Smart Server IOT Based Temperature Monitoring System

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Abstract- Internet of things is becoming more and more popular day by day due to its numerous advantages. Here phrase Internet of Things heralds a vision of the future Internet where connecting physical things. Although much of the work has been done until today to understand the Internet of Things into carry out, most of the work focuses on resource constrained nodes, rather than linking the existing embedded system to the Internet of things network. In this paper, we are building temperature based monitoring system using Internet of things for the server room. Here there is an app which will show the current temperature of the server room after each 2 seconds, and if we want to change the temperature of the server room we can change it accordingly. Here we are using hardware recognized as raspberry pi for interfacing purpose. Nations can harvest the potential of this wave of innovation not only for manufacturing but also for on a daily basis life and work and the development of new information and services that will change the way we do things in many walks of life. However, its success is not predictable. We have evaluated our system and showed that our framework can be used effectively to put into practice practical Internet of things applications over existing system.

Keywords- IOT, GPIO, Raspberry Pi

I. INTRODUCTION

The Internet is a living entity, always altering and evolving. New applications and businesses are created continuously. In addition to an developing Internet, technology is also changing the landscape. The Internet of Things is driven by a growth of the Internet through the inclusion of physical objects combined with an ability to provide better efficiency to the environment as more data becomes available. Internet of things technology is referred in our temperature based monitoring system, and it has been an expanding. Technology at which it provides a platform to enhance the system.

![Figure 1 IOT Architecture](image)

We are entering a new age of technology that is Internet of Things. Machine to machine, machine to environment, the Internet of the whole thing, the Internet of smart Things, intelligent system call it what you want, but it’s occurrence, and its possible is vast. We see the internet of things as billions of smart, connected “things”, that will include every feature of our life, and its foundation is the intelligence that embedded giving out provides. The internet of things is comprised of elegant
machines interacting and communicating with additional machines, substance, environment and infrastructures. As a consequence, vast volumes of information are being generated, and that facts is being processed into sensible events that can “authority and manage” things to make our life much easier and safer and to Decrease our contact on the environment.

II. LITERATURE SURVEY

Internet of Things represents a common concept for the talent of network plans to intellect and collect data from the world about us, and then split that data crossways the Internet where it can be process and utilized for various attractive purpose. Many companies in the world have problem to know the actual condition of the machine. The reason to know the condition of the machine is to make the prevention and to avoid the machine from breakdown, so this project is developing to monitor the temperature sensor system. A lot of work has been carried out for monitoring temperature sensor. Most recent work is in the direction of developing Wireless sensor for temperature monitoring.

| Existing System | Home Automation System via Raspberry pi | Web Based Temperature Monitoring System | Microcontroller Based Temperature Monitoring system | IOT Based Temperature Monitoring System |
|-----------------|----------------------------------------|----------------------------------------|---------------------------------------------------|---------------------------------------|
| Features        | Interoperability                        | Platform Independent.                 | More Manageable                                    |                                       |
|                 | Remote Access                           | Independent.                          |                                                   |                                       |
|                 | time-Tested                             | More                                    |                                                   |                                       |
| Advantages      | Provide availability of GPIO            | DHT11 Relatively cheap                 | Flexibility: Faster Speed of Execution             | Scalability                           |
|                 | GPIO provides easy connectivity         |                                        | Human effort can be saved                          | Transportation                        |
|                 |                                        |                                        |                                                    | Accessing web                        |
|                 |                                        |                                        |                                                    | user intelligence                    |
|                 |                                        |                                        |                                                    | Automation and control                |
| Drawback        | With Raspberry pie Node js is used to directly connect cloud. | Only JavaScript is used Less control over computer | Complex architecture Functionality is quite difficult | Safety Privacy/Security               |

III. SYSTEM ARCHITECTURE

The core idea is to interface temperature sensor with Raspberry Pi collect the temperature readings and display those readings on the mobile phone. Also we would use hadoop cluster to save all the temperature changes. These temperature recordings maybe used for analysis in the future. We will place the Raspberry Pi and the temperature sensor at Neova's server room and read current temperature using Cool Server Room app on the mobile phone basically, we are building an app which will show the statistics and current temperature of the server room.
3.1 System Implementation
The SAP solutions for the Internet of Things provide all you need to make data-driven intelligence from associated effects, citizens and plans. Connect your business with the new production of Internet enable plans in the cloud, convert your existing business process and reimagine your industry and customer experience. In implementation of system when we retrieve the current temperature readings and display those readings on the mobile phone. Also we would use Hadoop cluster to keep each warmth change. These hotness recording maybe used for study in the future. We will place the Raspberry Pi and the temperature sensor at Neova's server room and read current temperature using CoolServerRoom app on the mobile phone basically, we are building an app which will show the statistics and current temperature of the server room.
In server room, there will be a temperature sensor installed on raspberry pi kit. Raspberry pi will have node js installed on it which will allow the raspberry pi kit to read data on temperature sensor and it will push it to the Hadoop and cloud. There will be Cloud VM which will again have node js installed on it but it will also have sails js (a MVC framework) which will act as server for your mobile app. Sails js server (cloud vm) will provide data to mobile app which it has received from raspberry pi kit. The mobile app will be developed by angular js's framework ionic which will just give you an idea in relation to the data from sails js sever. When the system just connects to the internet, the quick and important is displayed on the screen of device.

3.2 Actual system
In the server room, there will be a temperature sensor installed on raspberry pi kit. Raspberry pi will have node js installed on it which will allow the raspberry pi kit to read data on temperature sensor and it will push it to the hadoop and cloud. There will be Cloud VM which will again have node js installed on it but it will also have sails js (a MVC framework) which will act as server for your mobile app. Sails js server (cloud vm) will provide data to mobile app which it has received from raspberry pi kit. The mobile app will be developed by angular js's framework ionic which will just show the data from sails js sever.
CONCLUSION

As per the paper I conclude that SAP solutions for the Internet of Things give the whole thing you need to generate data-driven intellect from connected things, people and devices. Join your industry with the new generation of Internet-and transform your existing business processes and reimaging your commerce and client experience. And in the future it can be used for European countries where the temperature is always cold; therefore in home level it can be used. As there is always cold, there is a need to on the heater of the room, so here everything can be done automatically.

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