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IoT based DigiSafe Home

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Abstract: *In the ever-evolving landscape of home automation, technology seamlessly integrates with our daily lives. As the Automation industry advances, our quality of life improves, and automated systems gain prominence over their non-automated counterparts. The proliferation of internet usage has further accelerated this transformation, with the Internet of Things (IoT) emerging as a pivotal force. Our prototype system leverages Wi-Fi technology for smart home automation, focusing on the NodeMCU, an open-source development board based on the ESP8266 chip. Unlike its predecessor, the NodeMCU is user-friendly, cost-effective, and widely adopted by makers and developers. Key components include relay modules for appliance control, a hardware interface integrating sensors and appliances, and a user-friendly software interface accessible via smartphones, tablets, and laptops. The system offers user-friendly control, energy management, and expandability for various home appliances and security enhancements—all within the confines of a Wi-Fi network.*

Keywords: Smart Home Automation (SHA), Internet of Things (IoT), ESP8266Wi-Fi Technology, NodeMCU, Sensors

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[5]. https://www.scirp.org/journal/paperinformation.aspx?paperid=60812- This paper presents the Home Automation Device Protocol (HADP), a standardized approach for enhancing interoperability among home automation devices using an IFTTT-like model. HADP focuses on minimizing power consumption and bandwidth requirements while supporting various communication mediums, including Wi-Fi, Bluetooth 4.2, ZigBee IP, 6LoWPAN, IEEE 802.15.4, and Ethernet with IPv6 support.

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[12]. "The Internet of Things" by Samuel Greengard Author: Samuel Greengard Website: Amazon "The Internet of Things" covers how IoT works in our current world, as well as the impact it will have in the long run on society. Author Samuel Greengard details the start of the IoT era and how it has evolved into the smart and life-changing technology it is today. However, he believes we are still in its early stages and there is much more to come. Whether in your home or in your banking, IoT is everywhere and it presents its own challenges and risks in a completely connected world. Greengard discusses privacy and security concerns as well as how the technology may evolve within the next decade