IoT Based Flood Alert and Avoidance System

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Abstract: *Floods are the most destructive and dangerous natural calamity in this world. On the event of flood, it can demolish the community and can affect many lives in different ways. It is very necessary to design a flood control device as a mechanism to reduce the flood. The application of this proposed structure is to remotely monitor and alert public user about the current flood conditions by continuously measuring the water level, rain fall reading and current temperature and humidity values. To accomplish this task various technologies are used such as messaging, live data feed via remote online platform named as Thing speak, video streaming & audio alerting etc. as we know messaging is most easy and convenient way to deliver messages using this advantage in appropriate possible way. This was fulfilled by using GSM Module making it more reliable & cost-effective system For alerting rural area user an audio buzzer was used. Using such technologies gave us efficient results for monitoring and alerting purposes making our aim satisfactory. As this proposed system mainly deals with safety of the society & its people so they can take necessary precautions before disaster occurs*

Keywords: Floods, GSM Module, buzzer, disaster

I. INTRODUCTION

The world's weather is changing rapidly due to effect from mankind activities such as pollutions, trees cutting, vehicle gas emission etc. Floods are the most usual damaging natural disaster that cause significant harm to life, property, and economy. Scientists estimate by 2030, if sea level rises by 4-Inches, it could potentially cause the severe flooding in many regions of the globe. This project implies a flood warning structure that can detect the water level and measure the speed of the increase in water level. To give the nearby peoples an earlier notification to evacuate before the water rises to the dangerously high level, the measured result is sent as an alert on a mobile through Short Message Service (SMS). This prototype is designed on a IOT platform, where data from the sensor is stored at the mini-processor and alert is generated & sent as SMS to a smartphone. This prototype system is implemented in an experimental setting in two different environments to test its effectiveness. And also, we can monitor the temperature and humidity for climate record. The System Works In 3 Steps:

• Monitoring water level in Dam/River.

• Monitoring of rain & climate changes for info purpose.

• Display the measured data If the level of water increases above defined value SMS .

II. MODULE IDENTIFICATION

This system consists of main unit known as esp32 which is also the brain of the system to which all the sensor and components are interfaced with it. Sensors used in this system are water level sensor, dht11 temp & humidity sensor and raindrop sensor.

As the system power ups sensor starts working in their appropriate manner. Water level Sensor starts measuring the water level with its pre-defined values of measurement, for ex. High Level (Danger), Medium Level and Low Level (Safe Level) this sensor continuously monitors the various levels & alerts the user using different platform like GSM messaging
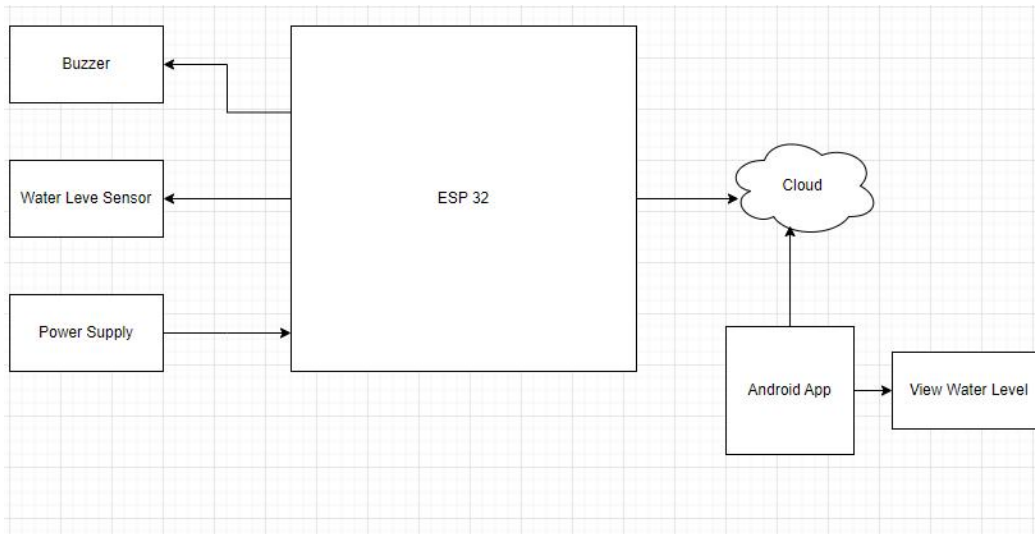
III. ARCHITECTURE DIAGRAM

Fig 1. Architecture Diagram

IV. LITERATURER SURVEY

A cost effective and sustainable relief material supply visibility system for devastated areas

designed a novel master-slave architecture-based system "Tensai Gothalo" to control the large-scale network fault to guaranty the robustness, network stability, ensure dis- aster readiness, and assist the network administrator in the decision-making process. A novel algorithm for fault restoration in the network, in conjugation with IoT, has also been proposed and validated in this experiment. Post disastrous situation is key for the relief of the living ones. But, food and other necessary consumable items become very difficult to be handed over topology the victims of the disaster

Developing an integration framework for crowdsourcing and Internet of Things with applications for disaster response

The main purpose of SCALE is to provide an alarm when it detects such prospective act of nature. This work proposes the Data in Motion Exchange (DIME) platform that is designed to allow heterogeneous integration of devices (and services) to publish/subscribe to any other data feed [1].

A semantic IoT early warning system for natural envi- ronment crisis management

Real-time stream processing may be helpful for providing network services to the disaster affected people. But, inefficiencies in spanning memory, scheduling algorithm, effective networking, and stream processing kernels cause high throughput in stream- processing. To solve this problem, "NEPTUNE" is proposed that reuses of objects that in turn performs memory swapping, page faults, and thrashing functionalities in a stabilized mode while throttling up the earlier stages in the processing pipeline

V. APPLICATION

The proposed Embedded device is for monitoring coordinates of the earth, and water levels in a particular region to make the environment intelligent or interactive with the objects through wireless communication.
It can be used where there are high chance of natural calamities

VI. ADVANTAGES

Because of the devastating effects that floods can have on people and their environments, flood monitoring systems have been developed to help prepare and warn people of emanating danger.
The systems can help prevent excessive damage and loss as a result of flooding and possibly save lives

VII. CONCLUSION

Those areas near the floods the proposed early flood detection plan is trying to help people who are not affected by the floods the system can give a shocking word to the people who will be affected by the floods. So the proposed system is helping people to save their lives. life because of the flood.

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