

*V-Ideas*

**Program: Electronics &  
Telecommunication Engineering**  
*(NBA Accredited)*  
**2018-19**



# *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 Electronics and Telecommunication Engineering, Information Technology and Computer 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 2019*

***"All of us do not have equal talent. But , all of us have an equal opportunity to develop our talents."***

***- A.PJ 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 ii 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 & 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.

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# Program : Electronics and Telecommunication Engineering

**Project Title** : Rolling Display  
**Domain (Area of Project)** : Embedded System



**Name of Project Guide** : Er.Madhavi M.  
**Name of Students** : 16201A0017-Priti Lonshikar  
16201A0011-SandeshDesai  
14201A0052-Rushikesh Ubare

## Brief idea of Project:

Display boards are primary thing in any institute, Organization, public utility places like bus stops, railway stations, parks, shopping malls to display information regarding platforms, various advertisements about the products or important notices. Digital notice board is one of the ways of displaying notices in which the notices are displayed on a scrolling display using LED matrix. These notices are change dynamically. The display screen and the system are connected with the help of the different mechanisms. In this project we can change the displayed information with Wi-Fi

## Screenshots of the Project



## Applications:

- This technology can be implemented in schools, banks, public places etc.
- Indoor and outdoor LED screens are an advertisers dream for displaying content.
- The size and brightness of our video wall range instantly draws the attention of anyone who passes by.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Fully Automated Solar Grass Cutter

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



**Name of Project Guide** : Er.Shilpa Gaikwad

**Name of Students** : 15201A0054-Jai Kasar  
15201A0055-Gaurang Thakur  
15201A0057-Mustafa Halwai

## Brief idea of Project:

A solar grass cutter is a machine that uses sliding blades to cut a lawn at an even length. Even more sophisticated devices are there in every field. Power consumption becomes essential for future. In this project solar grass cutter is used to cut the different grasses for the different application. Solar panel is used which acts as renewable energy source. This grass cutter by using IR sensor sense the obstacle and change the direction. Hence can be used without human interference.

## Screenshots of the Project



## Applications:

- It is used for cutting grass in bigger lawn and grounds without any human interference.
- It is also used on small scale in home and by adding adjustments of brushes.
- It can also be used as floor cleaners.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Washroom Automation**

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



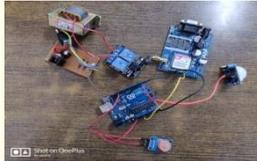
**Name of Project Guide** : **Er.Imran Sayyed**

**Name of Students** : 16201A0004-Sanchit Rane  
16201A0012-Harsh Pawar  
16201A0007-Suneet Salian

## **Brief idea of Project:**

This System works on Arduino UNO which is interfaced with various sensors and detectors. We choose Arduino UNO as the heart of our project as it is simpler to upload and delete programs in it and also provides some extra features other than 8051 and 89C51.

## **Screenshots of the Project**



## **Applications:**

- Used in Public Washroom to keep it clean.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Density based Traffic light & Ground Traffic light Control

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



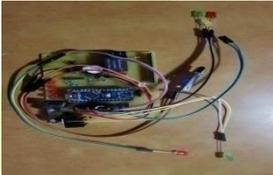
**Name of Project Guide** : Er.Sandhya K.

**Name of Students** : 16201A0040-Pranali Patil  
16201A0037-Abhishek Narkar  
16201A0036-Om Shirke

## Brief idea of Project:

This Project is aimed to design a Density based dynamic traffic light signal system where the timing of signal will change automatically on sensing the traffic density at any junction. Once density is calculated the glowing time of green light is assigned with the help of microcontroller.

## Screenshots of the Project



## Applications:

- Used to control traffic in high traffic areas.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Arduino based Colour Sorter**

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



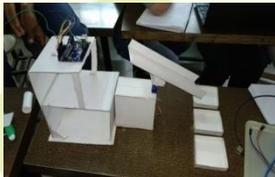
**Name of Project Guide** : **Er. Rohit Sharma**

**Name of Students** : 16201A0028-Sadanand Chauhan  
16201A0032-Yash Warule  
16201A0027-Durgesh Raut

## **Brief idea of Project:**

A Colour Sensor, as the name suggests is a device that senses or detects colours. A colour sensor will use an external means of emitting light (like an array of white LEDs) and then analyse the reflected light from the object in order to determine its colour. Colour sensors will give an accurate colour of the object. There are a wide range of applications of colour sensors like sorting objects by colour, quality control systems, printer colour enhancement etc. In this project we have designed a simple Arduino colour sensor application which has an ability to detect different colours. We have used TCS3200 colour sensors for this purpose. The main objective is to make a machine which can separate and make different batches of various flavours and so on as mentioned in the applications.

## **Screenshots of the Project**



## **Applications:**

- Food quality evaluation according to their colour characteristics.
- Objective evaluation method for chlorine detector tubes.
- Alginate cryogel based glucose biosensor.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Surveillance Robot**

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



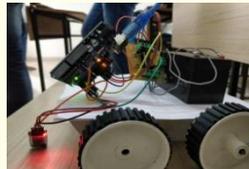
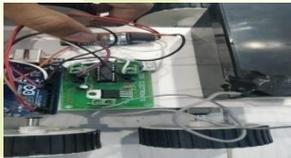
**Name of Project Guide** : **Er.Arpit Bankar**

**Name of Students** : 16201A0020-Sandeep Sargar  
16201A0026-Faheem Qureshi  
16201A0023-Chetan Patil

## **Brief idea of Project:**

A robot is usually an electromechanical machine that is guided by computer or mobile phone and electronic programming. This surveillance robot is designed to be controlled using an APP on an android mobile. And in which we use Bluetooth communication to interface Arduino UNO and Android. Arduino can be interfaced to the Bluetooth module through UART protocol. According to commands received from android the robot motion can be controlled. The consistent output of robotic system along with quality and repeatability are unmatched. These robots are programmable and can be interchanged to provide multiple applications.

