V-Ideas

Vidyalankar Polytechnic

Program: Electronics and

Telecommunication Engineering

(NBA Accredited)

2020-2021

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

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.

V-ideas culminates V-Technovation 2020

"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	IOT	EJ1.1	Dehydration Monitoring System	1
		EJ1.2	Automatic Floor Cleaning Robot	2
		EJ1.3	IOT Based Air Quality Monitoring System	3
		EJ1.4	IOT Based Home Automation	4
		EJ1.5	UVC Disinfection Box	5
EJ2	Embedded System	EJ2.1	Gesture controlled robotic arm with car	6
		EJ2.2	Foots step power generation	7
		EJ2.3	Contactless wall mounted thermometer with SD card logging	8
		EJ2.4	Turbidity Meter	9
		EJ2.5	Touchless vending Machine	10
		EJ2.6	IOT based Plant control system	11
		EJ2.7	Floor Cleaning Robot	12
		EJ2.8	Automatic Smart Trolley with Smart Billing using Arduino	13
		EJ2.9	Smart Locker	14
EJ3	AI and ML	EJ3.1	AI Assistant Using Alexa	15
		EJ3.2	Swarm Robot	16
		EJ3.3	Magic laser speaker	17

Program: Electronics and Telecommunication Engineering

Area ID	Project Area	Project ID	Project Title	Page No
EJ4	Biomedical	EJ4.1	Smart T-Shirt	18
EJ5	Power Electronics	EJ5.1	Smart Over/under voltage protection of electronic appliance	19
		EJ5.2	Voice controlled wheel chair	20
EJ6	Wireless Communication	EJ6.1	Mobile Controlled Land Rover	21
		EJ6.2	IOT Based Smart Attendance System	22
		EJ6.3	GSM based Digital weather station	23
		EJ6.4	Smart Waste Bin	24
		EJ6.5	Accident Alert System In Vehicle	25
		EJ6.6	Face Recognition Door Lock System	26
		EJ6.7	Android Controlled Electronic Notice Board	27
		EJ6.8	IOT Based Smart Parking System	28
		EJ6.9	RFID Based Automation System	29
EJ7	Electrical and Electronics	EJ7.1	SMS based Gas Leakage Monitoring System	30
		EJ7.2	NABI (Non-Anthropomorphic Biped)	31
		EJ7.3	Solar Energy Measurement System	32
		EJ7.4	Fire Fighting Robot	33
		EJ7.5	Regenerative Breaking With Power Monitor	34
		EJ7.6	Smart Helmet	35

Program : Electronics and Telecommunication Engineering

Project Title   : Dehydration Monitoring System

Domain   : IOT

Name of Project Guide : Er. Arpit Bankar

Name of Students   : Omkar Parte   – 18201A0009

                               Janhavi Warang   – 18201A0007

                               Mushab Khan   – 18201A0011

Abstract: Wearable sensors have enabled real-time monitoring of Health profiles and could enable monitoring of electrolyte loss during exercise or for individuals working in extreme environments. We here consider various methods of sensing hydration level and present our own approach. The wearable device that is presented in this paper is based on two approaches the first one being Light-based detection and Bioelectric impedance.

Screenshots of the Project / Photos of Working Model :
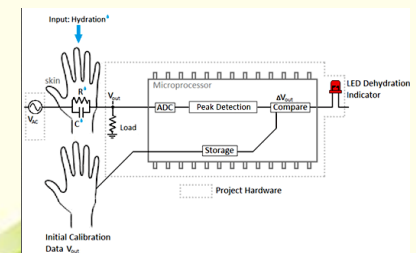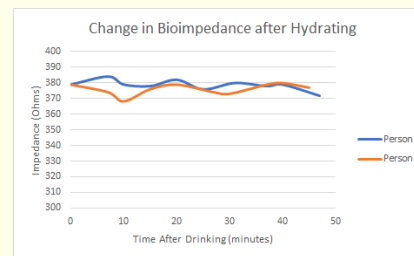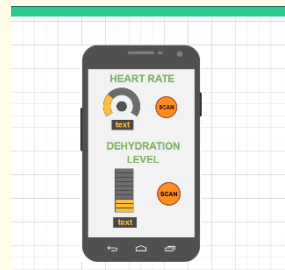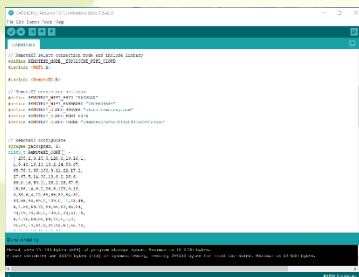
Applications:

- Can be used by athletes as well as non- athlete.
- Healthcare sector for monitoring patients suffering from chronic kidney disease.
- In Military for keeping proper track on the hydration of the soldiers.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Automatic Floor Cleaning Robot

Domain (Area of Project) : IOT

Name of Project Guide : Er. Sandhiya Kumar

Name of Students : Fihaan Solanki - 18201A0016

Pranav Sawant - 18201A0014

Tushar Vora - 18201A0017

Abstract :

Households of today are becoming smarter and more automated. Home automation delivers convenience and creates more time for people. Domestic robots are entering the homes and people's daily lives, but it is yet a relatively new and immature market.

Screenshots of the Project / Photos of Working Model:
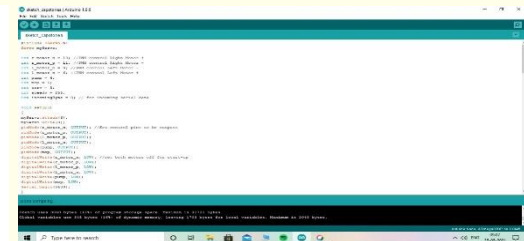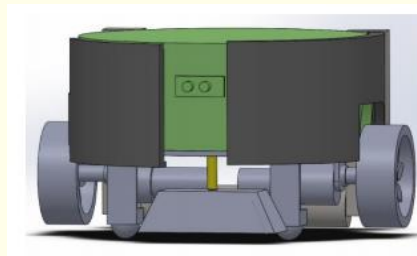
Applications:
- For sanitization of houses specially for Old and Specially abled people.
- For small industries and other premises for cleaning purpose.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : IOT Based Air Quality Monitoring System

Domain (Area of Project) : IOT

Name of Project Guide : Er. Rohit Sharma

Name of Students : Ronit Ajay Pawar -   18201B0006

Omnarayan Tiwari - 18201B0010

Purvashi Walkar   -   18201B0014

Abstract:In this project, we developed an indoor air quality monitoring device, measuring components of PM10, PM2.5, PM1.0, VOCs, temperature and humidity. The air quality monitoring system is commutated with a developed Server using long-distance communication module. The smart application basically provides air quality information (daily, monthly, yearly), air management methods, and emerging environmental issues.

