V-Ideas

Program: Electronics and Telecommunication Engineering

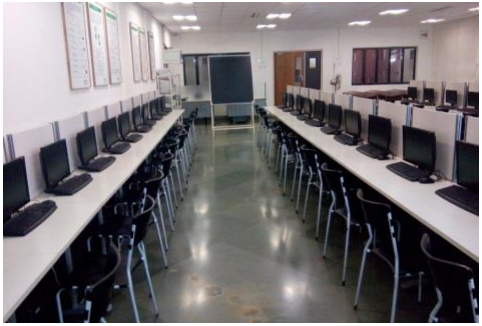
(NBA Accredited)

2021-2022

Be sure with

Vidyalankar

Since 1960



Preface

- **Vidyalankar is a 'Sanskrit' word combining two words Vidya + Alankar. Where Vidya means knowledge and Alankar means Ornament, the essence being that 'knowledge is the true ornament of a progressive mind'.**

- **Vidyalankar Polytechnic is one of the leading college in Mumbai, approved by AICTE, DTE Maharashtra State and Affiliated to MSBTE. It offers under graduate courses in engineering**

- **Vidyalankar Polytechnic was established by Vidyalankar Dyanapeeth Trust in 2002 under the dynamic leadership of Shri. C. S. Deshpande with the aim of imparting Technical Education in various fields of Engineering and Technology. It is located at the heart of Mumbai at Wadala(E).**

- **Courses offered are Computer Engineering, Information Technology, Electronics and Telecommunication Engineering.**

- **The college has excellent infrastructure for Class rooms, Technical library, Laboratories and latest computing facilities.**

Vidyalankar Polytechnic

Vision

To achieve excellence in imparting technical education so as to meet the professional and societal needs.

Mission

- Developing technical skills by imparting knowledge and providing hands on experience.
- Creating an environment that nurtures ethics, leadership and team building.
- Providing industrial exposure for minimizing the gap between academics and industry.

Principal Speak

Prof. Ashish Ukidve, Principal
Vidyalankar Polytechnic

Vidyalankar Polytechnic has always believed in providing quality technical education to the student who aspire to become skilled engineers .

We at Vidyalankar put forth for students a challenging ground; tracking them to learn and imply in their career and professional future. Emphasizing to skill and develop their opportunity to widen their innovative horizon.

V-Ideas is compilation of final year student's project ideas that have been processed and developed after fine scrutinizing and tuning by subject expertise. The selected projects were much appreciated by the judges boosting the morale of students.

Technovation the exploration of Technology and Innovation is the annual project exhibition and competition organised by Vidyalankar Polytechnic for final year students of various branches. Technovation enables students to exhibit and display their innovative skills, thus giving them an opportunity to manifest their hidden skills and ideas. This platform has privileged the students to think in new areas of their skills and present it in the best possible way.

Chief Technology Officer (CTO) Speak

Prof. Anjum Mujawar, CTO
Vidyalankar Polytechnic

"A project is complete when it starts working for you rather than you are working for it"

-Scott Allen

The capstone project is designed to consolidate final-year students' learning with valuable hands-on experience to help develop them into well-prepared and well-rounded graduates. It provides them an opportunity to use tools and techniques and implement methods. The capstone project encompasses a real-life working culture which aims to instill a set of specific skills that are both highly valued by employers and will ultimately serve students well into their careers.

To complete the project, students need to plan, estimate, and manage their time and energy. Students deepen their knowledge across disciplines and work effectively in teams while engaging professionally with their peers and professors. Solving real industrial problems is encouraged and facilitated by project guide.

We, at Vidyalankar, provide all the required facilities to complete their project. We also promote industry institute interaction by assigning industry-based problems in the form of project to our students.

V-ideas culminates V-Technovation 2022

"All of us do not have equal talent. But , all of us have an equal opportunity to develop our talents." - A.P.J Abdul Kalam

Vidyalankar Polytechnic has always believed in inculcating a synergetic and academic culture in its students, one that encourages them to be innovative and to be passionate about taking their ideas ahead.

V-Ideas are a collection of the final year project ideas of our students that have been nurtured after much rational thinking, fine-tuning and accurate reflection from teachers, guides and subject experts. The ideation stage is quite different from actual implementation; it is comparable to the transition from form to format, the regulated flow of ink from a nib which produces the actual writing. The Institute initiated an innovative idea of assembling the project ideas and transferring them into a hardcover book known as V-Ideas. This collection of projects acts as a future reference for First, Second and Third year students.

As a part of curriculum, students of diploma undertake a project related to their field and demonstrate the knowledge and skills gained on the subject of their choice. Students also take industry based projects for better and live exposure with the industry. The projects selected by the panel of experts are regularly monitored by the project guides. The innovative and creative projects are projected in V-Technovation. The projects won many awards at various competitions at other institutes.

V-Technovation provides a platform to diploma students to compete, interact and excel.

Program: Electronics and Telecommunication Engineering

Vision

To produce Electronics and Telecommunication engineers capable of effectively using technical knowledge and interpersonal skills to benefit the industry and society.

Mission

- Providing state of the art facilities and conducive environment enabling the students to sustain the challenges in the field of Electronics and Telecommunication.
- Educating the students to face the competitive world, develop leadership skills and to instill discipline and ethics.
- Promoting industry institute interaction.

Program Educational Objectives

- **PEO1:** Provide socially responsible, environment friendly solutions to Electronics and Telecommunication engineering related broad-based problems adapting professional ethics.

- **PEO2:** Adapt state-of-the-art Electronics and Telecommunication engineering broad-based technologies to work in multi-disciplinary work environments.

- **PEO3:** Solve broad-based problems individually and as a team member communicating effectively in the world of work.

Program Outcomes

PO1. **Basic knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the broad-based Electronics and Telecommunication engineering problems.

PO2. **Problem analysis:** Identify and analyse well-defined engineering problems using codified standard methods.

PO3. Design/ development of solutions: Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

PO4. **Engineering Tools, Experimentation and Testing:** Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.

Program Outcomes

PO5. **Engineering practices for society, sustainability and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.

PO6. Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

PO7. **Life-long learning:** Ability to analyse individual needs and engage in updating in the context of technological changes.

Program Specific Outcomes

PSO 1. Electronics and Telecommunication Systems: Maintain various types of Electronics and Telecommunication systems.

PSO 2. EDA Tools Usage: Use EDA tools to develop simple Electronics and Telecommunication engineering related circuits**.**

Program: Electronics and Telecommunication Engineering

Area ID	Project Area	Project ID	Project Title	Page No.
EJ1	Internet of Things	EJ1.1	Digital Notice Board using Raspberry Pi	1
		EJ1.2	Smart Minning Helmat	2
		EJ1.3	Predictive Maintenance using IOT	3
		EJ1.4	Smart Mirror	4
		EJ1.5	Mask Vending Machine	5
		EJ1.6	Smart Bird Feeder	6
		EJ1.7	Biometric based exam gate autentication system with sms alert	7
		EJ1.8	The UV Disinfecting Robot	8
		EJ1.9	Accident prevention, detection and reporting system using arduino	9
		EJ1.10	E-Fence for pet protection	10
		EJ1.11	Patient Health Monitoring System	11
		EJ1.12	Vehicle number plate recognition system	12

Program: Electronics and Telecommunication Engineering

Program: Electronics and Telecommunication Engineering

Area ID	Project Area	Project ID	Project Title	Page No.
EJ3	Power Electronics	EJ3.1	Smart Crop Protection System	21
		EJ3.2	Smart Energy Meter	22
		EJ3.3	100 Watt Inverter	23
		EJ3.4	Autonomous "Follow Me" Cooler	24
		EJ3.5	Motion based Automatic Door Opener	25
		EJ3.6	Fire Fighting Robot	26
		EJ3.7	Auto Irrigation System using Solar Panel	27
EJ4	Biomedical	EJ4.1	Automatic Hand Sanitizer	28
		EJ4.2	Pulse Oximeter	29
		EJ4.3	Safety and Security System for fighting Covid19	30
EJ5	Robotics	EJ5.1	Smart Cleaner Robot	31
		EJ5.2	Surveillance Robot	32

