

DEVELOPING AN INTELLIGENT HOME AUTOMATION SYSTEM LINKED TO THE RASPBERRY PI TECHNOLOGY

Swayam Jain

Modern School, Barakhamba Road, New Delhi

ABSTRACT

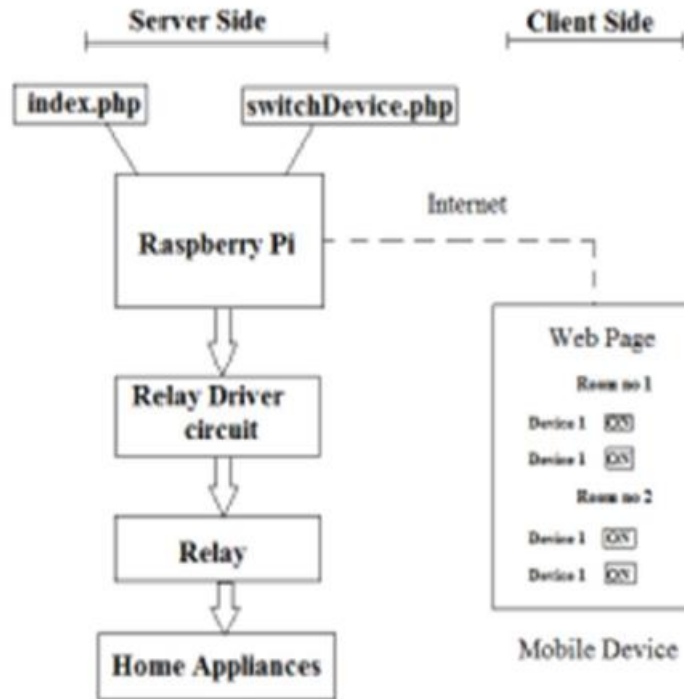
This venture presents the general plan of a Home Automation System (HAS) with a minimal expense and remote framework. It explicitly centres around fostering an IOT based home mechanization framework that has some control over different parts through the web or is consequently customized to work from encompassing circumstances. In this task, we plan firmware improvement for intelligent control, which can effectively be computerized, limiting human collaboration to save the trustworthiness of entire electrical gadgets in the home. We utilized Node MCU, a famous open-source IOT stage, to execute the course of computerization. Various parts of the framework will utilize different transmission modes that will carry out to convey the control of the gadgets by the client through Node MCU to the real machine. The principal control framework carries out remote innovation to give remote access from a cell phone. We are utilizing a cloud server-based correspondence that would add to the task's common sense by empowering unlimited machines access to the client regardless of the distance factor. We were given an information transmission organization to make more grounded mechanization. The framework is expected to control electrical apparatuses and gadgets in a house with a somewhat minimal expense plan, easy to understand connection point and simplicity of establishment. The situation with the machine would be accessible alongside the control on an android stage. This framework is intended to help and offer help to fulfil the older and crippled requirements in the home. Additionally, the brilliant home idea in the framework works on the way of life at home.

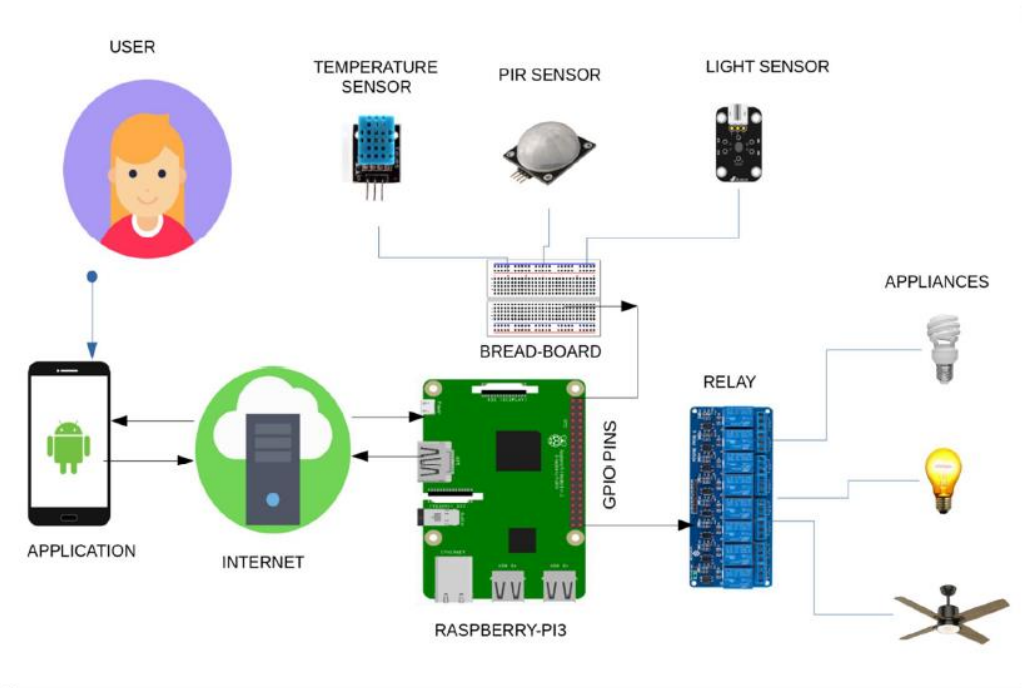
INTRODUCTION

This task presents the general plan of a home automation framework (has) with minimal expense and a remote system. It explicitly focuses around promoting an iot based home automation framework that has some control over different parts using the web or is consequently customized to work from surrounding conditions. In this project. We plan firmware advancement for intelligent control, which can effectively be computerized, limiting human collaboration to safeguard the respectability of entire electrical gadgets in the home. We utilized hub MCU, a famous open-source iot stage, to execute the mechanization interaction. Various parts of the system will utilize different transmission modes that will impart the control of the gadgets by the client through the hub MCU to the entire device. The primary control framework carries out remote innovation to give remote access from a cell phone. We are utilizing a cloud server-based correspondence that would add to the task's reasonableness by empowering unhindered access of the machines to the client independent of the distance factor. We gave an information transmission organization to make a more levelled robotization. The framework is planned to control electrical machines and gadgets in

