Electrical engineering project topics for final year pdf

You have to impress your teachers, don't you? This is the only way to get signs, and hopefully recommendations for this first job or graduate school. These days, engineering students need to find creative ways to show off their knowledge in design, management and maintenance of electrical equipment to outpace their peers. That's why the last year of the electric engineering project the student chooses is so important. Fortunately, your options are huge. These days it can be about anything from power generation to robotics. But now you don't have to look for any further ideas. We have compiled 12 of the best electrical engineering projects we could find to help you choose. Wherever your interest is, their interest is here for you1. Show your skills with GSMSource:EzEd/YoutubeWhy don't use everyday-life technology such as GSM? GSM (Global Mobile System) is well known in terms of phones. But why not use it to help control and control substations? In this project, you'll show how you can remotely control aspects of the substation. This can save valuable time and man-hours. How useful would it be if these functions, such as current, voltage, temperature and power output, were not to be measured manually? Data on these features can be captured and sent through GSM. The controller can view the data and determine whether adjustments are needed for security or functionality purposes. GSM can also be used to control switches and relays. Does that sound like something you can build? Source: sckrepta/iStockYes, your skills can benefit the environment, too. This project is a simple and necessary system that requires a certain level of knowledge to ensure accuracy. Smoke and fire detectors, which can be placed in forests, can be associated with an electronic alert system through the Sigby link. When a fire breaks out, authorities, such as the fire service, are automatically informed so they can take swift action. If everything is done correctly, then no human actions are needed. A computer based on a zigby-transiver can even power fire-fighting equipment from a remote location. If you love the environment, this could be the project for you. Let's automate our homes alternatively, you can make life easier for people at home. Home automation is undoubtedly the future, why not get ahead of the curve with this project? Through a Bluetooth wireless connection and an interactive Android app, you can let people control their devices remotely. To do this, you need to get the following right: Create a handy microcontroller app that can be easily placed on devices Allow smartphones paired with On appliances, while providing high automation connectivity Home is already part of our homes. You could help accelerate this trend. 4. Get most of the solar energySource:Supplied Solar energy use is growing rapidly, but there is still plenty of room for improvement. Large solar panels are installed in large quantities, but one of the limiting factors is the need for panels to move with the sun. So, what if we could optimize power output with fewer panels? By creating an MPPT (Maximum Power Point Tracking) system to determine the maximum point of energy generation, you can help people optimize their systems. You will need to develop algorithms to control the DC converter to manage the output voltage. Your focus should be on minimizing the cost of the photovoltaic system. Can you help people save money on solar power? Source: 1001slide/iStockYou can in turn help to minimize traffic congestion with a traffic control system. You will need to use PLCs (Programmed Logic Controllers) and SCADA HMI. If you're doing this project correctly, you'll need to develop a system that can: collect traffic data on various busy areas and intersections to analyze traffic flow by remotely managing traffic lightsO more examples of how electrical projects can solve ordinary society problems, such as saving people's time on the road and perhaps even preventing accidents.6 Strengthen your understanding of energy consumption and costsSource:Martin Prescott/iStockAnother The idea is to create a unit that limits the fine bearing to the industry. You will need to develop a way to control the capacitors according to the power factor values. This factor is determined by the AWU (zero voltage switching) and CCC (zero current switch). The goal is that even if the power factor becomes low, there will be no fine bearing because you plug in additional capacitors in the system to be used when needed. The need for this in the industrial markets is enormous. Source: Akintevs/iStockIf you want the mechanical load to run at a certain speed, it doesn't have to be a guessing game. You can improve accuracy with a closed system for a clean DC engine. The closed system allows you to control the real speed. Adjustments can be made using PWM signals if necessary. The correct approach should include a keyboard to allow the user to get in the right speed. Are you ready for the challenge?8. The final home of luxurySource:enkogorodff/iStockElectrical engineers can solve problems, but they can also improve current innovation. Homes and offices are already crammed with devices that use energy, and developing a way to save energy will always be and in demand. The design of a system that turns on the light when someone enters the room on and off when they leave. Of course, your system should control the number of people coming in and out. The lights should not go out while some people are still in the room. This can be done