## **Screenshots of the Project**



## **Applications:**

- Low range mobile surveillance devices.
- Military Applications (no human intervention)
- Home Automation, Monitoring workers.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Smart Bag  
**Domain (Area of Project)** : Embedded System

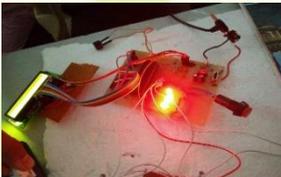


**Name of Project Guide** : Er. Pratik Tawde  
**Name of Students** : 16201A0021-Vedant Kadam  
16201A0019-Omkar Matkar  
16201A0031-Dipesh Mali

## Brief idea of Project:

The objects and materials present in the bag, if they are lost or came out of the bag, then the owner will come to know about it by the detection signals. Hence, losing of materials and objects are avoided by smart bag. The circuit of 89C51 is installed inside the bag and also connected to the LCD, LEDs sensors and buzzer.

## Screenshots of the Project



## Applications:

- Can be used in military application
- Can be used by officials who deal with or handle important documents, precious things..

# Program : Electronics and Telecommunication Engineering

**Project Title** : Smart Refrigerator

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



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

**Name of Students** : 16201A0033-Karthik Saravanabavan

16201A0038-Sameerkumar Tiwari

## Brief idea of Project:

We designed and constructed a Compressor less peltier Refrigerator with an interior cooling of 3.45 cubic meter .The peltier refrigerator was equipped with ON/OFF controller which was found to adequate to meet the required precision of +/- 15 degree celcius put forth in project requirement.One litter of water was placed inside the refrigerator to test performance of device.We tested the maximum performance of device by cooling a simple down to -5 degree celcius.ON/OFF controller was found to give adequate performance.

## Screenshots of the Project



## Applications:

- For preservation of insulation and drug.
- For preservation of food stuffs.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Arduino based Weather Reporting System**

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



**Name of Project Guide** : **Er. Pranjali Patil**

**Name of Students** : 16201A0025-Sonal Satve  
16201A0030-Akanksha Tikole  
16201A0035-Nilesh Shinde

## **Brief idea of Project:**

By using weather reporting system we can collect the information about humidity and temperature and according to current and previous data we can produce the results in graphical manner in the system. The accumulated data is used for analysis for weather prediction. So our main idea is to coin a system that can sense the main components that formulates the weather and can be able to forecast the weather without human error.

## **Screenshots of the Project**



## **Applications:**

- Used in Mechanical and chemical industries, Home Automation systems, Medical Equipment for measuring humidity.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Patient monitoring System using Arduino

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



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

**Name of Students** : 16201A0054-Shweta Jadhav  
16201A0041-Mohd Kashif Shaikh  
16201A0056-Santosh Jagtap

## Brief idea of Project:

The increased use of mobile technologies and smart devices in the area of health has caused great impact on the world. Health experts are increasingly taking advantage of the benefits these technologies bring thus generating a significant improvement in health care in clinical settings and out of them. Likewise countless ordinary users are being served from the advantages of the Mobile health. Applications and E-Health to improve, help and assist their health. Applications that have had a major refuge for these users, so intuitive environment. The IOT is increasingly allowing to integrate devices capable of connecting to the internet and provide information on the state of health of patients and provides information in real time to doctors who assist.

## Screenshots of the Project



## Applications:

- It can be operated remotely by interfacing a GSM modem system.
- It can be used in ICU's, operation theaters, monitoring oxygen level.
- It can be also used in old age homes to monitor various parameters of a sick person.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Arduino UNO based Biometric System**

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



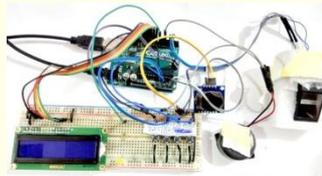
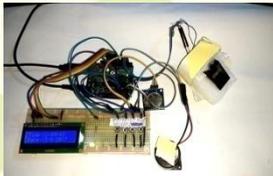
**Name of Project Guide** : **Er.Shrinivas Paivernekar**

**Name of Students** : 16201A0048-Suswar Sawant  
16201A0045-Chandramani Pednekar  
16201A0063-Sahil Chari

## **Brief idea of Project:**

Attendance systems are commonly used systems to mark the presence in offices and schools. From manually marking the attendance in attendance registers to using high tech applications and biometric systems these systems have improved. This project enables us to mark attendance by using biometric system using Arduino UNO.

## **Screenshots of the Project**



## **Applications:**

- Every person has its own unique fingerprint which can not be copied. Hence used in biometric system for marking attendance.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Human Detection Robot using PIR Sensor

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



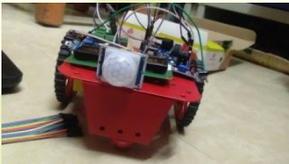
**Name of Project Guide** : Er.Rohit Sharma

**Name of Students** : 14201A0063-Gaurav Rajangali  
14201A0068-Amruta Patil  
15201A0020-Siva Kumar

## Brief idea of Project:

Human Detection Robot is a robot that can detect the movement of a human. It sends the signal from the transmitter side to the receiver side and notifies it to the user by continuous buzz sounds. The robot can move in all directions to increase the space of detection. The robot is automated to move in left, right, forward, and backward directions based on the obstacles it encounters. The obstacle sensor uses an infrared signal to find if there are any obstacles present in front of it. Its range is up to 5 cm. The obstacle sensors are placed in front, right, and left directions.

