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Industrial Safety Measurement using Sensors and Voice Announcement

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ABSTRACT

The multiple applications (Forest, Industrial, Home) sector being the backbone of the security system. Security systems which are being used now a day are not smart enough to provide real time notification after sensing the problem. This Project is very useful in industrial monitoring system, forest safety and controlling an application. The Processing Sensor analysis of PIR sensors, Fire, air, temp sensors based multiple sector Analysis industrial, human identification and Any Identification Indicate LCD Display and Web camera Based Any Problem Capture Stored Image Data base. In the present work a PIC Microcontroller based the remote irrigation system is developing for the multiple process. The microcontroller use to controlling and displaying the resultant sensor values LCD Display Identifying System.

Keywords: PIR sensor, web camera and multi-sensors.

1. INTRODUCTION

Over the past years information and communication technologies have been introduced in multiple applications , Digital multiple applications is a new mode of multiple applications based on information, it will achieve the digital, networking and information-based multiple applications production, constructs digital driven system of production and management of multiple applications with the integration of data acquisition, digital transmission, data analysis, digital mechanism of multiple applications.

Finally the digital, networking and automatic multiple applications production decides to be realized. Wireless sensor network is one kind of intelligent system with data collection, data fusion and transmission independently, it developed with the developing of MEMS technology, it is individual kind of micro-sensor node with the capability of communication and calculation, it is an intelligent detection and control system with function of completing some task independently according to the environment.

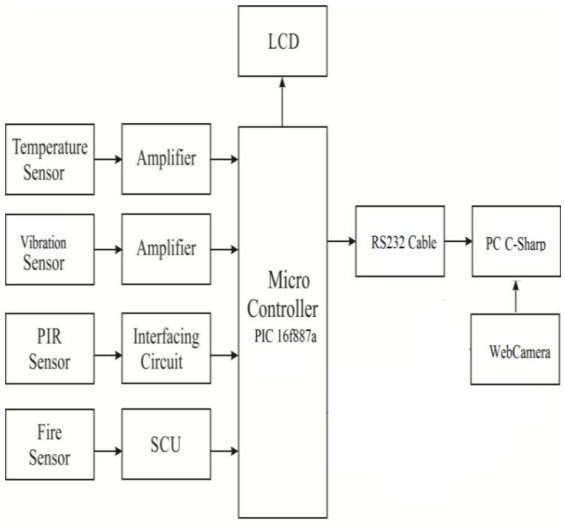
Wireless sensor network involve many advanced technology such as: embedded system technology, computer network technology in addition to communication technology, it is an autonomous unit with the ability of information collection, transmission and processing, it has a better prospect in the network monitoring system. It appears that, wireless sensor network can be used in the realization of digital multiple applications, it can take an important role to promote our multiple applications to an improved level with automation, effectiveness, accuracy of mechanism and intelligent production, wireless sensor network will be utilized in the fields of environment monitoring, chemical, zoology supervisory and so going on particularly in the environment with hard along with repulsive conditions, it has the advantages to fulfill the task comparing to the traditional detection technology.

2. EXISTING SYSTEM

The Existing Method a device will inherit a grid of sensor panels consisting PIR sensors, fire sensors and temperature sensors based industrial sector. It also sensor fusion can be done to increase the functionality of device. Improving these perspectives of device, it can be used in different areas. This project can undergo for further research to improve the functionality of device and its applicable areas. We have to implement this system as a security solution in industrial sector is proposed system.

3. PROPOSED SYSTEM

The Processing Sensor analysis of PIR sensor, fire sensor, temperature sensor and vibration sensor based sector Analysis and identification. Any Problem occurring in industries (Fire and Temperature) and any Object Identification Indicate to the speaker and sent through the system. The microcontroller use to controlling and displaying the resultant sensor values in our own computer Display any time and using web camera.



4. BLOCK DIAGRAM

4.1 Introduction to PIC

The microcontroller that has been used for this project is from PIC series. PIC microcontroller is the first RISC base microcontroller fabricated in Complementary Metal Oxide Semiconductor to facilitate use separate bus for instruction and data allow simultaneous access of program and data memory. The most important advantage of CMOS and RISC combination is low power consumption resulting in a very small chip size with a small pin count. The most important of CMOS is that it has immunity to noise than other fabrication techniques.

4.2 PIC (16F877)

A range of microcontrollers offer special kind of memories. EEPROM, EPROM, FLASH etc. be a few of the memories of which FLASH is the largest part recently developed. Technology that is used in pic16F877 is flash technology, therefore that data is retained even when the power is switched off. Easy Programming and Erasing are further features of PIC 16F877.