Screenshots of the Project / Photos of Working Model:
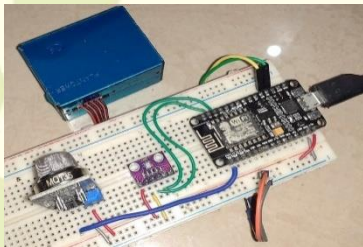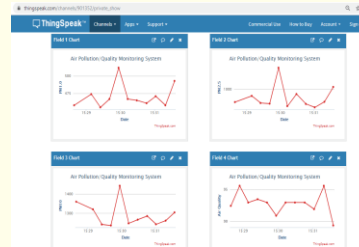
Applications:
1. It can be used as Roadside Pollution Monitoring.
2. Industrial Perimeter Monitoring.
3. Site Selection for reference monitoring station.
4. Indoor Air Quality Monitoring system.
5. To make this data available to the common man.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : IOT Based Home Automation

Domain (Area of Project) : IOT

**Name of Project Guide :** Er. Kirti Gupta

Name of Students   : Rina Prakash Pachkale   – 19201B1006

Mrunal Dipjay Vichare   -- 19201B1015

Karthika Malayandi Yadav – 17201B0004

Abstract: There are wide availability of sophisticated devices in markets. Home automation is incorporated with different technologies like IoT, DTMF, wireless etc. and now even artificial intelligence. A home automation system connects controlled devices to a "gateway". Home Automation using node MCU which has inbuilt Wi-Fi model and using Blynk app. It provides open source to user make to design automation in less price which will make life of a busy common man easy.

Screenshots of the Project / Photos of Working Model:
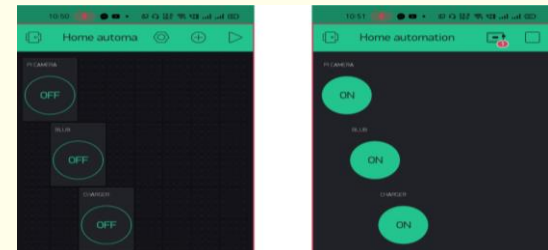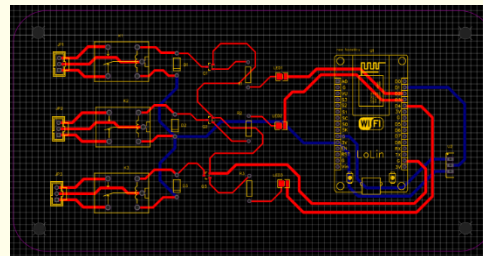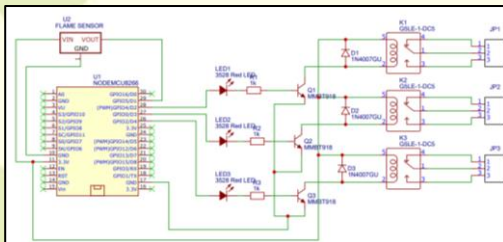
Applications:
* **Lighting:** The light can be scheduled to turn on/off and change their intensity using Home Automation.
* **Windows:** We can automatically open the shutters when sun rises, close at sunset & close automatically when it rains.
* **Thermostat:** Thermostat will recognize if you are nearing your home & will check the room and external temperature and set the right one for you.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : UVC Disinfection Box

Domain (Area of Project) : IOT

Name of Project Guide : Er. Pratik Tawde

Name of Students : Raj Patil   – 17201C0002

                   Sadaan Shaikh – 17201C0006

                   Ritesh Dornal   – 17201C0009

Abstract: UVC disinfection device based on Ultraviolet-C radiation. It offers the capacity to be remotely programmed using an Android mobile device and it has an infrared detection security system that turns off the system when triggered. The sanitizing method employed by this device affects a very wide range of micro-organisms and it has several advantages respect to chemical based-sanitizing methods.

Screenshots of the Project / Photos of Working Model (Min.3):
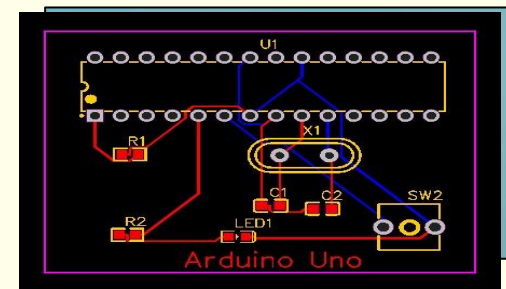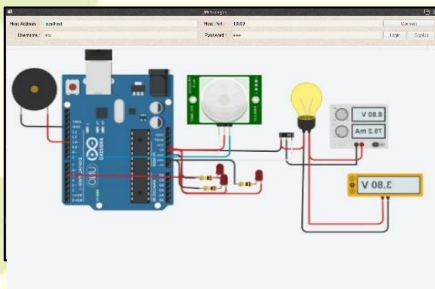
Applications:
- The UV sanitization is an automatic disinfectant chamber that sanitizes small items such as mobile phones,watches and rings.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Gesture controlled robotic arm with car

Domain (Area of Project) : Embedded System.

Name of Project Guide : Er. Shrinivas Paivernekar.

Name of Students : Tanmay Gaikwad -18201A0019

Kevin Mudaliar -18201A0002

Rushikesh Birje -18201A0025

Abstract: Gesture Controlled Robot is a robot which can be controlled by simple gestures. The robot and the Gesture device are connected wirelessly. Based on the gesture of human hands the robotic arm moves and performs the task and this system replicates the actions of human hands The wireless communication enables the user to interact with the robot in a more friendly way.. The Robotic Arm is mounted over a movable platform which is also controlled wirelessly by another accelerometer. The different motions performed by robotic arm are: PICK and PLACE / DROP, RAISING and LOWERING the objects. Also, the motions performed by the platform are: FORWARD, BACKWARD, RIGHT and LEFT.

Screenshots of the Project / Photos of Working Model:
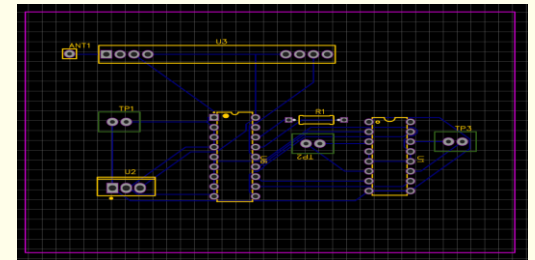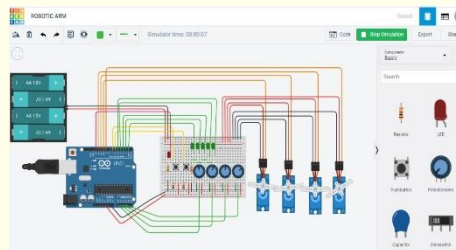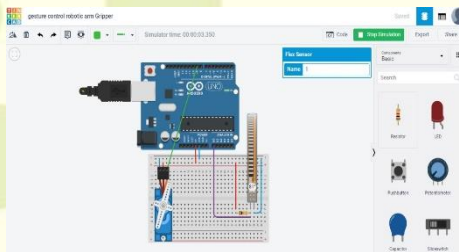
Applications:
- Contactless Pick & Place.
- Mechanical work like welding, drilling, painting, etc.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Foots step power generation

Domain (Area of Project) : Embedded System

**Name of Project Guide :** Er. Imran Sayyed

Name of Students : Prathmesh Pednekar -18201A0004

Atharv Sawant -18201A0005

Rounak Singh -18201A0006

Abstract: Foot step power generation system basically converts force energy of foot into electrical energy by using piezoelectric sensor. Piezoelectric sensor is transducer which converts force energy into electrical energy. It also has the ability to store the electrical energy into the battery.

