

Examination hall centralized mobile detection using arduino duemilanove

Kiran Kumar Humse*, Chethan K Mahadevaswamy and Sudheesh.K. V

Assistant Professor, Department of Electronics and Communication Engineering, Vidyavardhaka College of Engineering, Mysuru, Karnataka, India

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Abstract

This paper proposes a technology to detect a cellphone that is being used by a restricted user in a restricted area, and also show the location of the user, to prevent the user from continuous use of the cellphone. the right number is checked. However, it is often busy and take time for an outsized number of scholars. Therefore, to avoid this problem, automated detection and identification of phones has been integrated. Currently there are mobile jammer to jam the whole network, but only to seek out cell phones of scholars who have been present within the exam hall there. It automatically detects the activity telephone within the e-hall and displays this information with the mobile detector on the remote computer (administrator) within the GUI until it detects the message, room number, location, etc. That is, it determines the precise place. Calculates the space between position (detected) and detector, identify increasing boundaries, and add new dimensions to rooms like remote computers, switch from one room to a different.

Keywords

Cell phone, Arduino duemilanove, IoT.

1.Introduction

The use of mobile phones is prohibited on college campuses and within the examination hall. Sometimes it's impossible to locate mobile phones with students. Detecting a mobile from this project will fix that problem automatically and therefore the alarm will ring automatically. The buzzer sound was detected within the project employing a graphical LCD to detect centralized mobile identification and therefore the use of mobile phones within the examination hall and this information is shown on LCD.

When we press the decision button on our mobile, the buzzer rings when the LCD is lit and therefore the call continues until both calls are connected and the signal transmission stops. RF detector that uses a tuned LC circuit to detect signals within the GHz waveband used on mobile phones isn't appropriate.

Calculate the space between the detector and therefore the exact location within the exam hall, excluding faculty member's cell phones. Arduino may be a sort of microcontroller board that is used to design various electronic projects.

It comes with 14 pins, which may be utilized in two ways: input or output. On board are Atmel microcontrollers, power supply and 6 analog pins. USB ports for connecting to a private computer, integrated development environment, or pre-programmed microcontroller, are want to write programs and upload them to the Arduino board. It is often used for several security applications that need authentication to access related systems. We don't currently have the technology to spot a limited area as a mobile test hall. Monitoring students' mobile phones in examination halls and minimizing the human effort of automated mobile entry. The unauthorized use of mobile phones within the examination hall is the biggest problem within the world. This work focuses on creating a system that monitors the existence of GSM signals from unsanctioned users in constrained areas, which activates another device to limit the user from service. Problems are revealed that injustice has been done to the manufacture of mobile phones, which, although an honest communication tool, should be centralized during testing. To make sure 100% that no student can cheat with their mobile. Smart Phones capabilities such as HD Cameras and PDF readers with networking capabilities make them easy accessible during the exam. Due to this universities face a lot of problem.

*Author for correspondence

2.Literature review

Students are bothered about their attendance status. Some teachers have banned students from using cell phones during classes, but teachers cannot disclose the illegal use of mobile phones during lectures. It's currently an honest tool to detect unauthorized use of mobile phones. The essence of your time. Supported this review, it's proposed to introduce a replacement method of College Attendance Management System with Mobile Detector" in various colleges or educational institutions.

The paper [1] emphasize that if the scholar uses a mobile, the RF detector senses the presence of mobile and notifies the centralised surveillance department. The mobile uses RF having wavelength of 30 cm ranging from 872 to 2170 MHz, which may be a high-power high frequency signal. When the mobile is activated, it sends a sign through space.

The paper [2] explains about mobile which sends small base signals to the closest base station to record its availability. The mobile always tries to form a reference to the available base station. The phone features a high frequency RF wave electromagnetic force within the microwave field. Strong radiation from a 2-watt mobile that connects to a base station 2 to three km away.