## Screenshots of the Project



## Applications:

- Unmanned Surveillance system in military.
- Perimeter security in places where weather conditions are extreme.
- Used in offices for employee support and tracking.
- Long distance telecommunication protocols will be also proposed in any future version of this.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Motion Detector using Raspberry Pi**

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



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

**Name of Students** : 16201B0003-Chintamani Kumbhar  
15201B0008-Yogendra Labdi  
16201B0020-Yash Mengane

## Brief idea of Project:

Nowadays surveillance security forms the most important part of our lives. As it plays a very vital role to fulfill our safety aspects as burglary and theft, which was always a problem, as lately increased terrorism threats and theft of raw materials have made manufacturing, shipping, and storing of important goods riskier and more expensive in recent years. We propose this mechanism to resolve the object detection, tracking problem on the video security surveillance system. The suggested new mechanism used by Raspberry Pi and PIR Sensor, can make intelligent detection and will inform and alert through the buzzer.

## Screenshots of the Project



## Applications:

- It can be used in museums for security.
- It is used in security alarm.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Automatic Medicine Vending Machine

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



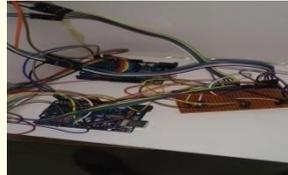
**Name of Project Guide** : Er.Pratik Tawde

**Name of Students** : 16201B0022-Prajyot Tare  
16201B0026-Raj Patil  
16201B0016-Aishwarya Kadam

## Brief idea of Project

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



## Applications:

- Availability of first aid kit in the best hygiene.
- Availability of basic medications easily.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Automated Greenhouse monitoring & Controlling System**

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



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

**Name of Students** : 16201B0001-Jay Khot  
16201B0010-Ketki Hodage  
16201B0012-Rohit Paspunatu

## **Brief idea of Project:**

Greenhouse are framed structures covered with transparent material large enough to grow crops under partial or fully controlled environmental conditions to get optimum growth and productivity. In this project different sensors are used to detect the variations in the climatic conditions, take corrective action to yield better crops.

## **Screenshots of the Project**



## **Applications:**

- It is used in green houses to control the temperature, soil moisture, humidity for the proper growth of plants.
- Can be used in Botanical Gardens and farms.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Arduino based 12V Battery Charger**

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



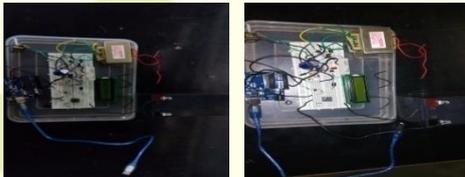
**Name of Project Guide** : **Er.Shrinivas Paivernekar**

**Name of Students** : 15201B0044-Arbaaz Khan  
16201B1002-Shamshtabrez Shaikh

## **Brief idea of Project:**

This project can automatically charge 12 V ,7Ah battery or above.It automatically controls the charging current as per the status of the battery.Battery voltage level as well as charging status are indicated on the LCD display.The charger maintains float voltage,if battery is fully charged.Arduino identifies status of the battery connection and voltage and indicates the same on the LCD.

## **Screenshots of the Project**



## **Applications:**

- Can be used for charging battery for Industrial purpose . .

# Program : Electronics and Telecommunication Engineering

**Project Title** : **RFID based Toll Plaza System**

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



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

**Name of Students** : 16201B0013-Janhavi Kashilkar  
16201B0019-Mohamed Ovais Ansari

## **Brief idea of Project:**

Now a days there is a huge rush in the toll plazas in order to pay the toll tax. Therefore in order to reduce the traffic jam and to save time and also to reduce money loss of 300 cores/year. We have designed project for the automation in toll tax payment using RFID. We have made automation of toll plaza using combination of microcontroller ,RFID and load cell technology. The aim of project is to design a system which automatically identifies an approaching vehicles and record vehicles number and time. If the vehicle belongs to authorized person it automatically opens the toll gate and a predetermined amount is automatically deducted from its account.

## **Screenshots of the Project**



## **Applications:**

- Used in parking system for pay and park purpose.
- Used for direct transaction of money.
- Cash less transaction can be done.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Biometric Fingerprint based Security System**

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



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

**Name of Students** : 17201B1009-Sandhya Yadav  
17201B1011-Sucharitha Gurudu  
17201B1014-Prajakta Mhadnak

## **Brief idea of Project:**

Money transaction play a vital role in the nature of trade.ATMs and credit card are used for this purpose,the authentication of these transaction are unsecure.The main objective of this system is to develop a system that will increase the ATM security.The software to be designed will control a simulated automated teller machine (ATM) with a customer console for interaction with the customer.The ATM will communicate with the bank computer over an appropriate communication link.The ATM will service one customer at a time.

## **Screenshots of the Project**



## **Applications:**

- Using in ATM for high security.
- Access to bank lockers.
- Voter registration and identification.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Smart Suitcase  
**Domain (Area of Project)** : Embedded System



**Name of Project Guide** : Er.Sandhya K.  
**Name of Students** : 17201A1001-Pratik Dete  
17201B1013-Kalpashree Khandvilkar  
17201B1015-Siddhesh Shirdhankar

## Brief idea of Project:

The luggage tracking system is designed to track the luggage and bags which gets lost. This system works on an alarm basis where an alarm is set up with the arduino UNO board and a GPS module. Also the alarm is turned on as soon as the bag is theft and goes outside a particular range.

