

SMART CITY USING IOT

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Abstract - The goal of our project is to provide an comprehensive concept of the smart city besides their different applications, benefits and advantages by interconnecting digital devices through the internet of things. Thus the realization of smart city concept has been presented in this project through the internet of things. This framework comprises the urban information system from the sensory level, data management using networking support structure and integration of respective systems and services using cloud, and forms a transformational part of the existing cyber-physical system. To illustrate the new method for existing operations this IoT vision for the smart city is applied so that this system can be adapted for enhancement and delivery of important city services. To address the specific features of each application Different technologies have been applied. By using the system people do not have to check all the system manually but they will get a notification.

Key Words: Internet of Things(IoT), arduino, vibration sensor, ultrasonic sensor, gas sensor, accelerometer.

1. INTRODUCTION

A smart city is a development of a country, it incorporates information and communication technology using IoT. It is used to maintain city's resources such as the local departments, information systems, libraries, schools, hospitals, waste management systems, transportation systems etc.

In this project, we are going to propose a system for the immediate cleaning of the dustbins. As it is necessary to maintain the level of cleanliness in the city, so it is very important to clean all the dustbins as soon as they get filled. Here ultrasonic sensor is used to detect the level of garbage. This project also aims at detecting gas leakage in Kitchen using Internet of Things. The main aim is to propose the design and construction of an SMS based Gas Leakage Alert System. Here gas sensor is used to detect gas leakages in a kitchen. The main aim of this project is to detect accident and to find accident location. In proposed system the unit installed in vehicle automatically informs accident to the pre programmed number. In this system vibration sensor and

accelerometer are used for accident detection. When accident occurs, this system sends short message to that corresponding member.

2. PROPOSED SYSTEM

2.1. Garbage monitoring system

The proposed model is a solution for the problem of insanitation. Our project consists of three modules namely smart trash, calibrate, and send notification. The trash consists of one sensor namely ultrasonic sensor. The sensor placed inside the trash sense the level of trash. The Wi-Fi placed inside the trash will intimate about the overflowing of trash to the corresponding person through Arduino.

The visual notification is sent from the web server through the coding programmed inside the Arduino. From the office the information regarding the removal of trash is sent to the respective area assistant and it will be displayed in LCD. The complaint report contains the truck number and exact location of the trash can. If the trash can is not replaced in a particular duration, the arduino placed at the trash can produce the second intimation to the corporation office. The smart trash receptacle finds to be cost effective and a better way of maintaining the environment clean and healthy.

2.2. Gas leakage detection system

This model is a solution for the occurrence of accidents due to gas leakage detection. Our project consists of three modules namely gas leakage detection, calibrate, and send notification. The module consists of one sensor namely gas sensor. The sensor placed in the module sense the leakage of gas. The Wi-Fi placed inside the module will intimate about the gas leakage to the corresponding person through Arduino.

The visual notification is sent from the web server through the coding programmed inside the Arduino. The corresponding person takes action towards the leakage of gas in home. If the problem is not rectified, the arduino placed at the module can produce the continuous intimation of gas leakage to the corresponding person until the problem

is rectified. The gas leakage monitoring system finds to be cost effective and a better way of maintaining the environment safe without any accidents due to gas leakage detection.

2.3. Accident detection system

This model indicates the occurrence of accidents due to gas vehicle collision. Our project consists of three modules namely accident detection, calibrate, and send notification. The module consists of two sensors namely accelerometer and vibration sensor. The sensors placed in the module sense the occurrence of accident to the corresponding person to whom it is to be notified. The Wi-Fi placed inside the module will intimate about the accident to the corresponding person through Arduino.

The visual notification is sent from the web server through the coding programmed inside the Arduino. The corresponding person takes action towards the accident. If the problem is not rectified, the arduino placed at the module can produce the continuous intimation of accident occurrence to the corresponding person until the problem is rectified. The accident detection system finds to be cost effective and a better way of maintaining the environment safe without any accidents due to collision of vehicles.