with:IR LED sensorsIR sensorsMicrocontrollersCountersNow, no one should worry about forgetting to turn off off Arduino-controlled homesSource:S-cphoto/iStock How about turning your Arduino development board into the ultimate house control unit? And all this can be done through the phone. Once again, you need to create a user-friendly interface and app. This app will need to communicate via Bluetooth with various home features such as lights and air conditioning systems. The most important part is that the Arduino board should be able to manage commands from the user. It will monitor the loads sent to the devices using Opto-insulators to diploma TRAIC arrangements. You can design this as your last project of the year and then enjoy using it in your own home. Don't forget to include privacy settings in all apps. Source: Ladislav Kubes/iStockA 3-phase induction engine can have costly problems when the start-up procedure does not go smoothly. Can you think of a way to minimize this problem? When the start current is lower, your startup will automatically be smoother, and therefore less expensive. And it's possible. All you need is: Silicon-controlled straighteners Induction MotorControl unitDesign systems so that tyristors will receive trigger signals from the control unit when the engine starts. Easy, right?11. Create a wireless energy transmission system Source: NevonProjectsYour Next Challenge? Create a device that can transmit energy wirelessly. This project is not as difficult as you think. The end device will transmit energy wirelessly instead of using conventional copper cables and current-carrying wires. You will need: HF Transformer2 Inductor CoilsResistorsCapacitorsTransistorsCables and ConnectorsDiodesPCB and BreadboardsLEDTransformer/AdapterPush ButtonsSwitch The concept of wireless energy transmission was originally introduced by Nicola Tesla. Once completed, it has many applications. Source: RossHelen/iStockFor uninitiated, solar microinverter is a standard plug-in and a playback device that is used in photovoltaic. It converts a direct current generated by a single solar module into a variable current. Although you can use any normal circuit inverter and connect it to the solar panel. If this sounds like something that you would be interested in, be sure to check out the project here. We hope these projects will help you understand what is possible when you apply your electrical skills. Other projects related to signal processing and schematic design are great ways to test your skills. If you want to move into the world of image processing Matlab or Matlab Advanced Image Processing, be sure to dwell on this. And remember that it's about using your skills and knowledge to address both the big and the little problems. For larger DIY projects, check these out. In the next article, we'll show the top last year's list of project ideas for electrical engineering students as we get too many quires in the email and mailbox page from followers followers newcomers and EE students of the last year. Note that we will update the list from time to time when salty ideas and electrical designs are introduced in related areas. Three phases of fault analysis with automatic restart for temporary fault and travel for permanent fault: The purpose of this project is to check for faults in the three phases of the system and travel power if the malfunction is permanent. The scheme constantly monitors the line to the line and line to the ground malfunction and quickly acts on any malfunction. In a temporary malfunction, the system resets, if the malfunction is permanent, a power outage to avoid further damage. Phase Sequence Checker for three phase sentences: The idea behind this project is to make sure that the proper phase sequence applies to certain 3 phase machines and travel power during the wrong phase sequence to avoid any potential damage. It uses phase sequence detectors, using the NAN gate with zener diodes to trigger the 555 IC timer, which will switch power. SCADA for Remote Industrial Plant Operations: SCADA Control Control and Data Collection Systems are used for automation in industries. System parameters, such as temperature or humidity, etc., are checked by sensors. The data is transmitted through a serial connection between the microcontroller and the computer, which is used to control and provide automatic or manual control over the limit of the parameter. Home Automation SystemThe goal of this project is to control the appliances inside our home such as light, fans, water pump, etc., leading it to the smart home automation system. Via Bluetooth connection between our mobile phone and microcontroller. The user sends a signal through the Bluetooth module, where the microcontroller process the signal and switches the relay for that device accordingly. Sigby-based wireless sensor network for sewer monitoring: The proposed idea of the project is to monitor the sewer system wirelessly to block water. The modules are installed inside the sewer at various points that are connected to the base receiver. Sensors provide data to a microcontroller that is transmitted via the Sigby wireless module. Electrical Device Control (Home Automation) Use your android phone: The goal of this project is to develop a system that allows the user to switch home appliances using their Android phone. To do this, you need to use a relay to switch devices and Arduino to switch the relay. While teams are produced through Bluetooth (HC-05) that interacts with Arduino. Such a project can be used i.e. voice recognition based