## Screenshots of the Project



## Applications:

- Police and private Detectives, Prevention of bag Theft, Hiking.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Neonate Incubator

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



**Name of Project Guide** : Er.Rohit Sharma

**Name of Students** : 17201B1008-Shubham Kandalgonkar  
17201B1006-Bhalchandra Kulkarni  
17201B1012-Aishwarya Thorat

## Brief idea of Project:

A neonatal incubator is a rigid box-like enclosure in which an infant can be kept in a controlled environment for observation and care. The device may include a heater, a fan, a container for water to add humidity. A control valve through which oxygen may be added and access ports for nursing care.

## Screenshots of the Project



## Applications:

- Used to provide a safe and stable environment for newborn infants, often those who were born prematurely or with an illness or disability that makes them especially vulnerable for the first several months of life.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Wireless Electronic Notice board using GSM**

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



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

**Name of Students** : 14201B0052-Kedar Katkar  
15201B0033-Diptesh Sawant  
15201B0037-Abhishek Pawar  
15201B0043-Rahul Khedekar

## Brief idea of Project:

Notice board is the most uniform and primary apparatus in any university, schools or public places like bus stations, railway stations and parks. But fixing and changing various notices of instruction on a day to day is a difficult process. The main objective of this project is to develop a wireless notice board that display messages send from the user's mobile. When a user sends a message it is received by a SIM inserted in GSM modem at the receiver unit. The GSM modem interfaced with level shifter IC to microcontroller. The message received by the GSM is sent to the microcontroller that further displays it on an electronic notice board.

## Screenshots of the Project



## Applications:

- Can be used in public places like bus stands, railway stations, airports, shopping malls and parks to display the information wirelessly.
- Can also be used in organizations, schools and colleges.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Google Home using Raspberry Pi**

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



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

**Name of Students** : 17201B1007-Imam Maddi  
17201B1002-Dhiraj Mekala  
17201B1004-Kunal Lakkabathini

## **Brief idea of Project:**

Google Home is a brand of smart speakers developed by Google. Google Home speakers enable users to speak voice commands to interact with service through Google's personal assistant software called Google Assistant. A large number of services both in house and third party, are integrated, allowing users to listen to music, control playback of videos or photos or receive news updates entirely by voice. Google Home devices also have integrated support for home automation, letting users control smart home appliances with their voice.

## **Screenshots of the Project**



## **Applications:**

- Home Automation, Listening Music, Messaging and calls, smart home control
- News and Information, Setting Alarms and weather forecasting, college laboratory for various applications

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Automatic Billing Trolley**

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



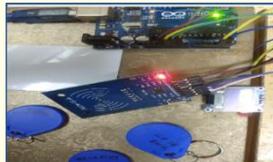
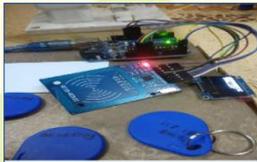
**Name of Project Guide** : **Er.Pranjali Patil**

**Name of Students** : 14201B0030-Revathi Nair  
14201B0049-Siddhesh Raut  
15201B1005-Rahul Bane

## Brief idea of Project:

With the increasing employment of board wireless sensor networks in the field consumer applications, it becomes important to address by its applications, such as reliability, energy consumption and cost effectiveness. Instead of making customers wait in a long queue for checking out their shopped items, the system helps in supermarkets automating the billing process. This makes small system fair and attractive to both the buyers and sellers.

## Screenshots of the Project



## Applications:

- Billing is done easily.
- It will also help to reduce manpower.
- It is easy to use and low of cost.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Automatic & Remote Dog Feeder**

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



**Name of Project Guide** : **Er.Minal Tandale**

**Name of Students** : 17201B1001-Sabir Khan  
17201B1005-Minal Jadhav  
15201B0051-Wilson Dsouza

## Brief idea of Project:

This project is about pet feeding machine automatically for a daily minimum period of time of eight hours when all people of nuclear family members are busy at work for the survival in the metro cities and other cities. This set up is controlled by the mobile app automatically. The pets of home can get food after an interval of half hours and the same can be monitored using mobile app and owner of pet always ensure about feeding of the pet especially dogs and cats when they are busy at work. The food would be served to the pets automatically up to a certain quantity only when the pet comes near to box when they feel hungry.

## Screenshots of the Project



## Applications:

- Easy to clean, holds enough pet food for up to six days.
- six second recordable message, dispenses dry and wet food.
- can not be programmed without internet, jams easily with certain types of food, limited battery back up.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Component Vending Machine**

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



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

**Name of Students** : 16201B1006-Sufiyan Shaikh  
17201B1017-Aftab Siddioui  
14201B0038-Swapnil Kandare

## **Brief idea of Project:**

The vending machine is used option the component just on one click.The machine make use of Arduino ,servo motor,PI sensor,LCD thought which one can option the required component by insecting money (coin) in it.

## **Screenshots of the Project**



## **Applications:**

- Can be used in labs for component fetching.
- With incorporation of sound module even blind people can make use of it.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Self Balancing Robot**

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



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

**Name of Students** : 17201C1004-Fardeen Sayed  
16201C0021-Sarjan Shirali  
16201C0001-Nikhil Gupta

## **Brief idea of Project:**

Self balancing robots are a topic of curiosity amongst students ,roboticists and hobbyists around the world.This project presents an attempt on developing an autonomous self balancing robot.A key element in maintaining the robot in the upright position is estimation of the tilt angle.The mpu6050 has been implemented and tested to fuse data from gyroscope and an accelerometer.This project will undertake the construction and implementation of a two wheeled robot that is capable of balancing itself.The structural ,mechanical and electronic components of the robot will be assembled in a manner that produces an inherently unstable platform that is highly susceptible to tipping in one axis.

