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Electronics for you projects pdf free

The most demanding projects in the field of engineering are electronics projects as they are very common for electronics, instrumentation, biomedical and electrical engineering students. We all know that life without electricity for a single day we can't imagine because it has become like a part of our life. So, learning the basic concepts of electronics is very important and beneficial. There are different concepts in electronics that deal with different circuits. The concepts may include resistors, capacitors, diodes, integrated circuits, microcontrollers, etc. This article lists electronics projects for engineering students. These projects are very helpful for ECE/EIE/EEE students. Electronics projects for engineering studentsThe following electronics projects are very useful for ECE and EEE engineering students. Electronics Project Voting Machine in Cellular using MicrocontrollerAt currently in elections, EVM or electronic voting machine is used. It introduces the proposed system of cellular-based voting machine using microcontrollers. This system includes two units as a voice unit and one master unit. The arrangement of a voice unit can be done anywhere, but the master unit can be placed within a control system. The voting unit contains a DTMF to generate a tone. This tone can be transferred to the master unit using the FM transmitter. The master unit includes a DTMF decoder, FM receiver, Display Unit & Microcontroller. This tone can be received through the receiver & decoded by a microcontroller then shows on LCD.Identification of Power Theft with Micro ControllerEvery, the rate of power theft has increased so to the electrical board it has become a major challenge. Because of this reason, the Electricity Board receives a total of 8% of the revenue. To overcome this problem, here is a system namely power theft identification. This project identifies power theft & intimate to the board via the power line. Converting CD players from Audio to VideoWe know that audio CD is used to play only audio CDs. These can also be converted to play CD-ROM video. The CD player used for audio has a mechanism for playing video CD cards excluding an MPEG card. This card may be included in the CD player which is readily available on the marketplace. This card plays a key role in decomposing data from CD players & changes in video signals correctly before delivering it to TV. Detection of Over Speed AutomaticallyIn India, day by day increase the number of traffic accidents due to over speed. To overcome this problem, a device is invented namely a speed detector. The main feature of this device is, it works from the distance of 100m so that the over speed vehicle is simply identified. As compared to the normal speed detector, this detector doesn't work on the Doppler Effect; however, it works on extremely consistent laser beams. Another advantage of using this device is, it can be used some kind of road & Easy. RFID Based Door Access ControlThe concept of entrance control is based on the average of a card, a parallel card reader and a control board that is merged with the server. This is a proximity card with a unique ID number included in it. The card reader interprets the data and sends it to the control card, which is a microcontroller. This microcontroller tests the legality of data with the incorporated server, which follows the database. The attached server is transferred with the details of the worker for the unique ID number. The Control Board confirms whether the person is allowed in at the exact door or not. If the worker is genuine, then the person is allowed to enter the door. Workers may be allowed in a special doorway according to the designation. The input control is used at this end. RFID technology employs frequencies in the range of 50 kHz to 2.5 GHz. An RFID mechanism usually includes the following elements:An RFID device that encloses the dataAn antenna used to transmit rf signals among the reader and the RFID machineAn RF transceiver producing rf indications That collectrf transmissions from an RFID machine and send data to the host system for further action. Automatic Solar TrackerAutomatic Solar TrackerThe automatic solar tracker starts to follow the sun exactly from sunrise, all day, to sunset, and starts work again from sunrise the next day. On foggy weather day, it lingers motionless and seizes the sun once again as it peeks out of clouds. It does all this mechanically by using cheap and economical elements, and is extremely accurate. Let us see how all this is done. There are 3 Electronic sections to be clarified. First is the parallel sensor section. It uses the 555 timer IC in the monostable method. Pin 2 or trigger pin of 555 is connected with a power separator network. Pin 4 that can be restored is connected with an additional power separating network. Don't miss: Latest Innovative Electric Project for Students Cell Phone operated Land RoverCell Phone operated Land RoverTraditional, wirelessly controlled robots make use of RF (radio frequency) circuits, which have their drawbacks of limited operational range, limited frequency range, and limited control. This project introduces the use of the mobile phone for robot control. This technology is more controller-friendly because it does not interfere with other controllers and can use up to 12 controls. It also has the advantages of robust control and