on home automation System.Overvoltage and Undervoltage Protection SystemIn this project we are going to build a scheme that protects the load from low or high voltage. The proposed idea is to use two 555 IC timers in comparator mode to detect low and high Individually. Of course, the voltage applied should be converted to DC using a straightener. The timers then have to switch the relay connected to the load.4 quadrant DC Motor Speed Control Using MicrocontrollerIn this project we offer the idea of controlling the DC engine in 4 quadrants i.e. clockwise, counterclockwise, front brake and reverse brake using microcontroller. Each button will trigger one of the four quadrants using the IC driver. Designing an ATM terminal using fingerprint recognition The goal of this project is to make a secure ATM terminal that can only be accessed by the user with his fingerprint along with the card and password. The idea is that the stolen card and password can be used by anyone if there is no fingerprint recognition feature built into the terminal. The anti-rigging development of the voting system using the Finger PrintThis project is designed for a voting system using fingerprint recognition to protect the system from casting fake votes. The system will acquire fingerprints of the impression and matches it with the current database. it will help in fair elections. Heat protection overload and real-time monitoring of the transformer temperature The goal of this project is to protect the transformer from high temperature, which can cause damage. The idea is to use the LM35 sensor to measure the temperature of the oil and winding in real time and show it on the LCD. If the specified temperature crosses the specified limit, the microcontroller travels the supply to prevent any damage, and notify the staff for maintenance. Above the electric motor speed signaling lights with the RPMThe purpose of this project is to measure the speed of the motor and trigger an alarm if the speed exceeds a certain limit. The proposed system uses a microcontroller with ir-sensors to calculate engine rotations. The data is processed and the speed is displayed through the LCD. If the calculated speed exceeds the limit, the buzzer and light triggers to notify the person. AC Lamp Dimmer Based on Android Smart PhoneInt The idea of this project is to control the intensity of the light lamp using an android smartphone. The project uses the Bluetooth module to connect between the circuit and the phone. The BT module sends commands to the microcontroller. The microcontroller increases or reduces the angle of firing the tyristor to increase or reduce the power supplied to the lamp (or any AC load)Remote ad using Android Smart Phone and ultrasonic distance sensor The goal of this project is to measure the distance between the sensor and the object using the sensor and display it on your smartphone. You need Arduino to connect the sensor and Bluetooth module to connect it to your phone. Arduino will calculate the distance using the information provided by the sensor and send it to the phone via the BT module. TRIAC-based load and dynamic temperature Adjustable System The goal of this project is to manage the load based on changes in temperature in the environment. The idea is to use the TRIAC shooting method to increase or decrease the power supplied by a microcontroller. The temperature sensor transmits information to the microcontroller through the ADC, which processs it and generates the firing angle accordingly. Automatic street light based on vehicle detectionImime idea is to turn on the street light when there is a vehicle on the road to reduce energy consumption. This project uses IR sensors placed on the side of the road to detect the vehicle and send a command to the microcontroller to turn on the light through the relay to illuminate the road ahead. GSM technology is based on the control of intelligent irrigation water systemsThe goal of this project is to deftly irrigate plants as soon as their soil moisture decreases, and to notify the user of its condition through the GSM module. The idea is to use a soil moisture sensor with a microcontroller that detects the need for water. Dry soil has a high temperature, while moist soil has low stability. A water pump or valve is triggered by a microcontroller to irrigate the plant. AVR Based on Smart Electricity Meter The goal of this project is to measure the electricity consumed in the home wirelessly from your office. The idea is to use a microcontroller that reads the counter and sends data through the RF module to the receiver in the office. The information sent is displayed using an LCD with meter identification information. Accident alertIn the framework of this project should avoid an accident between two trains on the same track. The idea is to use a proximity sensor on the front and back of the train to feel the distance between the trains. If there is a train on the same track, the system will call automatic brakes and horns for notification. GSM-based accident sensing systemsThe goal of this project is to monitor traffic for any accidents and notify the relevant authorities for rapid action through the GSM module. The idea is to use microcontrollers in a separate vehicle, which will include several proximity and pressure sensors to detect any accident. GPS will send the coordinates of the scene to the interested authorities using GSM. The electronic fingerprint-recognition voting machine The goal of this project is to digitize the voting machine to reduce paperwork. The idea