## **Screenshots of the Project**



## **Applications:**

- It can be used to make segway.
- It can be used to make self balancing scooter.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Smart Street light System using 8051

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



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

**Name of Students** : 16201C1004-Prashant Misal  
14201C0054-Mustafa Sayed  
14201C0015-Yash Rane

## Brief idea of Project:

The project aims at saving energy by detecting the vehicle movement on highways and switching on the block of street light ahead of it and simultaneously switching off the trailing lights. The Project requires sensors to detect the vehicle movements and switches on the lights ahead of it. As soon as the vehicle moves ahead the trailing lights automatically switch off. This can be used to save a lot of energy instead of using conventional system where the street lights are remained On. Another mode of operation can be used where the lights are remained on with 10% intensity and when vehicle passes by lights ahead of it are switched on with 100% intensity and trailing lights revert back to 10% intensity.

## Screenshots of the Project



## Applications:

- Mainly used on highways, real time street lights, hotels, parking areas and restaurants etc.
- In countries where load shedding is big issue, this project can be used to resolve the problem to some extent.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Wind Tree  
**Domain (Area of Project)** : Embedded System



**Name of Project Guide** : Er.Imran Sayyed  
**Name of Students** : 16201C0019-Anirudha Kadam  
14201C0050-Kumar Kadav  
14201C0028-Aman Shukla  
11D505-Omkar Bhor

## Brief idea of Project:

Energy from wind is the fastest growing source of electricity in the world. In the project wind energy is used to generate electricity with the help of aero leaves. Several leaf shaped aero leaves are placed in the form of tree called wind tree. Wind tree uses tiny blades housed in the aero leaves to generate power from wind speed of 7Kmph. In this project we have used tree shaped structure, covered with leaf shaped mini turbines called aeroleaves which are of savonius type turbine and designed to produce power which will catch wind from all directions. All cables and generators are integrated in to leaves and branches. Artificial leaves operate as mini vertical turbines all around tree. When the wind blows, the leaf turbines rotate and quietly produce the energy.

## Screenshots of the Project



## Applications:

- Can be used for one electrical car for 10,168 miles per year.
- Majority for residential purpose.
- Use for commercial purpose like schools, offices, hospitals etc.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Dam Operation based on Water Level

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



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

**Name of Students** : 15201A0027-Kaushal Mhatre  
15201A0058-Viren Mhatre

## Brief idea of Project:

Our project uses sensors to sense the water level and then opens the dam gate (motor used to demonstrate as dam gate) according to water level. Our system uses multiple water level sensors(float sensors) for these purposes. The sensors are mounted at three different levels in order to check water level and provide signals accordingly. When water reaches first sensor it is sensed by it and displayed. When water reaches second sensor it provides a signal to microcontroller and it opens dam gate partially. As soon as water level reaches third sensor, it signals microcontroller and microcontroller then signals motor to run, which is demonstrated as opening dam gate fully. Thus system allows for automatic dam gate opening based on water level sensing.

## Screenshots of the Project



## Applications:

- Water tank level control.
- Fuel tank level gauging.
- Oil tank level control, High and low level alarms

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Library Noise Detector**

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



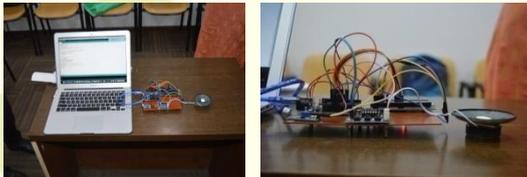
**Name of Project Guide** : **Er.Rupali Bhosale**

**Name of Students** : 16201A0008-Tanmay Kamble  
16201A0016-Nidhi Tirpude  
16201A0001-Rohit Dagde  
Asfahan Shaikh & Pranay Redkar

## **Brief idea of Project:**

To detect noise present in silent zone and ask them to maintain silence in that particular zone..So this project is most probably useful in college libraries.

## **Screenshots of the Project**



## **Applications:**

- Used in big university and college libraries.
- Can also be used in the area of the ICU section of hospitals to maintain silence.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Water Quality Monitoring System**

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



**Name of Project Guide** : **Er.Minal Tandale**

**Name of Students** : 16201A0044-Sweta Sharma  
16201A0043-Mehul Chahande  
16201A0052-AkshayLokhande

## **Brief idea of Project:**

Water pollution is one of the biggest fears for the environment. In order to ensure the safe supply of the drinking water the quality needs to be monitored in real time. We present a design and development of a low cost system for real time monitoring of the water quality. The system consists of several sensors which measure physical and chemical parameters of the water. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller.

## **Screenshots of the Project**



## **Applications:**

- Water quality can be managed by management bodies..
- Can be used in waste water recycling systems.
- To check quality of Groundwater, in medical Researches

# Program : Electronics and Telecommunication Engineering

**Project Title** : Vehicle Theft Alert using Arduino

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



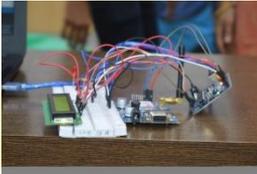
**Name of Project Guide** : Er.Rupali Bhosale

**Name of Students** : 16201A0053-Prital Ghanvat  
16201A0055-Suraj Singh  
16201C0013-Durvankur Sawant

## **Brief idea of Project:**

This project is made to alert vehicle user about exact location of the vehicle and allow user to control vehicle action through SMS in case of emergency.