Screenshots of the Project / Photos of Working Model:
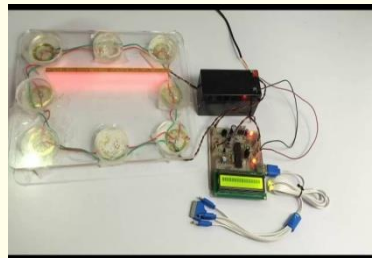
Applications:
- Foot step generated power can be used in Home appliances, Street lightning, Emergency power failure system.
- It can be used as a source for both A.C and D.C applications

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Contactless wall mounted thermometer with SD card logging

Domain (Area of Project) : Embedded System

Name of Project Guide : Er. Imran Sayyed

Name of Students : Deep Naik – 18201A0024

Sahil Jadhav – 18201A00020

Mayur Kakade – 18201A0018

Aditya Jadhav – 18201A0001

Abstract: Thermometers measure temperature or a temperature gradient (the degree of hotness or coldness) of an object. There are various thermometers available, this project uses infrared technology for contactless measurement of the temperature of the object. It alarms when the temperature passes the maximum temperature and displays the temperature and saves it in SD Card.

Screenshots of the Project / Photos of Working Model:
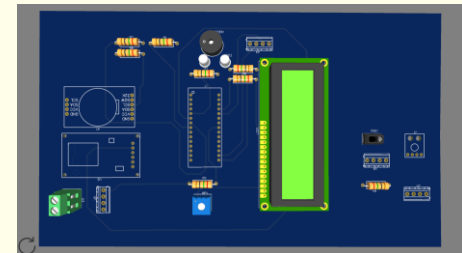
Applications:
- It can be used for scanning temperature at the entry gates of office, malls, shopping centers, etc.
- This thermometer can be used in measuring the temperature of the patients in the hospital without having physical contact with them.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA
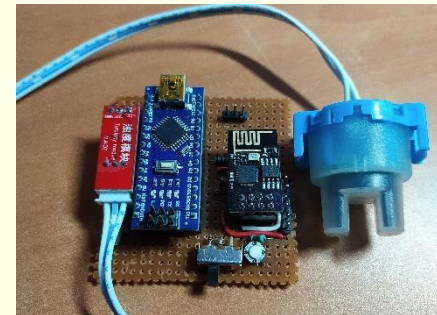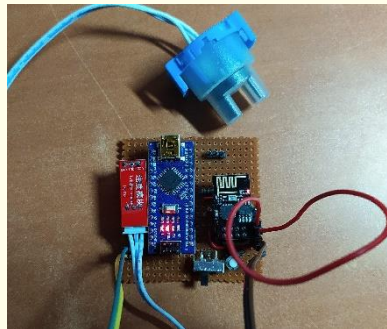
Program : Electronics and Telecommunication Engineering

Project Title　　　　　　**:** Turbidity Meter

Domain (Area of Project)　**:** Embedded System

Name of Project Guide : Er. Madhavi Machapuram

Name of Students　　**:** Sahil Shirdhankar　-17201A0013

　　　　　　　　　　　　Neha Sonar　　　　-17201A0003

　　　　　　　　　　　　Swayam Jadhav　-17201A0025

Abstract: A turbidity meter is a device that used to measure quality of the water depending upon turbidity level of water. To detect the turbidity level of the water we are using Turbidity sensor that convert Realtime information into electrical signals. It can easily transfer, process, and control signals. It has many special advantages such as good selectivity, high sensitivity, fast response speed and so on. According to these characteristics and advantages of sensors, Monitoring of Turbidity of Water is designed and developed. It is based on ESP8266 and Arduino nano microcontroller and the Turbidity Sensor.

Screenshots of the Project / Photos of Working Model:

Applications:
* To determine water quality of Water tank.
* To determine water quality of Aquarium.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Touchless vending Machine

Domain (Area of Project) : Embedded System

**Name of Project Guide :** Er. Rupali Bhosale

Name of Students : Suresh Bairi -17201B0013

Prathamesh Parulekar - 17201B0023

Ameya Shirali - 18201B100

Abstract: A Vending machine is a machine which dispenses items such as snacks, beverages, lottery tickets, cologne, consumer products and even gold and gems to customers automatically, after the customer inserts currency or credit in to the machine. The medicine vending machine as the name suggests is a vending machine that will dispense the required medicine as per the users choice. Degrees of social status are closely linked to health in equalities. Those with poor health tend to fall in to poverty and the poor tend to have poor health.

Screenshots of the Project / Photos of Working Model (Min.3):
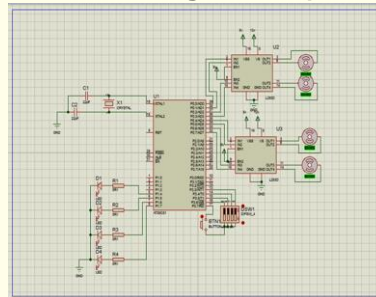
Applications:
* Foods and Drinks. Greatest application for vending machines is either food or drink or both! ...
* For tickets sale. Ticket vending machine is another latest technological development in this area. ...

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : IOT based Plant control system

Domain (Area of Project) : Embedded System

Name of Project Guide : Er. Pranesh Naik

Name of Students : Maknojia Abdurrafea Javed - 19201B1012

Aniket Barik - 19201B1017

Gajagotra Adarsh Mahadev – 19201B1018

Abstract: We present you a helper for Taking care of garden IOT based plant control system. With this project u can monitor your garden and water it from anywhere in the world.

Screenshots of the Project / Photos of Working Model:
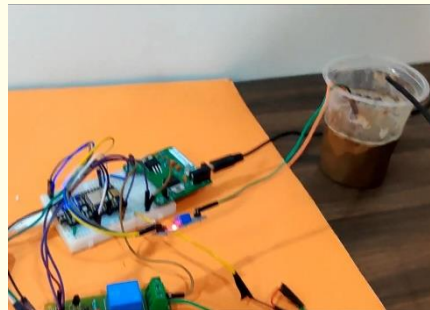
Applications:
* In Gardens
* Small farm area

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Floor Cleaning Robot

Domain (Area of Project) : Embedded System

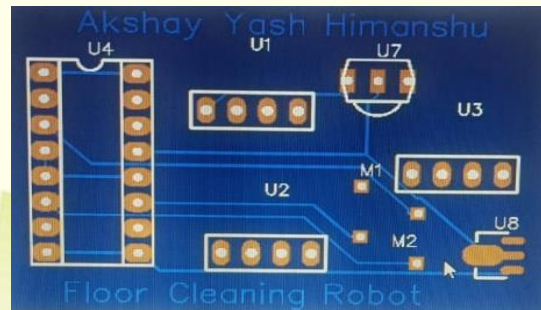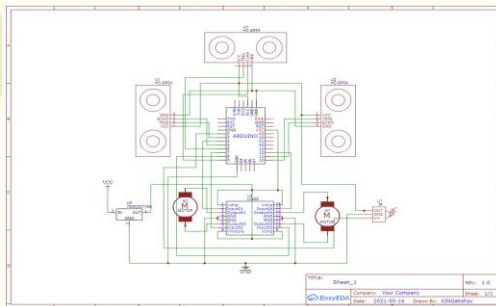**Name of Project Guide :** Er. Arpit Bankar

Name of Students : Yash Sanjay Potdar - 18201C1003

Akshay Mahendra Patil - 18201C1002

Himanshu Vimal Dubey - 17201C0020

Abstract: Households of today are becoming smarter and more automated. Home automation delivers convenience and creates more time for people. Domestic robots are entering the homes and people's daily lives, but it is yet a relatively new and immature market. However, a growth is predicted and the adoption of domestic robots is evolving. Several robotic vacuum cleaners are available on the market but only few ones implement wet cleaning of floors. The purpose of this project is to design and implement a Vacuum Robot Autonomous and Manual via Phone Application. Vacuum Cleaner Robot is designed to make cleaning process become easier rather than by using manual vacuum. The main objective of this project is to design and implement a vacuum robot prototype by using Arduino Mega, Arduino Shield, LDR Sensor, Real Time Clock, Motor Shield L293D, Ultrasonic Sensor, and IR Sensor and to achieve the goal of this project. Vacuum Robot will have several criteria that are user-friendly.

