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Industrial Automation Based on IoT

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Abstract : Internet of things IoT) is rapidly increasing technology.IOT is the network of physical objects or things embeded with electronic software, sensors, and network connectivity which enables these objects to collect and exchange data. In this paper, we are developing a system which will automatically monitor the industrial applications and generate Alerts/Alarms or take intelligent decisions using concept of IoT. Safety from leaking of raw gas and fire are the most important requirements of home and industries security system for people. A traditional security system gives the signals in terms of alarm.

Keywords: Adfruit Application, Node MCU ESP8266, Humidity Temperature, Relay Driver.

I.   INTRODUCTION

Automation is one of the incerasing need within industries as well as for domsatic applications. Automatio reduces the human efforts by replacing the human efforts by system which are self operated, The Intenet is one way of he growing platform for automation, through which new advancedment are made through which on easily monitor as well control the system using internet. As we are making use of Internet the system becomes secured and live data monitoring is also possible using IoT sysytem. Within industries the various hazardous gas are being processed, hence to provide security to those employ working within those industreis, it becomes important issue to work on their security, If leakage of gas takes place then these system alerts by turning ON alram which notifies the employers. This system also helps us take some crucial decision from any point of the world within internet network. Wi-fi shield is being used to act as service point between network and connecting network.

II. WORKING

The main goal of our project is to create an automation system using an Adafruit server and microcontroller to control and monitor environmental data. The core of the system is the MCU, which connects the hardware components of a circuit to the IoT platform. The GPIO pins of our esp are connected to the relay module as well as to the humidity and temperature sensors (DHT11).The DHT11 is a basic digital temperature and humidity sensor with very low cost. It uses a capacitive humidity sensor and a thermistor to measure ambient air and outputs a digital signal on the data pin (analog input pins are not needed). It is quite simple to use, but requires careful synchronization to capture the data. DHT11 is connected to pin no.D3 of our MCU node. It receives the DHT11 signal pin data and sends it to the adafruit server via the MCU node. Where this information is indicated with the indicators. [Write an appointment of the document or the summary of an interesting point. You can place the text box anywhere in the document. Use the Drawing Tools tab to change the format of the extraction appointment text box.

The relay driver is now connected to pin no. D0 and D2 of the MCU node. The relay acts as a switch to control high voltage electrical devices (lights, fans, TVs, etc.). These relays are activated via the sources present in the dashboard of the Adafruit server. And we can access it simply by enabling / disabling the feed from the Adafriut server control panel.

 Google Assistant, you can also access sources and use Relays / Exits with the Google Assistant, where you can access automated devices using voice recognition.

III.   DESCRIPTION OF SOFTWARE

The main software used in our project is Adafruit, which is used as an IoT platform to access devices via the Internet. The other software used is Proteus for PCB design. To dump the program into the MCU, we used the IDE ardiuno (integrated development environment). We also used googleifttt to access automated devices through the Google Assistant using the "OK GOOGLE" command. We use Google Assistant to manage automated devices via voice recognition of the Android system microphone.
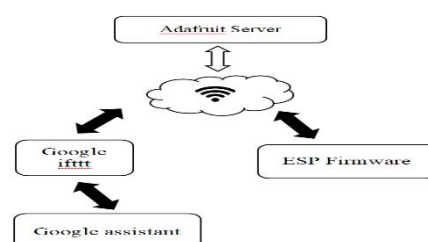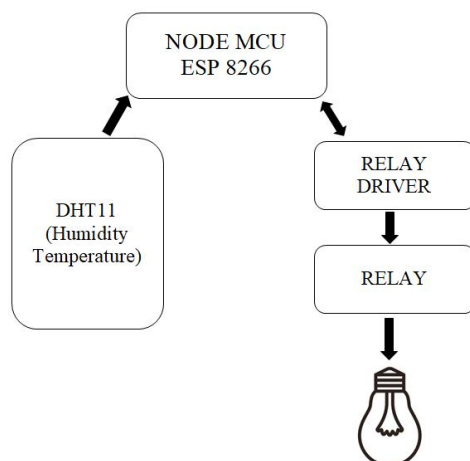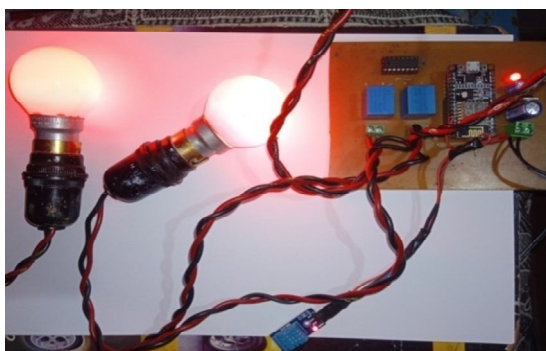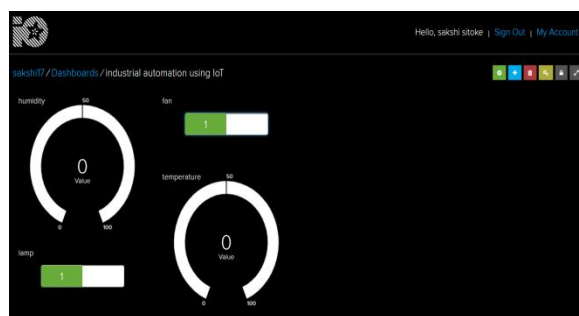
IV.   FIGURES

Fig (1). Software Flow

Fig(2). Hardware Flow

V. CONCLUSION

We conclude that by implanting these system we can access the live data and also control the device interfaced with our system

Fig(3). Hardware Output

Fig(4). Adfruit Dashboard Output

REFERENCES

[1] Android based Home Automation Using Raspberry Pi, by ShaijuPaul, AshlinAntony and Aswathy.B, IJCATInternational Journal of computing and Technology, Volume- 1, Issue1, February2014.

[2] Design and implementation of home automation system using raspberrypi‖ by Bruhathireddy, Dr.G.N.Kodandaramaiah, M.Lakshm-ipathy. International Journal of Science, Technology and Management,www.ijstm.com, Volume No.03, Issue No.12, December2014, ISSN:2394-1537.

[3] Home AutomationSystem (HAS) using Android for MobilePhone‖ by SharonPanth, MaheshJivani. International Journal of Electronics and Computer-Science Engineering, AvailableOnline at www.ijecse.org,ISSN:2277-1956.

[4] Bluetooth Remote HomeAutomationSystem Using Android Application", by R.A. Ramlee, M.H. Leong and R.S.S. Singh, the International Journal of Engineering and Science, Volume-2, Issue 01, Pages: 149-153, 2013, ISSN: 2319 – 1813, ISBN: 2319 – 1805.

[5] YoonD., BaeD.,Ko H. and Kim H., "Implementation of Home Gateway and GUI for Control the Home Appliance", The 9th International Conference on Advanced Communication Technology,PP.1583-1586,2007.

[6] R. A. Ramlee, M. H. Leong and R. S. S. Singh, "Bluetooth Remote Home Automation System Using Android Application", International Journal of Engineering and Science, Volume-2, Issue 01, Pages: 149-153, 2013, ISSN: 2319 – 1813, ISBN: 2319 – 1805.

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