## **Screenshots of the Project**



## **Applications:**

- Vehicle security and smooth fleet management.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Electronic Letterbox**

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



**Name of Project Guide** : **Er.Sandhya K.**

**Name of Students** : 16201A0058-Kunal Waghe

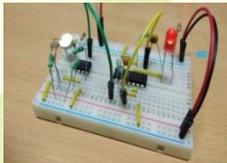
16201A0061-Pranit Parab

14201A0049-Fidel Patil

## **Brief idea of Project:**

In this project a simple Electronic letter box. A circuit that can be used to indicate whenever you receive a mail (physical mail-like a letter).An LED is used as an indication in this Electronic Letter box project.Usually the LED stays ON.But when a letter is dropped by someone in to your letter box,the LED stops glowing.It is turned off.This indicates that there is a letter in your letter box.

## **Screenshots of the Project**



## **Applications:**

- Can be used in office as well as in societies also for indication of important letters and files.
- Can be used in schools and colleges.
- can be used in post offices for important mails.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Automatic Cleaning Robot**

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



**Name of Project Guide** : **Er.Anjum Mujawar**

**Name of Students** : 16201B0011-Ansaf Khan  
16201B0017-Rajdeep Jadhav  
16201B0025-Payal Khorate

## **Brief idea of Project:**

Cleanliness is essential and natural when it comes to public places where a huge number of people use it every day. This includes children and senior citizens too, which further increases the risk of spreading of diseases due to dirty environmental and rotten garbage. When it comes to garbage, it is a serious issue in our environmental arguments. So this machine can help a little; it can also make work easy for human hands.

## **Screenshots of the Project**



## **Applications:**

- It is used for cleaning purposes.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Delivering Robot**

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



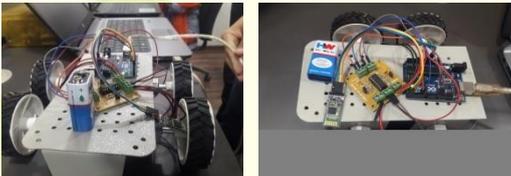
**Name of Project Guide** : **Er.Apurva Sawant**

**Name of Students** : 16201B0004-Ankit Bandal  
16201B0024-Mugdha Sawant  
16201B0027-Bipin Nirala

## **Brief idea of Project:**

The delivery robot can be used to transport various things in various places such as canteen ,office restaurants etc.It makes use of Arduino and bluetooth device to get connected with mobile phone.Thus one can control the movement of robot with a mobile application from a distance range.

## **Screenshots of the Project**



## **Applications:**

- Used in office to send files from one place to another place.
- Used in restaurants to deliver food from one table to another table.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Smart Den

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



**Name of Project Guide** : Er.Shilpa Gaikwad

**Name of Students** : 17201B1018-Shubh Mistry

17201B1010-Pratik Veer

17201B1003-Rakesh Sharma

## Brief idea of Project:

Smart home domain is a new trendy way of home automation and energy conservation. The increasing demand on home automation and self care for the elderly and the disabled persons has led to the increasing number of research works and academic publications. In this domain in very basic terms is an integration of two independent systems under one roof that can be controlled using only one smart device. The smart Den will have a Node MCU based automation system where it could be used to turn devices on and off using a smart phone. Google assistant with a functional android version of marsh mallow and above. The smart Den also comprises of Raspberry pi based security system.

## Screenshots of the Project



## Applications:

- Indoor positioning systems.
- Home automation for the elderly and disabled.
- Using voice control devices like Amazon Alexa, Google Home or mobile application to manage coffee machines, ovens, fridge and multicooker as instant pot or robotic kitchen

# Program : Electronics and Telecommunication Engineering

**Project Title** : IOT based Smart Irrigation System using NOD MCU ESP 12E

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



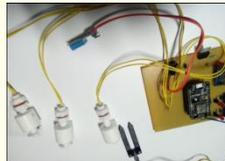
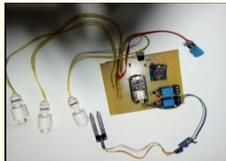
**Name of Project Guide** : Er.Pranesh Naik

**Name of Students** : 16201C0017-Neel Shah  
16201C0016-Jay Worlikar  
14201C0067-Pratik Hare  
17201C1006-Rushina Ansari

## Brief idea of Project:

Indian agriculture is diverse in nature ranging from impoverished farm villages to developed farm utilizing modern agricultural technologies. Facility agriculture area in china is expanding and is leading the world. However its ecosystem control technology is still immature with low level of intelligence. Promoting application of modern information technology in agriculture will solve a series of problems faced by farmers. Lack of exact information and communication leads to loss in production. Our project is designed to overcome these problems. This system provides an intelligent monitoring platform framework and system structure for facility agriculture ecosystem based on IOT.

## Screenshots of the Project



## Applications:

- It is used in vertical farming.
- It is used in Greenhouse farming.
- It is used normally in farms, fields etc.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Vehicle with Advanced Security System

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



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

**Name of Students** : 14201C0041-Akhilesh Shitap  
16201C0005-Gautham Sekar  
17201C1003-Akash Gupta

## Brief idea of Project:

This proposed work is an attempt to design an advance vehicle security system that uses GPS and GSM system to prevent theft and to determine the exact location of vehicle. GPS system track the current location of vehicle ,there are two types of tracking used one is online tracking and other is offline tracking. GSM system is also installed in the vehicle for sending the information to the user because GPS system can only receive the vehicle location information from satellites. In case of accident this system automatically sends the message for help to ones relatives. This complete system is designed taking in consideration the low range vehicles to provide them extreme security.

