



## APRIL 2021

# Pariyojana-2021

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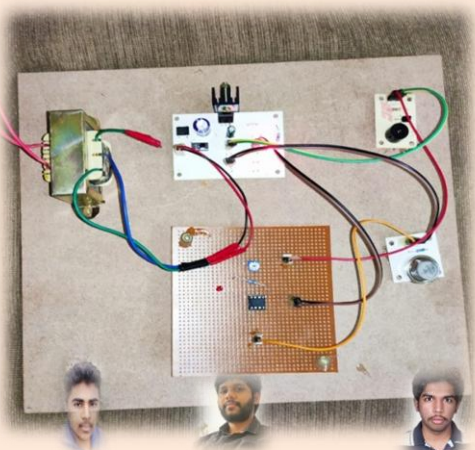
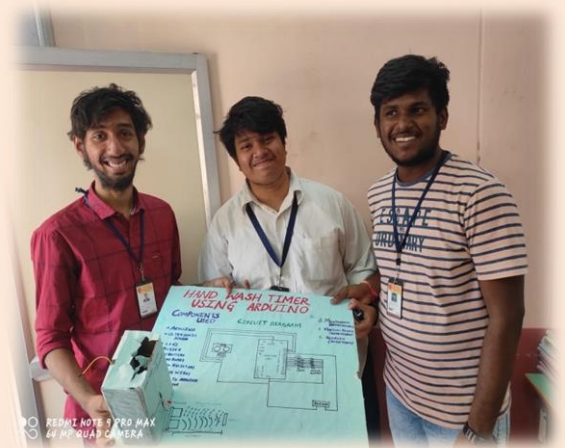
Contribution from all the Faculty and Students of United ECE

No field is changing faster and having a bigger impact in today's world than computing and information technology which associated with Electronics and Communication Engineering. To keep pace with this change, there is unprecedented demand for engineers who understand digital hardware and software, and can interface computing technology with other engineered systems. Working as a computer engineer, you may specialize in one area, such as embedded systems, computer networks, robotics, or VLSI system design.

Our students work under faculty guidance in various domains, based on their interest. The objective behind organizing project exhibition is to give platform to Third year students to showcase their creativity, hard work and to enhance their practical skills. Further the interaction with seniors and domain experts will give them better exposure to identify their area of interest and also final year project domains. – Dr. N H Shobha Reddy, HoD- ECE

### HAND WASH TIMER USING ARDUINO

We all know how dangerous the microbes and viruses are. So it's our responsibility to keep ourselves safe. We can do that by simply washing our hands for 20 seconds straight without any intervention. But keeping a track of 20 seconds is a bit difficult. This is where the Hand wash timer comes as a good solution, where its gives the user about the idea of 20 seconds.



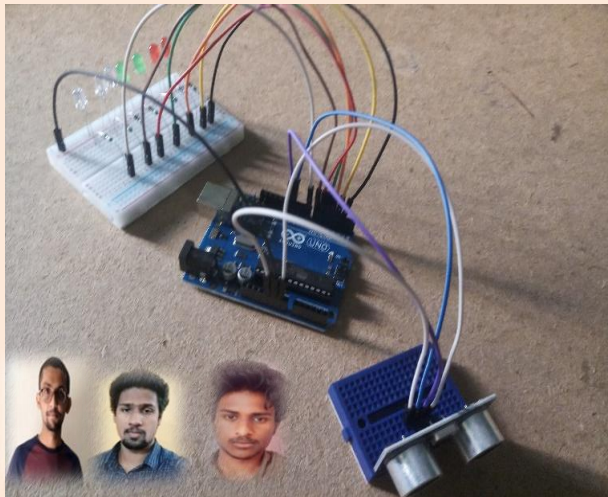
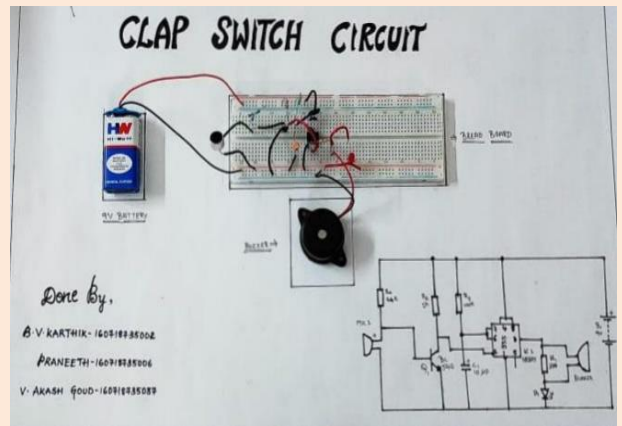
### LPG Detector