is to use a microcontroller to count votes that given by pressing a button chosen for individual candidates. In order to determine the vote, the user's fingerprint is thrust first and one vote cast. The same fingerprint won't work again or have multiple voices on the same fingerprint. Automatic pipeline for industrial automationDeath of this project is to automate the conveyor belt tape industries that will only work when there is an object on it to save energy and its speed can also be automated. The idea is to use object detection sensors and speed sensors and process them using a microcontroller for industrial automation. Attendance management with a fingerprint recognition system at colleges or at work can be easily controlled by a fingerprint recognition system. The fingerprint scanner module with Arduino can be used to detect a thumb impression that will be recorded for this unique user. A person can register with a fingerprint and register using the same method. The system will also record the time of entry. Automatic Energy Management SystemsThe idea of this project is to control energy consumption and put a limit on devices that consume high energy. The idea is to use a microcontroller with current sensing units to determine the energy consumption in each device. The calculation is sent via a wireless environment to another microcontroller that is connected to the PC. The PC terminal will show the units consumed on each device and can be managed for a whole month, where the data can be used for better energy saving in the building. The language of the movement of the supervised wheel ChairThis project aims to help people with physical disabilities in managing their wheelchair movement using language. This project involves the use of a magnet attached to the tip of the tongue, and a hall effect sensor (which is a magnetic field sensor) is attached to the helmet. Sensors will detect the movement of the language, which can be translated into motion by a microcontroller. Intelligent Wireless Talking Bus StopThe goal of this project is to help blind people in recognizing bus stops and bus journeys. The proposed method uses an RF-ID sensor in the bus that reads the RF-ID bus stop and announces the location on the speaker. The microcontroller also announces the bus's journey path to help the blind in deciding on its destination. PC Regimented Defense Android Using SiegBizel this project is to help the military in monitoring the area using a wireless controlled robot with a camera. Wireless is made using the Sigby module. The video signal with motion commands is processed by a microcontroller and sent between a portable controller and a bot. it's used in surveillance. Multi-purpose generator functions with CounterThe frequency of the project is to generate a signal with variable frequency and wave form, as well as measure the frequency of the signal. uses one IC generator that can generate sinus, a square triangle with variable service cycle and adjustable frequency. Using potentiometers, we can design it to vary the frequency and cycle of the service when choosing between different undulatings. GLCD touchscreen based on digital control devicesThe purpose of this is to control an electrical device using a GLCD or a touchscreen graphics LCD. The idea is to use a GLCD with a microcontroller and an EMR relay to switch loads. The GLCD shows the current state of the devices, and the user can easily switch the load simply by touching the LCD screen. Switchgear Contact Temperature Online Monitoring The goal of this project is to monitor the temperature of switchgear contacts and begin the necessary action if the temperature crosses some predetermined limit. The idea is to use the LM35 temperature sensor and sends information via a microcontroller through the zigbi module over a wireless network. The information is obtained by another module that displays it on the screen. If the temperature rises, the microcontroller sends commands to turn off this particular switch. Power management in the remote lighting system of the airfieldRALS (remote lighting system of the airfield) has no power control system. The proposed system is equipped with several sensors to sensing humidity, light, temperature, etc. to calculate enough power needed for RALS. So it saves energy in the long run. Environmental monitoring systemImme the idea of this project is to monitor the environment for several factors such as humidity, temperature, light and metal, etc. The robot is equipped with several sensors to obtain data and wirelessly transmit information to a portable unit that displays data continuously. It is a multipurpose project that can be used to detect metal as well as feel the weather. The Green House monitoring and monitoring Wemeha project is to monitor and monitor factors affecting plant growth automatically, such as humidity, temperature, light, etc. The project uses sensors to monitor each factor using appropriate sensors and then provides the necessary measure to monitor. It can also include a GSM kit to send an SMS to the user about the current condition or when the condition is deteriorating. Automatic speed controller in schools and collegesIt is the main idea of the project is to avoid an accident caused by speeding near schools and colleges. The idea is to use RF ID sensors in cars. Car sensors sense RF-ID near colleges using a microcontroller and send commands to the driver's section to reduce the speed of an otherwise override to reduce speed automatically. The Bus Information Alert for The Blind Using SigbiZel this project is to help blind people in finding their bus at the bus station. The idea is to use communication via the zigbi module between two Arduino, which transmit information between the bus and the blind user.

