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Flood Monitoring System With Sms Alert Using Node Mcu

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Abstract:
As we all know that Flood is one of the major well known Natural Disasters. When water level suddenly raises in dams a lot of Destruction happens at surrounding places. It causes a huge amount of loss to our environment and living beings as well. So in this case, it is very important to get emergency alerts of the water level situation in different conditions in the dam in order to save lives. If the water level exceeds the specified safety limit, immediate alert will be given to the people in the surroundings through SMS.

Introduction:

Flood becomes one of the major problems in most of the countries around the world. Although, we are able to forecast rainfall or to track storm path very precisely from the satellite images, the need to have real-time monitored data such as flow, precipitation level, or water level is essential in order to make a reasonable decision on the actions necessary to be performed to prevent flooding. Wireless monitoring systems are largely preferred to check various Industrial parameters from different locations [1]. In most of the industries, there is a need to monitor different information for actual creation and all this parameter can't be monitored physically. Mobile phones now often combine personal organization and entertainment content as well as serving as a phone. Many of the newer models are combining functionalities, such as including cameras in their capabilities. Wireless monitoring system is a basic in situations where accessibility to parameter to be monitored in not accessible or the situation [2] where monitoring is a risky one. Now a day's many industries are using wireless monitoring systems.

One other major problem that is faced during the flood situations is that the people have no idea where to shift, which road they should select to move to a new location.[3] During disasters like flood, citizens get no prior information .If there's a system that could predict floods, people would take necessary precautions. So we need a much quicker and advance system to let the people know before the destruction occurs.

This paper focuses on providing early warnings to areas likely to be ravaged by flood events using IOT. Which saves individuals plenty of time to prepare against predicted flood occurrence, saving them from the of flood disaster.

Fig.1.Proposed Block Diagram

2.Working :

The main objective of our project flood monitoring systems is to monitor the water level, temperature and the amount of water flow.

Firstly, Temperature and humidity sensor, water flow sensor and ultrasonic sensor are incorporated to the dam. The ultrasonic sensor monitors the water level. The temperature and humidity sensor monitors the weather temperature. The water flow sensor monitors the rate of flow of water.

Then, Blynk app free application is installed to the system for monitoring purpose. Later the user will Have to login to the application using their login credentials. Then the application will be synchronized to the sensors by the means of node-mcu.

The Nodemcu board is connected to the Blynk cloud via WIFI. The measured values by the sensors are shown in the app. A program is coded and connected to the node mcu. [4] If the water level exceeds the specified safety limit immediate alert will be given to the people in the surroundings through SMS

3. Mobile Application Results:

Fig.2.Blynk Application Results

Blynk app free application is installed to the system for monitoring purpose. This is the output obtained from Blynk app showing (i) temperature, (ii) water level (iii) rate of water flow

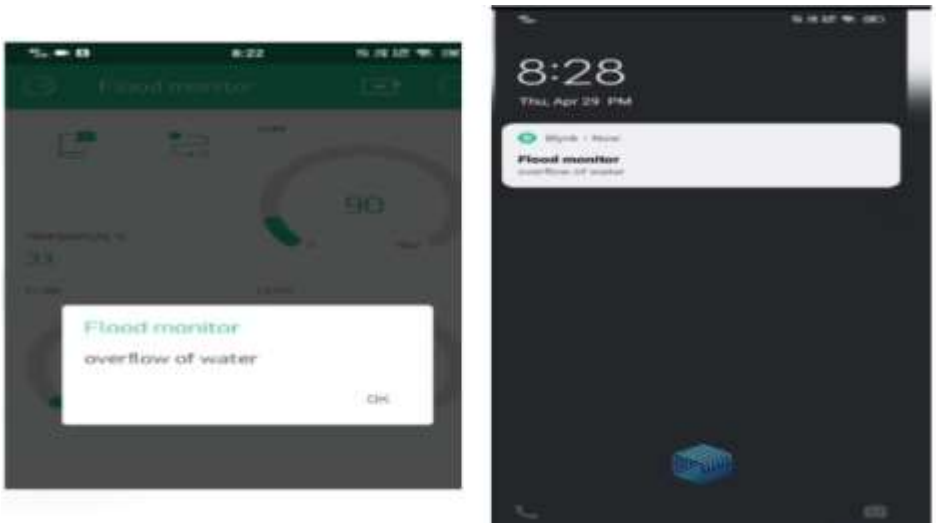

Fig.3. Notification message in bylnk Mobile Application

The above notification message indicates the water level exceeds the specified safety limit immediate alert will be given to the people in the surroundings through SMS.

4. Hardware implementation:

The hardware model is implemented for prototype of flood monitoring system .the results are obtained through mobile application and system output. The proto type model implemented is shown below,

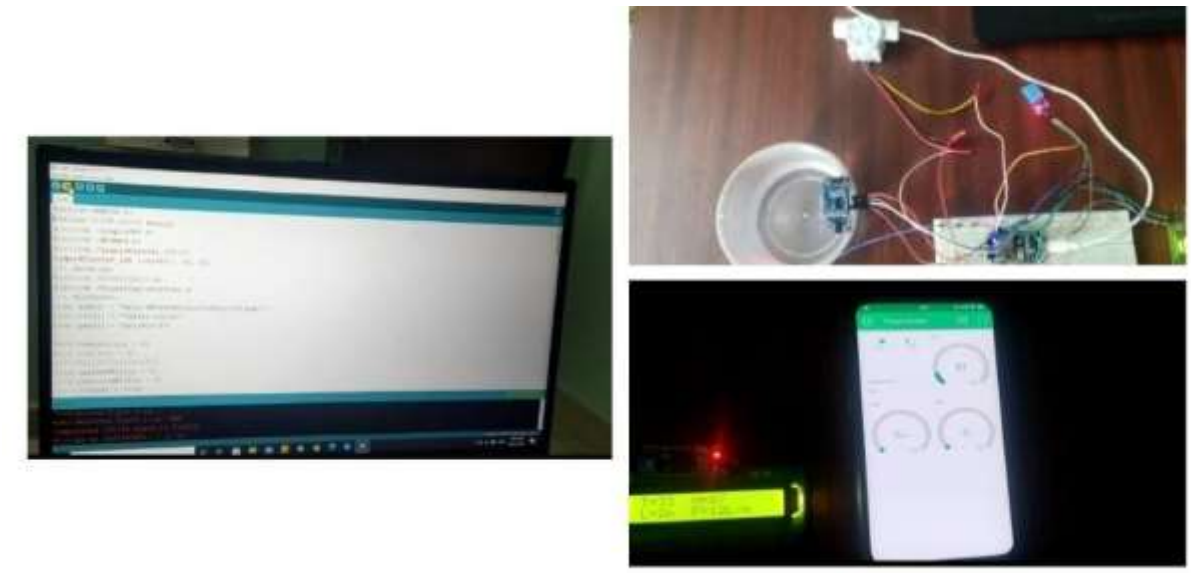

Fig .4.Hardware implementation

5. CONCLUSION:

The project contributes towards economy and the citizen's .It envisions a safe, prepared and less casualty community before, during and after disaster. The model also promotes the useof real time monitoring system and SMS notification system as an easy medium to pass information particularly in remote areas. Monitoring system is done automatically.

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