a house with a generally minimal expense plan, easy understanding of the point of interaction and simplicity of establishment. The situation with the apparatus would be accessible alongside the control on an android platform. This framework is intended to help and offer help to fulfilling the older and handicapped necessities in the home. Additionally, the smart home idea in the framework works on the way of life at home.

PROCESS MODEL

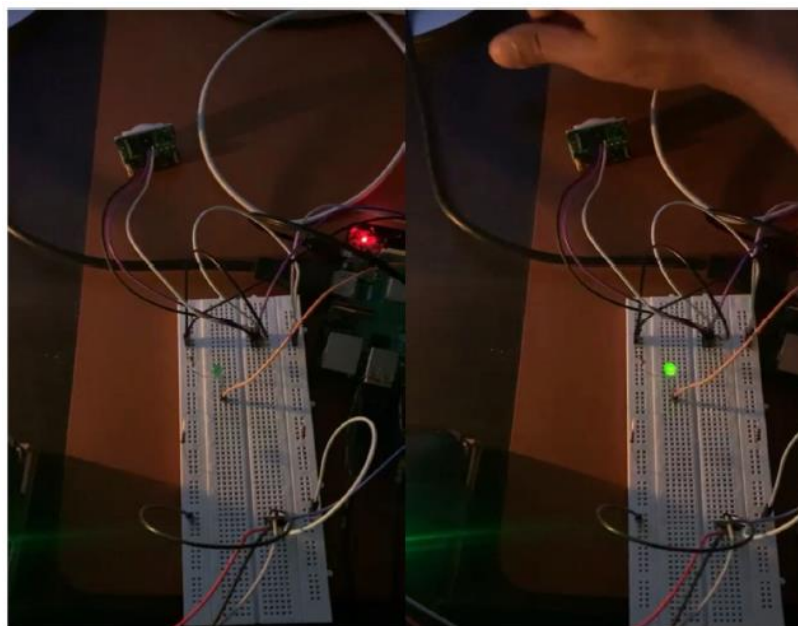




A. Design Diagram

The framework of the propounded structure is given in Figure 1. The construction incorporates a bunch of equipment parts, for example, WLAN module, Raspberry pi4, Fire locator, Motion sensor, hand-off, light sensors, Strip light surface light and a bunch of programming parts like Rasberry pi, Blynk IOT application. The different advances included make sense of: The structure contains different sensors like development and fire.

RESULTS



Motion



Flame

CONCLUSION

This paper proposes a practical voice-controlled (Google Assistant) home robotization controlling general machines viewed as in one's home. The methodology talked about in the paper was fruitful as GACHA (Google Assistant Controlled Home Automation) effectively carried out the plan. This framework is profoundly solid and productive for the matured individuals, and unexpectedly, abled individuals in a wheelchair who can't arrive at the switch for the turning ON/OFF the gadget and are reliant upon others.

REFERENCES

- [1] Home Automation Using ATmega328 Microcontroller and Android Application, S.Anusha1, M.Madhavi2, R.Hemalatha3. International Research Journal of Engineering and Technology (IRJET), Volume: 02 Issue: 06 | Sep-2015.
- [2] Internet of Things: Ubiquitous Home Control and Monitoring System using Android based Smart Phone, Rajeev Piyare. International Journal of Internet of Things 2013, 2(1): 5-11.
- [3] Design and Implementation of a WiFi Based Home Automation System, Ahmed ElShafee, Karim AlaaHamed. World Academy of Science, Engineering and Technology International Journal of Computer, Electrical, Automation, Control and Information Engineering Vol. 6, No. 8, 2012.
- [4] Y.C. You, Cloud-based smart home automation, Thesis, Southern Taiwan University of Science and Technology, Communication Engineering Research Institute, 2013.

- [5] Gerald Santucci et al. From “Internet of data to internet of things”. In Paper for the International Conference on Future Trends of the Internet, volume 28, 2009.
- [6] Kari Pulli, Anatoly Baksheev, Kirill Korniyakov, and Victor Eruhimov. Real-time computer vision with opencv. *Commun. ACM*, 55(6):61{69, June 2012.
- [7] M. Soliman, T. Abiodun, T. Hamouda, J. Zhou, and C. H. Lung. Smart home: “Integrating internet of things with web services and cloud computing”, In *Cloud Computing Technology and Science (CloudCom)*, 2013 IEEE 5th International Conference on, volume 2, pages 317{320, Dec 2013.
- [8] Zanella, N. Bui, A. Castellani, L. Vangelista, and M. Zorzi. “Internet of things for smart cities”, *IEEE Internet of Things Journal*, 1(1):22{32, Feb 2014.
- [9] ElShafee and K. A. Hamed, "Design and Implementation of a WiFi Based Home Automation System," *World Academy of Science, Engineering and Technology*, vol. 68, pp. 2177-2180, 2012.
- [10] R. Piyare and M. Tazil, "Bluetooth Based Home Automation System Using Cell phone," in *IEEE 15th International Symposium on Consumer Electronics*, Singapore 2011, pp. 192 - 195