IOT SMART KITCHEN SAFETY SYSTEM

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Abstract—In this modern world with increasing population and concept of small families.Children,elderly with physical disablement may end up staying alone at home. Kitchen is generally the most endangered place at home as misapply of devices or improper kitchen activities rises unpredictable and life frightening situations. In this paper, we have present intelligence system extending the existing kitchen environment with sensors, actuators and controller. We have first pinpointed possible safety issues and, then install sensors to pin down the changes and actuators to monitor and control kitchen environment. We distribute kitchen safety in three stage Sensing, Actuating and controlling to regulate anomalous in the kitchen. According to the unusual conditions, the proper control devices are placed to eliminate the undesirable outcome

Keywords—*kitchen activities,safety,monitor, IOT,Sensords)*

I. INTRODUCTION

Human life is changing rapidly due to growing innovation. As people are busier, they think that there should be technology that should reduce their work. Though the number of technologies is increased to reduce the human efforts and fulfil their needs. IOT helps to fulfil these requirements of the human. Every individual goes to the kitchen to cook food. Then if an individual forgets to switch off the gas knob or they light it would create a fatal situation. Leakage in gas cylinder can cause a dangerou. In this project IOT based kitchen safety system is introduced to avoided such situations.

This project consists of gas sensor, temperature sensor, PIR sensor, etc.The gas sensor is connected to the microcontroller. If there is any gas leakage it will be detected by the sensor and will give signal to the microcontroller to switch on the solenoid valve which in turn will switch off the gas knob and will prevent the gas leakage.

On the other hand, the fan will be switched on to flush out the gas from the kitchen.

PIR sensor will detect the presence of human in the kitchen, if the person enters into the kitchen then light will be switched on and if exits then will be turned off, thus it will save the electricity.

Also, if the temperature in the kitchen reaches above a certain level then the heater will be turned off automatically. As this project is an IoT based project it contains WIFI module which will capture and store the data in the cloud from where an individual can access all the data and can manage the data from any place.
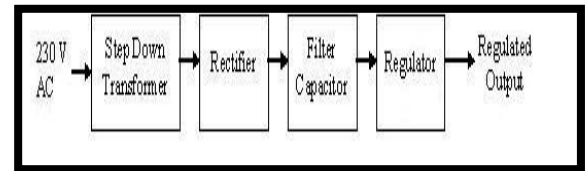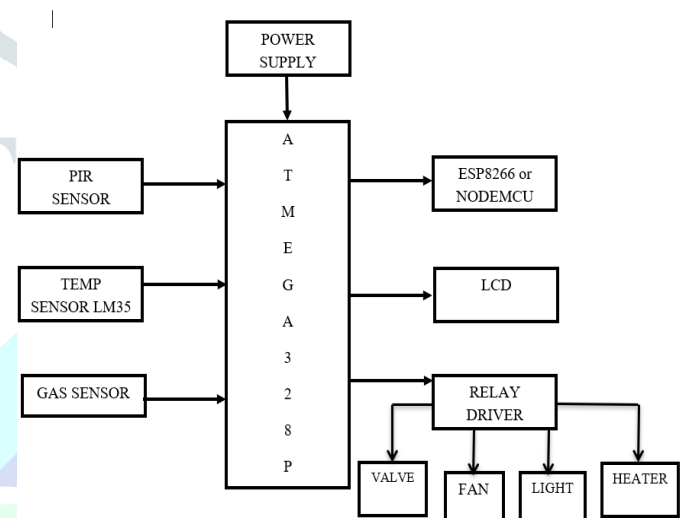
II. SYSTEM ARCHITECTURE

Fig.1

Fig.2

The project mainly aims on providing the user with cautionary signals. In this project we are using ATMEGA328P microcontroller which is used to provide the control signals to the electrical appliances. The power supply is used to provide 5 volts to the LCD, ATMEGA328P microcontroller, ESP8266 module, relay and the other sensors as depicted in figure.

In the event of gas leakage, the gas sensor detects the leakage and provides necessary information to the ATMEGA328P microcontroller. The microcontroller is used to drive the relay which turns on the solenoid valve which in turn switches off the gas knob.

Further, a fan is provided to remove the gas which has accumulated in the kitchen.

The PIR sensor is used to keep the track of a person either entering or exiting in and from the kitchen. Based on the either action mentioned above the light will be either turned on or off. This will help the user to cut down on his/her electricity bill.

The temperature sensor is provided to control the turning on and off of the heater.
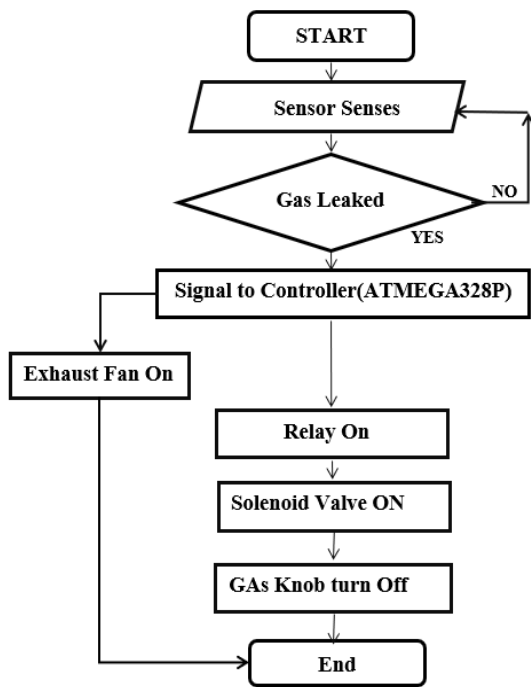:

III. FLOWCHART

Fig.3

Fig.3 shows the block diagram of IOT based smart kitchen system which forms the basis for the development of the above flowchart (Fig. 3).

Once the system is started,sensor will check the presence of gas and temperature in kitchen.As gas sensor is connected to the microcontroller.If there is any gas leakage it will be detected by the sensor and will give signal to the controller.Relay will be trigger by controller signal and further switch on the solenoid valve which in turn will switch off the gas knob and will prevent the gas leakage.
On the other hand, the fan will be switched on to flush out the gas from the kitchen.
As this project is an IoT based project it contains WIFI module which will capture and store the data in the cloud from where an individual can access all the data and can manage the data from any place.
Hence,the system will remain continously on.And keeps on monitoring Kitchen temperature and gas presence in air.

IV. CONCULSION

Hence this project prevent the accidents that will be caused due to the leakage of the gas by using gas sensors and the solenoid valve, in addition save the electricity when not

$$(1) \qquad\qquad (1)$$

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