Program: Electronics and Telecommunication Engineering

Area ID	Project Area	Project ID	Project Title	Page No.
EJ6	Wireless Communication	EJ6.1	Manhole detection and Monitoring system	33
		EJ6.2	Voice Based Hot-Cold Water Dispenser System	34
		EJ6.3	Smart Aquarium	35
		EJ6.4	QR Covid Verification Check for Public Area	36
		EJ6.5	Design Power supply 5V, 12V and 3.3V with digital display	37
		EJ6.6	Day/Night Cycle Auto Air Sanitizing System	38
		EJ6.7	Smart Umbrella	39
		EJ6.8	Voice controlled wheel chair for disable people	40
		EJ6.9	Finger Print Door Lock System	41
EJ7	Instrumentation and Control System	EJ7.1	PLC based Automatic Car Parking System	42
		EJ7.2	olar Powered Mobile and Laptop Charging Statio	43
		EJ7.3	Water Management System Using PLC	44

Program : Electronics and Telecommunication Engineering

Project Title : Digital Notice board using Raspberry Pi

Domain : Internet of Things

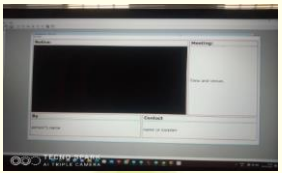
Name of Project Guide : Er. Pratik Tawde

Name of Students : 19201A0013 – Anuraj Chavan
19201A0002 – Raj Sawant
19201A0017 – Girish Sangare

Brief idea of project:

As we advance in Digital Technology, it is more efficient to represent the information on digital devices. But sticking various notices day to day is a difficult process. In this paper, it has been implemented an IoT (Internet of Things) Based Digital Notice Board using Raspberry pi and Operating System With the help of this project. Now a day's internet is the primary mode of communication everywhere. Digital Notice Board is primary thing and plays a vital role in any institution or public utility places like bus stations, railway stations, colleges, malls, etc. At any time, we can add or remove or alter the text according to our requirement and authenticated person can convey the message/notice even from remote place on digital devices like LCD display

Screenshots of the Project:



Applications:

- For Timetable/to do list
- Notice for institute
- Menu for restaurant

Program : Electronics and Telecommunication Engineering

Project Title : Smart Mining Helmet

Domain : Internet of Things

Name of Project Guide : Er. Kirti Gupta

Name of Students : 19201A0029- Yashraj Damgude
19201A0041 - Mithila Thakur
19201A0046 - Sujal Tamore

Brief idea of project:

In this project, a wearable helmet is presented towards early warning of leaking toxic gas in large-scale for protecting the lives and safety of workers better. Air Quality becomes an important factor in mining areas where the health condition of the workers is prominently considered. The composition of many toxic gases under the mining area causes many fatalities that keep on increasing day by day. Exceeding the standard levels of these toxic compounds in the air causes many problems like severe breathing trouble and headache. In this proposed work, Smart Helmet has been developed for mining workers using LoRa to overcome the above mentioned problems. This device helps to alert user on the air quality.

Screenshots of the Project:

Applications

- It can be applied to the person who is working underground.
- It can be very useful not only for mining but underwater too.

Program : Electronics and Telecommunication Engineering

Project Title : Predictive Maintenance System

Domain : Internet of Things

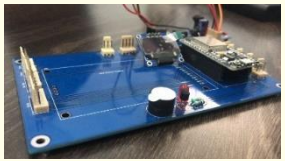
Name of Project Guide : Er. Anjum Mujawar

Name of Students : 19201B0015 – Shweta Rapolu
19201B0016 – Rachna Mishra
19201B0021 – Ritika Todkar

Brief idea of project:

Predictive maintenance is a technique that uses data analysis tools and techniques to detect anomalies in your operation and possible defects in equipment and processes so you can fix them before they result in failure. When a machine is encountered with a fault, it will automatically sense it using sensors and will immediately send a text message to the nearest customer care service center of the concerned brand. It will also make the user aware of the fault by text message to the customer`s smart phone.

Screenshots of the Project:



Applications:

- Industrial motor vibration monitoring.
- Temperature, humidity, gas monitoring.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Mirror

Domain : Internet of Things

Name of Project Guide : Er. Shanti. Krishnan

Name of Students : 19201B0005 – Samuel.R.Pallikonda
19201B0019 – Shivam.Parsekar
19201B0003 – Harikrishnan.Achari

Brief idea of project:

In today's world, everyone needs a comfort quality life, and they are always ready to access the information easily with wireless connected device that are being used in various day to day activities. The smart mirror is the moderation over the regular household mirror with associated smart digital devices and raspberry pi which provide advance functionality such as time, calendar, weather of the city, updates of news and headlines.

Screenshot of the Project:

Applications:

- Smart mirrors are often used in the retail sector wherein retailers try to catch the interest of potential clients and encourage them for frequent or regular visits.

Program : Electronics and Telecommunication Engineering

Project Title : Mask vending machine

Domain : Internet of Things

Name of Project Guide : Er. Sandhya Kumar

Name of Students : 19201C0004 - Adnan Shaikh

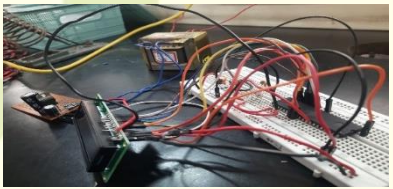
19201C0011-Pranay Kumar

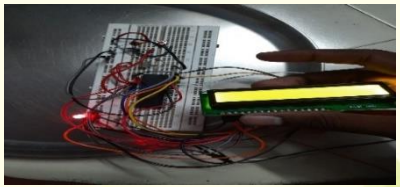
19201C0009-Siddhesh Teli

Brief idea of project:

A vending machine is a machine that gives out different kinds of products when a person inserts a coin into it, therefore it is a coin based vending machine. These machines can be implemented using various methods but in this project it has been implemented using 89S52 microcontroller. Vending machines makes it easier for making small purchases, it occupies less space and it doesn't need any continuous monitoring. Vending Machines are there since very long time, and they have changed much with the time. Vending Machine is very cool and useful product to dispense various Mask just by inserting a coin in it.

Screenshots of the Project:





Applications:

- Use in school and college to distribute face mask.
- Use in public area such as railway station ,offices, companies etc.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Bird Feeder

Domain : Internet of Things

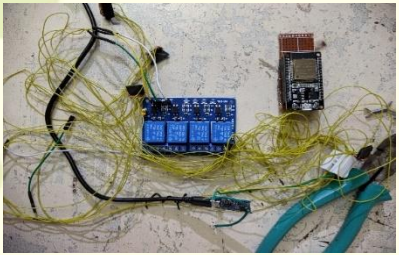
Name of Project Guide : Er. Apurva Wadekar

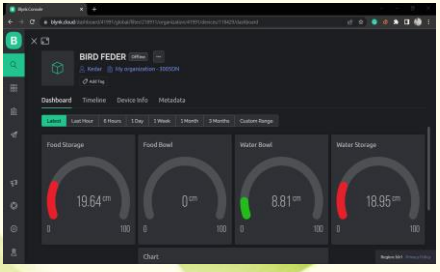
Name of Students : 17201C0015 – Kedar Alwe
20201C1001 – Jai Solanki

Brief idea of project:

Automatic Bird Feeder is designed to provides food and water to the birds. The feeder has storage tank to stock seeds and water and can be remotely monitored through an app. The app will indicate the tank level depending upon the usage of the food and water and thus the user will get an alert to refile the tank at regular intervals.

Screenshots of the Project:





Applications:

- Bird feeders provides an uninterrupted supply of food to the birds.
- This system can be installed in balcony, garden, building or on a trees to feed the birds.