Screenshots of the Project / Photos of Working Model:

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA
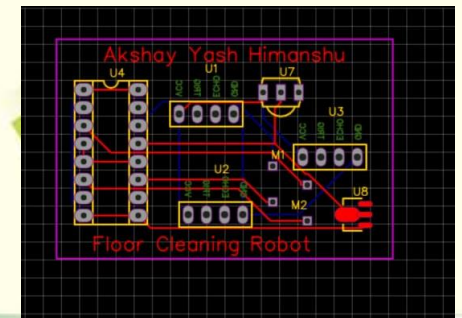
Program : Electronics and Telecommunication Engineering

Project Title   : Automatic Smart Trolley with Smart Billing using Arduino

Domain (Area of Project)   : Embedded System

Name of Project Guide : Er. Apurva Sawant

Name of Students   : Amritpal Sinngh Mangat   - 18201C1006

Prathmesh Deepak Jadhav - 16201C0024

Mohammed Sadik Darvesh - 16201C0010

Abstract: Shopping mall is a place where people get their daily necessities. There has been an emerging demand for quick and easy payment of bills in shopping malls. Quite often, when shopping in a supermarket shoppers are frustrated at locating the items on the shopping list and no assistance is available To overcome these problems we have designed a smart trolley with a mobile application.
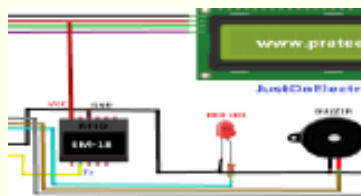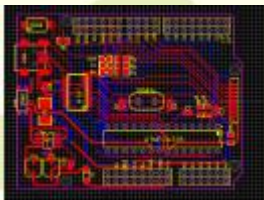
Screenshots of the Project / Photos of Working Model:

Applications:
- It can be used in shopping centres.
- It can be used in Super markets.

Program : Electronics and Telecommunication Engineering

Project Title : Smart Locker

Domain (Area of Project) : Embedded Systems

**Name of Project Guide :** Er. Helina Tandel

Name of Students : Ritesh Prajapati   - 18201C0015

Abhijeet Phalke   - 18201C0020

Samarth Sawant - 17201C0019

Abstract: Smart locker is basically a locker with 2 stage of security such as biometric and OTP approach for the security of the valuables of the users. Trough this project we are trying to give a user friendly and a secured device. It also has GPS/ location based unlocking for several reasons.

Screenshots of the Project / Photos of Working Model:
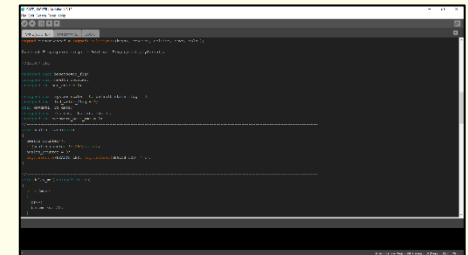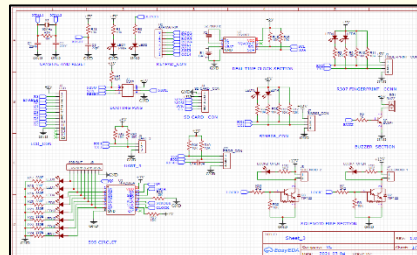
Applications:
- Bank Lockers
- Office Uses

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : AI Assistant Using Alexa

Domain (Area of Project) : AI and Machine Learning

**Name of Project Guide** : Er. Apurva Sawant

Name of Students : Manish Chaudary -18201A0038

Amaan Hatodkar -18201A0042

Shreyash Saundade -18201A0044

Abstract: Virtual assistant is boon for everyone in this new era of 21st century. We aim to design a AI assistant, which will help us to accomplish day-to-day task such as setting an alarm, playing music as per the mood, creating to do list, searching data online, home automation and few more. This will be a prototype and a cost effective solution to the expensive assistants available in the market.

Screenshots of the Project / Photos of Working Model:
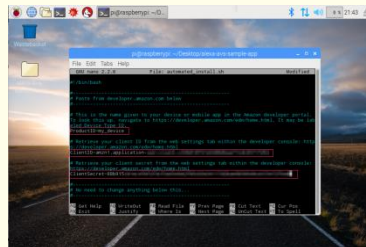
Applications:
- Healthcare for assisting Doctor
- Education for automating grading system
- Autonomous vehicles for advance vehicles.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA
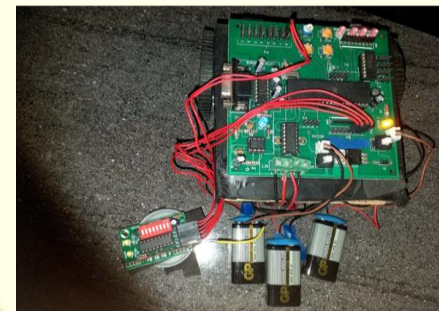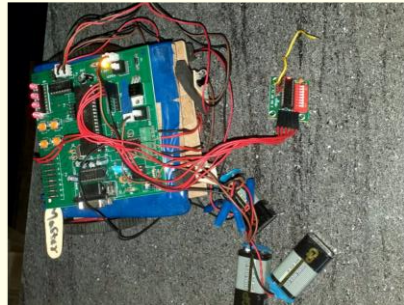
Program : Electronics and Telecommunication Engineering

Project Title   **:** Swarm Robots

Domain (Area of Project)   **:** AI and Machine Learning

Name of Project Guide : Er. Anjum Mujawar

Name of Students   **:** Sania Bandekar – 17201B0022

Abstract: A swarm robot consists of an obstacle avoider robot along with a blind slave which mimics the master using the principles of communication. The transmission and reception modules help in coordinated movement inspired from nature. When a threat is pose to the master along with the slave, the direction of the bots is changed.

Screenshots of the Project / Photos of Working Model:

Applications:

• Provides user friendly communication - it engages youth and even old ones

• Creates bonding in fields where audience gets engaged with stage dramatics and theatre education

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA
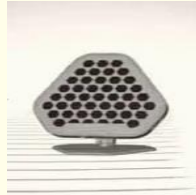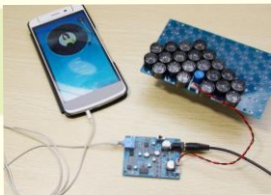
Program : Electronics and Telecommunication Engineering

Project Title   : Magic Laser Speaker

Domain (Area of Project) : AI and Machine Learning

Name of Project Guide : Er. Anjum mujawer

Name of Students   : Sahil Nagarji   - 18201C0007

Farzan Siddiqui - 18201C0003

Ubesh Khan.   - 18201C0014

Abstract:The importance of sound which represents the character, place & time and it moves in a way visual can't, but there is a contradiction always with good things, (i.e Nose Pollution ,it's principal of propagate radiating frequency & Fading problems), however according to the boundary surface control principle, it is possible to reflect the flow of acoustic energy at a boundary if a boundary surface with zero impedance can be formed by controlling the sound pressure and the particle velocity at an arbitrary position in space. If this principle is used in such a way that a boundary surface is formed only in the direction not intended for radiation of the sound, then a directional speaker/Magic laser speaker system can be realized. It is easy to achieve sharp directivity in the low frequencies & vice versa with increasing in frequencies it's flaring and directivity decreases but with increase in wider dimension with all those circumstances and all bounded & paramation property makes Audio applications to next level.

