

A Study on IoT Based Real Time Flood Alert System for Dam

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Abstract: *In the last few years we have seen floods in different parts of the world almost every year. Technological advancement in recent years has made it easier to find a solution to these natural disasters. One such technology that brings us closer to the Internet is the "Internet of Things". This paper contains Real Time Flood Alert System for Dam using IoT technology. The sensors in this case are used to measure water, humidity, and temperature and to send real-time data to the cloud and users can access the data via the mobile app. This model is widely used to scare people before there is a flood and appropriate safety measures are taken.*

Keywords: NODEMCU, Ultrasonic Sensor, Buzzer, DHT11, etc.

I. INTRODUCTION

Floods are the foremost frequent style of disaster worldwide. It can strike anywhere and anytime. Although floods are often predicted, they often cause massive damage and destruction of property as most urban communities are located near water sources like coasts and rivers. Due to increased pollution and greenhouse gas emissions, natural disasters such as earthquakes, floods, tsunamis, etc. have increased significantly in many parts of the world. In some areas, such as USA, advanced technology has reduced casualties. But in countries that are technologically and economically backward, countries have not been able to do this. Therefore, this model solves the problem and supports the at the lowest cost with limited computing power and high reliability. The uses the sensor network to help detect incoming floods. This is where IoT plays an important role as is the most efficient approach. It is actually a networked system of embedded electronics, software and sensors that send and receive data remotely over the Internet.

II. LITERATURE SURVEY

Flood warning systems in urban areas have improved lots in recent years. Arrival of GIS, Radar-Based Precipitation Estimation Using NEXRAD and Radar Systems Internet. the difficulty of flood warning and warning was delivered to the public's attention. After the recent Tropical Storm Allison Flood of June 2001. This flood was reported by NOAAAs the foremost damaging urban get American history, and definitely the foremost devastating event Further losses within the county affect Beau and Houston with over \$ 5 billion 50,000 damaged structures. over \$ 1.5 billion in damages to Texas heart alone Informed with major influences from area people.

Conventional gauge-based ALERT Systems rely upon spatially independent rain gauges. While these systems can provide critical Information, they can't provide dense coverage of information collection available with NEXRAD Radar. With the arrival of NEXRAD radar and GIS data analysis systems, it's possible Real-time regional average rainfall over the basin, which may be compared to hydrologic models estimated peak flows in a very basin. One such system is since spring, 1998 Houston, Texas area. Commissioned by Texas middle (TMC), focuses on the system Brings Bayou to Southwest Houston, and provides TMC with real-time information Flows forecast in Brays Bayou, with visual feedback as a real-time.

III. PROPOSED SYSTEM

An IoT Based Real Time Flood Alert System for Dam, the use of the Arduino is thus, a proposed technique to this problem. The gadget includes numerous sensors which might be temperature, humidity, water level, go with the float and ultrasonic sensors and additionally consists of an Arduino controller, a Wi-Fi module, an LCD, an IoT far off server-primarily based totally platform and an android utility with built person pleasant GUI relaying all of the crucial data worried withinside the image in a visible format. This version installation the NODEMCU board close to the dam and DHT11 sensor, float sensor and ultrasonic sensor, DHT11 sensor are related to it. DHT11 sensor offers the Humidity and Temperature withinside the air and Ultrasonic sensor offers the water level and Float sensors hits when water level is high also gives alarming signals. Based on this and a few different parameters we might also additionally determine if the flood goes to arise or not. We join them to the cloud from wherein we join this to the cellular utility and we will see the output in our Software too.

Following Fig.1 shows actual System architecture of this System, firstly the sensors connected to node MCU controller that will give humidity, temperature and Water level of the dam. So, code will collect all these data and upload it to cloud which we initialized before using Wi-Fi module and from there our data will be retrieved into the mobile application.

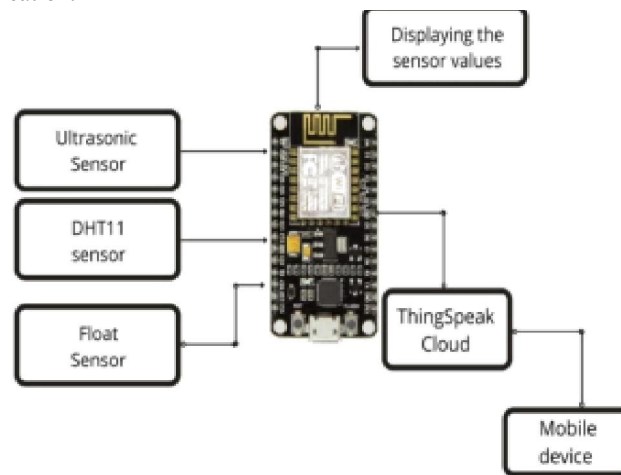


Fig 1: System Architecture

IV. CONCLUSION

This paper has tried to propose a possible and economic solution to the matter of floods. Floods can't be predicted easily, but we are attempting to develop a process which helps us to grasp the first Flood Detection and Intimates us to grasp the mandatory Precautions. The IoT based Real Time Flood alert system may persuade save the lives of individuals by reducing the human quick out during emergency situations. Development of a wireless sensor network has been successfully distributed, with considerations on area of deployment and efficiency. So far, we have built a micro-model through a prototype; the sensors utilized were fundamental in obtaining the specified data necessary for monitoring and detecting flood events, and a live feed has also been actualized for end users.

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