LPG is everywhere, we use it at our homes, at industries, in transport systems etc. while we have worked with this technology for many years, we still hear about tragic incidents involving explosions caused by LPG. Hence, there is a need for a simple, cost effective and easy to make device that can detect and signal an alarm so that people can deal with it before it can do any damage. It also creates a peace of mind knowing that there is a safeguard in place

### CLAP SWITCH

This is a project on CLAP SWITCH which can switch on/off any electrical circuit by the sound of a clap. If we clap the lamp turns on and to switch it off clap again. Basically, this is a Sound operated switch.

The condenser microphone picks up the sound of your claps, coughs, and the sound of that book knocked off the table. It produces a small electrical signal which is amplified by the succeeding transistor stage.

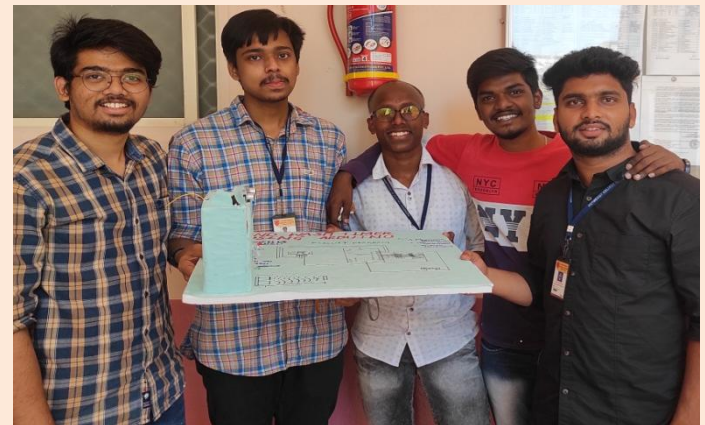


### VEHICLE REAR DISTANCE SENSOR

A Vehicle Rear Distance Sensor is used to measure distance between any vehicle or an object in its vicinity. This device consists mainly of ultrasonic sensor, Arduino, LEDs, connecting wires and a buzzer. It's works very simple, When a wall or another vehicle is behind your vehicle and you can't see it, it's when this device plays a huge role .As you get closer to the obstacle your dashboard's LEDs starts glowing one by one as it gets closer, when it reaches the most closest point the buzzer starts making sound warning you. Buzzer is optional. It's very helpful for: heavy vehicles, Backing up in dark, while parking in narrow places. etc.

### LASER SECURITY SYSTEM USING ARDUINO

The prime advantage of using the Laser system is that the intruder is unaware of the fact that a security system is installed in the entry points like doors and windows since laser rays can travel long distances and are almost invisible. When somebody crossover the laser ray the circuit senses the discontinuity and trips the buzzer. The alarming sound does not stop until someone turns it off manually after checking. It is among the most affordable security system that can be used for indoors as well as outdoors.



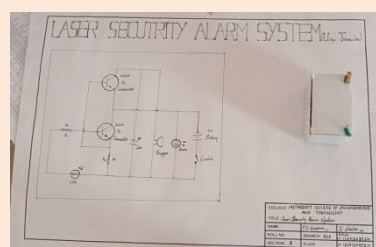
### LASER SECURITY ALARM SYSTEM WITH TWO-MIRROR REFLECTION

This is based on the principle of voltage divider circuit. When the laser beam continuously falls on the LDR, the voltage drop across it is very low, as the resistance of LDR becomes less. And, as soon as the laser beam is intermitted by any means of object or a barrier, the voltage drop across it becomes high due to change in the LDR's resistance. This triggers the alarm or siren in the circuit.



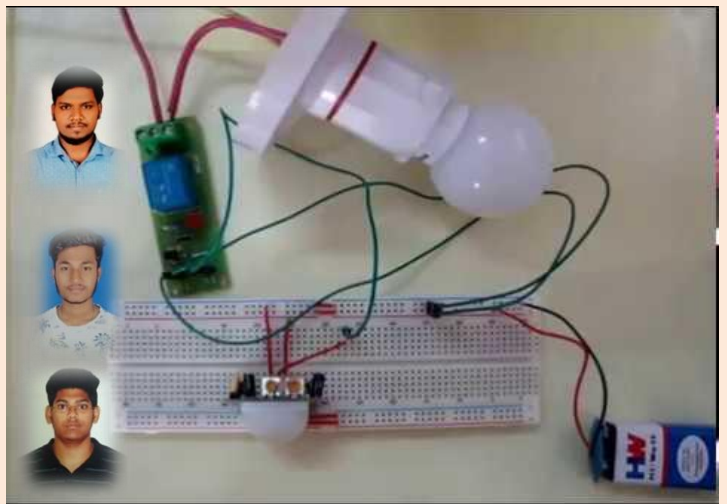
### LASER SECURITY SYSTEMS

There is a laser diode that generates the laser beam which continuously strikes over the Light dependent resistor sensors. When any person crosses the path, it inhibits laser to reach LDR and the buzzer and led will be activated.



