

BORE WELL SAFETY ALARM SYSTEM USING ARDUINO

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ABSTRACT:-In present scenario there have been several incidents record on abandoned bore wells which are turning in to death wells. Many guiltless children are being trapped into these bore wells and drop their lives. The actual purpose of bore wells is to save lives, but these bore wells in turn have started taking many innocent lives. In several cases the rescue operations are done by big machines and lot of man power involvement. Usually these release operation are very lengthy, complicated and very time taking processes. The paper presents a simple and effective method to rescue the child from the bore well. The traditional way to rescue the child is to dig a corresponding pit t adjacent to the bore well. This technique is difficult, lengthy and also risky to rescue the intent child. This paper implies a new design which has a sensor kept at top of bore-well hole which helps to sense the child if fell inside. If the closes and prevents the children from falling. Since children who are the future of India should be saved from these dangers.

KEYWORDS:- Bore-well, closes , children , falling hole, inside, sensor

1. INTRODUCTION

Almost all Many innocent children are being attentive into these bore wells and losing their lives. This enlargement is supported by the advance of electronics and in sequence technology. The job can be performed on schedule precisely and efficiently by adopting this advance technology. An achievement in computer technology is used not only in business and industry but has so covers almost all fields, including control system where a computer system can be used to control the hardware in a flexible way. Therefore, computer based control system becomes more common in recent development of control system. At first We have to arrange LCD display , Buzzer and switch side outside of the borewell. IR sensor and servo motor will be arranged at the inside of the bore-well at 8 feet distance from the top. A plate should be fixed on it in order to save if a person falls into the bore-well and the plate must be rotate 90. It can bear 15 to 20 Kgs. When a person falls into the bore-well IR sensor sense the motion of the person because it analogue to human visionary sense. Then IR sensor transmits this information sends to arduino. Arduino receives the information and sends to that information to servo glide, Buzzer & LCD display . After receiving the information servo motor will be rotate up to 90°. So that if anything or a person falls into the bore-well not deep, that person will be safe on the plate . LCD displays that "Object found Gate closed" then the buzzer rings and switch will be off condition. This whole process happens in fraction of seconds. When the buzzer rings anybody in that nearby will come and inform to rescue team. And when someone comes to rescue any food items are etc something else to in that bore-well IR sensor sense but not

motor again rotate because until we reset the switch. We can simply save the children life with this project .we can save many lives with this project, the number of deaths will decrease.

1.1 Principle

There are some objectives need to be achieved in order to complete the work. These objectives will act as a guide and will limit the system to be implemented for certain situations. To develop a model of BORE WELL SAFETY ALARM USING ARDUINO by using the IR sensor detect person and plate can be closed. To use (IDE) software to generate a computer program for the arduino in order to get signal for the real time. To on the buzzer person detected.

1.2 Bore Well Safety

The main intend of this paper is implies a new design which has a sensor kept at top of bore-well hole which helps to sense the child if fell inside. If the closes and prevents the children from falling. Since children who are the future of India should be saved from these dangers. The calculation is performed by high level language program that reside in an arduino.

2. IR SENSOR

Infrared is a energy radiation with a frequency below our eyes reactivity, so we cannot see it Even that we cannot "see" sound frequencies, we know that it exist, we can snoop them. Even that we cannot see or hear infrared, we can feel it at our skin warmth sensors. When you approach your hand to fire or warm element, you will "feel" the heat, but you can't see it. You can see the fire because it emits further types of diffusion, visible to your eyes, but it also emits lots of infrared that you can only sense in your scrape.

3. ARDUINO

Arduino is a software company, scheme, and user community that designs and fabricate computer open -source hardware, open source, and microcontroller-based kits for build digital strategy and interactive substance that can sense and control physical devices. The plan is based on microcontroller board designs, produced by several vendors, using various microcontrollers. These systems provide sets of digital and analog I/ O pins that can interface to various expansion boards (termed shield) and other bounds . The boards element serial communication interface, including universal serialbus (USB)on some models, for loading programming from personal computers. Arduino are used in repeatedly controlled devices such as control systems, office machines, automobile engines, power tools and so on. By dipping the size, cost and power consumption, arduino makes it reasonable to electronically control more and more operation.