provides as large a work area as the service provider's coverage area. Although the appearance and functions of these robots vary, they share mechanically moving structures under some sort of control. The robots are controlled in three phases namely reception, processing and operations. Here, preceptorsensors are mounted on the robot and the processing is done by an on-board microcontroller or This robot works either with the help of engines or with some other actuators. The robot is controlled by making a call on the mobile phone attached to the robot. In the course of the call if any button is pressed a dual-tone multiple-frequency (DTMF) tone is heard at the other end of the call. The cell phone mounted on the robot perceives this tone and then the robot processes it by ATmega16 microcontrollers using DTMF decoder MT8870. Automatic Room Light Controller with Bidirectional Visitor CounterThe main purpose of this project is to create a controller-based model to calculate the number of people stumbling any particular space and as a result, illuminate the space. At this point, we can use sensors and can urskype the number of people currently in the space. In the present world, there is a constant requirement for mechanical appliances with a surge in living standards; There is an intellect of importance for creating circuits that would reduce the complications of life. Also if at all you want to make out the number of people who are in the room so as not to contain overcrowding. This circuit is extremely helpful. PC Based Wireless Device ControlThe corresponding part of the personal computer is a controlling pallet for executive projects dealing with control of real peripherals. It can be used to control domestic and other electrical appliances. The computer program in the space of the interface circuit handles the relays, which in return turn on the devices ON or OFF. Here we explain how to control wireless electrical appliances from a remote position by using the RF (radio frequency) module. For this personal computer (PC) based wireless device control system, you need to have the intention and build up the necessary hardware & software. The corresponding part of the PC is used to check the devices at the broadcaster's side. The RF edge is employed as a substitute for IR to conquer all the disadvantages of the IR interface. The PC indicators are transmitted from the RF transmitter and acknowledged by the RF receiver. Solar Cell Phone Charger CircuitThis small device uses a small three-volt solar cell to charge a six volt NiCad battery that, in return, is possibly employed to charge lots of models of cell phones and other handy gadgets. The circuit will search power from the solar battery by keeping it charged close to 1.5 volts (maximum energy transfer value) and trickle charging the internal battery set with current pulses. The uncomplicated circuit is not as efficient as possible but it handles a reputable 70% at 100 mA from the battery and 30% when the battery delivers only 25 pretty excellent mA without leaving for a lot of additional problems or making use of other foreign or unwanted elements. Note: This circuit is designed to use a low voltage battery to charge a high-voltage battery. Do not use it to take out a voltage than the cells produce. The circuit wants a battery load to wear efficiently. Different cell phone models have different charging necessities and this charger may not work with all these models. Finger Print Based Security SystemFinger Print Based Security SystemThis fingerprint project is created to avoid security issues in organizations. In this project, the fingerprint sensor reads the thumbprint of the related individual and that copy will be contrasted with the image recorded earlier, if both images are matching, then the fingerprint machine activates the exact task such as the right to enter a protected area, the detection of the employee, etc. The project involves 2 approaches, the primary is the master method, and the next is the user method. The master method is used to register the fresh user and provides the permission method. The Master method can generate and delete users from the system. A user strategy is a normal method used to control an employee. In the user approach of permissions, the formation and deletion of an existing user cannot be done. The central idea of this project is to grant the authentic right of entry to different divisions of a company by reading the employee's thumbprint. Wireless control of robotarm The main purpose of the robotarm project is by using the r-FSK method to control the robotarm. The principles that are mainly used to develop in the design of the industrialised applications that are smooth and simply improved to use in the near future. There is a big issue in a number of industries where a human being cannot tear. This is because the temperature in the industrial room is more than a temperature suitable for human labor. To conquer the difficulty of high temperature wireless control, the robotarm was designed. This robotic arm comes into play to work under the circumstances where humans can't work and even the robotic arm can be controlled by putting in the game wireless method that is in trend these days. The wireless method used in our mission is r-FSK. This robotic circuit is interfaced with a microcontroller (P89C51R2), keypad and Motors. The engines are connected with each other creating a robot arm that is again interfaced