Advanced Flood Monitoring and Auto Alert System

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Abstract— **This paper contains implementation of system to monitor & control flood condition which sends alert sms in advance to people in nearby area for their security. This system will be useful to overcome current problems as it gives intimation about flood in advance it provides a good option for disaster management.**

Index Terms—**Flood, Auto alert system, Dam**

I. 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. Over the past ten years, high volume removal, extensive area cut, and intrusion of communal forest, in addition to ineffective protection of cut-over forest, has accelerated the increasing need to address the flood hazard in the urban region. Which cause household water logging. November 2002, the flash flood caused deaths and the estimated total loss of more. Flooding is one of the major disasters occurring in various parts of the world. This type of disaster is not completely avoidable, but using advanced flood monitoring we can predict the flood affecting probable area using GSM system. When we give the information about the increased water level, increased water flow speed and rainfall measurement level can be displayed on the LCD. Flood monitoring is the provision of advance warning of condition that is likely to cause flooding to property and a potential risk of life. The main purpose of flooding warning is to save life by allowing people, support and emergency service time to prepare for flood. Flood monitoring system will solve the current situation using GSM module to send the notification before flood occurs. This system monitors the level of water and if water level exceeds beyond set point at that time doors of the DAM are automatically open using DC motor & alert sms is send to the peoples in nearby area to avoid problems. One more sensor is used that is water flow sensor. The

function of this sensor is to measure the speed of water flow, and give the information to the zigbee. We use an instrument called a rain gauge to measure rainfall. This system takes a rain gauge records the amount of rain that has fallen in a particular length of time. Then that level can be measure in to the millimeters. Most rain gauges measure rainfall in millimeters on the same the server predicts the probable affecting areas and intimates the end user.

II. PROPOSED WORK

The main purpose of this system is to alert people in advance before flood occurs this is to save life of people. Flood monitoring system will be produce to solve the current situation using GSM module to send the notification before flood occurs.

Dam Side: - A system which measures the level of DAM water, Raining, and the speed of water flow, that gives the exact information about the water to controls the doors of dam and sends the data to server.

Server system: - At The server side when the information about the water received from the DAM side, at that time a server will receive the data from dam though Zigbee and based on that it gives the historical database. It predicts the affecting areas and intimates the probable suffering End users, using GSM system.GSM gives the alert message to that people whose are stay in the flood affecting area.
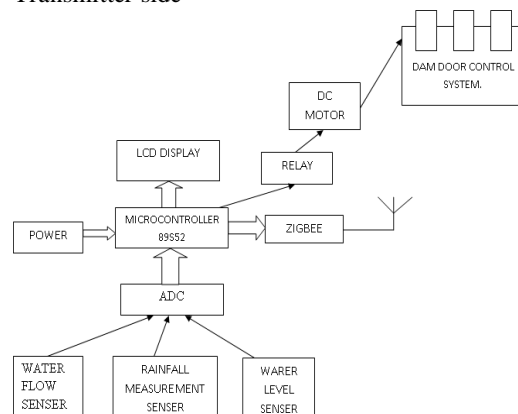
A. Block Diagram

Transmitter side

Fig 1: Block diagram at transmitter side

Receiver side

Fig 2: Block diagram at receiver side

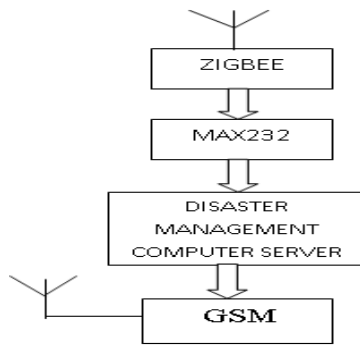Fig 4: Run time VB window

B. Description

Hardware for above system is transmitter placed at dam side & receiver placed in control room. Figure 1 indicates transmitter which consists of Microcontroller along with three sensors (water level sensor, rainfall measurement sensor& water flow sensor), Zigbee, LCD & door control unit. Sensors are interfaced with controller predict flood situation. If all parameters exceeds the threshold values possibility of flood is dominant in such situation alert sms is activated by the system to the peoples in nearby area using GSM module.

Figure 2 indicates receiver side where message is send through server & GSM module from database present in server.