4. BORE-WELL SAFETY ALARM SYSTEM USING ARDUINO

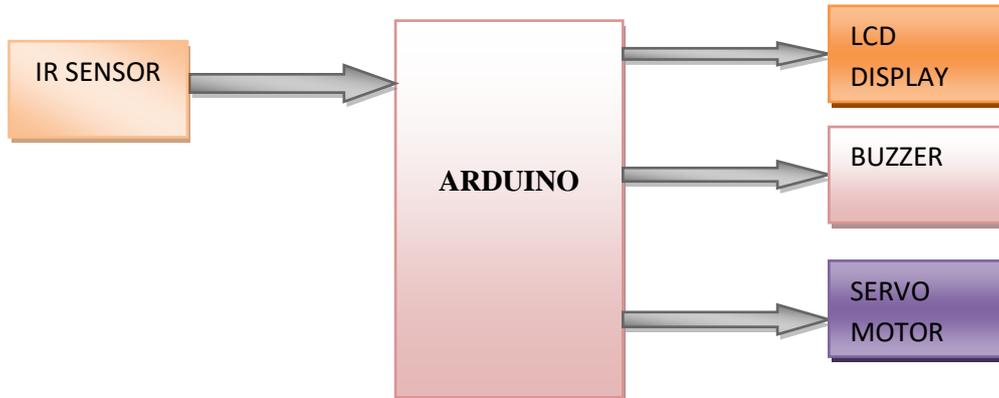


Fig:1 Bore well safety alarm system using arduino

4.1 Sensor Used

To allow a superior communication using infra-red, and avoid those "fake" signals, it is necessary to use a "key" that can tell the receiver what is the real data carry and what is fake. As an analogy, glance eye naked to the night atmosphere you can see hundreds of stars, but you can spot easily a distant away airplane just by its flashing strobe light. That blinking light is the "key", the "coding" component that alerts us. From currently on you must think as infrared as just a "red" light. This light can mean something to the beneficiary, the "on or off" emission can broadcast different meanings. Lots of things can breed infrared, anything that radiate warmth do it, as well as our body, lamps, stove, oven, roughness your hands together, even the warm water at the spigot.

4.2 IR Sensor working

IR sensor vary module IR sensor provide 2cm - 30cm non-contact extent function, the range correctness can achieve to 3mm. The modules embrace infrared transmitters, receiver and control circuit. The basic philosophies of work are:

- IR source (transmitter) is used to emit radiation of requisite wavelength.
- This radiation reaches the object and is reflected back.
- The reflected radiation is detected by the IR receiver.
- The IR Receiver detected radiation is then additionally processed based on its intensity. Commonly, IR Receiver output is tiny and amplifiers are used to amplify the detected signal.

Wire connecting direct as following: 5V power supply, Output, 0V Ground



Fig 2: IR sensor

4.3 ARDUINO UNO

The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB relevance, a power jack, an ICSP header, and a reorganize button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. The Uno differs from all foregoing boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it features the Atmega8U2 programmed as a USB-to-serial converter. "Uno" means one in Italian and is named to mark the future release of Arduino 1.0. The Uno and version 1.0 will be the reference editions of Arduino, moving forward. The Arduino Uno can be programmed with the Arduino software. The ATmega328 on the Arduino Uno appear pre burned with a bootloader that allows you to transfer new code to it devoid of the use of an outside hardware programmer. It communicates using the innovative STK500 protocol.

5. ABOUT PROJECT

The IR sensor block diagram shown in Fig:1 was connected to detect objects and receive echo, the range is calculated through the time interval between elicited and received echo. Whenever the object is detected the servo motor stops its revolving and the buzzer gets started and thing detected this on LCD display. Whenever switch is turned off state is object detected .set is used to turn on state.