with a panel activated with keys to control. Electronic NotesThe main purpose of our project is to design & present a practical electronic notepad. The notepad will consist of a touch screen with a storage memory to collect data written. This notepad will allow the facility to transfer data to a computer and when needed. This transfer is done using software that interprets data & displays on the screen. The notepad has high accuracy & fast sampling rate which helps to show the exact drawing that you made. A microcontroller & is interface respect with the notepad circuit. On your command is is transfer data to your computer's SD card using a serial connection. Human being Skin as Touch ScreenThe mobile industry has brought many revolutionary changes in mobile, from large & bulky phones to small & portable sets. The touch screen technology is used in many mobile phones. This project aims to use human skin arms or palm or legs as a touch screen panel. All you have to do is wear a band in your wrist, which will show all the data from your mobile to your skin and you can use it as a touch screen technology like in iPhones. To perform additional actions you just need to type the command on the skin & using an acoustic sensor, this sensor reads the command from your skin & performs it. The acoustic sensor is used to analyze the exact tissue density and extra biometric data from your skin, to determine the type of command you have entered. As you travel around the world you may wonder a little & appreciate the structures & other artificial creations then you can at this time thank the technology for technology, using technical theories several revolutionary changes have been made in human life. No matter which engineering field you're in—whether it's mechanical, aerospace, electrical, electronics, or material handling—engineering procedures are critical as well as interesting. Don't miss out: 200+ Electronics projects for engineering students with free AbstractsAdvanced Electronics Project ListThe advanced electronics mini project list is discussed below. IR Sensor-based Car Parking SecurityThis project is used to give a warning to the driver while parking the car or while driving in the reverse direction if there is any wall or obstruction arising. Circuit Breaker using PasswordThe design of this project can be done using an 8051 controller. This project is mainly used to disable the power supply by entering a secret word. Remote Control System for Five Channel with microcontrollerThis project is used to design a simple & simple five-channel remote control system, which is used to power 5 different loads. This project uses the IR communication policy. AT89C51 Microcontroller-based Thermometer with Celsius ScaleThe design of this thermometer can be done with AT89C51 & LM35. This circuit mainly uses the A/D conversion principle. This circuit is used in mobile locations, homes to track the temperature. Doorbell based on Detection of ObjectThis doorbell project is used to detect the object that helps to detect the presence of a person automatically & generates the doorbell. Breaking Alarm by Wire LoopThis project acts as a continuity tester device to test the stability of the wire. It is an important tool to ensure broken wires as well as short circuit of wiring. ICL7107 based Digital Voltmeter CircuitThis project is used to design an A/D converter that acts as digital voltmeter with less power. It uses an ICL7107 A/D converter that includes a 7-segment decoder, a CLK, a one & display drivers. Charger Circuit for Battery Using Solar EnergyThis circuit is used to charge a rechargeable Lead-acid battery with 6V, 4.5 mA using a solar panel. This charger includes the control of voltage, power & installation of over voltage cut. At constant voltage, this circuit is used to charge any kind of battery at a stable voltage due to adjustable output voltage. Robot to detect human with 8051. MicrocontrollerThis project is designed a robot to detect humans using a human detection sensor. This robot can be operated manually using a PC. The technology used in this project is RF wireless technology. By using this technology, data transfer can be done. Home Automation System by DTMFThe proposed system as an automation system for home using DTMF will help control various appliances in the home. So DTMF plays a key role in controlling the devices. GSM based Electronic Message Board WirelesslyThis project is designed with GSM technology using a microcontroller. Here microcontrollers play a key role in displaying data on liquid crystal display, the data we transmit through the mobile. Audio Mixer Circuit through Multi-ChannelThe circuit-like audio mixing includes two MIC inputs as well as two line inputs. If we want to improve the input channels based on usage then the extra circuits can be added parallel to this circuit. Power generation by FootstepThe proposed system namely to generate power through footsteps is used to charge mobile phones. Solar Panel based Robotic Vehicle Is controlled by the RFPProject Solar Panel-based robotic vehicle-controlled by RF used to monitor an area. This robot can be built with a solar panel and a camera with 350 degrees. This robot can be controlled through RF and mainly used for safety purposes. Alarm Generation Anti-Sleep Truck DriversThis project designs an alarm system for anti-sleep drivers. This system is used to control the eye movement of the driver continuously. If this system detects the