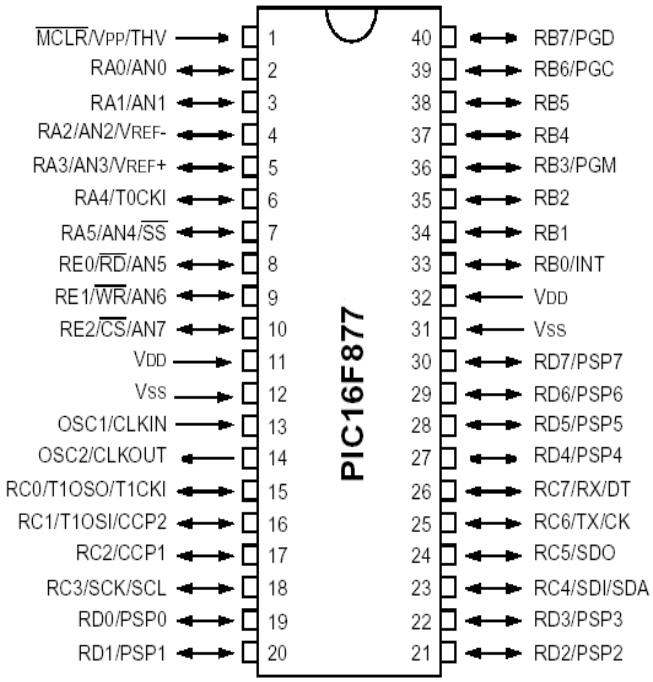
4.3 Architecture of PIC 16f877

The complete architecture of PIC 16F877 give details about the specifications of PIC 16F877 complete pin diagram of the IC PIC 16F877.

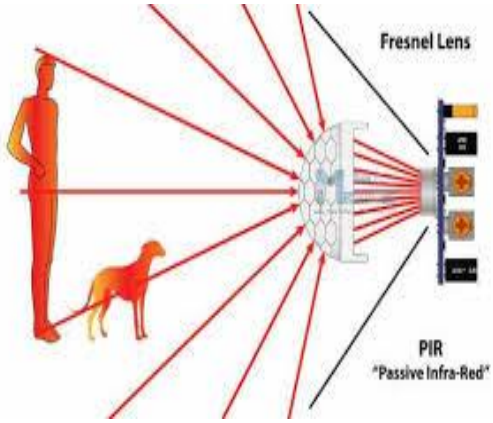
4.4 Specifications

DEVICE	PROGRAM FLASH	DATA MEMORY	DATA EEPROM
PIC 16F877	8K	368 Bytes	256 Bytes

4.5 Pin diagram of PIC 16F877



The fire alarm system includes a current modulation section and an address specification section. The current modulation section is use for maintaining a current flowing in the sensor line at a programmed value for a determined time at the time of a fire, in addition to modulating the current in accordance with the inherent address information of the fire sensor. The address specification section is use for sensing fire information by judging whether otherwise not the current have been maintained at the programmed value for the determined time, and also used for specifying the inherent address of the fire sensor that issue the fire information, since the modulated state of the current.

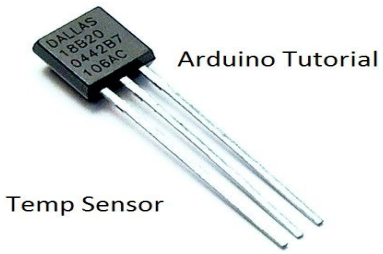


4.6 PIR sensor: human sensor

PIRs are essentially made of a pyroelectric sensor (which you can see above as the in a circle metal can with a rectangular crystal in the center), which can sense levels of infrared radiation. Everything emits a few low level radiation, and the hotter something is, the extra radiation is emitted. The sensor in a motion detector is really divided in two halves. The reason used for that is to we are look to detect motion (change) not average IR levels. The two halves are wired up so that they cancel each other out. If one semi sees more or less IR radiation than the other, the output will swing high or low.

4.7 Temperature sensor

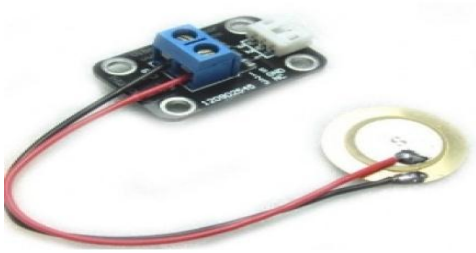
A thermistor is a kind of resistor whose resistance varies with temperature. The word is a portmanteau of thermal and resistor. Thermistors are extensively used as inrush current limiters, temperature sensors, self-resetting in excess of current protectors, and self-regulating heating elements.



Thermistors differ from Resistance Temperature Detectors in that the material use in a thermistor is generally a ceramic otherwise polymer, while RTDs use pure metals. The temperature response is also different; RTDs are useful over larger temperature ranges, though thermistors typically realize a higher precision within a limited temperature range [usually −90 °C to 130 °C].

4.8 Vibration sensor

A piezoelectric sensor is a device that use the piezoelectric effect to measure pressure, acceleration, strain or force by convert them to an electrical signal.



The piezoelectric effect is reversible in to piezoelectric crystals, when subjected near an on the outside applied voltage, can transform shape by a small amount. The effect find useful application because the production and detection of sound, generation of high voltages, electronic frequency generation, microbalance, also ultra

Applications

1) Digital multiple applications in addition to information-based multiple applications production Wireless Application. 2) High Security.

5. CONCLUSION

The system is planned for identification of rodents in grain stores. Before collecting and analyzing the data, algorithm is considered to provide accuracy. Designed for futures up gradation, device resolve a grid of sensor panels consisting PIR sensors, Fire, vibration, temp sensors base multiple sector Study of Human, fire, temp, Air sensor any identification Indicate LCD Display and Web camera base any Problem Capture Stored Image Data base.

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