescribed medication schedules. This will cause disease complications, lower quality of life, and even mortality. To beat these issues the automated medicine reminder is employed. This technique is extremely simple to work and update therefore someone of any people can use it. This technique may be useful in hospital where number of patients is present and sometimes it's difficult to recollect the drugs and dosage by the staff. So this technique with some updates may be employed in hospitals. The matter like

1) maintaining the regularity of prescribed dosage is difficult to be remembered in busy schedule
2) remembering the name of medication to be taken is admittedly difficult
3) thanks to above two reasons the patient’s life can get more complicated. These above problems are arising to everyone because of non adherence of medicines. Therefore, there's a growing need and urgency for in-home healthcare devices to produce patients with the electronic tools to support medication self-management. With the most purpose of this paper is to propose the essential idea of automatic medicine reminder supported ARDUINO which is able to help the patients to require their prescribed medicine at appropriate time. Automatic medicine reminder is novel idea to assist the

patient to require their medicine on time and hence may reduce the time to pass though their disease. Sometimes, the aged patient takes the incorrect medicine and their wrong dosage incorrectly causing the severe problem. This method isn't just helpful for a private but can even have major contribution in hospitals. In today's busy, stressed and scheduled life, people are affected by many diseases s but don't seem to be able to remember their medicine and timing of it and here this technique are often the real use.

R.Likitha
B19CI018