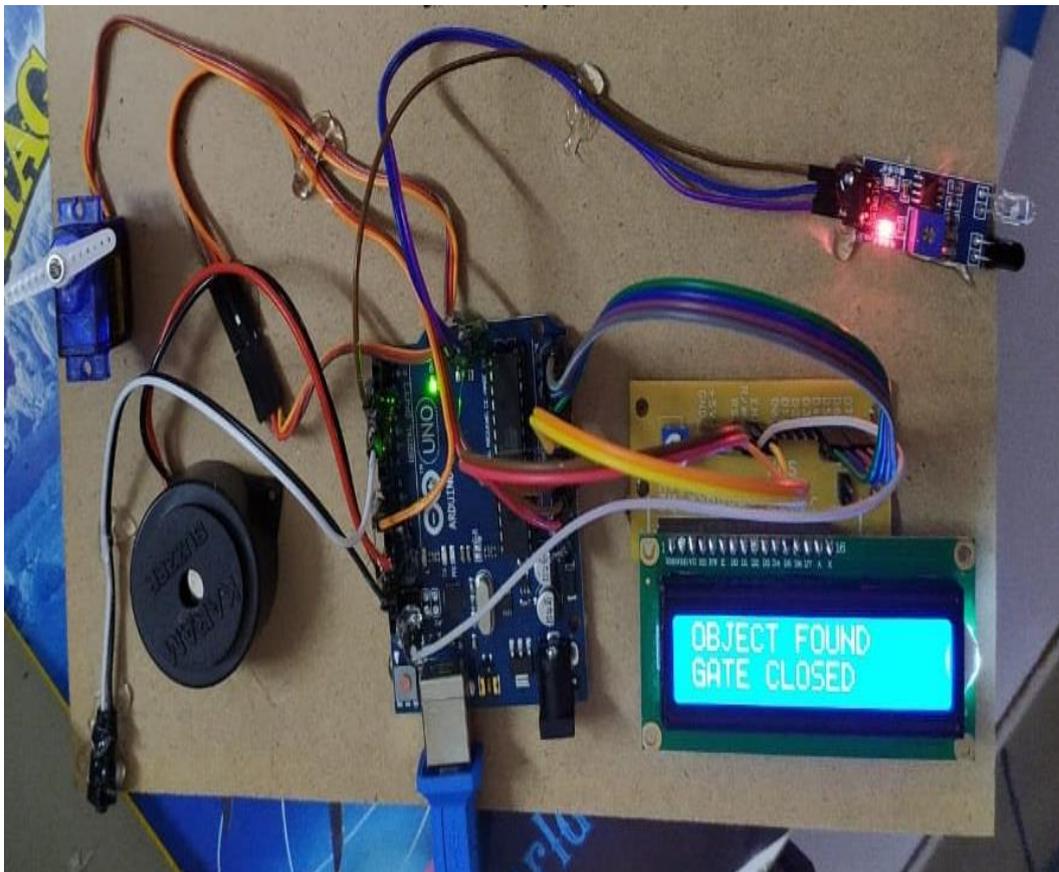


Fig.3:Result analysis

6. SYSTEM INTEFRATION

After structure each component and element on prototype board, it is essential to test the circuit as well as the performance of overall system. The whole Integrated System has locate to a functionality test to confirm that all the hardware and software coding and interfacing are work well.

7. CONCLUSION

This function would definitely lend a serving hand to the society by reduction the death excise rate. The embedded C technology is definitely making atmosphere manage in a smart way. In present circumstances of managing both work and life one will always opt for leading a smart life with smart devices which are making the surrounding smarter. The design near in the paper which was drafted needs to be implemented which would be the future scope of this paper.

In future we can use this scheme in several applications by adding further components to this project. The arrangement is made brawny enough to sustain all probable loads, though it can be stretchy at the same time to adjust wider range of bore diameter and any change in the diameter of bore. we can hurl these robots to perilous zones by connecting smolder sensor to the robot we can get the information related concentration of smoke or gases in respective fields and feeler will detect the poisonous gas and it gives information to the Microcontroller and microcontroller gives the information to the transceiver from that we can get the information on the PC side.

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