3. BLOCK DIAGRAM

3.1. Garbage monitoring system

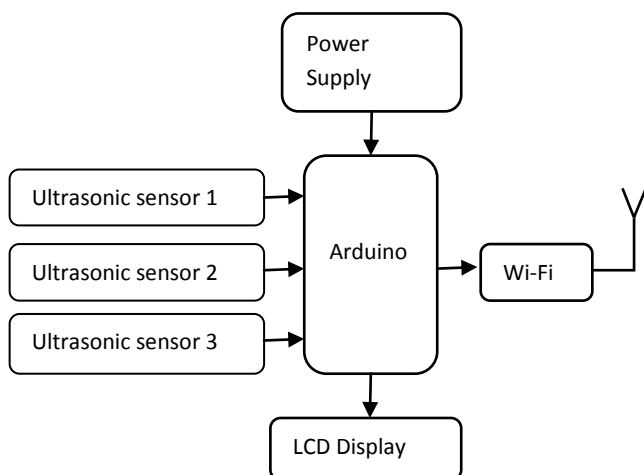


Fig-1: Block diagram of garbage monitoring system

3.2. Gas leakage detection system

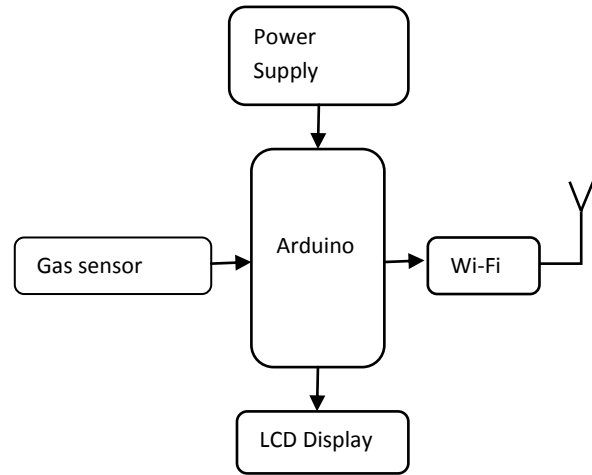


Fig-2: Block diagram of gas leakage monitoring system

3.3. Accident detection system

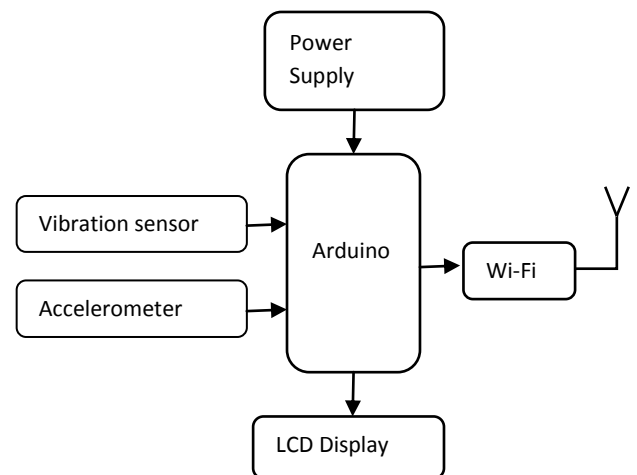


Fig-3: Block diagram of accident detection system

4. OUTPUT

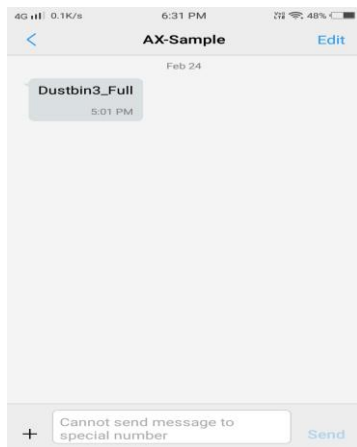


Fig-4: Output for garbage monitoring

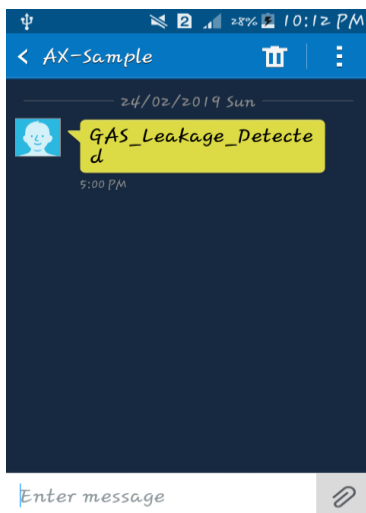


Fig-5: Output for gas leakage detection



Fig-6: Output for accident detection

5. CONCLUSION

In this project, we incorporated three different systems such as garbage monitoring, gas leakage detection and accident detection system by means of internet. By using this system people do not have to check all the system manually but they will get a notification.

In garbage monitoring system, a threshold value is set according to the size of trash can. If the distance will be less than this threshold value, it implies that the Trash can is full of garbage and a notification is send to the corresponding municipality office employee as “Garbage Full” for immediate cleaning of that garbage. In gas leakage detection system, the sensor will measure gas level around the area a threshold value is set. If the gas level is beyond this threshold value, it implies that the gas leakage is occurred and a notification is send to the corresponding person as “Gas leakage detected”. In accident detection system, when the occurrence of accident is identified by means of vibration sensor and accelerometer, a notification is send to the corresponding person as “Accident occurred”.

6. REFERENCES

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