The Paper [3] explains about the first detection technology which difficult to implement an existing design using discrete components. They're very inexpensive to manufacture, but require precise tuning. This design was analysed and located to be incorrect. The new system may be a practical solution to accurately and securely locate cellular phones. The instant the bug detects RF signals from the telephone, it triggers a beep alarm and therefore the message will be popped up on the LCD display. A typical RF detector that uses a tuned LC circuit isn't suitable for detecting signals within the telephone waveband.

A robot is often defined as an electrical system. The road follower robot is one among the self-operating mobile machines that leaves a scratch on the bottom. Generally, the trail is already pre-determined and appears sort of a blank line with a high contrast colour on a white surface. Light based sensors were installed under the robot. The road sensing process requires high resolution and high visibility. Such robots are often used for military purpose. Line follower robots work with cell-phone utility detectors, with a black line appearing on the white surface (reverse) of the

trail. It captures the road position with the LDR at the front of the robot.

The paper [4] explains about the comparator that compares the analog signal received from the LM324 sensor then transmits the microcontroller in '0' or '1 digit'. A number of those processors send analog signals for error. Convert analog to digital form. The proximity sensor detects a long way in order that an obstacle is made and therefore the microcontroller receives the signal. Microcontrollers and other devices are powered by AC to AC adapters via a 5V regulator. Adapter output voltage is 12v DC, which nobody controls. The bug detects the RF transmission signal by activating the beep alarm and LED blinks from the active beep alarm.

Mobile phone jammer may be a device employed by cellular phones to jam signals from base stations. The jammer is effectively disabled when employing a telephone. These devices are often used practically anywhere, but mainly interrupt phone calls. It senses the signal within the GHz waveband employed in mobile phones because the frequencies of mobile phones ranges from 0.9 to 3 GHz. The circuit uses a 0.1microFarad disk capacitor to capture RF signals from mobile phones.

The Paper [5] focusses on the circuit which is made using PCB123 software then printed on special paper. Software is additionally utilized in the development of 3D design circuits. The mobile uses RF having wavelength of 30 cm ranging from 872 to 2170 MHz with high power and high frequency. When the mobile is activated, it sends a sign through space. After the RF antenna receives the wireless signal, the circuit operates on a 9-volt DC battery, while the functional amplifier receives the LM358AN amplifier signal.

The Paper [6] explains about the Mobile signal jammer for GSM, we will disable all mobile signals anywhere within the system using the mobile jammer ARM7 for a period of your time pre-determined by CDMA. A tool designed to prevent the phone ringing at a selected time. Since this ringing can cause disturbances in such places, the device is often utilized in places where ringing isn't desired at certain times. The jamming device reduces the RF signal reserved for a good range of telephones that interfere with the cell phone signal, leading to a "Network Not Available" display on the telephone screen. All phones are silent with jammer effect. Activation and deactivation times are often programmed with a microcontroller.

3.Methods

Arduino microcontroller

Arduino is an open source electronics prototype platform with hardware and software. It is a very popular board because it is inexpensive, easy to use and does not require intensive technical skills to develop any project. Arduino offers many examples, libraries and tutorials, as well as its Arduino software ideology and many tips available on the Arduino website (Figure 1-Figure 7).



Figure 1 Arduino micro-controller

Buzzer

A signalling device commonly used to produce a buzzer or beeper sound.



Figure 2 Buzzer

Cell Phone

A cell phone (also called a cell phone, cell phone or cellular telephone) is a small portable radio telephone.



Figure 3 Cell phone

Light emitting diode (LED)

In electronics, Figure 4 shows that a semiconductor device that emits infrared or visible light when charged with an electric current is a light-emitting diode. Many electronics devices use indicator lights, LEDs that appear on the rear windows and brake lights of automobiles, and signs are full-color posters in the form of billboards and alphanumeric displays.



Figure 4 Light emitting diode

With technological advances in semiconductor materials, LED lamps produce light in the visible spectrum, so it has the highest efficiency compared to incandescent, sodium vapor and other lamps. Therefore, LED lighting is widely accepted in the world for many lighting applications targeting street lights. LED lamps with a capacity of 50000 hours to more than 100000 hours and a capacity of 100 to 120 lumens / w.