Program : Electronics and Telecommunication Engineering

Project Title : Biometric based exam gate authentication system with SMS alert

Domain : Internet of Things

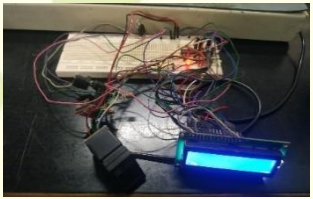
Name of Project Guide : Er. Srinivas Paivernekar

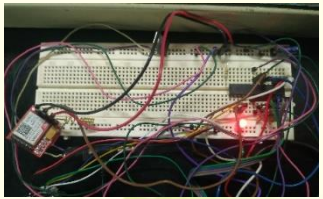
Name of Students : 19201A0035 - Saurabh Nirmal
19201A0005 - Swaraj Katalkar
19201A0005 - Yash Kharat

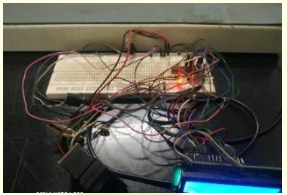
Brief idea of project:

Biometrics authentication plays a vital role in organization, company, colleges and institutions. Security within the examination hall is one of the foremost repetitive issues. To maintain attendance verification is a sophisticated and time-consuming process, this biometric will help in maintaining attendance and security in the examination hall. This advanced authentication system is made for identifying candidates and granting access to them.

Screenshots of the Project:







Applications:

- Use for marking attendance during exam in school and colleges, etc
- And can be further use for other attendance part in system

Program : Electronics and Telecommunication Engineering

Project Title : UV Disinfectant Robot

Domain : Internet of Things

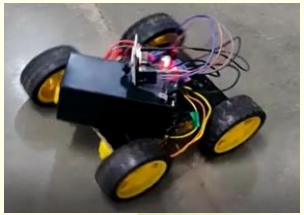
Name of Project Guide : Er. Helina Tandel

Name of Students :
19201A0012 – Janam Pandya
19201A0010 – Siddhi Bhekare
19201A0054 – Kavish Shetty
19201A0009 – Sayali Bhogte

Brief idea of project:

UV-C is employed as it has germicidal properties, in particular - bacteria and viruses, but it is detrimental to human-beings as well. So, for the purpose of disinfection without human interference, a UV Robot has been designed and implemented that can be controlled manually. The ultimate aim of disinfection and sterilization is to inactivate or eliminate microorganisms in order to avoid the spread of diseases and infections present in the Air.

Screenshots of the Project:



Applications:

- It can be used in Hospitals for sanitization surgical instruments and rooms.
- It can be used in School, Colleges and various crowed places.

Program : Electronics and Telecommunication Engineering

Project Title : Accident prevention, detection and reporting system using Arduino

Domain : Internet of Things

Name of Project Guide : Er. Imran sayyed

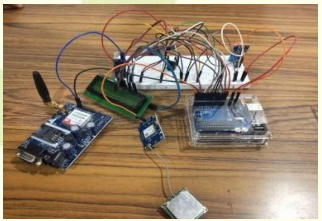
Name of Students : 19201A0030 - Prasad Bhandare

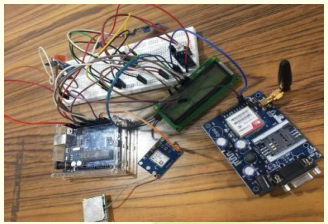
19201A0031 - Vighnesh Shelar

Brief idea of project:

In today's world there is a severe increase in the use of vehicles. Such heavy automobile usage has increased traffic and thus resulting in a rise in road accidents. This takes a toll on the property as well as causes human life loss because of unavailability of immediate preventive and safety facilities. Complete accident prevention is unavoidable but at least repercussions can be reduced. This embedded system can prevent the accident to occur and proper preventive measures are taken in this system. The ambulance service and the police station can easily find the location as the location along with the google map link was sent to their smart devices with mobile network accessibility.

Screenshots of the Project





Applications:

- The accident preventive measures can be use with all type of engined vehicles.i.e. diesel/petrol engine.
- The GPS and GSM system can be used to determine over speed in restricte.

Program : Electronics and Telecommunication Engineering

Project Title : E-Fence for pet protection

Domain : Internet of Things

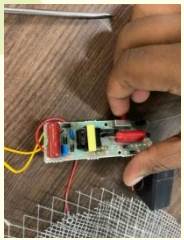
Name of Project Guide : Er. Kirti Gupta

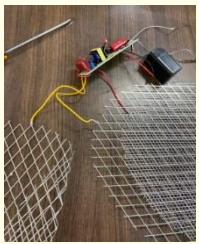
Name of Students : 18201B0005 – Sail Pangam
18201B0012 - Fiza Shaikh
18201B0016 – Hitesh Goankar

Brief idea of project:

An electric fence is a barrier used to keep your animals safe and unwanted animals out of gardens and other landscapes you want to protect. Electric fencing is also ideal for grazing or pasture management as it contains animals on a selected area of pasture or crop.

Screenshots of the Project:





Applications:

- Agricultural fencing and other forms of non-human animal control.

Program : Electronics and Telecommunication Engineering

Project Title : Patient Health Monitoring System

Domain : Internet of Things

Name of Project Guide : Er. Shanti Krishnan

Name of Students : 19201C0003 – Parth P. Mahadik

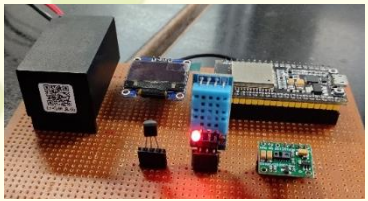
19201C0012 – Prashant D. Bole

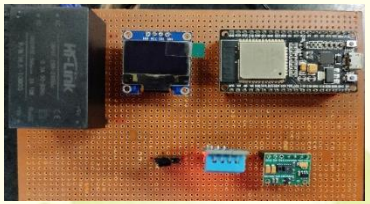
19201C0014 – Rishabh R. Chaturvedi

Brief idea of project:

Healthcare technology is very popular in today's pandemic situation due to COVID-19. Actually, with the help of IoT, healthcare technology is rapidly being revolutionized. Keeping track of patient's health status at home is a difficult task for doctors due to their busy schedule and daily work. Especially, elderly patients should be monitored periodically. So, we propose an innovative system that makes this task easily automated. This equipment uses the Blynk website to track patient health with the help of various sensors. Hence, patient health parameters such as body temperature, heart rate, blood oxygen levels as well as room temperature and humidity can be monitored.

Screenshots of the Project:





Applications:

- Hospital
- Disable Patients
- Senior citizens

Program : Electronics and Telecommunication Engineering

Project Title : Vehicle Number Plate Recogintion System

Domain : Internet Of Things(IOT)

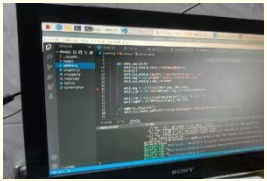
Name of Project Guide : Er. Shanti krishnan

Name of Students : 19201A0037 – Ninad Balam
19201A0001 – Shivam Deshmukh
19201A0038 – David Karunanidhi

Brief idea of project:

Automatic Number Plate Recognition (ANPR) is the ability to automatically recognize the symbols contained in the number plates of a motor vehicle when read from an image provided by video surveillance cameras for the purposes of further processing by a security system. In general, a number plate recognition system consists of a "frame-grabbing instrument" capable of capturing an image, searching for a number plate's position within the image, and subsequent singling out of the relevant symbols with the aid of optical character reading (OCR) tools, which translate the image pixels into visually readable digits.

Screenshots of the Project:



Applications:

- In public parking areas.
- It also plays a vital role in building entry gate.