Screenshots of the Project / Photos of Working Model:

Applications:
Surgical military weapon, Entertainment industry, Sound flaregun.

Program : Electronics and Telecommunication Engineering

Project Title   **:** Smart T-Shirt

Domain (Area of Project)   **:** Biomedical

Name of Project Guide : Er. Apurva Sawant

Name of Students   **:** Yash Parbat   – 18201A0040

                                  Prathamesh Bhosale   – 18201A0003

                                  Arvind Nagaonkar   – 18201A00031

Abstract: The health monitoring system, which tracks the state of health of a patient and compiles a chronological health history of the patient uses a multipara metric monitor, which periodically and automatically measures and record the data from sensors in contact with the patient's body. The data collected is not specifically related to a particular medical condition but, instead, provides the information necessary to derive patterns. Our project aims to monitor three parameters of human physique, namely – body temperature, heart beats and lung volume. Three sensors are incorporated into the T-shirt which will continuously monitor the body parameters and update it on the mobile application.

Screenshots of the Project / Photos of Working Model:
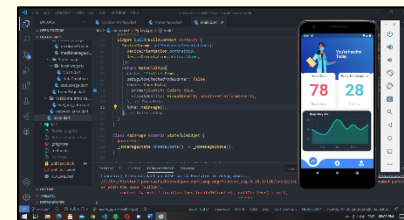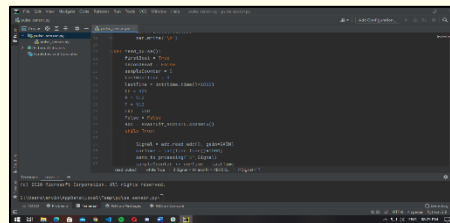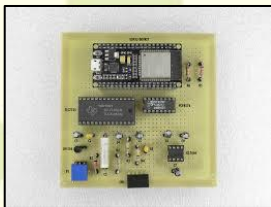
Applications:
- Health Monitoring.
- Keeping Medical Records

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

**Project Title** : Smart Over/under voltage protection of electronic appliance

Domain (Area of Project) : Power Electronics

Name of Project Guide : Er. Shanti Sankara Krishnan

Name of Students : Azam Siddiqui - 20201C2001

Abstract: This work presents the design and simulation of a microcontroller based under and over voltage protection device, which has been achieved using a microcontroller, transistor and other discrete components. A microcontroller PIC16F877A is at the heart of the device which performs the major control of the device. The device is simple and low cost. It can withstand loads up to 2KVA at the required set voltage range for the device, to allow supply to the connected load at the output vary from 200 – 240 Volts. It can be used to protect loads such as refrigerators, radio sets, laptops and VCR/DVD players etc. from undesirable over and under voltage conditions, as well as surges caused due to sudden failure/resumption of mains power supply. This device can be used directly as stand-alone equipment between the mains supply and the load, or it may be inserted between an existing automatic/manual stabilizer and the load.

Screenshots of the Project / Photos of Working Model:
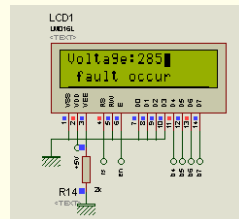
Applications : Smart Homes

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Voice Controlled Wheelchair

Domain (Area of Project) : Power Electronics

**Name of Project Guide :** Er. Madhavi Machapurm

Name of Students : Varad Sawant – 18201A0008

Girish Rathod – 18201A0009

Devang Mahida -- 18201A0021

Abstract: The goal of this system will allow certain people to live a life with less dependence on others for their movement as a daily need. The objective of this project is to fascilate the movement of people who are disable or handicapped and elderly people who are not able to move well.

Screenshots of the Project / Photos of Working Model (Min.3):
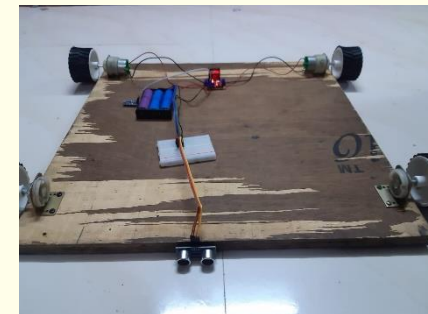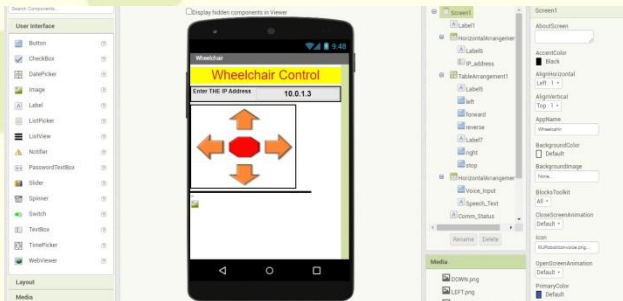
Applications:

This system will be a Real-Time Voice controlled Wheelchair for the physically disabled person.

This system will be designed to operate the wheelchair based on the voice of the user and control the movement according to the command given by the operating person.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : Mobile Controlled Land Rover

Domain (Area of Project)   : Wireless Communication

Name of Project Guide   : Er. Pranjali Patil

Name of Students   : Venkatesh Paul Raj - 18201A0032

                               Faiz Khan Ahmed   - 18201A0034

                               Pratham Shejwal   - 18201A0028

Abstract: Mobile Controlled land rover is a device which can move like a rover according to the command given wirelessly via a phone call. A mobile phone can be used as a remote for this rover, by pressing the numbers in the dial pad we can control the movement of the rover wirelessly. The main moto is to control a device wirelessly without the disadvantage of working range which is achieved in this project.

Screenshots of the Project / Photos of Working Model :
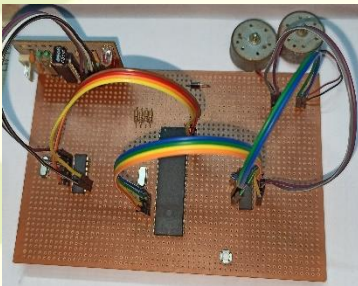
Applications:
• Can be used for surveillance
• Can be used for smart toy like gadgets

Program : Electronics and Telecommunication Engineering

Project Title : IOT Based Smart Attendance System

Domain (Area of Project) : Wireless Communication

Name of Project Guide : Er. Helina Tandel

**Name of Students** : Shubham Prakash Shirke — 18201A0015

Surbhi Chandrakant Kulaye — 18201A0026

Gauri Bharat Harsule — 18201A0029

Abstract :
IOT based attendance system is a system which automatically marks the attendance of the system based on the facial recognition process. It also uses a RFID method for the same. It stores the name of the attendee along with the time at which they arrived on the Google sheets. It cuts the time consumption compared to traditional attendance system and also the margin of error is zero.

