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# 50 Latest Home Automation Projects For Engineering Students

OK lets start!!! Here you can find the solid researched home automation projects along with sources like circuit diagram, codes and most of the curated data. As We know that we can see smart homes every where these days.With the advancements in technology life is made very easy.There are many technologies used for automating home depending on the  Cost,accuracy required by the consumer.Here is list of  home automation systems using different technologies category wise.These are very useful for the students and professionals who want to build smart homes.



**What you can control**

| **NUMBER** | **PROJECT NAME** |
| --- | --- |
| DTMF Based Home Automation | |
| 1 | [**Smart homes using DTMF and AVR**](https://www.electronicshub.org/dtmf-controlled-home-automation-system-circuit/)**:**This System explains automation of homes using DTMF technology and Atmega8 microcontroller. DTMF means dual tone modulation frequency .This frequency is used for communication between controller and the appliances in the home. |
| 2 | [**DMTF home automation without microcontroller**](http://circuitdigest.com/electronic-circuits/dtmf-based-home-automation-system)**:**Home automation can be done without using any microcontroller also. This system provides complete information about home automation without using any microcontroller. |
| 3 | [**Home Automation using 8051**](http://www.engineersgarage.com/contribution/dtmf-controlled-home-automation-system-using-8951)**:**This system uses 8051 microcontroller along with DTMF technology. |
| 4 | [**DTMF Signal Controlled House Monitoring System**](http://www.lukosius.net/files/dtmf_home_automation.pdf)**:**This system develops home automation system using PIC microcontroller and DTMF technology. |
| 5 | [**Home automation project using GSM**](http://www.instructables.com/id/Home-automation-system-using-Arduino-and-SIM900-GS/)**:**This project uses GSM and arduino for home automation. Here Sim900 GSM module is used. A step-by-step procedure is followed for implementing this project. Read this post for complete information. |
| 6 | [**Low Cost Home Automation Using Offline Speech Recognition**](https://www.researchgate.net/publication/264558453_Low_Cost_Home_Automation_Using_Offline_Speech_Recognition)**:**This home automation project is added with Sound based on acoustics. This project is designed for physically challenged people. |
| 7 | [**GSM Based Home Automation**](http://nevonprojects.com/gsm-based-home-automation/)**:**Proposed system uses GSM module along with 8051 microcontroller. |
| BLUETOOTH Based Home Automation | |
| 8 | [**Home automation Bluetooth project Using 8051**](https://www.electronicshub.org/bluetooth-controlled-electronic-home-appliances/)**:**Home automation system uses Bluetooth technology here.8051 microcontroller plays a key role in this project. An android device is used for controlling the appliances. This device communicates with the home appliances using 8051 microcontroller. |
| 9 | [**Android App Home Automation via Bluetooth Using PIC16F628A Microcontroller**](http://www.circuitsgallery.com/2015/04/bluetooth-android-home-automation.html)**:**Here android device is communicated with the PIC microcontroller. This uses a Bluetooth app which can control maximum of 8 appliances. Read the post for complete information. |
| 10 | [**Bluetooth Based Home Automation and Security System Using ARM9**](http://www.ijettjournal.org/volume-4/issue-9/IJETT-V4I9P168.pdf)**:**This paper proposes a home automation system along with security. Only authentication person is allowed to control the appliances.ARM7 and ARM 9 were used for communicating between the appliances. |
| 11 | [**Design and Implementation of an Advanced Home Automation System using Android and GSM Technologies**](http://www.ijmetmr.com/olmay2015/MrsGeethaMrunaliniKadiyam-MrKRajasekhar-MrAPravin-29.pdf)**:**The main purpose of this paper is to design an advanced electrical devices monitoring cum controlling at home or offices using GSM modem and android mobile. User can monitor the status and also control multiple devices by sending suitable SMS format to the ARM-7 LPC2148 microcontroller based system. |
| 12 | [**Smart Home Automated Control System Using Bluetooth Based on Solar Panel**](http://ijsetr.org/wp-content/uploads/2015/11/IJSETR-VOL-4-ISSUE-11-3953-3956.pdf)**:**This project presents a home automation system that uses Solar panel for Power. It uses Bluetooth technology for controlling the devices. |