Program : Electronics and Telecommunication Engineering

Project Title : Solar Energy in Clouds

Domain : Embedded System

Name of Project Guide : Er. Arpit Bankar

Name of Students : 19201A0043 – Manthan Vasant Jagdale
19201A0052 – Avesh Rais Khan
19201A0036 – Devang Sunil Kelkar

Brief idea of project:

Solar trackers are devices used to orient photovoltaic panels, reflectors, lenses or other optical devices toward the sun. Since the sun's position in the sky changes with the seasons and the time of day, trackers are used to align the collection system to maximize energy production. Several factors must be considered when determining the use of trackers. Some of these include: the solar technology being used, the amount of direct solar irradiation, feed-in tariffs in the region where the system is deployed, and the cost to install and maintain the trackers.

Screenshots of the Project:

Applications:

- Emergency battery backup
- positioning solar panels so that they remain perpendicular to the Sun's rays and positioning space telescopes so that they can determine the Sun's direction.

Program : Electronics and Telecommunication Engineering

Project Title : Microcontroller Based Automated Body Mass Index (BMI) Calculator

Domain : Embedded System

Name of Project Guide : Er. Shrinivas Paivernekar

Name of Students : 20201B1001- Rohit Bhosale

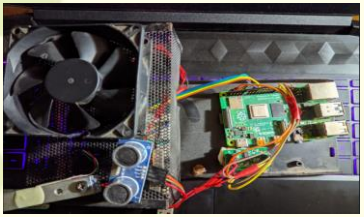
20201B1006 - Amey Jathar

20201B1011- Suraj Golambade

Brief idea of project:

We design a microcontroller based automated Body Mass Index (BMI) calculator with LCD display, which calculates the body mass index using the two basic parameters that are weight and height. It is a useful device when it comes to controlling your weight and height and maintaining a healthy lifestyle.

Screenshots of the Project:



Applications:

- The automatic Body mass index calculator has many applications in the vast field of biomedical engineering.
- The electronic BMI is such a device which is used in Hospitals, Clinics, and even Pharmacies.
- BMI is the most convenient and most efficient measure of obesity
- It can also be used for commercial purposes by installing a fool proof coin acceptor system.

.

Program : Electronics and Telecommunication Engineering

Project Title : Fall Prediction System Using ML

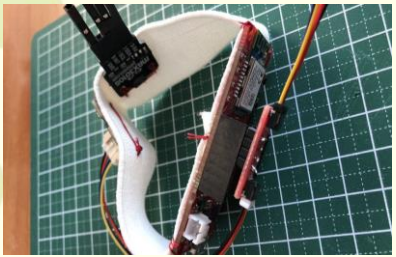
Domain : Embeded System

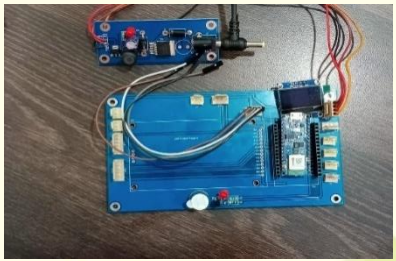
Name of Project Guide : Er. Anjum Mujawar

Name of Students : 19201B0014 – Shubham Pillay
19201B0012 – Chinmay Pillay
19201B0010– Khan Sufyan

Brief idea of project:
Creating Prefall prediction machine monitoring system using ml for anomaly patient and make emergency call/message. It can be used to avoid major injuries and provide emergency assistant to the person.

Screenshot of the Project :





Applications:
- Use by elder patient.
- Use in hospital to avoid fall.

Program : Electronics and Telecommunication Engineering

Project Title : Automatic Irrigation Water Supply

Domain : Embedded System

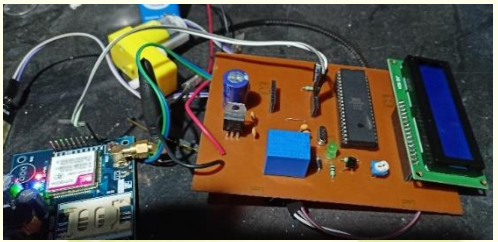
Name of Project Guide : Er. Arpit Bankar

Name of Students : 18201C0012 – Prathamesh Sonawane
18201C0019 – Shiva Devendra

Brief idea of project:

An Automatic irrigation Water Supply system refers to the operation of the system with no or just a minimum of manual intervention beside the surveillance. Almost every system (drip, sprinkler, surface) can be automated with help of timers, sensors or computers or mechanical appliances. It makes the irrigation process more efficient and workers can concentrate on other important farming tasks.

Screenshots of the Project:



Applications :

- Its mainly used in farms.

Program : Electronics and Telecommunication Engineering

Project Title : Coffee Vending Machine

Domain : Embedded System

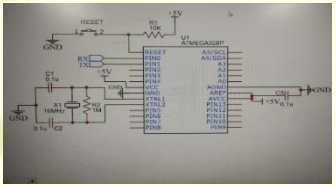
Name of Project Guide : Er. Rohit Sharma

Name of Students : 18201C0016 – Hardik Sharma
18201C0004 – Mohit Sonar
18201C0014 – Siddhi Jadhav

Brief idea of project:

We all take coffee vending machines for granted these days, but vending had come a long way since its early form and is no less important now than when it was first invented. While this is not about a coffee vending machine, it's a good idea to get some history before you enter into a coffee machine rental agreement. It's then you will see the enormity of what you're doing for your business and employees.

Screenshots of the Project:



Applications :

- Can be used in offices, restaurants etc.
- Due to its multifunctionality it can be converted into any type of cocktail machine.

Program : Electronics and Telecommunication Engineering

Project Title : Color Detection & Tracking with ESP32 CAM & OpenCV

Domain : Embedded System

Name of Project Guide : Er. Pratik Tawde

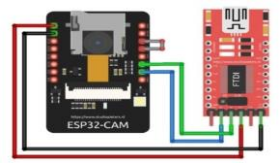
Name of Students : 19201A007 - Anuj Vikas Jadhav

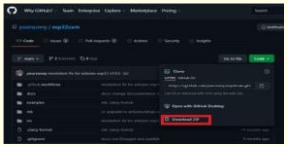
19201A0026 - Khan Sohel Ali Azghar

Brief idea of project:

This project is all about Color Detection & Tracking with ESP32 CAM Module & OpenCV. It will be detecting any specific colors during live video streaming. Colour detection is necessary to recognize objects, it is also used as a tool in various image editing and drawing apps.

Screenshots of the Project:





Applications:

- It can be used by color blind person

Program : Electronics and Telecommunication Engineering

Project Title : Smart Compost System

Domain : Embedded System

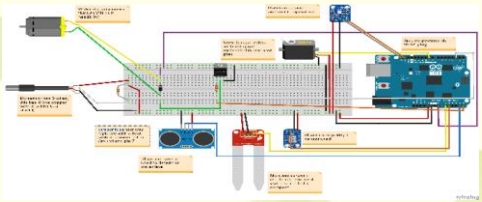
Name of Project Guide : Er. Arpit Bankar

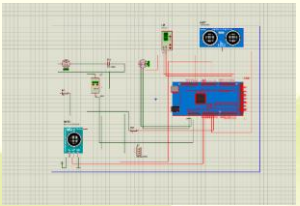
Name of Students : 19201B0001 – Yash Ghogale
18201B0011 – Arvind Kumar
18201B0015 – Wilson Metri

Brief idea of project:

As per the report of environmental protection agency the percentage of waste material thrown on the landfills increases year by year. Because of these pollutions increases as these waste material emits the methane gas and other harmful gases. These gases go into air as we inhale it goes to human body and it create pollution in environment. These gases are the alarm to the global warming because of this it starts heating the planet. Nowadays we are realizing that in summer season temperature increases year by year. The best option to done with the waste as we throwing on landfills is to do composting. Composting means put a waste in close unit and let the microorganism breakdown to make humus like product. This product can be used as a fertilizer for plants and soils. In this system with the help of Arduino, temperature sensor, gas sensor, humidity and moisture sensor compost will be monitored.