LCD Display

A liquid display (usually abbreviated LCD) may be a thin, flat display device which will be placed ahead of a light-weight source or a reflector of any color or monochrome pixels. it's often utilized in battery-powered electronic devices because it consumes little or no power.



Figure 5 Liquid crystal display

Battery

A battery is a device that contains more than one electrochemical cell that provides an external electrical connection, such as a flashlight, smartphone, or electric car.



Figure 6 Battery

Arduino IDE (Integrated Development Environment)

Arduino IDE may be a cross-platform application written for C, C++ and Java programming languages (for Windows, MacOS, Linux). Writing and uploading programs to the Arduino board is straightforward. The ASCII text file of the IDE is issued under the GNU (General Public License). It's very simple and straightforward to use. No in-depth knowledge is required to know IDE. Figure 8 Shows the Arduino IDE 1.8.8 window.



Figure 7 Arduino symbol



Figure 8 Arduino IDE window

Block Diagram

Centralized mobile identification during a project to detect the utilization of mobile phones using buzzer sound detection alongside LCD within the examination hall. A telephone detector can detect the presence of a lively mobile telephone. The Arduino board doesn't get to send a special programmer to the program and additionally we will also use a USB cable. Finally, these boards provide a selected factor that disrupts the performance of microcontrollers within the packages available. This board is beneficial where memory space is required at low speeds. Arduino proves to be a perfect choice for top speed applications (Figure 9 and Figure 10).

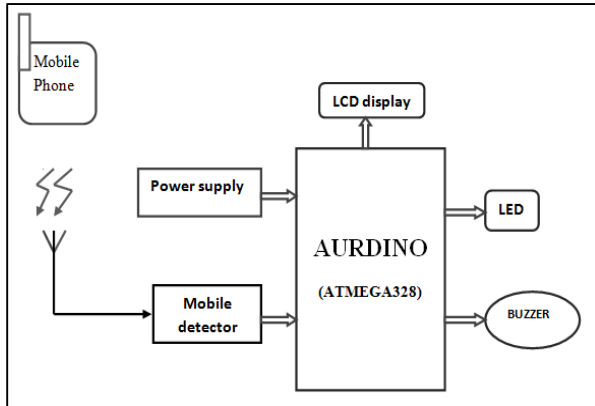


Figure 9 Block diagram of centralized mobile detection in examination hall

Flow Chart

Start the method and check the circuit and components correctly at the start the detector rotates 360 clockwise and counter-clockwise. The detector receives an RF signal when the telephone is activated. Once the signal is detected it stops their rotation and sends the signal to the operator (GUI). Graphical interface may be a sort of interface that permits the user to speak with an electronics device via graphical icons and visual indicators. When the administrator receipt receives the buzzer stars and therefore the message is displayed on the liquid Display (LCD).

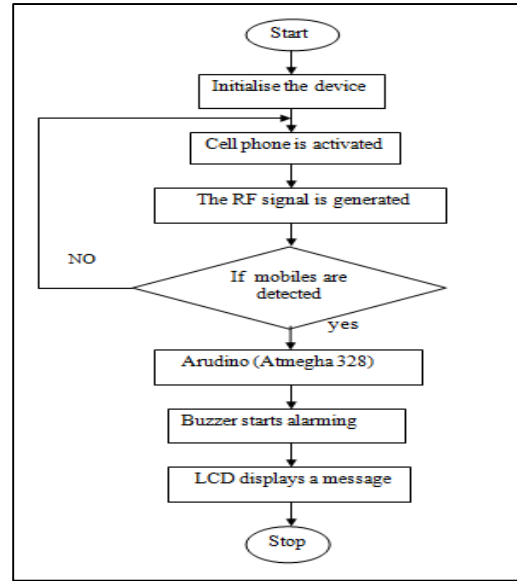


Figure 10 Flow chart for mobile detector

Figure 11 shows a circuit diagram of a mobile detector using the LM358. The circuit is made around LM358 (IC1) and NPN transistor BC548 (T1). When the mobile is activated, it emits RF signals passing through a close-by location.

