

Basics of Internet of Things (IOT)

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ABSTRACT

The Internet of Things (IoT) is the entomb systems administration of actual gadgets, vehicles and different articles which comprises of an inserted framework with sensors, actuators and organization network that empower to gather and trade information. The IoT permits objects to be detected and additionally controlled from a distance across existing organization framework, setting out open doors for more combination of the actual world into PC based frameworks, and result in better precision, productivity and monetary advantage.

Key Terms: IoT,IoE,M2M,Sensor

INTRODUCTION

Have you ever dreamed that when you wake up in the morning automatically your coffee start brewing, some unseen computing device turn on the TV news, starts reading your schedule and responds to your voice commands etc. Such type of things we have seen in the movie, or in a science fiction Isn't it! But now in reality all this will be possible. The technique that supports above mentioned things is known as Internet of Things (IoT).

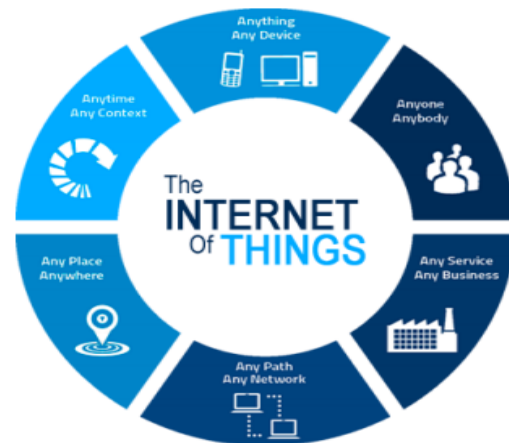


Fig.1 IoT

What is Internet of things (IOT)?

Sometimes it is known as Internet of Everything (IoE). It consists of web-enabled device that will collect or send data and also act on the data that found in the surrounding, environments embedded with sensors, processors and communication hardware.

This device is known as “connected “or small devices and is able to talk to other related devices. The process which is necessary for communication is machine-to-machine (M2M). It acts only with that information that they get from one another.

Where is IOT?

The IOT is influencing our life style for the way we react and the way we react....!

The Real time example of IOT:

- Smart car
- Smart Ac: controlled by your Smart Phone

- Smart Watch: Which tracking your daily Activities and much more examples.

How's the IOT works??

The IOT is giant network with connected Devices. The sensors embedded in any physical devices. It mean now all the devices are embedded with sensors.

The IOT provides a common platform for all the devices to dump the data And a common language for all the devices are communicate with each other. The IOT platform collect the data from different different sensors. The data is not allies' continuously allowing. This is just a one or more million sensors.

We have the smart appliances i.e. Smart car, Smart homes as well as Smart cities. Where the IOT is redefining the lifestyle and transforming the way of interact with the Technology.

PREVENTION

Without a properly secured network, IOT is **PREVENTION**.

Without a properly secured network, IOT is fair game to every hacker with a decent internet connection.

You can improve security by implementing traditional endpoint features like antivirus, firewalls, anti-malware, and intrusion prevention as well as detection systems. Authentication should be a key starting point for any device.

You can use two-factor authentication, biometrics and digital certificates.

Always use IoT security analytics tools that can detect IoT specific attacks or intrusion.

Before you can develop an IoT application, you need to carry out conclusive research on IoT application security.

Try to strike a perfect balance between the apps user interface and the security of the IoT application.

APPLICATION: CASE STUDY

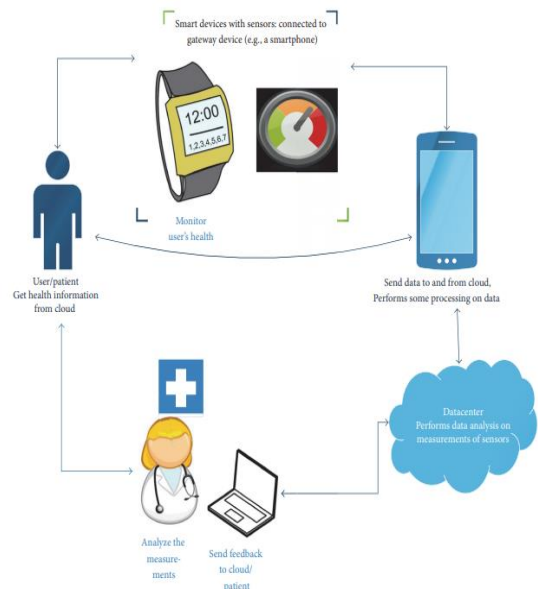


Fig.2 Smart Health Care

IoT ,smart connectivity have proven in the health care domains. Many wearable devices are being developed, which monitor a person's health condition (see Figure 2).

It is useful for elders and patients with critical health conditions. Currently, IoT sensors are being used to continuously monitor and record their health conditions and transmit warnings in case any abnormal indicators are found.

CHALLENGES

1. Availability :

Hardware and software levels must be there to provide services whenever needed by whoever.

2. Security:

Attackers can use it as entry points to hack data/harm.

3.Privacy: Smart devices gathers all personal data so privacy is the concern.

CONCLUSION

Since in day by day IoT becomes more powerful and will be widely used in every field. It is used to connect humans with machines ultimately in all over the universal. It makes individuals life easier. IoT can prefer to proper utilization of resources.

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