Screenshots of the Project:





Applications:

- This system can be used at home for decomposition of waste materials

Program : Electronics and Telecommunication Engineering

Project Title : Home Automation Using Node MCU with Blynk App

Domain : Embedded System

Name of Project Guide : Er. Pranesh Naik

Name of Students : 20201B1014 – Pratik Rajesh Dhulap

20201B1015 – Vijay Chandra Chavan

20201B1018 – Sarvesh santhosh Takke

Brief idea of project:

IOT technology that allows us to control hardware devices through the internet .Here we propose to use IOT in order to control home appliances, thus automating modern homes through the internet. This system uses 4-loads to demonstrate as house Appliances Controlling. Our user friendly interface allows a user to easily control these home appliances through the internet Worldwide. For this system we use an Node MCU (Node Microcontroller Unit).This microcontroller is interfaced with a Relay modem to get user commands over the internet. Relays are used to switch loads.

Screenshots of the Project :

Applications:

- This project can also be used in offices, home and industries.
- The Load Can be of any type which is the output of the circuit. The Output relay drives the appliances. i.e. fan, LED bulbs, motors, etc.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Crop Protection System

Domain : Power Electronics

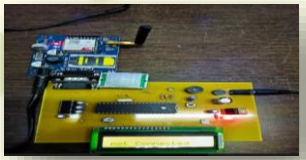
Name of Project Guide : Er. Sandhya Kumar

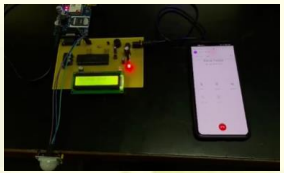
Name of Students : 19201A0050 – Sahil Naik
19201A0023 – Om Kasar
19201A0042 – Vishvesh Manchekar

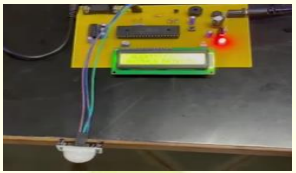
Brief idea of project:

Crops in farms are many times ravaged by local animals like buffaloes, cows, goats, birds etc. This leads to huge losses for the farmers. It is not possible for farmers to barricade entire fields or stay on field 24 hours and guard it. So here we propose automatic crop protection system from animals. This is a microcontroller-based system using PIC family microcontroller. This system uses a motion sensor to detect wild animals approaching near the field. In such a case the sensor signals the microcontroller to take action. The microcontroller now sounds an alarm to flee the animals away from the field as well as sends SMS to the farmer so that he may know about the issue and come to the spot in case the animals don't turn away by the alarm. This ensures complete safety of crops from animals thus protecting the farmers loss.

Screenshots of the Project:







Applications:

- Agriculture Land
- Industries

Program : Electronics and Telecommunication Engineering

Project Title : Smart Energy Meter

Domain : Power Electronics

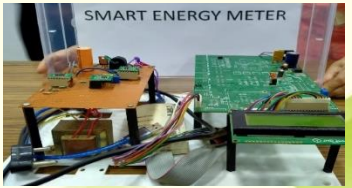
Name of Project Guide : Er. Madhavi Machapurm

Name of Students : 19201A0024 – Ajay Bhavsar
19201A0025 – Vinit Nikam
19201A0034 - Yogesh Pawar

Brief idea of project:

The Smart Energy Meter (SEM) has capability to display all the parameters of power instantaneously on the LCD screen. SEMs use advanced metering infrastructure technology (via GSM) for better performance. They can transmit the data to the utilities like energy consumption, parameter values, alarms, etc. Using data updated on the server we can draw the plots for easy understanding and changes in power. It helps us to monitor the power related problems instantaneously and optimize the energy consumption. Smart energy meters are used to read, process and feedback the data to customers These meters reduces the need to visit while taking or reading monthly bill.

Screenshots of the Project:



Applications:

- Monitoring of energy consumption by various loads such as AC motors, Air conditioners etc. in industries/commercial buildings .
- Optimize power consumption.
- Automatic meter reading system.

Program : Electronics and Telecommunication Engineering

Project Title : 100W Inverter

Domain : Power Electronics

Name of Project Guide : Er. Kirti Gupta

Name of Students : 19201B0011 – Abhishek Yadav

Brief idea of project :

Inverter circuit boards are power electronic devices which converter Direct current (DC) to Alternative current (AC). This board converts 12V DC current to 220V AC current. It works on the frequency of 50Mhz to 60Mhz. But You will need to connect a 12-0-12 12V transformer with it, to get the proper power supply. This board has inbuilt over voltage, over current, and short circuit protection. The board is perfectly design to provide high output performance. This type of board is use in solar system, to charge the battery of the vehicles, to drive low power AC motors, etc.

Screenshots of the Project:

Applications:

- Availability of Electricity in need of emergency.
- During Power cuts.

Program : Electronics and Telecommunication Engineering

Project Title : Autonomous "Follow Me" Cooler

Domain : Power Electronics

Name of Project Guide : Er. Sandhya Kumar

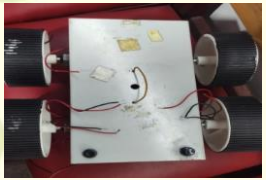
Name of Students : 19201B0006 - Rudra Pawar

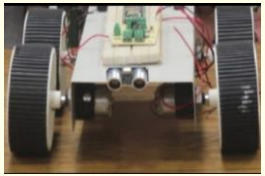
19201B0022- Robin Abhishek

Brief idea of project:

We will move forward and design our first autonomous robot. In this project we use ESP32 to build an autonomous follow me cooler. The robot is connected to the smartphone, in the robot we have used ultrasonic sensor HC-SR04 which senses the object within the distance of 30m and avoid it.

Screenshots of the Project:





Applications:

- Availability of fresh cool drinks while camping in summer.
- Availability of cool water if the refrigerator is not working.

Program : Electronics and Telecommunication Engineering

Project Title : Motion Based Automatic Door Opener

Domain : Power Electronics

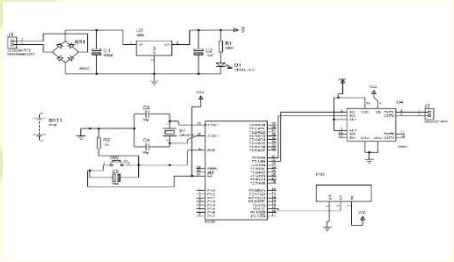
Name of Project Guide : Er. Helina Tandel

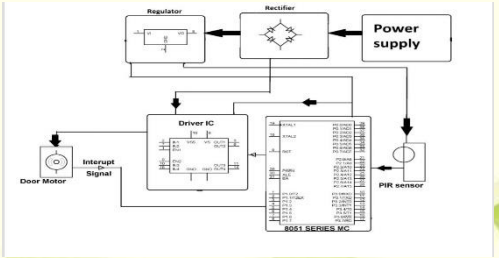
Name of Students : 18201A0022- Shridhar Sahu
18201A0030- Aniket Ghodake
18201A0045- Shrikant Desiti

Brief idea of project:

Our system puts forward an automatic and precise door opening system based on human movement sensing near the door. Well opening a door in places like hotels, Shopping complexes, and offices can be a tedious task and sometimes requires hiring a person just for the sake of opening door whenever a person arrives.

Screenshots of the Project





Applications:

- The automatic door opener in used in shopping mall and the industrial area.
- The automatic door opener system is also used in railway station and airport etc.

Program : Electronics and Telecommunication Engineering

Project Title : Fire Fighting Robot

Domain : Power Electronics

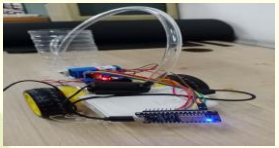
Name of Project Guide Er. Madhavi Machapurm

Name of Students : 19201C0007 - Himanshu Dubey
19201C0010 - Krishna Jaiswal
19201C0001 - Sahil Khapekar

Brief idea of project:

The advent of technology, humans are replaced with robots in life-threatening situations. We aim to design a robot capable of suppressing fires. By designing and implementing an autonomous robot capable of extinguishing flames, disasters can be avoided with minimal risk to human life.

