

Report

What Is IoT?

Things (or "things") are physical items embedded with sensors, software, and other technologies with the purpose of communicating and sharing data with other devices through the internet, which is known as the Internet of Things (IoT).

What is a smart home?

- Using a mobile smartphone or other networked device, a smart home allows appliances and gadgets to be managed remotely from anyplace with an internet connection.
- Through the internet, devices in a smart home may be controlled remotely, including security access, temperature, lighting, and a home theatre.

Problem Statement

Cisco packet tracer is used to deploy smart home technology. To make smarter, I employed several sensors, smart devices, and detectors. As seen in the accompanying image, the home's architecture is connected via wireless and wired mediums.

Objective

- To monitor and operate household appliances from afar.
- To save time and to make effective use of energy
- To have better control over your living environment and improve your freedom
- To make communication with relatives more convenient
- To enhance personal security
- To serve as a visual warning system in the event of an emergency.

Advantages of Home automation systems:

- Watching TV (and what you watch) and cooking in the oven, keeping food in the refrigerator, and using electricity may all be tracked over time. System scalability and easy extension.

- Functionality of the appliance has been improved. Having a smart home can also help you get the most out of your appliances. Your favourite shows will be easier to find with a smart TV's applications and channels. With the help of a smart oven, you can cook your chicken to perfection without worrying about overcooking or undercooking it, ever again.
- Home device management from a single point of access. In this case, the level of convenience is great. The ability to link all of your house's electronics through a single interface is a huge step forward for home technology and administration.

Methodology

- The Home Gateway's web interface may be used to remotely manage the IoE device. The Home Gateway's internal (LAN) IP address is 192.168.25.1, but it may also be contacted through its Internet-facing IP address.
- Smart devices such as fashionable windows, gorgeous fans, lovely lights, stylish doors, attractive garbage doors, grass sprinklers, fire sprinklers, cell towers, web cameras, and various sensors are utilised to carry out home automation. To control the objects and sensors, the Microcontroller and the Home Gateway were utilised, which provide a programming environment for controlling connected things and control mechanisms via the registration of Home Gateway smart devices.

Conclusion

- The impetus for this effort was the advancement of technology and the rise in smartphone usage. Safety measures are important, and IoT offers a novel and great notion for making our surrounds smarter.

- In this project, Cisco packet tracer was used to create and simulate a smart house. During the implementation process, Cisco's public tutorials and past research proved to be quite useful. The results showed that end-user devices may be used to administer and monitor the devices. A number of capabilities in Cisco packet tracer make simulation easy.