Screenshots of the Project / Photos of Working Model:
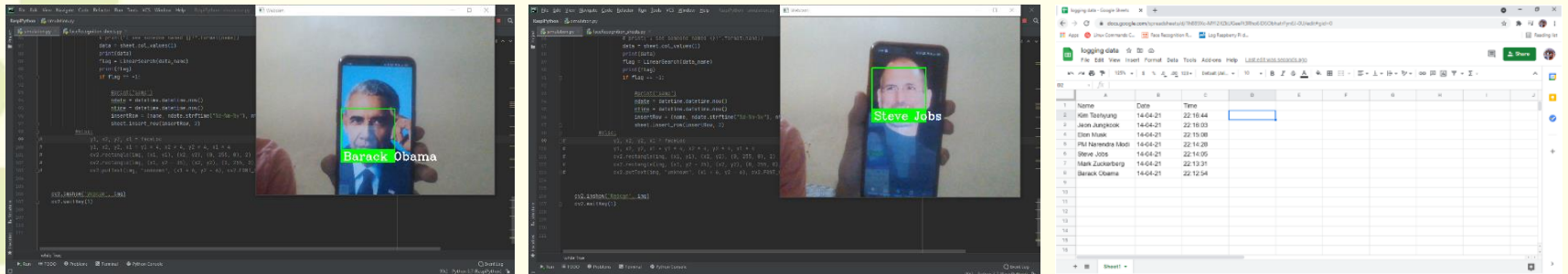
Applications:
- It can be used in schools and colleges to mark attendance of students.
- It can also be used at work places where the employee's attendance is taken.
- A development is going on the payment through facial ID.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   **:** GSM based Digital weather station

Domain (Area of Project)   **:** Wireless Communication

Name of Project Guide   **:** Er. Shanti Sankara Krishnan

Name of Students   **:** Hemlata Chaurasiya -17201A0017

                                    Aniket Jagtap   -17201A0053

                                    Shubham Magar   -17201A0024

Abstract: Here we propose a GSM based weather sensing and reporting project. The system senses temperature, as well as light and humidity and conveys this to the user wirelessly. Our system uses temperature sensor to detect and record current temperature. It uses a light sensor in order to detect current lighting conditions. Also a humidity sensor is used to detect current humidity conditions. All this data from sensors is conveyed to the microcontroller. The microcontroller now processes this data and passes is on to a GSM modem interfaced to it. The GSM modem now encodes this data as SMS message and sends this message to programmed user. Thus this puts forward a wireless GSM based weather monitoring system where the person does not need to be near the equipment to constantly monitor weather reports. The data is automatically sent to the user via a SMS.

Screenshots of the Project / Photos of Working Model:

Applications : Weather stations

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA
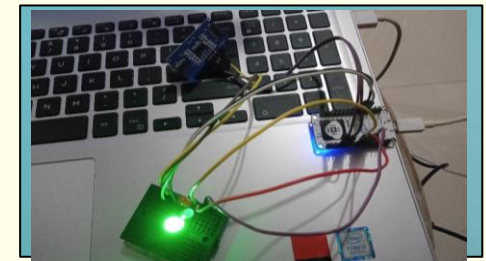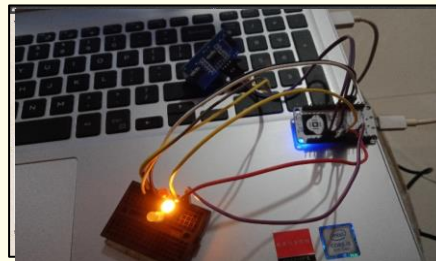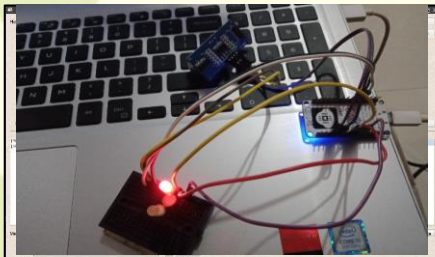
Program : Electronics and Telecommunication Engineering

Project Title : Smart Waste Bin

Domain (Area of Project) : Wireless Communication

Name of Project Guide : Er. Pratik Tawde

Name of Students : Prasad Doiphode – 18201A0013

Ahmed Mukadam – 18201A0035

Pratik Shelar – 18201A0043

Vivek Penta – 18201A0026

Abstract: In This project present the development of a smart waste monitoring system in order to Measure waste level in the waste bin in real-time and to alert the municipality, in particular causes ,Via.NOTIFICATIONS:- it supposes to generate and send the warning message to the municipality Via SMS when the waste can be collected immediately furthermore,it is the smart waste monitoring system is a way to contribute to ward the well -being of environment

Screenshots of the Project / Photos of Working Model :

Applications:
* It can be used for public places
* It can be used for domestic purpose and Municipality can also used

Program : Electronics and Telecommunication Engineering

Project Title   **:** Accident Alert System In Vehicle

Domain (Area of Project)   **:** Wireless Communication

Name of Project Guide : Er. Imran Sayyed

Name of Student   **:** Shubham Bochare   -19201B1003

   Eshank Pawar   - 19201B1011

                            Atharva Das   - 19201B1002

Abstract: Accident alert system main aim is to rescuing people in accidents.
This new technology, popularly called **VEHICLE ACCIDENT ALERT SYSTEMS** which will rescue people who have met with accident in minimal time.
This hardware is fitted on to the vehicle in such a manner that it is not visible to anyone who is inside or outside of the vehicle.

Screenshots of the Project / Photos of Working Model (Min.3):
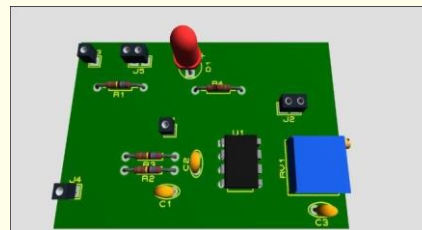
Applications:
*   Fleet monitoring

*   Vehicle scheduling

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : Face Recognition Door Lock System

Domain (Area of Project) : Wireless Communication

**Name of Project Guide :** Er. Pratik Tawde

Name of Students   : Vrushabh Sawant – 19201B1007

Satish Madad – 19201B1008

Manish Gupta – 19201B1014

Abstract: : Security is at most concern for anyone nowadays, whether it's data security or security of their own home. With the advancement of technology and the increasing use of IoT, digital door locks been used. So we decided to make a Face ID controlled Digital Door lock system

Screenshots of the Project / Photos of Working Model :
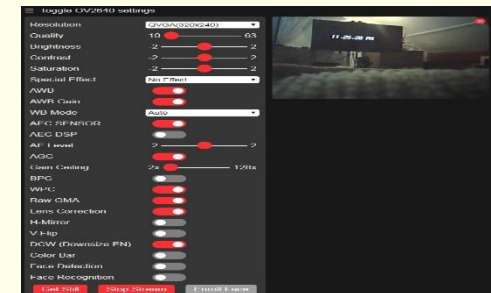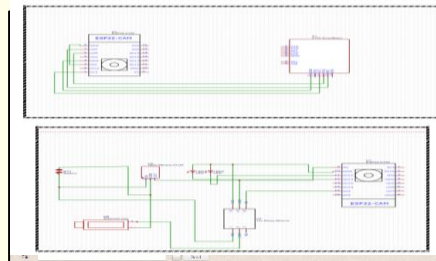
Applications:
*   Schools
*   Offices
*   Industries

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : Android Controlled Electronic Notice Board

Domain (Area of Project) : Embedded System

Name of Project Guide : Er. Shrinivas Paivernekar

Name of Students : Mayur Atmaram Shinde   – 19201B1009

Raj Harishchandra Pandey – 19201B1010

Rohan Ravindra Parab   – 19201B1016

Abstract: In this project we have electronic notice board where a message is sent from the user's android application device, the message will be displayed on wireless electronic notice board. This message can be sent from any tablet/smart- phone etc. with Android OS upon a GUI based on touch screen operation. When the user is sending the message from android application device this will be received by the Wi-Fi-modular. As the Wi-Fi module has its own IP address and port number that will be known only to the users who is operating. Later it is sent to the microcontroller that further helps in displaying the notice in wireless electronic notice board which is equipped with 16*2 LCD.