Screenshots of the Project:



Applications:

- Can be used in server room.
- Extinguishes fire where probability of explosion is high.
- Disaster area monitoring and rescue.

Program : Electronics and Telecommunication Engineering

Project Title : Auto Irrigation System using Solar Panel

Domain : Power Electronics

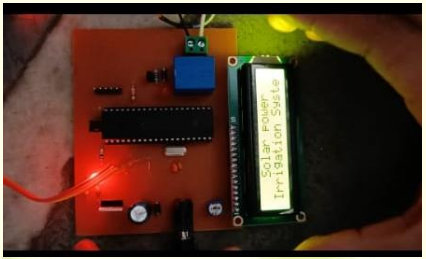
Name of Project Guide : Er. Helina Tandel

Name of Students : 18201A0023 – Amit Jaiswar
18201A0037 – Yaduraj Kadlag

Brief idea of project:

Irrigation system is very important in the field of agriculture .Deficiency in water may harm the growth of plants which results in loss of farmers .Auto irrigation system keep information about moisture level in land and keep moisture to permissible limit. Moisture sensor is used to measure moisture level in soil .

Screenshots of the Project:



Applications:

- The circuit can be used to measure the loss of moisture in the soil over time due to evaporation and intake.
- The circuit is designed to work automatically so there is no need for any human intervention.
- This circuit can be used in Agriculture field, gardens, playing ground etc.

Program : Electronics and Telecommunication Engineering

Project Title : Automatic Hand Sanitizer

Domain : Biomedical

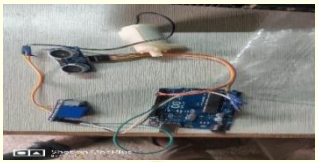
Name of Project Guide : Er. Madhavi Machapuram

Name of Students : 17201A0033 – Chinmay Kamble
17201A0054 – Saish Chavan
14201A1013 – Aniket Yadav

Brief idea of project

The COVID-19 pandemic radically affected life for almost everyone around the globe, with the everyone being more careful of their interaction with humans and objects, personal hygiene has taken serious precedence over all other factors in public place. A lot of public places have hand sanitizers for visitors, but they need to be manually pressed. To avoid any contact at all, some no - touch hand sanitizer dispensers are commercially available, but they are expensive and most off-the-shelf commercial sanitizers cannot be automated. In this project, we would create a contactless hand sanitizer dispenser that can be used for any press-to-release hand sanitizer available in the market.

Screenshots of the Project:



Application:

- The automated hand sanitizer can be used in public places such as hospital, metro stations, shopping malls, etc.
- They are easy to use

Program : Electronics and Telecommunication Engineering

Project Title : Pulse Oximeter

Domain : Biomedical

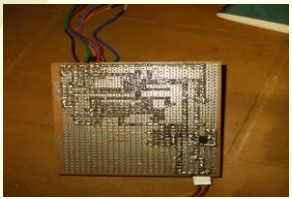
Name of Project Guide : Er. Apurva Wadekar

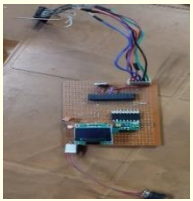
Name of Students : 18201B0002 – Saurabh Manerikar
18201B0008 – Zaid Shaikh
18201B0013 – Aniket Tiwari

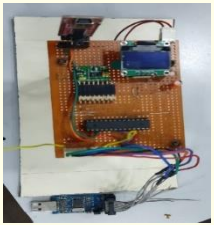
Brief idea of project:

The designed project Pulse Oximetry is a noninvasive test that measures the oxygen saturation level of your blood. It can rapidly detect even small changes in oxygen levels. These levels show how efficiently blood is carrying oxygen to the extremities furthest from your heart, including your arms and legs.

Screenshots of the Project:







Applications:

- Medical professionals may use pulse oximeters to monitor the health of people with conditions that affect blood oxygen levels, which may include disease such as asthma, pneumonia, anemia.

Program : Electronics and Telecommunication Engineering

Project Title : Safety & Security system to fight from covid

Domain : Biomedical

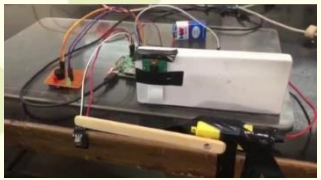
Name of Project Guide : Er. Apurva Wadekar

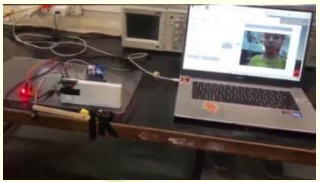
Name of Students :
20201B1002 - Manasi Bhosale
20201B1003 - Girish Kumar Lohar
20201B1004 - Yash Kurwa

Brief idea of project:

A smart entry device that automatically monitors human body temperature and detects a mask at the door opening system is developed. An advanced idea is used in this system approach, which is a combination of all three including face mask detection, fully automated temperature scanner and entry provider system. The scanner is connected directly with a human barrier to bar entry if high temperature or no mask is detected.

Screenshots of the Project:





Applications:

- This product can be used in different places such as hospitals, schools, railway stations, airports etc to prevent from covid spread.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Cleaning Robot

Domain : Robotics

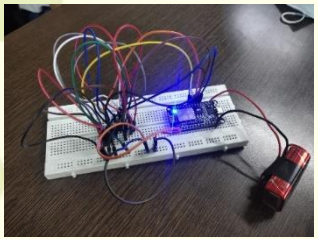
Name of Project Guide : Er. Rohit Sharma

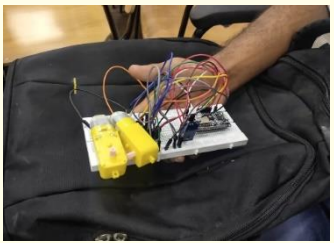
Name of Students : 19201A0040 – Shelton Picardo
16201B0026 – Barkattulla Syed
16201B0016 – Jayant Singh

Brief idea of project:

This robot can be used for various cleaning purposes. This Robot has various cleaning expertise in mopping and wet floor cleaning. Smart floor cleaning robot has been designed for home and office environments. The proposed system is a automatic and manual system because it can automatically control itself or the user can control every single direction and action of the robot.

Screenshots of the Project:





Applications:

- This is very much helpful for elderly people as well as for those who are unable to a lot of physical activity
- This robot can be used in various industries.

Program : Electronics and Telecommunication Engineering

Project Title : Surveillance Robot

Domain : Robotics

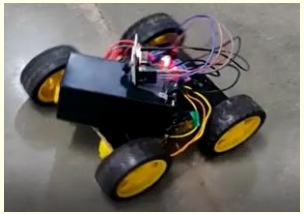
Name of Project Guide : Er. Pranesh Naik

Name of Students : 19201A0051 – Amaan Khan
19201A0019 – Pratham Chopade
19201A0047 – Latish Rai

Brief idea of project:

So, as you all know that The human cannot record video safely in critical conditions and environments. These conditions and environments may be buildings where the fire breaks out, Areas with poisonous gases or harmful radiation and the places where there is an exchange of fire such as battlefield. So the solution is a surveillance robot based on Wi-Fi and Bluetooth protocol. The robot can transmit real-time video to the intended recipient.

Screenshots of the Project:



Applications:

- It can be used in monitoring the surrounding.
- It can be used for security purpose.

