Smart Sage: IoT-Driven Home Automation Framework with Predictive Machine Learning

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Abstract—In the modern generation, the use of automation or AI has become an integral part of our lives. As a result, today it affects various aspects such as transportation and communication, communication, even starting from the rising of the sun every morning and household chores till sunset. Smart home apps are changing the standard of living of people and helping people to do any task very easily, considering this is our endeavor. Nowadays people are more and more attracted towards automation so this paper considers basically how to automate a home or office appliance using machine learning and Arduino Uno. Also, it measures the voltage of the electricity from them to give an idea or framework of what the future electricity demand might be for them.

Index Terms—home automation, framework, future predictions, voltage measurements

I. INTRODUCTION

The home self-regulation concept is growing in popularity for reducing human effort including errors and thus increasing efficiency. We can manage remote home appliances help of Home self-regulation.Over and above that, the home self- the regulation system can also integrate other ardors like alarms, emergency systems, security, etcetera. At the point when a self-regulation house was implicit in the good 'old days, At first, it utilized signals and electrical force transmission wires to naturally control the home appliances where each sign contains computerized information short radio- recurrence.Different types of home self-regulation systems such as Bluetooth Controlled, Internet Controlled, and so many others. All kinds of self-regulation systems have their favor and drawbacks. In our work, we have designed various automatically activated devices for smart homes. Our home self-regulation framework project is built on Arduino UNO, RIP motion sensor, Temperature Sensor, multimeter. The next section will interpret all framework modules on the project. The fundamental home self-regulation is shown in Figure 1. Even though there are many contending merchants, there is a developing exertion toward open-source frameworks. In any case, there are issues with the present status of self-regulation in IOT, including the absence of standard safety efforts and the degrading of more established gadgets Without reverse similarity, and thinking about this issue, our proposed framework structure has been created.

II. RELATED WORK

Nowadays technology has enriched every sector in many ways.In this recent world everything is automated like E-voting [1], [2], supply chain management [3],robotics [4], vehicle registration [5],national identity card management [6],sentiment analysis [7],applications for own security [8] and so more.Here, a concise narrative of the work done earlier and also discusses the automation systems based on all the sectors that have created various new systems using IoT and the application and technology was the main basis of their work which they have shown in Figure 2. Himanshu Singh, Vishal Pallagani, Vedant Khandelwal and Venkanna U. [9] used a wireless sensor node to automated home repose track of varied circumstance variables that exist and guides to work according to the user needs. A smart room based on the solar power system and Wago PLC had developed by Vibhuti and S. L. Shimi [10] with two processes. S. Mahmud, S. Ahmed, and K. Shikder [11] developed a smart home automation system with a metering system using IoT for user-controlled and monitored electronic devices. A portable, low-cost, and user-friendly IoT-based home automation system was proposed by Jabbar, W. A., Kian, T. K., Ramli, R. M., Zubir, S. N., Zamrizaman, N. S. M., Balfaqih, M., Alharbi, S [12].
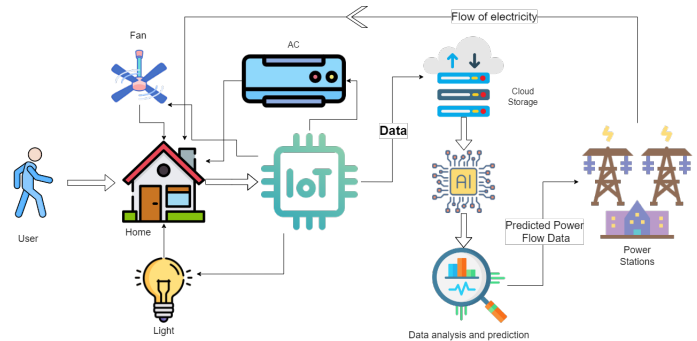
III. METHODOLOGIES

Fig: IoT-Driven Home Automation Future Predictive Proposed Framework

Acknowledgment

Conclusion

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