vehicle driver in sleepy condition, then an alarm can be generated to give a warning to the vehicle driver to the person to wake from sleepy condition. Electronics Mini Projects The list of mini electronics projects for engineering students includes the following. Street Light ProjectThis simple project is mainly used to design a street light system. This street light will be turned off in the day time and turn on at night. This project is designed with an LDR or light dependent sensor. To detect the light required to make a decision when to disable or activate the circuit. In this project, the LDR uses the principle that the presence of light will cause resistance ldr sensor to set off low. This circuit can be changed by using LEDs instead of a lamp. This project is very easy to design and not expensive. SCR based Charger for electronics, this is one of the Projects. In this project, a simple circuit is designed for charging the batteries. An SCR or Silicon Controlled Rectifier is used to correct the mains voltage for charging the battery. This circuit can be designed with basic transistor switching techniques & various electrical and electronic components are used that can be obtained in various electronics stores. Detector Circuit for airflowThis project is mainly used to make an indicator so that the airflow can be illustrated in a certain space. Airflow detection can be done using a filament of a filament lamp. The changes due to the resistance change within the incandescent due to the airflow are set at the input of an LM339 op-amp. Water level based Alarm CircuitThis project is used to generate an alarm when the water level increases above a fixed level. This circuit is designed with a basic astable multivibrator designed with an IC 555 timer. A resistance probe is placed in a position where the alarm is turned on, when the water level increases to the set level. This circuit uses fewer components & it can simply be connected on a circuit board. Alarm Circuit for Low Cost FireThis project is used to detect fire and generates an alarm. Therefore, it gives a warning to the people where it is connected in the building. A BC177 transistor is used to detect the temperature generated due to the fire. A preset level can be set aside for the transistor. When the temperature increases beyond the fixed level, as the leakage current from the transistor increases, therefore other transistors within the circuit can function. This circuit uses a relay to connect the watch load. The components used for the circuit can be achieved simply & this circuit is very easy to design. FM Radio Circuit with Single ChipThis is a simple project that mainly applies to engineering students. A TDA7000 IC is used in this circuit with a Frequency-Locked-Loop (FLL) system with a frequency of 70 kHz. This circuit is very simple to design and low cost. Circuit for Digital Stop WatchThis project includes a digital clock that can be designed with a 555 timer IC as well as a 4-bit IC counter. IC used in this project is IC MM&4C926 & a 7-segment screen. The assembly of this circuit can be done on PCB easily. High & Low Voltage Cut-off by Delay & AlarmThis project is used as a simple project as well as a large project on a home for electrical appliances. This project is used to defend high voltage fluctuations. This circuit can be designed with simple electronic components such as diodes, LEDs, transistors, and a monostable multivibrator with an IC 555 timer. This circuit can also be changed to an automatic voltage stabilizer with some simple modification in the circuit. Switch Circuit Activated by LightThis circuit is designed with a non-recurring LM311 & an LDR LDR output given to the inverting pole of the comparator. When there is no light at the The resistance will be high in the same way, when the light falls on the LDR, then the resistance will be released. So the voltage will be reduced at the entrance terminal of the comparator. How the comparator creates high o/p so that transistors will turn ON to make the relay ON. Indicator for Incoming Calls in MobileThis project is used to run away from the irritation of mobile rings when we are at home. This project provides a visual sign when it is placed near a mobile phone even if the ring is disabled. Wireless Lock System by OTPThis project uses OTP (one-time password) for the bluetooth & arduino lock system. When an unauthorized person tries to open it, it will generate an OTP every time. A key-based locking system is not used because there is a chance of key robbery or loss. So to overcome this, an OTP-based wireless locking system is designed. By using this, all problems & security threats can be reduced. Infrared Contactless Thermometer using PhoneAt present, checking the human body regularly is important without connecting the measuring device. So, an infected person is detected immediately without spreading the disease. Here, a measurement device for temperature measurement without contact as a thermometer is necessary everywhere. Currently, a contactless thermometer based on Bluetooth is being developed. It has thermal screening capabilities incorporated into our mobile phones. So, in order to change our phones to a contactless thermometer, initially we need to attach our phones to a sensor that uses Bluetooth to give us the reading of the temperature in an app. By using USB also we can get data on our phone from the sensor. Digital Electronics ProjectsDigital electronics can