Program : Electronics and Telecommunication Engineering

Project Title : Manhole Detection and Monitoring System

Domain : Wireless Communication

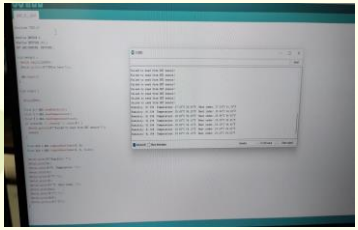
Name of Project Guide : Er. Shilpa Mam

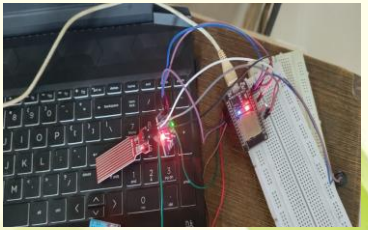
Name of Students : 19201A0004 - Harsh Kadam
19201A0049 – Vishal Kodurpaka
19201A0048 - Shubham Gurav

Brief idea of project:

Broken or missing Manhole covers is the reason for Accidents mainly in rainy season. This proposed system includes various sensors like Float sensor, Temperature sensor, Gas sensor and IR sensor which are operated in real time to monitor the parameters like Water level, internal temperature, toxicity of sewage system and tilt of manhole cover. All these parameters are continuously updated, and alert will be given due to increase of any parameter

Screenshots of the Project:





Applications:

- React Application: Works with ThingHTTP to perform actions when a threshold is reached by the channel data.
- ThingHTTP Application: Enables communication between websites and computers. It is triggered using React Application

Program : Electronics and Telecommunication Engineering

Project Title : Voice based hot-cold water dispenser

Domain : Wireless Communication

Name of Project Guide : Er. Pranjali patil

Name of Students : 19201A0018 - Mahalaxmi Udaiyar
19201A0020 - Mansi Jadhav
19201A0044 - Tanvi Koli

Brief idea of project:

This system is fully based on voice sensor, which uses Raspberry Pi circuit, this water dispenser system also uses IR sensor, voice sensor, mic, jars for storing water, pipes and motor. In this project the voice is detected by the voice sensor, then the sensor sends the respective information to the microcontroller, to understand whether the water required by the person should be hot or cold.The system uses IR sensors to detect the presence of water glass and then the IR sensor sends the signal to the microcontroller about the presence of the glass, accordingly the motor starts and the water flows though the pipes from the particular jar(hot/cold).

Screenshots of the Project:

Applications:

- This system can be used at home, offices etc. to get hot or cold water by just giving voice command.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Aquarium

Domain : Wireless Communication

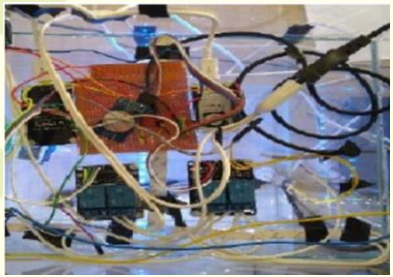
Name of Project Guide Er. Shilpa Gaikward

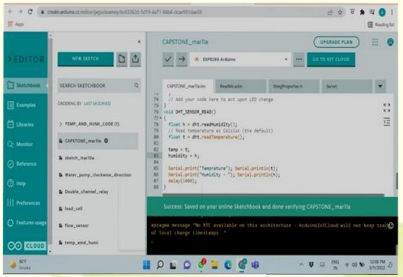
Name of Students : 19201B0008 – Muskan Mollick
19201B0013- Amey Jaguste
20201B1005 – Ronak Shavinkar

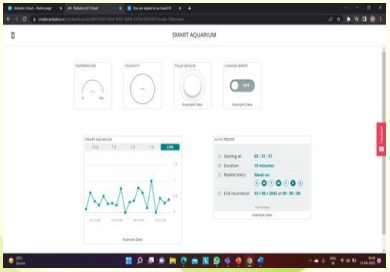
Brief idea of project:

Smart Aquarium is implemented to monitor the status of the aquarium on user's mobile application. This system is designed to maintain the aquarium remotely by using different sensors that are operated in real time. Sensors like temperature sensor, turbidity sensor and Feed mechanism will check the status of water and will change it if needed and feed the fish in the absence of the owner.

Screenshots of the Project:







Applications:

- It being a smart aquarium can be implemented at offices and shopping mall where continuous human monitoring is not possible.

Program : Electronics and Telecommunication Engineering

Project Title : QR code verification check in public area

Domain : Wireless Communication

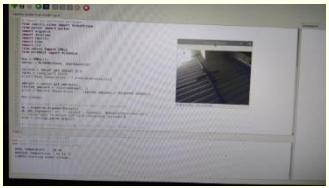
Name of Project Guide : Er. Pranjali Shelke

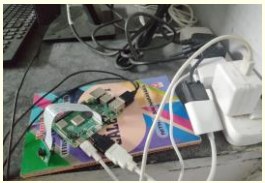
Name of Students : 20201B1012 - Aditya Raut
20201B1013 - Arnav Tripathi
20201B1007 – Tanaykumar Pandey

Brief idea of project:

The QR code scanner scans the QR code for verification in various situations as QR codes are widely use for various purposes such as covid verification for railway ,along with the thermal sensor which senses the temperature of the person putting their finger before the sensor to make sure they are well enough to be qualified to go inside the place being protected with the device.

Screenshots of the Project:





Applications:

- It stores the user data with proper date and time.
- It helps ensure security.
- It detects abnormal high temperature in case the user is infected.

Program : Electronics and Telecommunication Engineering

Project Title : Design Power supply 5V, 12V and 3.3V with digital display.

Domain : Wireless Communication

Name of Project Guide: Er. Shilpa Gaikward

Name of Students :18201C0021: Jayprakash Naikar

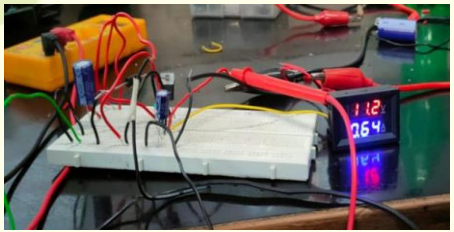
18201C0021: Kamran Shaikh

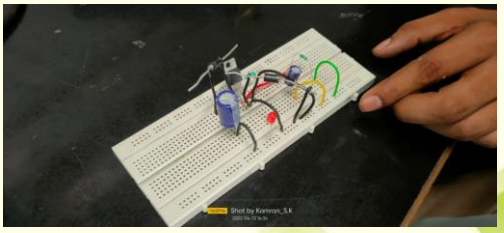
19201C0020: Sidhesh Shirsat

Brief idea of project:

Regulated supply is the main requirement of DC operated equipment. LM2576 voltage regulator is suited for simple Buck converter design, also known as Step down switching regulator. The circuit is designed to provide the output voltages like 3.3V, 5V and 12V and current 1A through 90% of peak efficiency. With the help of Digital panel meter voltage and current values will be displayed.

Screenshots of the Project:





Applications:

- Used to provide power to different circuits and devices.

Program : Electronics and Telecommunication Engineering

Project Title : Day/night Cycle Auto Air Sanitizing System

Domain : Wireless Communication

Name of Project Guide : Er. Pranjali Shelke

Name of Students : 18201C0001 - Nayak Pavanlaumar

19201C0002 - Sankalp Dive

19201C0018 - Mahim dhiviyan

Brief idea of project:

Appropriate location for installing purifier in the bedroom can improve the air quality inside the bedroom. With standard ke turbulence model, this paper made the numerical simulation analysis of pollutant concentration distribution after installation of indoor air purification device, and found the best place to put purifier. Numerical simulation results show that formaldehyde concentration is low in the place of strength turbulence intensity and the place of outlet.

