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A LIVE MONITORING AND INDICATION FOR SEWAGE SYSTEM USING WSN TECHNOLOGY

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Abstract: A seamless, sustainable and reliable infrastructure is crucial to realize drainage problems. The infrastructure in drainage is not only required to be pervasive, scalable, and secure but also expected to be accurate and guarantee a required Quality of Service to an end node. Various sensors is interfaced for various purpose in drainage system mainly to detect the level of the drainage system.GSM is used to send the message which sensor is detected in Drainage system. Bluetooth is interfaced to send the data of the sensor to our mobile. This also eliminates the need of any extra person to monitor that drainage. A camera is being used for the monitoring purpose.

Keywords: ***Bluetooth,Camera, GSM,Sensor***

I. INTRODUCTION

Drainage is the infrastructure for drying the land from the excess, rainwater and waste water. Drainage channel can be either natural channel or man-made channel. In an urban areas, due to rain, waste water, so that it does not disturb the activities and the facilities and property in the community to control this we have to build drainage channels .

To keep it functioning properly Drainage conditions must be watched continuously. All areas do not have drainage monitoring network. Lack of overseeing leads to irregular monitoring of the drainage condition. Irregular monitoring contributes to clogging of the drainage that leads to the siltation which triggers flooding the neighborhood. Manual supervision is also inefficient. It needs a dedicated team which is only able to record limited report with low accuracy. These weaknesses lead to delay in solving problems in drainage. When the sewage reaches the treatment plant to operate the process correctly it relies on level monitoring.

The main problem the world facing is sustainability of available water resource in many regions. This problem is mainly associated with poor water distribution, inefficient use, and shortage of water and improper water management. Industry, domestic purpose and agriculture are the main consumers of water.

Therefore, efficient monitoring and proper use are the real constraint for domestic and office water management system. In recent times several monitoring integrated systems for water level detection have been accepted. Measuring water level is an important job for governmental and residential use. It would be easy to monitor the actual implementation of such steps with integration of various regulatory activities. An Embedded system is a technology used to perform a few dedicated functions often with real time computing constraints. It is merged as a part of complete device that is including hardware and software. Then by contract, for example a computer is designed to be easily handled and to meet a wide range of end user needs. Embedded system may control devices in commonly used today. Embedded system is controlled by one or more main processing cores and they are typically either microprocessor or controller. The key characteristic, however, is being dedicated to handle a particular task, which may require very powerful processor.

In general, embedded system is not a strictly determinable term, as most system has some elements of extensibility and programmability. For ex, hand held computer share some element with embedded system such as the operating system and microprocessor which power them, but they allow different application to be loaded and peripherals to be connected.

II. BACKGROUND RESEARCH

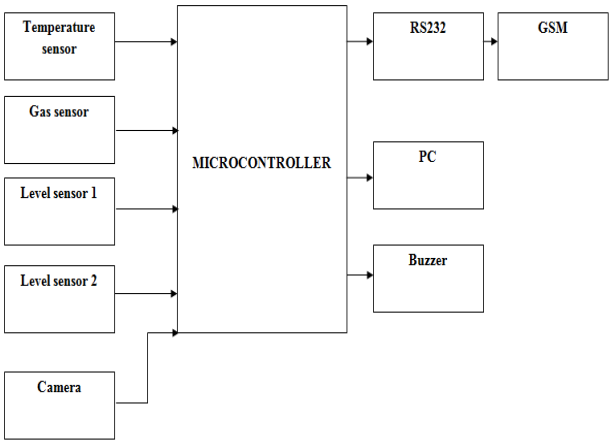
The author's present communication architecture for sensor networks and proceed to survey the current research relating Will constantly on layers of the protocol stack[1] : Physical, information Link, Network, transport Also provision layers. A sensor network is defined as being consisting of the majority nodes which are engaged more in close nearness to the situation / condition to be monitored. Each of these nodes gathers data and its aim is to route back this information to a sink. The network should be in a position to organize itself, since the positions of individual nodes is not so designed to work independently. Cooperation among nodes is the most important feature of this type of setup, where groups of nodes cooperate to pass on the information gathered in their area to the user. The writers opine that none of the investigations surveyed need a completely coordinated circuit view of every last one of variables driving the outline about sensor networks. and present their own communication architecture and design factors to be used as a model and as a tool of comparison of various protocols. Subsequent to our studying the literature, we feel that it may be included in the open research issues that can be used for future work.

