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A Study of Smarthome Tech using IoT

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ABSTRACT: The upcoming generations are want to handle the environment in their hands. “Internet of Things” connects living and non-living things through internet in smart home. Everything in the globe is considered as an object, but in the IoT paradigm everything in the globe is considered as a smart object. That allows to communicate each other through internet. The proposed system uses IoT for energy efficient Environmental Conditions recognizing and monitoring in Household appliances. This paper also provide how to run fully smart environment condition monitoring by various sensors for providing data and automatically adjust the comfort level in homes. We make use of predictions here for automatically detection and resolution of any problem in the devices. It will send the notification by text message to experts for service and it will also make alarm sound for fire and smoke detection to the owner. This gives more advantage to make the home will be smart system.

KEYWORDS: IOT, Smart home, Household appliances, Predictions.

I.INTRODUCTION

In modern days people expect new technology and new device to simplify their day to day life. Everyone wants to get the information from smart devices and want to share the information through internet. IoT offers advanced connectivity of devices, services, and systems which is beyond machine-to-machine communications (M2M) and uses lot of protocols, applications, and domains. Modern systems generally consist of switches and sensors connected to a central hub called a “gateway” from which the system is controlled with a user interface that is interacted either with a mobile phone, tablet computer or a web ,via Internet cloud service.The IoT is a new of intelligence computing and it’s providing a privilege to communicate around the world. The objective to use of IoT is Anytime, Anyone, Anyplace, Anything, Anyservice and Anynetwork. This type of technology helps to protect the environment and helps to save the life. And it also focused to live tension free.

II.LITERATURE SURVEY

Previous Research on Home Automation IOT Devices:

Jitendra Rajendra Rana and Sunil N.Pawar,Zigbee based Home Automation, in the paper have implemented a zigbee based home automation system. Zigbee is a high-level communication protocol used to create personal area network. It supports any kind of microcontroller.It eliminates complication of wiring in case of wired automation. Considerable amount of power saving is also possible. Operating range is more than Bluetooth.

Vinay sagar. K, Home Automation using Internet, In this paper the home automation system simple appliances are monitored ,by connecting the appliances in sensor were controlled and monitored remotely through Internet.

A. Z. Alkar and U. Buhur have developed an internet based wireless home automation system for multifunctional devices. A flexible, low cost, wireless solution to the home automation is introduced.The home appliances are connected through a server to a central node. The system is secured from unauthorized users by using algorithm.

III. PROPOSED SYSTEM

In this proposed system focus the normal living home will become smart home by using Internet a wireless network. This network can have connectivity for everything and it is expected that these connections will create an entirely advanced dynamic network that used to monitoring the electrical/electronic appliances, gas leakage, smoke smelling,



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Unauthorized object moving and lighting temperature things are made to interact with the environment by exchanging data and information sensed by the sensors. The devices gather the information and send the notification to the authorized person. This home applications technology provide a certain protocol used to find out the problems in household products with the help of sensors. This sensor network act as an ad-hoc network to share the data to home PC with the help of zigbee and ftp protocol.

Proposed scheme uses different sensors (temp, electrical/ electronic conditions) to accumulate the data to the environmental condition and also sense the fault in devices if any. Home PC continuously (24*7) observe sensors values and control the devices. If drawback found it report to server. Here user can change the settings as they want and see the devices functionality and working at any time.