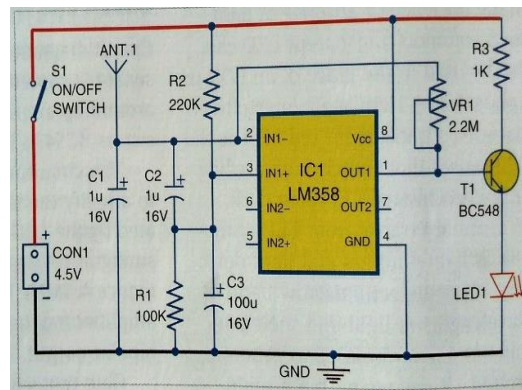


Figure 11 Circuit diagram of mobile detector

The signal contains the electromagnetic frequency from the phone. Capacitor C1 is employed within the circuit to detect RF signals from mobile phones. When a mobile transmits energy within the sort of an RF signal, C1 absorbs it and goes to the input of IC1; this is often indicated by the flashing of the LED1. Circuit VR1 (2.2M) is employed to isolate the range of the circuit.

Transistor T1 is employed to amplify the signal received at pin 1 of IC1. The circuit applies to 2G / 3G / 4G networks, GPRS and network search.

4.Results and discussion

The above Figure 12 shows the output of mobile detector. When the cell phone is activated the detector sense the presence of Radio Frequency signal then the LED will glow and buzzer will start alarm.

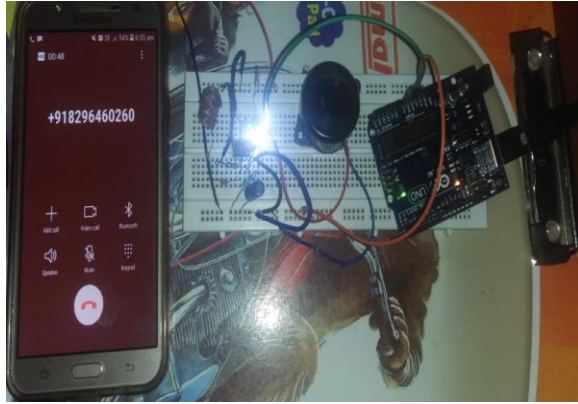


Figure 12 Output of mobile detector

5. Conclusion and future work

This paper proposes a technology to detect a cellphone by the implementation of LCD display and interface with the Arduino Uno board. Detecting the presence of cellphones in classrooms barring faculty members cellphones to be future work.

Acknowledgment

None.

Conflicts of interest

The authors have no conflicts of interest to declare.

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Kiran Kumar Humse is a M.Tech in Communication Systems from RVCE, Bengaluru, Karnataka, B.E in Electronics & Communication from NIE, Mysuru, Karnataka. His Areas of Interest are Communication System Engineering and Technology.

Email: kirankumarhumse@vvce.ac.in



Chethan K Pursuing is a Ph. D in Electrical and Electronics Engineering Sciences from Visvesvaraya Technological University, Belagavi, M.Tech in Signal Processing from Reva Institute of Technology and Management, Bengaluru and B.E in Electronics and Communication

Engineering from Vidyavardhaka College of Engineering, Mysuru Karnataka

Email: chethank@vvce.ac.in



Sudheesh. K. V is a Ph. D in Electrical and Electronics Engineering Sciences from Visvesvaraya Technological University, Belagavi, M.Tech in Industrial Electronics from Sri Jayachamarajendra College of Engineering, Mysuru, Karnataka and B.E in Electronics and Communication

Engineering from Vidyavardhaka College of Engineering, Mysuru Karnataka

Email: sudheesh.kv@vvce.ac.in