## Screenshots of the Project



## Applications:

- Used to provide protection to human life in vehicles like motorbikes, cars, buses etc.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Wireless Blood Glucose Level Monitoring**

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



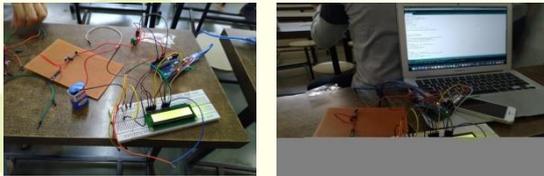
**Name of Project Guide** : **Er.Pranjali Patil**

**Name of Students** : 16201A0006-Sanketa Mali  
16201A0003-Mandar Sawant  
16201A0005-Ishaan Kadam

## **Brief idea of Project:**

A glucose sensor is an electrochemical diagnostic strip which used glucose oxidizes enzymes.ACS712 current sensing module converts signals from glucose sensor(milliamp) to voltage interfaces with the Arduino UNO.LCD module is used to display the measured value of the blood glucose.Software is developed in C language.

## **Screenshots of the Project**



## **Applications:**

- At homes for patients to check their sugar levels whenever they want.
- At clinics and hospitals to help the doctors to check sugar levels instantly without waiting for hours for reports and other stuff.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Posture Corrector**

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



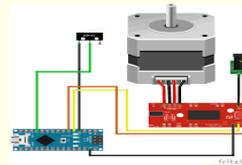
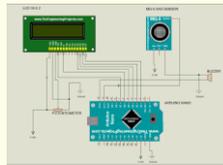
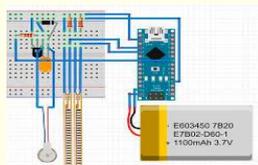
**Name of Project Guide** : **Er.Anjum Mujawar**

**Name of Students** : 16201B0018-Rehaan Beg  
16201B0014-Farooq Shaikh  
16201B0006-Mohsin Ashrafi

## Brief idea of Project:

The focus of this project is to build a wearable device to detect wearer's posture, especially lower back posture and provide haptic feedback as well as feedback in graphical format to user's device. A gyroscope and an accelerometer are used to measure the angle of the wearer's lower back, and this information is processed and tracked by a microcontroller which relays it to a bluetooth module to be sent over to a paired device as well as turn on/off the vibration motor to indicate poor posture to be corrected immediately. The device successfully alerted the user via the vibration motor if the offset from the calibrated position was greater than pre-defined threshold angle. Also it relayed the angle values that microcontroller calculated to a paired device via bluetooth.

## Screenshots of the Project



## Applications:

- Sitting while leaning back around 110 degrees to 150 degrees for 30 minutes can do this while taking phone calls or reading paper. .
- This position leads to strain in the neck and is thus not advised.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Hand Talk Device**

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



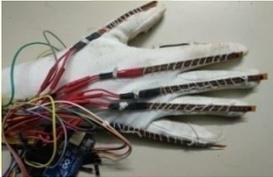
**Name of Project Guide** : **Er.Kirti Gupta**

**Name of Students** : 17201C1007-Rattan Karan  
16201C0012-Shivali Jangam  
16201C0022-Jayesh Godge

## **Brief idea of Project:**

Communication is the only medium by which we can share our thoughts or convey the message but for a person with disability faces difficulty in communication with normal person. Because of this, a person who lacks in hearing and speaking ability is not able to stand in race with normal person. Communication for a person who can not hear is visual, not auditory. Generally dumb people use sign language for communication but they find difficulty in communicating with others who don't understand sign language. So there is a barrier in communication between these two communities. This work aims to lower this barrier in communication. The aim is to develop a cost-effective system which can give voice to voiceless persons with the help of a hand talk assistive device.

## **Screenshots of the Project**



## **Applications:**

- Physically challenged persons.
- Conveying information related operations.
- Communication system

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Gesture Controlled Bionic Arm**

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



**Name of Project Guide** : **Er.Shilpa Gaikwad**

**Name of Students** : 16201A0059-Shreya Tivrekar

16201A0060-Aamir Khan

16201A0042-Ashwini Sapkale

## **Brief idea of Project:**

Accelerometer based gesture controlled Robotic arm moves according to the movement of hand as we place the accelerometer on the hand. When we give tilt to the hand in forward, backward, left side and right side, robotic arm moves accordingly in the same direction. This project is helpful in medical application where surgery can be done with the help of robots.

## **Screenshots of the Project**



## **Applications:**

- Used in earth movers to pick up heavy weight and keep them where required.
- Medical application for surgery purpose.
- Military application to control robotics, construction application

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Wireless Floor Cleaner**  
**Domain (Area of Project)** : **Wireless Communication**



**Name of Project Guide** : **Er.Pranesh Naik**  
**Name of Students** : 16201C0011-Shubh Rambhia  
16201C1001-Rahul Gupta  
16201C0002-Soham Patil

## Brief idea of Project:

Wireless floor cleaner is a system that enables cleaning of the floor by the help of highly stabilized and rapidly functionalized electronic and mechanical control system. Current project work targets to use wireless floor cleaner in house hold purposes and office floors. The cleaning purpose is specifically carried out by continuous relative motion between scrubber and floor surface. During the cleaning and moving operation of vehicle a propulsion mechanism such as driven wheels and guide wheels are used for dry tracking on floor surface. Suction of water is carried out by pipe, scrubbing action is done by the scrubber directing water towards rear end.