| 13 | [**Home automation projects raspberry pi**](http://diyhacking.com/raspberry-pi-home-automation/)**:**Here is the home automation system using raspberry pi. Appliances can be controlled from anywhere in the world. A web application is used for controlling the devices. It uses normal http protocols. GO through this paper for complete information. |
| ZIGBEE Based Home Automation | |
| 14 | [**Home Automation using ZigBee Protocol**](http://www.ijcsit.com/docs/Volume%205/vol5issue02/ijcsit20140502186.pdf)**:**This paper presents a home automation system using zigbee and microcontroller. Here a PC is used for controlling the home appliances. |
| 15 | [**Wireless Home Automation System Using Zigbee**](http://www.ijser.org/researchpaper%5CWireless-Home-Automation-System-Using-ZigBee.pdf)**:**The automation system controls the appliances wirelessly using zigbee and voice. The system has been tested and verified. 80.05% of these commands were recognized correctly. |
| 16 | [**Speech Recognition Module for Home Automation System Based On ZigBee**](http://ijcsmc.com/docs/papers/August2014/V3I8201449.pdf)**:**This paper, presents a voice controlled home appliances. It is constructed using the microcontroller and VRC is (Voice/speech Recognizer kit). In this the home appliances are controlled according the commands given by the human voice. |
| 17 | [**Home Automation System using ZigBee and PandaBoard as a Gateway (HAS-ZP)**](http://searchdl.org/public/journals/2014/IJRTET/10/2/4.pdf)**:**This wireless home area network does not require line of sight communication. The HAS-ZP can be implemented in existing home environments, without any changes in the infrastructure. |
| WI-FI Based Home Automation | |
| 18 | [**Home automation project using Wi-Fi**](http://waset.org/publications/5037/design-and-implementation-of-a-wifi-based-home-automation-system)**:**This paper explains prototype implementation of new home automation system using Wi-Fi technology. This System supports a wide range of home automation devices like power, management components and security components. |
| 19 | [**Android and Arduino Wi-Fi Control Home Devices with ESP8266**](https://www.openhomeautomation.net/monitor-your-home-remotely-using-the-arduino-wifi-shield/)**:**This project show you how to monitor some data in your home precisely using Arduino Wi-Fi shield. Arduino Uno board and the system will form an autonomous solution to monitor one or more sensors in your home. |
| 20 | [**RASPBERRY PI HOME AUTOMATION WITH WIRELESS SENSORS USING SMART PHONE**](http://www.ijcsmc.com/docs/papers/May2015/V4I5201599a70.pdf)**:**This project presents a low cost home control and monitoring system. An embedded microprocessor & microcontroller, with IP connectivity were used for accessing and controlling appliances using Smart phone app. This system doesnt require a server. |
| 21 | [**Wi-Fi based wireless advanced home automation system**](http://www.academia.edu/11182817/WI-FI_BASED_WIRELESS_ADVANCED_HOME_AUTOMATION_SYSTEM)**:**This paper proposes an advanced home automation system using WI-FI and PIC microcontroller. Appliances can be switched on /off using PC through Wi-Fi. |
| 22 | [**Remote Controlled Home Automation Using Android Application via Wi-Fi Connectivity**](http://www.ijritcc.org/download/1428302226.pdf)**:**In this paper, we propose prototype implementation of home automation system that uses Wi-Fi technology and Android OS. Users can control electrical appliances in home or office via smart phone. Application will also provide secure notifications and alarm for, LPG leakage, fire hazards and Burglary. |
| RF Based Home Automation | |
| 23 | [**RF Remote Control Circuit for Home Appliances**](https://www.electronicshub.org/rf-remote-control-circuit-for-home-appliances/)**:**The proposed system controls the appliances using RF technology without using any microcontroller. RF434 MHz modules are used in this project to make wireless remote. Using this remote, we can control the appliances within the range of 100 meters. |
| 24 | [**Design Exploration of a Microcontroller Based RF Remote Control 13amps Wall Socket**](http://www.iosrjournals.org/iosr-jce/papers/Vol11-issue1/I01115660.pdf?id=120)**:**This project is designed to control the devices using the RF remote. This remote makes wall socket ON/OFF using the RF remote control , whose operation is independent of the direction, unlike the IR remote control which uses line of sight . |