Screenshots of the Project / Photos of Working Model:
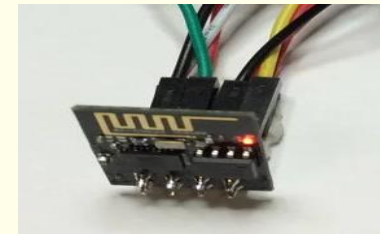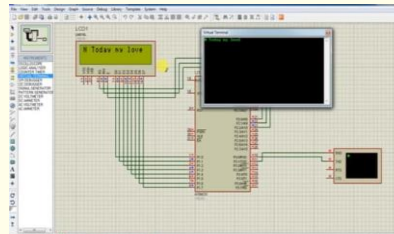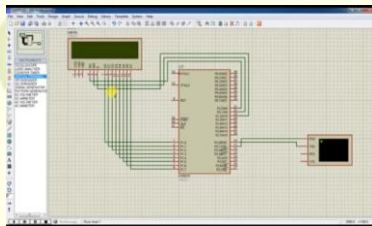
Applications:
1. Educational
2. Institutions and Organizations.
3. Managing Traffic
4. Advertisement Conference Hall
5. Bus or Railway stations.
6. Any Public Utility Places

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   **:** IOT Based Smart Parking System

Domain (Area of Project)   **:** Embedded System

Name of Project Guide : Er. Sandhya Kumar

**Name of Students**   **:** Supriya Nakade - 19201C1006

                              Sumedh Vichare - 19201C1003

                              Gracy Borra   - 18201C0010

Abstract: - With growing popularity of Smart Cities, there is always a demand for smart solutions for every domain.
The IoT has enabled the possibility of Smart Cities with it's over the internet control feature. A person can control the devices installed in his home or office from anywhere in the world by just using a smartphone or any internet connected devices.
There are multiple domains in a smart city and Smart Parking is one of the popular domain in the Smart City

Screenshots of the Project / Photos of Working Model:
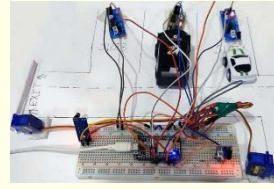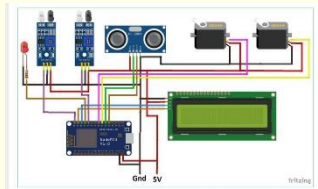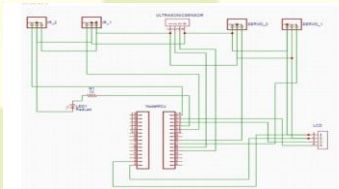
Applications:
- Shopping mall
- Theatres
- Restaurant

Program : Electronics and Telecommunication Engineering

Project Title : RFID Based Automation System

**Domain (Area of Project)** : Wireless Communication

Name of Project Guide : Er. Pranjali Patil

Name of Students : Jay Kishor Boricha – 17201C0005

Siddesh Rombade – 19201C1004

Abstract: RFID is a versatile and trending technology which is used in many realtime applications. In this proposed work, RFID system is a microcontroller-based system that reduces the man power and dispenses the accurate amount of fuel. Also, if the customer tries to swipe the unauthorized card, the RFID system rejects the card. In this way, the system is much secured. For the RFID operation,

Screenshots of the Project / Photos of Working Model :
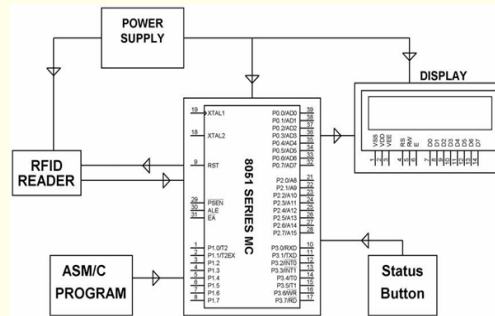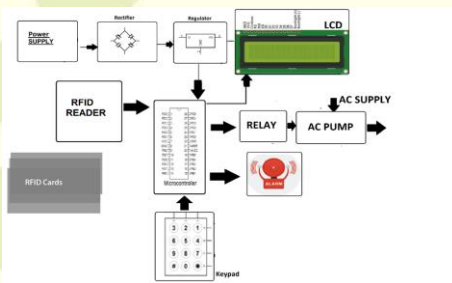
Applications:
- Unmanned petrol station concept is not limited petrol station, but it can be applicable for the availability of food, Grades at long distinct area.
- It can make human safer from robbery, fraud, and any other unwanted incidences by the use of plastic money.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : SMS based Gas Leakage Monitoring System

Domain (Area of Project)   : Electrical and Electronics

Name of Project Guide   : Er. Shanti Sankara Krishnan

**Name of Students**   : Sahil Mahadik   - 17201A0031

                              Aniket Ahire   - 17201A0020

                              Venus Chauhan - 17201A0014

Abstract: Gas leakage is a major problem with industrial sector, residential areas, and gas driven vehicles like CNG (Compressed Natural Gas) buses, cars etc. One of the preventive methods to stop accidents related with the gas leakage is to install a gas leakage detection device at permeable places. The aim of this project is to develop such a device that can automatically detect and stop gas leakages in those permeable areas. The system detects the leakage of the LPG (Liquefied Petroleum Gas) using a gas sensor and uses the GSM to alert the person about the gas leakage via SMS

Screenshots of the Project / Photos of Working Model:
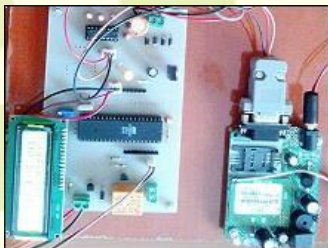
Applications : Industries, Home, Hospitals**.**

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title : NABI (Non-Anthropomorphic Biped)

Domain (Area of Project) : Electronics & Electrical

Name of Project Guide : Er. Kirti Gupta

**Name of Students** : Sahil Anil Baikar - 10201B1005

Atharva Prashant Pawar - 19201B1021

Aditya Dayanand Hande - 19201B1004

Abstract::

In this world of Technology & Robotics, **NABI** AI (Artificial Intelligence). **NABI** is human friendly robot designed to help humans in their work efficiently, for example: product pick-up & placing; helping in emergency if necessary; behaving as a friend, when lonely; a person can take a help, in his business, etc. key main features of NABI are machine learning, speech recognition, face recognition, data analysis, internet of things (iot) means a half AI (artificial intelligence). The programming languages used for it are: python (for decision making, etc.); rive script (speech recognition); embedded c (hardware: limb control)

Screenshots of the Project / Photos of Working Model (Min.3):
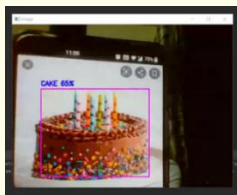
Applications:
* An AI assistant robot
* Human Helping Robot
* Pick-up & Place Robot
* Used for an EMERGENCY Robot

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   **:** Solar Energy Measurement System

Domain (Area of Project)   **:** Electronics and Electrical

Name of Project Guide :   Er. Rupali Bhosale

Name of Students   **:** Gaurang Gawas- 18201B1010

                       Aniket Tambat- 16201B0008

                       Kunal Tamore - 18201B1001

Abstract: The designed project measures different solar cell parameters like light intensity, voltage, current and temperature by using multiple sensor data acquisition. The project uses a solar panel to monitor sunlight and a PIC microcontroller. The project requires an LDR sensor for measuring light intensity, a voltage divider to measure voltage and a temperature sensor to measure the temperature. These measurements are then displayed by the microcontroller to a LCD screen.

