

BOREWELL CHILDFALL PREVENTION SYSTEM

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Abstract- Child fall accidents in bore wells have become a major concern in recent years. In order to prevent such accidents, a bore well child fall prevention system is proposed in this project. The system uses an Arduino microcontroller, GSM modem, 16x2 LCD display, and a water sensor to detect water inside the bore well. The system calculates the digging depth of the bore well and alerts the corporation office when water is not found beyond a certain depth. The alert includes the location of the bore well in Google Maps, allowing for quick inspection and action to prevent child fall accidents.

INTRODUCTION

Childfall accidents in borewells have been a recurring problem in India and other parts of the world. Borewells are often dug without proper safety measures and supervision, leading to accidents that can be fatal for children. The borewell childfall prevention system aims to prevent such accidents by alerting the corporation office when water is not found beyond a certain depth during borewell digging.

EXISTING SYSTEM

Currently, there are no specific systems or measures in place to prevent child fall accidents in bore wells. Most bore wells are dug without proper safety measures or supervision, leading to accidents that can be fatal for children. In the absence of any preventive measures, the bore well child fall prevention system proposed in this project can help prevent such accidents by alerting the corporation office when water is not found beyond a certain depth during bore well digging.

PROPOSED SYSTEM

The proposed system block diagram for the bore well child fall prevention system is a comprehensive solution designed to prevent child fall accidents in bore wells. The system comprises an Arduino microcontroller, 16x2 LCD display, start and stop switches, water sensor, bore digging motor, alarm, and GSM modem.

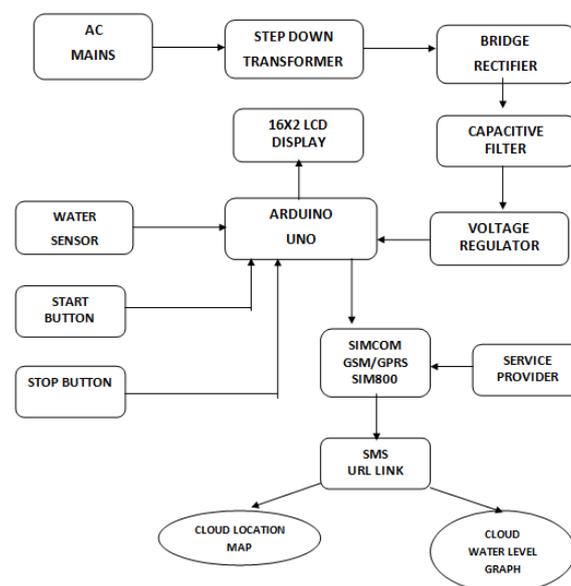


Figure 1: Block Diagram

The Arduino microcontroller is the brain of the system, responsible for processing data from various sensors, displaying information on the LCD display, and controlling the bore well digging motor. The 16x2 LCD display provides real-time updates on the water level and bore well digging depth, allowing the user to monitor the progress of the bore well digging process.

The start switch is used to initiate the bore well digging process, and the stop switch is used to stop the bore well digging motor. The depth of the bore well is calculated by measuring the time interval between the start and stop of the bore well digging motor. If water is not found beyond a certain depth, the system triggers the alarm and sends an SMS alert to the corporation office using the GSM modem.

The GSM modem allows for the system to send SMS alerts to the corporation office when water is not found beyond a certain depth during the bore well digging process. The SMS alert includes the location of the bore well in Google Maps, enabling quick inspection and action to prevent child fall accidents. The corporation person can inspect the dry bore well and ensure that the bore well is properly closed, preventing any potential child fall accidents.

The system also has an emergency stop button that can be pressed to immediately stop the bore well digging motor in case of an emergency. This feature adds an extra layer of safety to the system, ensuring that the bore well digging process can be stopped immediately if necessary.

thus, the proposed system block diagram for the bore well child fall prevention system is a comprehensive solution designed to prevent child fall accidents in bore wells. The system is easy to install and use and provides real-time updates on the bore well digging process. The use of the GSM modem allows for quick and efficient communication with the corporation office, enabling prompt action to prevent any potential child fall accidents. With the addition of an emergency stop button, the system provides an extra layer of safety, ensuring that the bore well digging process can be stopped immediately in case of an emergency. Overall, this system is a valuable addition to bore well digging processes, helping to prevent child fall accidents and promoting safety.

WORKING PRINCIPLE

The bore well child fall prevention system works by detecting water inside the bore well using a water sensor. The Arduino microcontroller is used to process the data from the water sensor and display the water level on the 16x2 LCD display. The system also calculates the digging depth of the bore well by using the start time and end time of the digging process.