| 25 | [**RF MODULE BASED WIRELESS SECURED HOME AUTOMATION SYSTEM USING FPGA**](http://www.jatit.org/volumes/Vol77No2/14Vol77No2.pdf)**:**It uses RF and FPGA for automation. Due to their configurability, programmability and security, FPGA modules are highly compatible and suitable for the evolving technology of software defined radios (SDR). |
| Miscellaneous | |
| 26 | [**Home automation project using Lab view**](http://www.ijareeie.com/upload/april/7_Real%20Time.pdf)**:**This system discusses the approach of real-time home automation system development using the data acquisition tool of Lab VIEW. This approach is a combination of software and hardware technologies. |
| 27 | [**Internet of Things Based Architecture of Web and Smart Home Interface Using GSM**](http://www.rroij.com/open-access/internet-of-things-based-architecture-of-weband-smart-home-interface-using-gsm.pdf)**:**This paper proposes architecture to enable the users to control and monitor smart devices through internet. It creates an interface between users and smart home by using GSM and internet technologies, or it simply creates GSM based wireless communication from the web server into the smart home. |
| 28 | [**Renewable Energy Based Home Automation System**](http://www.ijctee.org/files/VOLUME5ISSUE3/IJCTEE_0615_02.pdf)**:**This paper describes the methodology of renewable energy based home automation in which two things are considered. one is energy consumption and another is energy generation. In this, ZigBee is used for monitoring energy consumption of home equipments and power line communication (PLC) is used to monitoring energy generation. |
| 29 | [**Cloud based low-cost Home Monitoring and Automation System**](http://people.cst.cmich.edu/yelam1k/asee/proceedings/2015/Paper%20files/Student_Papers/2015_ASEE_NCS_Conference_submission_90.pdf)**:**A cloud based low cost home automation system is proposed. This is implemented using the Digilent chip KIT Uno32 and Arduino Uno. |
| 30 | [**Energy Efficient Smart Home Automation System**](http://www.ijser.in/archives/v3i1/SjIwMTM0MzU=.pdf)**:**This system aims at designing energy efficient system. It uses network of wireless sensing element. |
| 31 | [**Implementation of Home Automation Safety Control Using Programmable Logic Controller**](http://idosi.org/mejsr/mejsr20(4)14/17.pdf)**:**The accurate and reliable operation of relay based industrial automation is not possible practically in this modern world. Hence switching to PLC based automation is one of the better choices . |
| 32 | [**WEB BASED REAL-TIME HOME AUTOMATION AND SECURITY SYSTEM**](http://www.ijeetc.com/ijeetcadmin/upload/IJEETC_559aa65c49242.pdf)**:**In this project , home appliances are controlled through human interaction as well as through self-control of the system. In manual mode user can control home appliances automatically using PC or any Wi-Fi enabled mobile. In automated mode, the system automatically control the appliances. |
| 33 | [**E-MAIL INTERACTIVE HOME AUTOMATION SYSTEM**](http://ijcsmc.com/docs/papers/July2015/V4I7201517.pdf)**:**This paper aims at designing a basic home automation application on internet through reading the subject of E-mail. |
| 34 | [**HAND GESTURE BASED HOME AUTOMATION FOR VISUALLY CHALLENGED**](http://www.ijiert.org/admin/papers/1429465938_Volume%202%20Issue4.pdf)**:**This paper aims at developing home automation system for visually challenged. It uses hand gestures of the user to control the appliances. |
| 35 | [**Home Automation using Cloud Network and Mobile Devices**](http://www.ijitech.org/uploads/451362IJIT4656-12.pdf)**:**Home Automation system in this paper describes the integration of cloud networking, multitouch mobile devices,wireless communication, and power-line communication to provide the user with remote control of various lights and appliances within their home. |
| 36 | [**GSM BASED HOME AUTOMATION SYSTEM USING APP-INVENTOR FOR ANDROID MOBILE PHONE**](http://www.ijcsmc.com/docs/papers/April2015/V4I4201534.pdf)**:**This paper explains secured GSM based device control system .This system uses App Inventor for Android mobiles. App Inventor is a visual programming platform for developing mobile applications for Android-based smart phones. |
| 37 | [**Energy Switch: a Home-Automation System for Renewable Energy Self-Consumption Optimization**](http://www.dis.uniroma1.it/~bibdis/RePEc/aeg/report/2015-13.pdf)**:**The proposed system is based on a switch which changes the electrical energy source between photovoltaic and classical energy grid. |