The bus module will send information when it arrives at the bus station, and the user module will announce the bus information to the blind user. Intelligent Alcohol Detection System for CARThe aim of this project is to allow the car ignition system only if the driver's alcohol is are at the limit. Alcohol sensors, such as MH3, can detect the concentration of alcohol in the breath, which changes its stability. The microcontroller process the data and enable the relay chain that activates the ignition. Laser voice transmitter and receiver Target is to transmit a beep from one chain to another through a laser beam. The laser diode generates a laser that can travel very long distances. You can use the IC audio amplifier to amplify the beep coming from the audio port and transmit it through the laser diode. The mini solar panel receives a signal that can be played through the speaker after the amplification. Accident Railway Avoiding SystemThe proposed idea is to avoid an accident by finding any dislocation or cracks in the railway track. This can be done with a microcontroller robot that has sensors built in. The bot will communicate wirelessly with a portable controller that also uses a microcontroller. Sensors from the bot will send data, thus notifying the crew of any problems on the tracks. The GPS module will also allow the coordinates of this problem to be foreseen. The train distance indicator for the unguarded CrossingThe goal of this project is to avoid any accident at an unguarded level of crossing by providing information about any upcoming train along with its distance. The idea is to place several sensors along the railroad track at a certain distance from each other, which sends a signal to the microcontroller at the gate. The distance from the sensors is displayed on the screen to alert any vehicle passing by. Road priority control for ambulances The goal of this project is to introduce a priority function into the existing traffic light signal for an emergency vehicle such as an ambulance, fire engine or police car etc. An ultrasonic voice-based walk for the BlindThis project's goal is to help blind people walk by notifying them of an obstacle in their path. The idea is to use ultrasonic sensors, the rays of which are reflected backwards from the surface and used to detect objects. The controller processes information and provides voice feedback to the person. Electric energy generation using Speed Breaker The goal of this project is to use the energy of wasted vehicles when crossing the speed switch and convert it into electricity to power street light, etc. rotates when the vehicle is crossed. The flywheel is connected to a generator to power the loads. Electric energy generation using FootstepsThe proposed idea is to save the step of energy and convert it into a form such as electric energy using a piezoelectric sensor. Piezoelectric sensor converts converts Stress in electrical energy that can be stored in the battery or directly power any nearby lights, etc. Options such as current, resistance, vibration, temperature, etc. are constantly monitored. If any parameters fall outside the safe zone, the power supply stops and a maintenance notice is issued for this option. Ac MotorThe touch screen based on speed control is the main goal of this project is to control the speed of the AC engine by changing the angle of THE TRIAC firing. An additional feature of this project is to make it user-friendly, GLCD or touchscreen graphics LCD. THE GLCD will be able to start, stop and accelerate/down, etc. The system of access to machines based on images and passwords for the Touch ScreenThe project is to make a system based on a touch screen that displays status as well as controls equipment in industries. The idea is to use GLCD to control multiple machine functions such as ON/OFF and speed and direction. The GLCD will also show the current state of the machines. A motor speed and monitoring system based on the frequency of the blocked loopThe goal of this project is to maintain the constant speed of the DC engine at variable load. Engine speed is converted to frequency using a sensor that is compared to the input reference frequency to maintain a constant velocity. The comparator generates voltage based on a difference that increases or decreases the speed of the engine. Sigby and GSM-based Real Time Home and Industrial Automation SystemThe idea of this project is to monitor appliances or equipment inside the home or industry from afar. The system uses GSM communication between the user control module. The command is sent via SMS, which is sent wirelessly to the appropriate device using the Sigby wireless module. The state of the device or machine is sent to the user in real time via SMS. RF Technology Based Wireless 3 Phase Motor Starter with Feedback IndicatorsIt's system is used to control the engine wirelessly using the RF module. The wireless button interface will send the team through the RF transmitter to the engine launch module. The system will also show the current state of the engine. GSM Planning a Path for a Blind Man using the UltrasonicThis Project is a wearable device for a blind person who It's easy for the user to navigate the path through voice instructions. The device will plan the route for the location and provide instructions on every corner or