IOT Computing

IV. SYSTEM IMPLEMENTATION

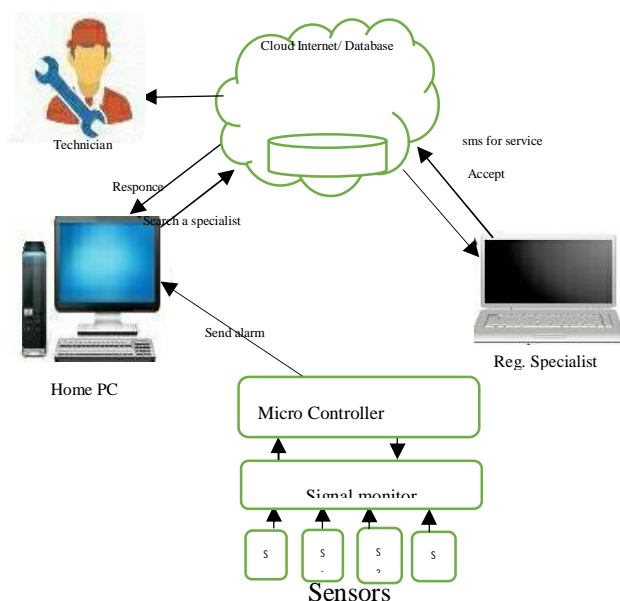
In this proposed system can also possible to develop a application to monitor all the initialized sensors in smart home with the help of web designing with the help of html codings. Proposed scheme uses different sensors (temp, electrical/ electronic conditions) to accumulate the data to the environmental condition and also sense the fault in devices if any. Home PC continuously monitoring and observe sensors values and control the devices. If any issue occurs it report to cloud server.so that user will be alert and server send the notification to the specialist to solve the problem. In home automation system function has the capabilities to control some components in home, sensed devices which monitored and send the notification if the threshold value will change. The home automation system monitored the appliances and make the alarm sound if changes as they are motion detection(living objects),smoke and fire detection, temperature level. For monitoring all the sensed devices we need to build individual page for all the electrical and electronic appliances, temperature level inside the home, and detect the leakage for gas, fire, and smoke.

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Proposed architecture of smart home

We also build a page for one Registration application where Specialists, and other service provider will register on it. They has to provide their details like their mobile no, personal details, type of service and their service timing etc. Finally Cloud Server will collect and apply data mining on data sets. By applying the data mining process server sends SMS to the registered person(specialist) and send details to the Owner. We can connect N number of users on cloud server hence it supports multi user system. Here we can use only one cloud server but we can connect lots of numbers of users to it via home pc, or any android devices. we collect all sensor values and analyse it with the help of a microcontroller, which can be monitored and controlled with a pc or mobile device. If there is a problem found in any device we alert the owner and the related technician come and solve the problem.

All the monitored data is stored in the cloud. The stored data can be retrieved and analyzed at anytime and anywhere. The below spreadsheet shows the temperature in degree stored at vary time intervals. It provides the state of the motion moving along with the time. And it also provides the information about how many times the motion as detected. All this data is stored in the database server which can be checked by the user any time when they are away from home.



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	A	B	C	D	E
1		Temperature in DegreeC	Threshold Temperature	Motion Status	
2	5/30/2015 16:54:42	30.23542		35 SAFE	
3	5/30/2015 17:06:36	30.23542		35 SAFE	
4	5/30/2015 17:06:43	30.23542		35 SAFE	
5	5/30/2015 17:06:54	30.23542		35 SAFE	
6	5/30/2015 17:07:05	31.56982		35 SAFE	
7	5/30/2015 17:07:20	30.23542		35 SAFE	
8	5/30/2015 17:07:28	30.23542		35 Motion Detected	
9	5/30/2015 17:07:39	30.23542		35 Motion Detected	
10	5/30/2015 17:07:39	32.22657		35 SAFE	

Sample database storage

V. CONCLUSION

The proposed system supports monitoring and control the appliances with the help of mobile phone or laptop from any location. This application will provide a simple and user friendly to serves the old aged people to live a safe living in the environment. IoT based design of smart home controlling system have proved that the prototype is capable to monitor and control the system. This application gives more advantages in term of low cost, time save, energy efficient, user-friendly, quick service etc. we proposed a different technique that will give us better results.

VI. FUTURE WORK

In future, this framework will be expanded through voice intimation instead of text messages. The structure which could also include home security feature like capturing the photo of a person and storing it onto the cloud server.

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