### **AUTOMATIC ROOM LIGHTS USING ARDUINO**

It is a very useful project as you need not worry about turning on and off the switches every time you want to turn on the lights. The main components of the Automatic Room Lights project are Arduino, PIR Sensor and the Relay Module Limiting power. Making a controller which can sense if any person enters the room and lights up automatically. This is an ARDUINO based project that uses PIR sensor which detects the motion near the sensor and indicate the motion by glowing the LED bulb



### **AUTOMATIC HAND SANITIZER DISPENSER**

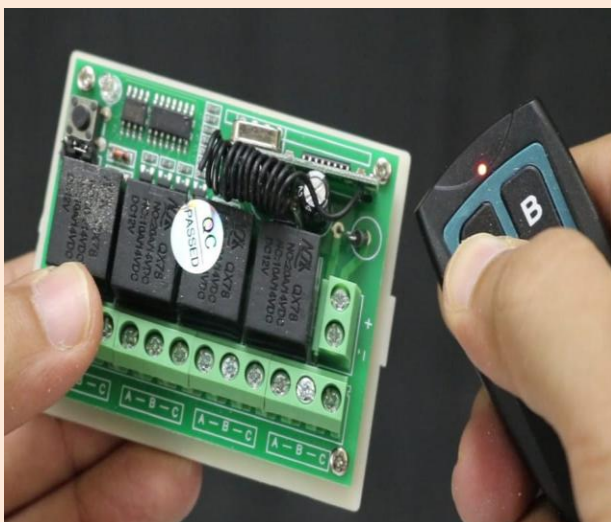
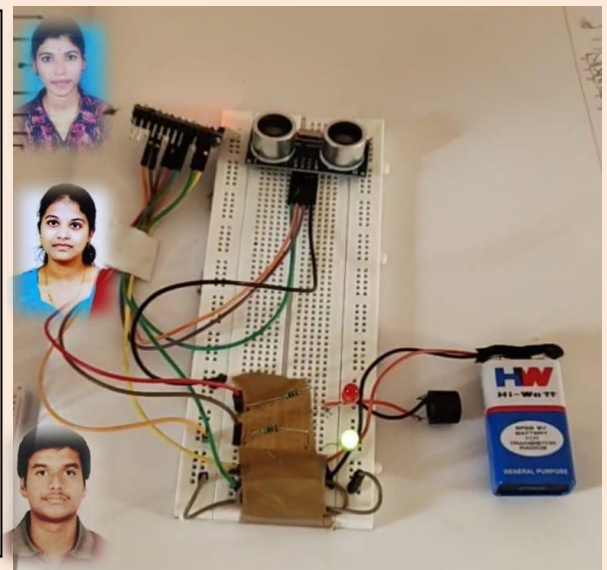
Automatic Hand Sanitizer is a Mini-Project made using almost recycled material and Basic sensor modules. The Main Aim of the project is to make every able student understand the need of this piece of technology to be made available in their household for our safety.

It's easy to build it as well as Portable, Rechargeable, Cost Efficient, Easy to Refill, Long Working Life



### **COVID 19 SOCIAL DISTANCE METER**

It gives us a great pleasure to introduce "COVID-19 SOCIAL DISTANCE METER" as the Mini project in our course. We all are aware of covid-19 and the whole world is suffering from covid-19. Already it is been a year we haven't succussed yet a bio war against covid-19. We all know that if we maintain 2 meters of distance from person to person we can easily feet this pandemic by protecting ourselves. A circular shaped device called "COVID-19 SOCIAL DISTANCE METER" which means a person having this device comes to nearby your contact within range of 2 meters this device turns on red light to alert you, which indicates that you are in between 2 meters to the person and also turns on green light if you are of 2 meters away from the person or community.