Prime idea of this project may be that in the event of any mishap, the system will send SMS messages to the user [2]. At any time, user can send request for condition of system. Home appliances can be controlled using SMS service through GSM so that the user can save his/her money and time. In the proposed system, power supply gives 5V power to the system. AT89S52 is 8- bit, cost effective controller. MAX232 is used for conversion of signal. Relay driver ULN2003 drives the all relays which are connected to the loads. Keep going anyhow not the minimum GSM module SIM300 is a delivery person the middle of the client Furthermore microcontroller utilizing AT command. This paper gives detailed information about circuit diagram in Proteus simulation with all necessary components.

In this paper, regulating fan pace Also light force will be those claims to fame of the task [3]. This paper holds two parts, equipment some piece called methodology unit What's more programming a piece called modifying unit. Methodology unit hold numerous Bluetooth module LM400, LCD, dimmer circuit, Also microcontroller PIC16F877 (40 pin IC). Checking unit hold main Smartphone. To better effectiveness dimmer circlet is intended utilizing SCR.Home appliances can control using android phone which has Bluetooth application. Bluetooth module will be utilized for correspondence. It is remote engineering. Dimmer out is utilized for controlling the fan speed Furthermore force level from claiming light.

For the purpose of control overflow and water pollution from storm pumping discharge, a real-time monitoring system to storm waste capacity might have been developed, dependent upon channel capacity model [4], Also web-based geographic data framework. Those screening framework need been connected under Caohejing waste system, Shanghai, a differentiate waste framework with dry-weather contamination entrance under storm pipes. It shows included storm waste on the premise from claiming terminal waste water rise for 2. 6m, the current discriminating condition with work storm pumps. The ongoing screening framework manifestations the supports to improvement for ongoing control framework of the study range.

III. BLOCK DIAGRAM



In this block we have used three different types of sensors with enhanced features. The sensors used are Temperature

sensor, Level sensor and Gas sensor. The temperature sensor is used to estimate the current temperature with clear status, then the level sensor is the major element in our project which would mainly detect the increase of water level. Finally the gas sensor actuallymeasures the amount of gas which harms the environment. With these effective sensors a wired camera is also been placed as a part to monitor live actions of the drainage system. Another major executive factor in our project is the location master GSM which would exactly pinpoint the spot of the leakage or any other diffusion in the system. An android application has been implemented as an overall advantage which can be easily used with the connection to check the workflow of the drainage system from elsewhere.

A group for low-cost, high-performance, CMOS, fully-static, 8-bit microcontrollers would know as PIC16FXX. At PIC micro controllers utilize the most recent risc construction modeling. Those PIC16FXX microcontroller crew need improved center features, eight-level profound stack, furthermore numerous inner and outside intrude sources. The two-way direction book pipeline permits every one guidelines will execute to an single cycle, but to system extensions (which oblige two cycles). What added up to 35 guidelines (limited direction book set) would accessible. Also, an expansive register set aides on accomplish a large amount from claiming execution.

A sensor is An innovative gadget that detects / faculties a signal, physical state and concoction mixes. It is also defined as any device that changes a signal from one form to another. Sensors are either electrical or electronic. The LM35 can be interfaced easily in the same way as other integrated circuit temperature sensors. It can be pasted or added to a surface and its temperature will be about 0.01˚C range of the surface temperature. The assumption is that the ambient air temperature is just about the same as the surface temperature; Assuming that those air temperature were much higher alternately bring down over the surface temperature, the genuine temperature of the LM35 pass on might make at a middle of the road temperature between those surface temperature and the air temperature. . The temperature sensors have well known uses in environmental and to control the process and also in examining, calculations and interface.

