Title: Home Automation System

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Author Note:

I am a learner who is very hardworking and enthusiastic about new things to learn with persistence and nature of consistency.

Title:

Embedded systems and Iot

Embedded systems refer to computer systems designed to perform specific functions within a larger device or system. They are typically composed of microcontrollers or microprocessors that are embedded into hardware and operate with limited resources. These systems are dedicated to performing a specific task, such as controlling machinery, monitoring sensors, or managing communication protocols.

Heading1 :History of Iot

The Internet of Things (IoT) began with the concept of connecting devices and enabling machine-to-machine communication.

The term "Internet of Things" was coined in 1999 by Kevin Ashton.

IoT evolved from industrial applications to consumer applications, and continues to expand into various domains, driven by advancements in connectivity, technology, and the demand for automation and efficiency.

Heading2 : Internet of Things

The Internet of Things (IoT) extends the capabilities of embedded systems by connecting them to the internet, enabling them to interact with other devices and exchange data. IoT enables the seamless integration of physical objects into a digital network, allowing for remote monitoring, control, and automation. It encompasses a wide range of applications, including smart homes, industrial automation, healthcare monitoring, and environmental sensing. By combining embedded systems and IoT, we can create intelligent, interconnected systems that enhance efficiency, convenience, and overall functionality in various domains.

Heading3: About Project- Home Automation System

In this project we will make Bluetooth light switch.

Nowadays, we have remote controls for our television sets and other electronic systems, which have made our lives real easy. Have you ever wondered about home automation which would give the facility of controlling tube lights, fans and other electrical appliances at home using a remote control? Off-course, Yes! But, are the available options cost-effective? If the answer is No, we have found a solution to it. We have come up with a new system called Arduino based switching system using Bluetooth. This system is super-cost effective and can give the user, the ability to control any electronic device without even spending for a remote control. This project helps the user to control all the electronic devices using his/her smartphone. we are introducing automatic system using Bluetooth and can be used along with the regular switch. With the help of this system you can control your home appliances from your mobile phone. You can turn on/off your home appliances within the range of Bluetooth.

Heading4: COMPONENTS Required

Arduino UNO

Single Channel Relay Module

Bluetooth Module HC-05

LED Bulb

Power Supply (USB)

Bread Board

Push Button Jumper Wires

5V Battery

Resistors (220ohm, 10kohm)

Heading5:Role of Iot in the project

The IoT based Home Automation will enable the user to use a Home Automation System based on Internet of Things (IoT). The modern homes are automated through the internet and the home appliances are controlled. The user commands over the internet will be obtained by the Wi-Fi modems. The Microcontroller has an interface with this modem. The system status is displayed through the LCD display, along with the system data. This is a typical IoT based Home Automation system, for controlling all your home appliances. The smart home market is taking off as IoT device prices come down and the general public comes to understand the benefits of these products. And from smart homes, the next logical step is smart cities, which would take the IoT to the next level. And yet, smart homes are just

one small part of our daily lives that the Internet of Things will transform in the coming years.

Heading 6 : Conclusion

IoT is deployed for Smart homes, Wearables (watches and bracelets), Smart Cars, Smart farming, Smart Retail, Smart Grids, Smart city, and smart healthcare. With such a broad spectrum of applications, the future of IoT looks more promising than ever before.

References:

https://www.electronicsforu.com/technology-trends/tech-focus/role-iot-home-automation

https://www.slideshare.net/Aakashkumar276/project-report-on-home-automation-using-by-bluetooth