be defined as the study of digital signals and the devices that use or generate digital signals. These are quite different analog signals as well as analog devices. Generally, the design of digital electronic circuits can be done using logic gates that are often enclosed in ic. See this link to know more about Digital Electronics Projects.Digital Electronics ProjectsBiomedical Electronics ProjectsThe concepts in the biomedical projects mainly include different design concepts of biology and medicine used for medical purposes such as diagnostic/therapeutic. Applications of biomedical technology mainly include expansion of biocompatible prostheses, various therapeutic and diagnostic medical devices such as clinical, micropalms and common imaging devices such as EEGs & MRI. Biomedical electronics projects are discussed below. Health monitoring of the patient using GSMThe proposed system is used to monitor the health of the patient such as heart rate, temperature and humidity using sensors. These sensors receive information from the health parameters. Once the sensors have received the data, it sends it to the Microcontroller. The microcontroller then transmits to the user via an SMS using the GSM-modem. GSM-modem. This data can be displayed over the LCD. If the readings of the patient on the display are abnormal then an alarm can be generated. Baby Incubator based on SMS & GSMThe proposed system is designed with GSM technology and is used in hospitals. This system uses two sensors such as temperature & humidity. When the temperature of a baby increases above the threshold level, then an SMS can be sent to the doctor/caretaker. Arduino & IoT based Patient Health MonitoringThe proposed system can be designed with an Arduino board & IoT. In this project, various parameters can be monitored using IoT. So, the patient's real-time parameters are transferred to the cloud by connecting the Internet to a remote location. So finally the user can check the patient's details from anywhere in the world. Ambulance Tracker by GPSAmbulance tracking is very important because a mine delay can lead to the life or death of a person. In order to address this problem, the proposed system is designed by means of GPS technology. Currently, the GPS tracking system is applied to ambulances. So that the user can track the availability of ambulance near the location of the patient. So that ambulance can be sent from the hospital to the location of the patient in less time. Tracking System for SoldiersWorldwide, the safety of the nation depends primarily on the Navy, Army and Air Force. But army soldiers play a key role. There are many concerns when it comes to soldier safety. When any soldier enters enemy lines then it is very important to the army base station to know the health status and location of all soldiers. To overcome this problem, this project is used to track the soldier and his health condition during the war. Router for TelephoneThis router for phone projects can be designed with a microprocessor-based system. This system is used for routing phone calls to a variety of parties by initializing specified switches. This is a very helpful device especially for those areas where the phone density is very poor. Local PCO MeterThe proposed system namely the local PCO meter is used for barring mobile, STD & ISD calls. After the interval required, this project automatically cuts the call but before you cut the call this system will generate a beep sound so that customers will warn and continue the call. The list of some more biomedical electronics projects includes the followingBio-monitoring by ECG & BPHandly ECG-Galvanic Response of SkinDynamometer for Muscle StrengthECG Signals Transmission through Bluetooth or WiFiSimulator of ECGHeart Rate and Temperature Monitoring of PatientFunction Test of Digital Pulmonary with MicrocontrollerAcquisition and Analysis of EMGNon-Invasive GlucometerMonitoring System for BiomedicalGSM based Monitoring of Patient Monitoring of InfantsFailure of Chronic Renal Early DetectionECG MonitorAlarm Messenger for ThermoBP Monitor by DigitallyHemetic Analyzer MultiparameterTherapy Unit of agricultural projects in electronics include the following. Seed Sow Machine for MultipurposeDigital Weather Station with GSMMini Powered Tiller & Weeder DevelopmentHarvesting Machine for WheatAutomation of Public GardenTracking System for Solar PanelThe computing of Liquid Level & Storage DeviceArecanut Climber Machine DevelopmentData Storage based Digital Weather StationAgri Vehicle Operated through RemotelyHarvester of SugarcaneControlling of Device through GSM & SMSHarvesting Machine for MaizeData Acquisition System for 4 Channels through MicrocontrollerPesticide for Animals through GPSDetection of Toxic Gas through GSM technologyAndroid-based Controlling & Monitoring of Greenhouse EnvironmentInformation System for Weather Report through SMSMonitoring & Controlling System of GreenhouseIoT & Arduino based Reporting System for WeatherElectronics Projects using ArduinoArduino is a very well known open source board used to develop electronics projects and prototypes in a simple way. There are different kinds of development boards in Arduino namely Arduino UNO, Nano, Mega, Pro Mini, etc. All of these boards are based on AVR series microcontrollers. Here is the list of electronics projects with the help of the Arduino Board of Engineering Students. Industrial Automation with Arduino & JoystickIoT & Arduino based noise