Gas sensor is a subdivision of chemical sensors. Gas sensor quantifies the concentration of gas in a particular area. Gas sensor interacts for an gas should measure its centralization. Every gas need its identity or breakdown voltage i. e. That electric field in which it is ionized. Sensor identifies gasses toward measuring these voltages. The quantum of concentration of a gas can be ascertained by measuring the current discharge in the device.

A level sensor finds the level of liquids and other fluids also fluidized solids, including slurries, granular materials, Also powders that show an upper spare surface. Substances that stream turn into basically level to their compartments (or different physical boundaries) due to gravity while a large portion heft solids heap during a point for rest on an top. Those substance will be measure it may be inside a compartment or might make over its common structure (e. g., a waterway alternately a lake). The level estimation might be possibly constant or side of the point qualities. Non-stop level sensors measure level inside a specified extend Also determine the accurate add up from claiming substance On An sure place, same time point-level sensors best demonstrate if the substance is over alternately beneath the sensing perspective. By those last recognize levels that would exorbitantly high or low.

Global System for Mobile communication is An advanced versatile telephony framework that is generally utilized within Europe and other parts of the universe. Global System for Mobile communication uses a variation of time division multiple access (TDMA) Furthermore may be those The greater part broadly utilized of the three advanced remote telephony advances (TDMA, GSM, and CDMA). Global System for Mobile communication digitizes and compresses data, that point sends it down a channel with two different streams from claiming client data, each for its identity or time opening. It works In Possibly those 900 mhz or 1800 mhz recurrence band. A Global System for Mobile communication modem is a specialized type of modem which accepts a SIM card, What's more works In a membership with An portable operator, simply in a cell telephone. From those portable driver perspectives, a worldwide framework to versatile correspondence modem takes a gander Exactly like An cell phone. At a worldwide framework for versatile correspondence modem is associated with a workstation. , this allows the computer to use the Global System for Mobile communication modem to communicate over the mobile network. Same time these worldwide frameworks for portable correspondence modems would habitually use to give portable web connectivity, a lot of people for them might additionally make utilized to sending What's more getting SMS What's more MMS messages. A widespread asynchronous receiver/transmitter may be a bit of workstation fittings that interprets information between parallel and serial manifestations. UARTs would regularly utilized clinched

alongside conjunction with other correspondence norms for example, such that EIA RS-232. A UART is normally a distinct (or and only an) incorporated information preparing utilized for serial interchanges through a workstation alternately fringe gadget serial port. UARTs are Right away usually included over microcontrollers. A double UART or DUART combines two UARTs under A single chip. A lot of people advanced ICs Not withstanding accompany a UART that can be additionally imparted synchronously; these gadgets need aid called USARTs.

A buzzer or beeper (BUZZERS) is a signaling device, usually electronic, typically used in automobiles, household appliances For example, a microwave oven, or diversion reveals to. It The majority ordinarily comprises of a amount for switches or sensors associated with a control unit that determines Assuming that and which catch might have been pushed alternately An preset occasion when need lapsed, Also Typically illuminates An light on the fitting catch alternately control panel, What's more resonances a cautioning in the manifestation of a nonstop or irregular buzzing alternately beeping heartless.

There are principle sorts of energy supply some would outlined to convert High voltage AC mains electricity to a suitable Low voltage supply for electronic circuits and different gadgets. A power supply can be broken down into a series of blocks, each of them perform a particular function

Transformer: Steps down high voltage AC mains to low voltage AC

Rectifier: Changes over AC will dc yet the dc yield will be changing diode would the primary rectifier use.

Smoothing: filter the DC from changing greatly to a little swell.

Regulator: Dispenses with swell toward setting dc yield to an altered voltage.

IV.CONCLUSION

A Multilevel Indication and Live Monitoring for Drainage System Based on WSN Technology has been successfully design and implemented. In this project the wireless sensing network, we established is characterized by self organization and adaptive system. This drainage monitoring system has the virtue like small power consuming, data transmission reliable, and it's affordable. The WSN technology can be used to every walk of life and this system can be used in production. After a nominal installation cost it make the overall process simple and cheap.

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