Screenshots of the Project / Photos of Working Model:
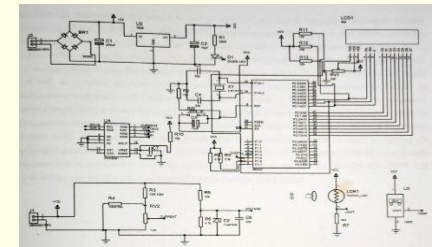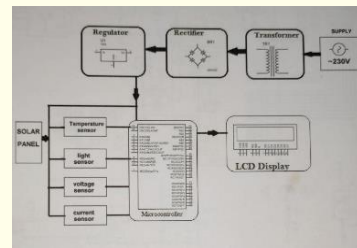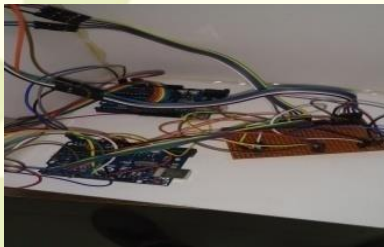
Applications:
1. Determine actual potential energy yield.
2. Identify ideal locations for solar power stations and panels.
3. Optimize placement to maximize efficiency.
4. Monitor system performance over time.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : Fire Fighting Robot

Domain (Area of Project) : Electrical and Electronics

Name of Project Guide : Er. Shilpa Gaikwad

Name of Students   : Akash Gupta   – 18201B0007

Hariom Vishwakarma – 19201B1001

Shubham Shinde   – 19201B1013

Abstract:
The project is designed to develop a firefighting robot using RF technology for remote operation. An Atmega 16 is used for the desired operation. The robotic vehicle is loaded with water tanker and a pump which is controlled over wireless communication to sprinkle water to extinguish fire. At the transmitting end using push buttons, commands are sent to the receiver to control the movement of the robot either to move forward, backward and left or right etc.

Screenshots of the Project / Photos of Working Model:
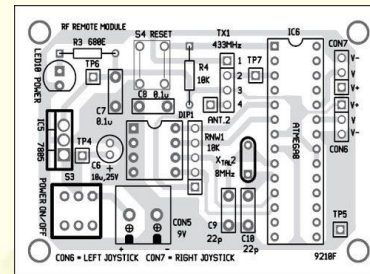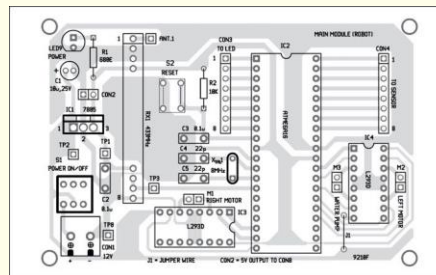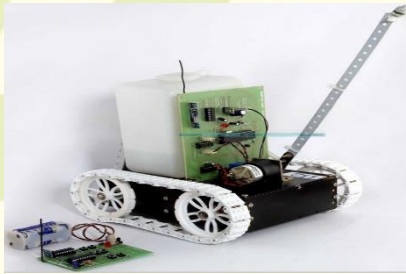
Applications:
Can be used in extinguishing fire where probability of explosion is high. For e.g., Hotel, kitchen, LPG/CNG gas store

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : Regenerative Breaking With Power Monitor

Domain (Area of Project)   : Electrical and Electronics

Name of Project Guide   : Er. Rohit Sharma

Name of Students   : Akash kale   - 16201C0020

   Abhishek Jadhav   - 19201C1002

   Prathmesh Chormale - 19201C1001

Abstract:Presently what the world needs is a method or a technology that saves energy from getting wasted. Energy conservation is the hour of need. In case of automobiles, energy conservation can be done by using regenerative braking systems (RBS). When driving an automobile, a great amount of kinetic energy is wasted when brakes are applied, which then makes the start up fairly energy consuming. The main aim of this project was to develop a product that stores the energy which is normally lost during braking, and reuses it.

Screenshots of the Project / Photos of Working Model:
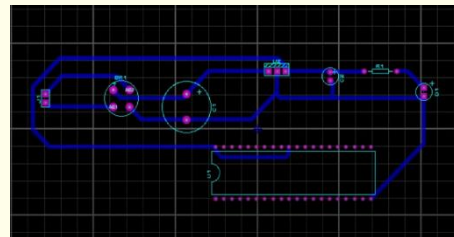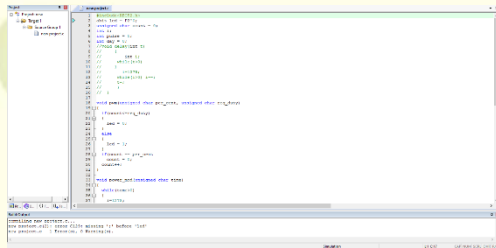
Applications:

- For recovering Kinetic energy of vehicle lost during braking process.
- One theoretical application of regenerative braking would be in a manufacturing plant that moves material from one workstation to another on a conveyer system that stops at each point.
- Regenerative braking is used in some elevator and crane hoist motors.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Program : Electronics and Telecommunication Engineering

Project Title   : Smart Helmet

Domain   : Electrical and Electronics

Name of Project Guide   : Er. Pranesh Naik

Name of Students   : Suyash pawar - 18201C0009

                       Sahil Mansuri - 18201C0011

                       Rushab Awad - 18201C0017

Abstract:A smart helmet is a type of protective headgear used by the rider which makes bike driving safer than before. The main purpose of this helmet is to provide safety for the rider. This can be implemented by using advanced features like alcohol detection, accident identification, location tracking.

Screenshots of the Project / Photos of Working Model :
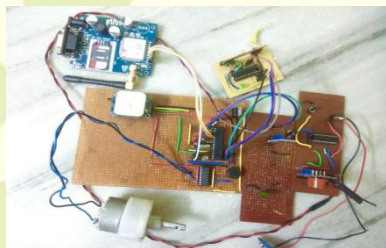
Applications:
- It can be used in real time safety system.
- It can be designed for less power consuming safety system.
- The system records the helmet status, speed of vehicle, accident status and the location of the vehicle all through the time vehicle ignition starts such information can be provided to traffic authorities for traffic monitoring.

Awards if Any for TPP / Competitions / Paper Publication / Any Other Pls. Specify: -- NA

Final Year Project Committee
Program: Electronics and Telecommunication Engineering

	Er. Anjum Mujawar **(Head, Department of Electronics and Telecommunication Engineering)**
	Er. Apurva Sawant **(Project Coordinator)**