obstacle. The device also interacts with the GSM module to send a person's current location for monitoring purposes. The wireless weather monitoring station For the purpose of this project is to Weather for several parameters such as temperature, humidity, wind, pressure, etc., the project uses different sensors for each reading and wireless transmission between sensors and a portable device that will display readings. Pedestrian Collision Prevention The goal of this project is to develop such a system in vehicles to avoid any accidents when hitting a pedestrian. The idea is to use a detection system for pedestrians such as ultrasonic sensors, etc., as well as to detect the condition of the driver. According to the information collected, the vehicle will automatically perform the best manure to avoid any harm to the pedestrian. GSM based on Energy Meter Rate Display - Anti-theft SystemThis project allows the user to know the exact energy units consumed along with real-time changes. The microcontroller is used to calculate the bill that will be displayed on the LCD. In addition, the GSM kit will send an SMS notification of the bill to the owner. The system can also be used to detect theft of electricity if it is used in both feeders and in the house. If the feeder units exceed the internal meter, electricity is stolen and the GSM kit will notify the appropriate authority. Power network management via PC SCADA: The main goal of this project is to manage devices connected to the network through pCs. The idea is to use an RF connection between the transmitter and the receiver, which consists of a microcontroller to switch the devices through the relay. COMPUTER sends commands through serial communication to a microcontroller. TENS UnitTENS means transcutaneous electrical stimulation of the nerve - it is used to relieve pain without the use of medication. The idea behind this device is to generate either a high-frequency signal that blocks the pain signal from reaching the brain or a low-frequency signal that helps the body produce endorphins (increase blood flow) to relieve pain. Fighting Fire RobotThe proposed idea is to use a robot that can enter a building where people can't and put out the fire autonomously. The idea is to use IR sensors to detect the fire and follow it and then put it out using water from the pump. IR sensors are placed around the robot to provide 360 degree sensing. Intelligent GSM Bus Search SystemIt is the goal to provide information about the location of the bus and its arrival time at the bus station. The GSM module inside the bus sends a message to the station containing information about its location and estimated arrival time. This will allow people to manage their time well. Autonomous Lawn mower The goal of this project is to automate to work automatically without any person involved. It will work in a specific area as well as it will avoid any obstacles like trees using ultrasonic sensors. Below are some additional electric final list of projects and ideas. Distance relay scheme based on unifiA's new fuzzy neural network Work for optimal control theory and hybrid control of ModelGSM battery-based UPS for the IndustriesPower system to transform IndustriesPower from three stages to one phase control and direct the mobile robot of the car using SensorPosture activity and distribution of wearable sensors based on shoeControlling electric device switch using Mobile PhoneEmbedded systems based on EB Theft Finder and AnalyzerRemote Flying Robot based on GSM unmanned PhotographyStepper motor and DC Motor Speed Controller based on PCPower Semi conductor based on speed control of the Universal Control MotorAccess Electrical Equipment System, based on the integrated ChipEnergy Meter based on the manipulation of internal electricity BillA Internal building electricity meter with voice AnnouncementNovel Technique is based on three phases to five phases of the Transformer DevelopmentHybrid PWM Based on the analysis of Cascade five-level inverter Distributed Energy Flow Controller based on improved power quality in distribution systemsInterfaxing Inverter based on improved power quality distributed networkSHEPWM Technique is based selective harmonic elimination of multi-level inverter High Performance PID simulation controller to control engine induction speed with Mathematical modelingKadka H-Bridge Multilevel Wind-based Inverter-based SystemA Two Stage Bidirectional/Isolated DC/DC Converter using current Ripple-Kuasi reduction technique - Source Topology based on one phase of AC-AC ConverterSimulation and simulation of asynchronous generator with AC/DC/AC Converter fed RLCDynamic Series Voltage The power sags and sags during one line to the ground and three phases of FaultsUP'C custom power devices based on the wind farm weak grid ConnectionPower Quality measurement and development method for monitoring DevicePassword Included industrial switching devices using speech recognitionNote: If you want to add your own last year's electric project idea to this article, let us know in the comment box below. Related electronic lists of the project's ideas: lists: electrical engineering project topics for final year pdf. electrical engineering project topics for final year 2019. diploma final year project topics for electrical engineering. final year project topics for electrical and electronics engineering. major project topics for electrical engineering final year. latest project topics for electrical engineering final year. final year project topics for electrical engineering students