Screenshots of the Project:

Applications:

- Some major industrial applictions for air purifires include removal of dust, toxic fumes, volatile organic matter oil mist, and harmful odours to enhance performance of production machines as well as industrial.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Umbrella

Domain : Wireless Communication

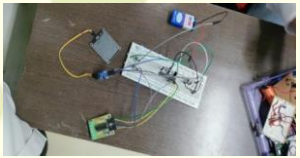
Name of Project Guide : Er. Pratik Tawde

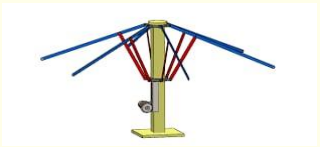
Name of Students : 19201A0014 - Kaustubh Darade
19201A0022– Gautam Bhandare
19201A0011– Vinayak Ghanwat

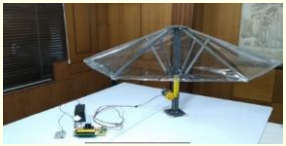
Brief idea of project:

Step towards the digital world, main factor of many industry is to predict the climatic changes, here we are using IoT for monitoring the weather as well as atmospheric changes throughout the time by using a smart E-Umbrella which will tell the weather condition as audio output and buzzer alert in unconditional weather to indicate if we have to take our smart umbrella with us or not. It can notify you before about the climate by giving audio output of the weather conditions. Which is being implemented using the smart sensor like humidity sensor, temperature sensor.

Screenshots of the Project:







Applications:

- The smart umbrella not only blocks a rain but also provides a variety of services to customers.
- Smart umbrellas have various features such as giving an alarm for raining and a loss prevention.

Program : Electronics and Telecommunication Engineering

Project Title : Voice Controlled Wheelchair For Physically Disabled

Domain : Wireless Communication

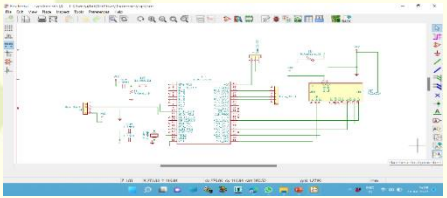
Name of Project Guide : Er. Srinivas Paivernekar

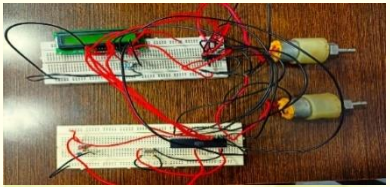
Name of Students : 19201B0018 – Sonu Kumar Mandal
19201B0007 – Amar Kranti

Brief idea of project:

Voice Controlled Wheelchair is a kind of a mobile robot whose movements can be controlled by the user by giving specific voice commands. The main aim of this project is to facilitate the movements of the disabled people and elderly people who cannot move properly so with this wheelchair we can enable them to lead better lives without any problem. The system consist of a microcontroller based interfaced with a voice recognition module that takes speech commands from the user converts this speech into digital data which is then debugged by the micro-controller to get directional commands.

Screenshots of the Project:





Applications:

- We can use this system without human interference for those people who are physically handicapped.
- It can be also used in hospitals for patients. .

Program : Electronics and Telecommunication Engineering

Project Title : Finger Print door lock system

Domain : Wireless Communication System

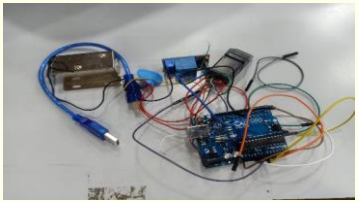
Name of Project Guide : Er. Minal Tandale

Name of Students : 19201C0008 - Sandeep Yadav
19201C0019 – Ajay Naidu
18201C0018 – Siddi Sadashiv

Brief idea of project:

Let's start with the definition. Although the name in itself is pretty self-explanatory, a fingerprint door lock may be defined as "a system which grants access to authorized personnel by virtue of recognizing their unique fingerprints." You have probably looked at your hands countless times and noticed the ridges and valley pattern. The patterns were an important outcome of the human evolution as they enhanced our ability to grip. However, an unforeseen consequence of this particular step in the evolutionary process was to grant humans a fantastic method of identification.

Screenshots of the Project:



Applications:

- Fingerprint door locks are useful security measures for the more tech-savvy home, office or business.
- They let you move in and out of a room without the need to fumble about for keys, and they help you better manage security risks by granting access only to those with pre-approved biometrics.

Program : Electronics and Telecommunication Engineering

Project Title : PLC Based Automatic Car Parking System

Domain : Instrumentation and Control System

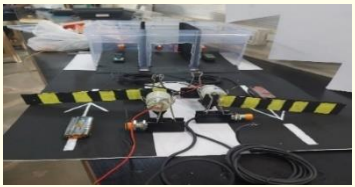
Name of Project Guide : Er. Imran Sayyed

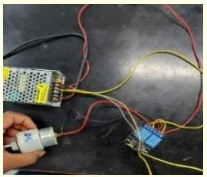
Name of Students : 19201B0017- Shlok Gaikwad
19201C0015 – Manas Desai

Brief idea of project:

The main purpose of PLC is to make a process fast and accurate .In this project we made a system which will be use in multiple parking. This system will show the driver exact place to park his/her vehicle at the entry point of parking in the screen outside of the parking. Also it counts the total number of car parking is available and show it to the display outside the parking so it will help the driver to park vehicle. At the entrance he/she will see the spot number which is empty so driver will park his/her car at that particular spot so it saves the time of the driver to find the spot and park the vehicle. This project is based on industrial automation technology.

Screenshots of the Project:





Applications:

- To make the process of Parking fast and Accurate
- It is use to Keep the Record of number of cars Available in the Parking.

Program : Electronics and Telecommunication Engineering

Project Title : Solar Powered Mobile And Laptop Charging Station

Domain : Instrumentation and Control System

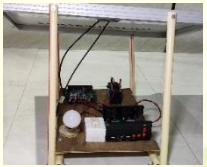
Name of Project Guide : Er. Imran Sayyed

Name of Students : 18201B0004 - Mohd Akmal Borkar

Brief idea of project:

Mobile and other smart devices keep on running all the time anywhere and everywhere, draining its battery, recharging mobiles need certain time and suitable place. sudden shutdown of mobile phones due to lack of huge creates huge embargo or people who is in rush to workplace market, school, college, office, train and bus station and so on, it would be great if we could facilitate these people with instant smart devices charging opportunity through renewable resources.

Screenshots of the Project:



Applications:

- They are completely waterproof including the solar charge controller, so it can be used in any whether conditions .
- Monocrystalline solar panels are made up high quality solar cells which offer high efficiency.
- Advanced fully automated charge controller provides completely overcharge protection and supports several battery types with different charging parameters for maximum efficiency

Program : Electronics and Telecommunication Engineering

Project Title : Water Management system using PLC

Domain : Instrumentation and Control System

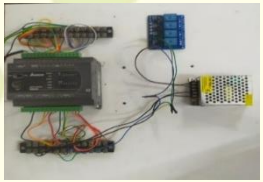
Name of Project Guide : Er. Imran Sayyed

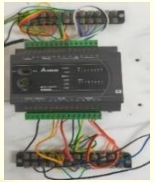
Name of Students : 19201A0003 – Sanish Karande
19201A0007 - Srushti Bhosale
19201A0015 – Sanil Patil

Brief idea of project:

A Programmable Logic Controller, PLC or Programmable Controller may be a computer used for automation of mechanical device processes. The project "Water Tank Level Controller by using PLC" is designed to monitor and control the level of liquid in the tank. The system has associate automatic pumping system hooked up thereto thus on refill the tank once the liquid gets to the lower threshold, while offing the pump once the liquid gets to the higher threshold. Level sensors are used to implement the system. These sensors detect the presence of water. The system is operated by PLC so there is no need of human interference this could save the human resources and provides protections to individuals from danger of industrial accidents. The system is highly reliable, once programmed it does not need any inspections.

Screenshots of the Project:





Applications:

- Low power consumption
- Simple construction
- High efficiency

Final Year Project Committee
Program: Electronics and Telecommunication Engineering

	**Er. Anjum Mujawar** (CTO, Vidyalankar Polytechnic and HOD, Department of Electronics and Telecommunication Engineering)
	**Er. Apurva Sawant** (Project Coordinator, Department of Electronics and Telecommunication Engineering)