## Screenshots of the Project



## Applications:

- Hospitals, colleges, Industrial floors
- Hotels, Laboratories, canteen.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Solar Grass Cutter**  
**Domain (Area of Project)** : **Wireless Communication**



**Name of Project Guide** : **Er.Helina Tandel**  
**Name of Students** : 16201C0014-Akshay Londhe  
16201C0015-Shivam Karle  
17201C1001-Abhiral Dubey  
16201C0027-Saiganesh Kalkuri

## Brief idea of Project:

The sun has been the major source of energy for life on earth. The solar energy was being used directly for purposes like drying clothes, cutting agricultural produce, preserving food articles etc. The total energy we obtain from the sun far exceeds our energy demands. For human enlargement in many countries, there is study and trials are going on the solar energy and the wind energy. So a new concept is solar powered grass cutting machine which cut grass on the agricultural products or on small plants in lawns and gardens. Remote controlled grass cutter can be described as the application of radio frequency to power machine on which electric motor rotates which in turn rotates a blade, which does the mowing of a grass.

## Screenshots of the Project



## Applications:

- It can be used in all form of grass land, play grounds etc.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Smart Menu**  
**Domain (Area of Project)** : **Wireless Communication**

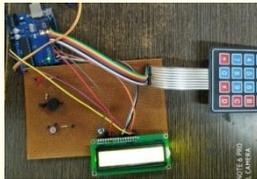


**Name of Project Guide** : **Er.Kirti Gupta**  
**Name of Students** : 16201C0018-Shlok Gokhale  
17201C1002-Francis Talari  
15201C0008-Pradhnik Pawar

## Brief idea of Project:

Traditional method that is commonly been used in hotels is by taking the customers orders and writing it down on a piece of paper.Many solutions have been proposed for solving this issue.This project is again one attempt in the same direction.This system makes use of LCD Screen,keypad,Arduino UNO.

## Screenshots of the Project



## Applications:

- Used in Restuarants and canteens.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Li-Fi Communication**

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



**Name of Project Guide** : **Er.Pranesh Naik**

**Name of Students** : 16201C0007-Sakshi Palande

16201C0025-Sahil Ghag

16201C0026-Aniket Jagadale

## **Brief idea of Project:**

Visible light communication is the term given to an optical wireless communication system that conveys information by modulating light that is visible to human eye. Communication is achieved by switching LED lights on and off at a speed higher than what is perceptible to the human eye. Eyes can detect changes in light brightness and power but they can not perceive light that is switched on and off rapidly. A Photodiode on the other hand can easily recognize the rapid on off modulation. A photodiode is a photodetector that produces an electrical current that is proportional to optical power that is incident on the photodetector surface.

## **Screenshots of the Project**



## **Applications:**

- Li-Fi live streaming, in hospitals
- Li-Fi in the workplace, in schools and in retail.

# Program : Electronics and Telecommunication Engineering

**Project Title** : **Two Wheeler Security System**

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



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

**Name of Students** : 16201A0039-Prithish Suvarna  
16201A0046-Lavesh Mundhe  
16201A0049-Dhiraj Gurav

## Brief idea of Project:

In the modern era, the security of each and everything is a vital role and security of two wheelers or bikes is one of the important parts. Typically, bikes are stolen from streets or parking lots. By the time people understand the situation, vehicles are already gone, leaving almost no traces. To come out of this problem, there is only the implementation of a security system in bikes. Currently, security systems available for two wheelers are very costly. So, bike companies are not able to implement a security system as it increases the total cost of a two-wheeler. So, it is necessary to design a security system for a bike which is less costly and easily usable for every person.

## Screenshots of the Project



## Applications:

- Lock and unlock bike via Wi-Fi.
- Search bike in a huge parking lot.
- The most useful application of this system is nobody will use a bike other than the authentic user,

# Program : Electronics and Telecommunication Engineering

**Project Title** : PLC based Sorting System using metal Detection

**Domain (Area of Project)** : Instrumentation & Control System



**Name of Project Guide** : Er.Minal Tandale

**Name of Students** : 16201A0009-Ruthpriya Nadesan  
16201A0015-Tanmay Mayekar  
15201A0060-Tejas Mane

## Brief idea of Project:

In today's world of technology and due to speed running industries, the production rate has increased tremendously. Generally, manufacturing industries keep manufacturing same models with little variation in height, colour, weight, shape. And here sorting plays an important role. In such cases, industries can't bear human errors for sorting these products. Thus, it becomes necessary to develop low-cost automation for sorting these products in an accurate manner.

## Screenshots of the Project



## Applications:

- It is used in dismantling of automobiles.
- It can be installed in airports, railway station for security checking.

# Program : Electronics and Telecommunication Engineering

**Project Title** : Solar highway lighting System with Auto turn off in day time

**Domain (Area of Project)** : Power Electronics



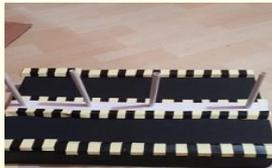
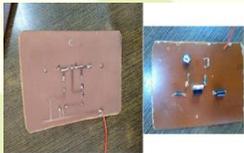
**Name of Project Guide** : Er.Shanti Krishnan

**Name of Students** : 16201A0024-Vishal Naidu  
16201A0018-Shubham Gaonkar  
16201A0034-Hemant Chaudhari

## Brief idea of Project:

This Project is designed for LED based street light with an auto intensity control that uses solar power from PV cells. PV panels are used for charging batteries by converting the sunlight in to electricity. The project aims in saving energy and auto turn off during day time with intensity control during night time.

## Screenshots of the Project



## Applications:

- Highway Street lights.
- Home Automation.

# *Final Year Project Committee*

*Department of Electronics & Telecommunication Engineering*

	<p><b>Er. Anjum Mujawar</b> <b>(H.O.D)</b></p>
	<p><b>Er. Pratik Tawde</b> <b>(Project Co-ordinator)</b></p>



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