### **REMOTE CONTROL DOOR LOCK**

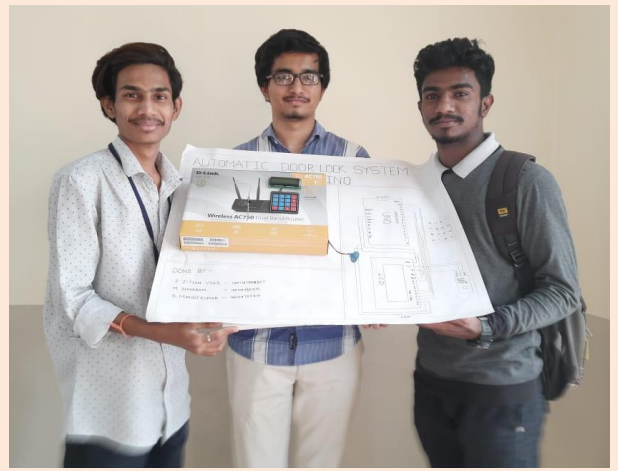
Remote control switching device for household application is a home device used to control the switching of household appliances from a distance. It serves to make the switching of household appliances easy for the elderly, physically challenged, the young and anyone who, in any circumstance, needs comfort and security.

This project develops a remote control system using the Radio Frequency technology utilizing multiplexers, demultiplexers, encoders, decoders, and Radio Frequency module with the analysis of various technologies which can be used for the development of a remote control system.

### **AUTOMATIC DOOR LOCK SYSTEM USING ARDUINO**

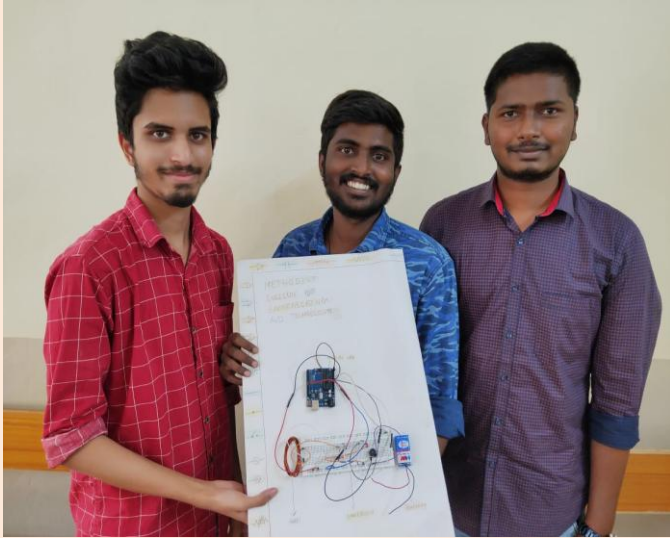
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### **Metal Detector USING ARDUINO**

The most commonly used metal detection technology is very low frequency (VLF), also known as induction balance. In this type of metal detector, there are two rings: an outer coil called the transmitter coil and an inner coil called the receiver coil. The transmitter coil has an electric current running through it, which creates an electromagnetic field. This magnetic pulse interacts with any conductive object it passes over, causing that object to create a weaker magnetic field of its own; it is this magnetic pulse from the object that the receiver coil senses. The receiver coil is shielded from the transmitter coil's magnetic field, but can pick up magnetic pulses sent by other objects.



### **SMART BLIND STICK USING ARDUINO**

According to the WHO, about 30 million people are estimated to be permanently blind worldwide. These people are totally dependent on others. They even cannot walk on their own. We have created designed and built an "Ultrasonic Blind Walking Stick" device which will help blind people to walk with ease independently. As a simpler version, we have used only one ultrasonic sensor in this project. For better accuracy and assistance two or three sensors can be used. The main objective of this project is to help blind people to walk with ease and to be warned whenever their walking path is obstructed with other objects, people or other similar odds. As a warning signal, a buzzer is connected in the circuit, whose frequency of beep changes according to the distance of object. The closer the distance of obstruction, the more will be the buzzer beep frequency. We can say that the beep frequency is inversely proportional to the distance.



### **SPACE ROVER**

A rover is a planetary surface exploration device designed to move across the solid surface on a planet or other planetary mass celestial bodies. Some rovers have been designed as land vehicles to transport members of a human spaceflight crew; others have been partially or fully autonomous robots. Rovers are typically created to land on another planet via a lander-style spacecraft, tasked to collect information about the terrain, and to take crust samples such as dust, soil, rocks, and even liquids. They are essential tools in space exploration. Rovers have to withstand high levels of acceleration, high and low temperatures, pressure, dust, corrosion, cosmic rays, remaining functional without repair for a needed per of time.