If water is not found beyond a certain depth, the system sends an alert to the corporation office using the GSM modem. The alert includes the location of the bore well in Google Maps, allowing for quick inspection and action to prevent child fall accidents. The system also has an emergency stop button that can be pressed to immediately stop the digging process in case of an emergency.

SIMULATION RESULTS

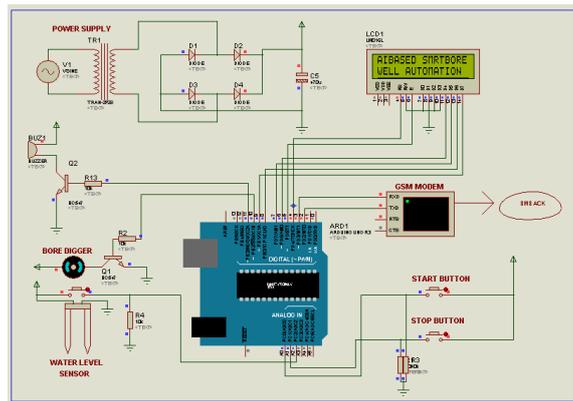


Figure 2: Simulation Result 1

The above figure represents the overall project simulation circuit in which the project title is getting displayed over 16X2 LCD Display.

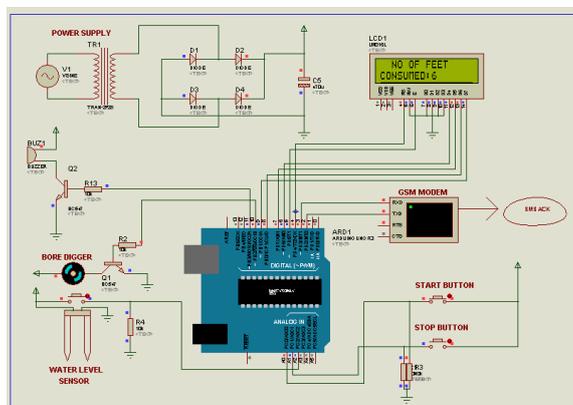


Figure 3: No of Feet Digged

The above figure represents the bore well digging motor running and the system is calculation the no of feet is being digged by the bore well digger motor in the 16x2 LCD Display.

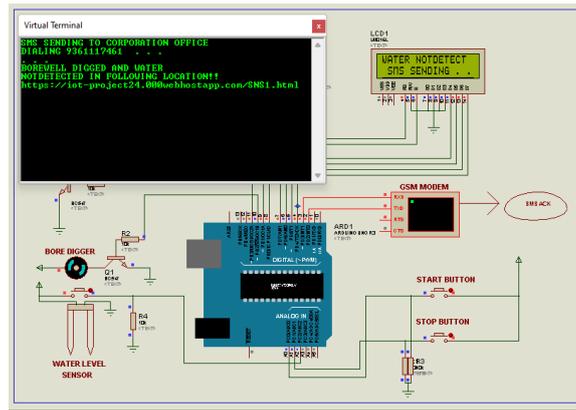


Figure 4: SMS Alert When Water Not Found

The above figure represents the sms sending to the corporation office when the bore well is digged and the water is not found in the bore well. The sms also contains the URL link with the google map pin pointing the location where the borewell is digged exactly.

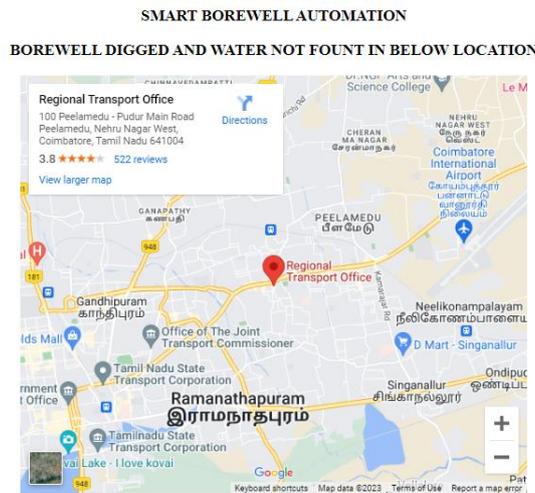


Figure 5: Google Map Location

The above figure represents the bore well digged area where the water is not found in the borewell to the corporation office through SMS link.

CONCLUSION

The proposed borewell childfall prevention system can play a crucial role in preventing childfall accidents in borewells. The system uses an Arduino microcontroller, GSM modem, 16x2 LCD display, and water sensor to detect water inside the borewell and calculate the digging depth. When water is not found beyond a certain depth, the system alerts the corporation office with the location of the borewell in Google Maps, allowing for quick inspection and action to prevent childfall accidents. The system can be easily installed and can help save lives by preventing childfall accidents in borewells.

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