| 38 | [**PIR Based Security Home Automation System with Exclusive Video Transmission**](http://ijsetr.com/uploads/562413IJSETR5180-624.pdf)**:**This project describes an automated security system. This simply monitors the home. If any one enters home it takes the images through a camera and sends an email. This also rings the buzzer in order to alert others. |
| 39 | [**Embedded Web Server for Home Appliances**](http://www.ijera.com/special_issue/VNCET_Mar_2012/35.pdf)**:**This is a new approach of controlling appliances from a remote terminal, using a local server, the Internet. This system consists of Pcs, interface cards, microcontroller, along with window-type s/w and microcontroller control s/w. |
| 40 | [**An Integrated and Low Cost Home Automation System with Flexible Task Scheduling**](https://www.researchgate.net/publication/263196998_An_Integrated_and_Low_Cost_Home_Automation_System_with_Flexible_Task_Scheduling)**:**This paper describes a low cost and ?exible home automation system that can be programmed and controlled remotely. |
| 41 | [**RTOS based Home Automation System using Android**](http://www.warse.org/pdfs/2013/icacsesp87.pdf)**:**This paper presents low cost but compact and secure home automation system that uses android smart phone. An arduino board is used for controlling the appliances. |
| 42 | [**Web-based Smart Home Automation: PLC controlled Implementation**](http://uni-obuda.hu/journal/Bingol_Tasdelen_Keskin_Kocaturk_49.pdf)**:**This paper shows a smart home automation system by using Delta DVP28SV model PLC .It can be controlled in two different ways either by any internet-connected device or an operator panel assembled on PLC. |
| 43 | [**BUILDING AUTOMATION SYSTEM USING SOLAR POWER: AN OVERVIEW**](http://iraj.in/up_proc/pdf/100-14097399886-8.pdf)**:**This paper explains about home automation using Solar panel. The solar panel status and other parameters were considered ,accordingly automation system is operated. |
| 44 | [**ARM based Smart Home Automation**](http://www.ijse.org/admin/post_image/1409338247_ARM_based_Smart_Home_Automation.pdf)**:**This system uses Arm controller and mobile phone for automation. There are two systems which recognize the abnormal conditions of the sensors and acts accordingly. The other system which informs the abnormal conditions of the sensors . |
| 45 | [**Embedded Web Server for Home Appliances**](http://www.ijera.com/special_issue/VNCET_Mar_2012/35.pdf)**:**This paper offers a new approach to control home appliances from a remote terminal, with an option from a local server, using the Internet |
| 46 | [**Touch screen Based Home Automation System**](http://ijaret.com/wp-content/themes/felicity/issues/vol2issue3/ver2/preeti.pdf)**:**Here a touch screen based home automation system has been implemented. It uses a resistive touch panel to switch on/off appliances. |
| 47 | [**SOA-Based Framework for Home and Building Automation Systems**](http://www.sersc.org/journals/IJSH/vol8_no5_2014/18.pdf)**:**This paper proposes a SOA based framework which, manages the automation system .The framework consists of several layers for managing heterogeneous embedded devices. |
| 48 | [**Home Automation using PLC and SCADA**](http://www.mjret.in/V1I1/M20-1-1-4-2014.pdf)**:**This paper automizes home appliances. The appliances are controlled automatically by the programmable Logic Controller( DELTA Electronics DVP SX10) |
| 49 | [**GUI-MATLAB Based Home/Industrial Automation Using MCU89S52**](http://www.ijsr.net/archive/v3i9/U0VQMTQ3MzAx.pdf)**:**This system uses AT89c51 microcontroller and GSM technology as a medium for communication.Appliances are controlled using PC.MATLAB is used for controlling through PC. |
| 50 | [**Home Automation Using Internet of Things**](https://www.irjet.net/archives/V2/i3/Irjet-v2i3317.pdf)**:**This system uses computers or mobile phones to control the appliances through internet anywhere in the world. Home Automation system (HAS) uses Intel Galileo that employs the integration of cloud networking, wireless communication, to provide the user with remote control. |
| 51 | [**Mobile Controlled Home Appliances without Microcontroller**](https://www.electronicshub.org/mobile-controlled-home-appliances-without-microcontroller/)**:**The proposed system controls the home appliances using a mobile.This project does not require any microcontroller. |

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