C. Software Requirements

GUI is created using VB 6.0 which acts as a front end for user interface.MS Access is used as a back end to store database of nearby peoples.
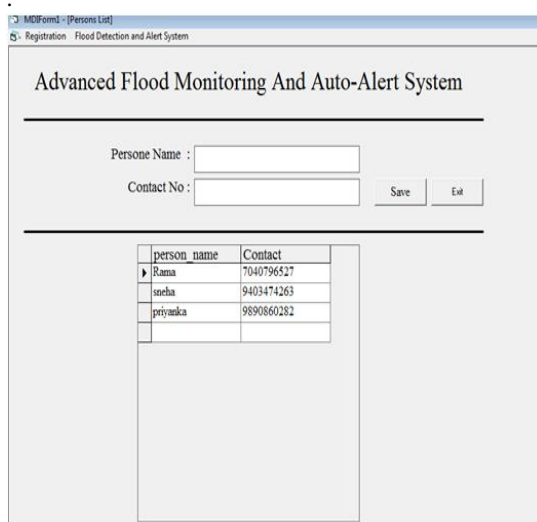Fig 3 indicates registartion of user through front end.Fig4 indicates run time VB window.
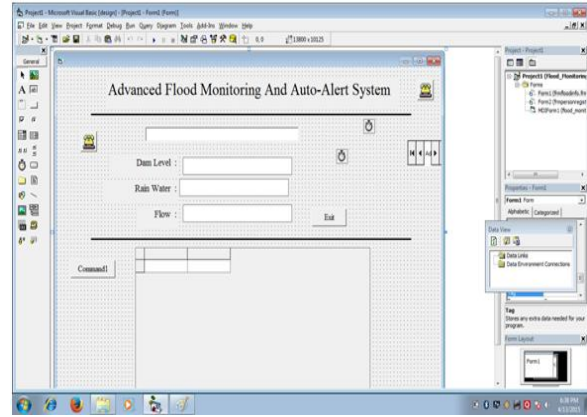

Fig 3: Registration window
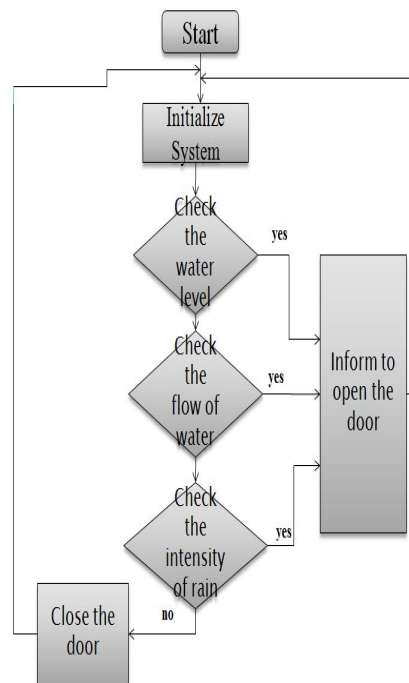
D. Flowchart

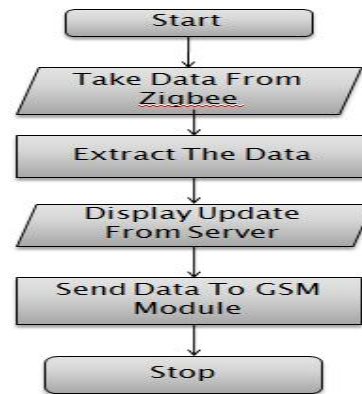

Fig 5: Flow chart at transmitter

Fig 6: Flow chart at receiver

III. SIMULATION & HARDWARE

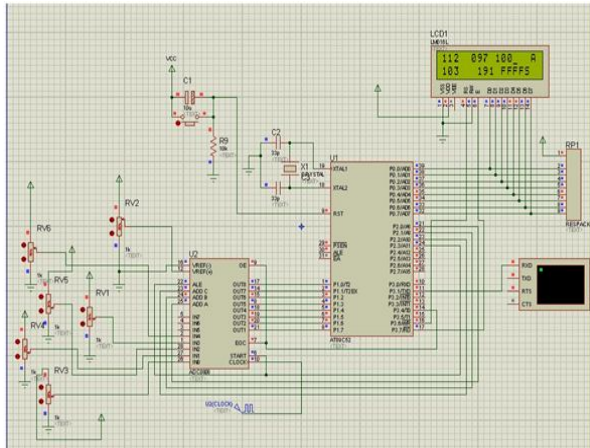Proteus 7.7 is a software tool is used for Simulation .Fig 7 indicates simulation output of all sensor .

FIG 7: PROTEUS SIMULATION

Final hardware Setup

FIG 8: FINAL SETUP

IV. CONCLUSION

Flood monitoring system will be useful to solve the problems using GSM module to send the notification before flood happens.This system not only Monitors the level of DAM water , but also takes the information of Rainfall and based on the same the server predicts the probable affecting areas and intimates the end users. Thus safety precautions will be taken in advance.

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