Future Network and Technology -IoT Healthcare Solutions and Applications

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Abstract:-

The Internet is a large network of interconnected computers spread across the world. It has been a channel hosting multiple avenues of services and information. People are now connected to each other like never before. Why limit ourselves to only human-to-human network? Isn't it a great idea to connect everything in a network so that we get real-time information and thus automate tasks? **"**Internet of Things (IoT)" is currently the most discussed topic which contemplates automation and has potential to impact human lives in the near future.

Keywords:- Automation ,Computers , Channel, Network.

1 Introduction

Individuals can wear something that looks like jewelry but is designed to alert family members or friends in case of an emergency. For instance, if an individual is wearing a medical alert bracelet and fell out of bed in the middle of the night, the people they designate to help in the case of an emergency would be immediately notified on their smartphones that their help was needed.

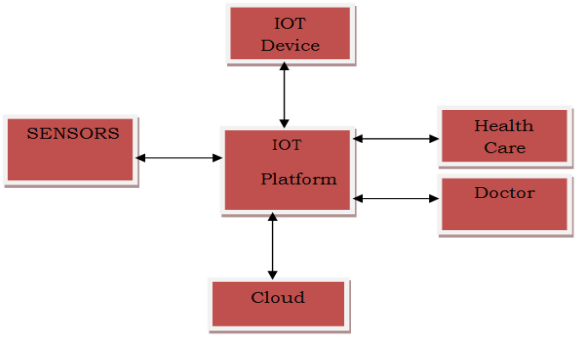

Fig 1 Peripheral Device

2. Literature survey

Connected healthcare yet remains the sleeping giant of the Internet of Things applications. The concept of connected healthcare system and smart medical devices bears enormous potential not just for companies, but also for the well-being of people in general. Research shows IoT in healthcare will be massive in coming years. IoT in healthcare is aimed at empowering people to live healthier life by wearing connected devices.The collected data will help in personalized analysis of an individual's health and provide tailor made strategies to combat illness. The video below explains how IoT can revolutionize treatment and medical help.

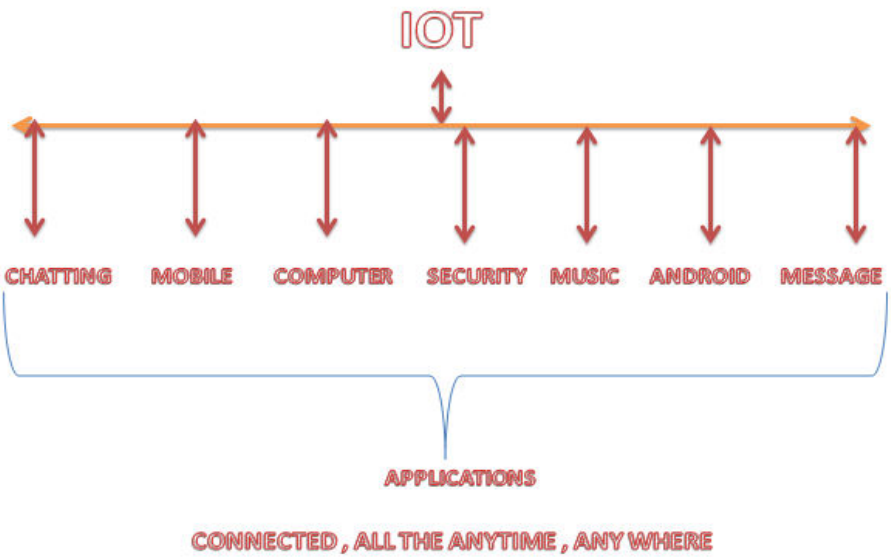

Fig 2 Application of IOT Device

3. Proposed methodology

The current technology in healthcare and a general practice of medicine gets enhanced with the IoT system. Professionals reach is expanding within a facility. The diverse data collected from large sets of real-world cases increases both the accuracy and size of medical data. The precision of medical care delivery is also improved by incorporating more sophisticated technologies in the healthcare system. IoT hardware and software and what is the IOT architecture made up of. Moreover, we will learn internet of things software and hardware devices that make use of IoT technology. IoT Hardware includes a wide range of devices such as devices for routing, bridges, sensors etc. These IoT devices manage key tasks and functions such as system activation, security, action specifications, communication, and detection of support-specific goals and actions.

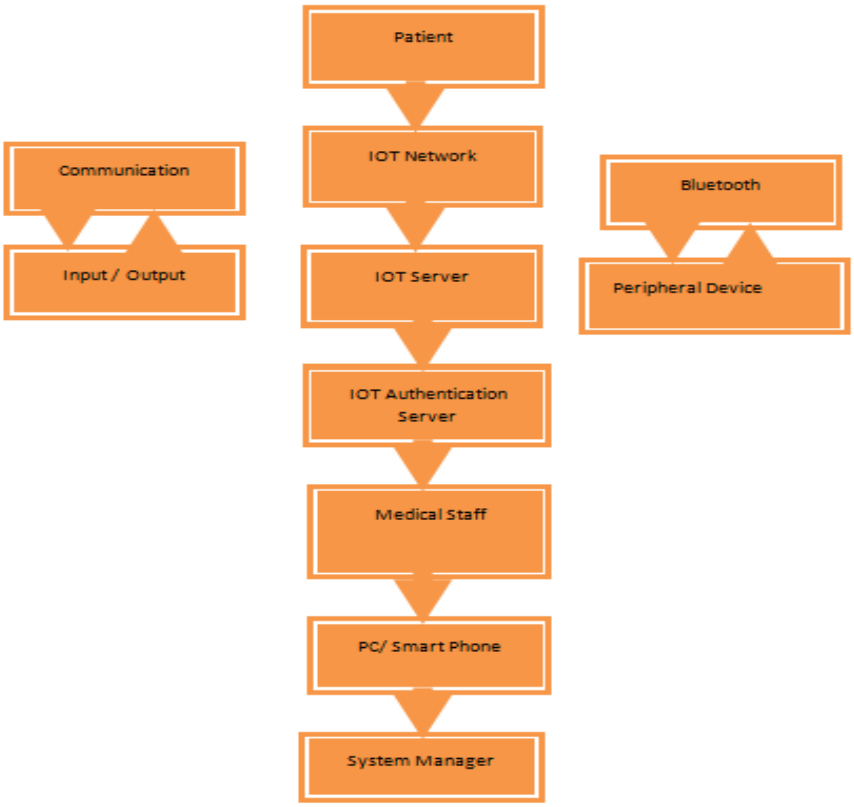

Fig 3 IoT for Patients Connected device

3.1 IOT & Machine to Machine (M2M)

All the computers joined to the Internet can talk to each other. Use of mobile phones for connecting internet has revolutionized the entire scenario. With Internet of Things (IoT) the communication is extended via Internet among all the things that surround us. At the primary appear, it may become visible that Machine-to-Machine (M2M) communications and IoT denote the same thing. In reality, M2M is only a subset of IoT. IoT comprises M2M as well as Human-to-Machine communication (H2M). The enabling technologies for Internet of Things are sensor networks, RFID, M2M, mobile Internet, wired & wireless communication network, semantic data integration, semantic search etc. In wireless communication Wi-Fi, ZigBee, 6LOPAN, Bluetooth technologies may be used for short range connectivity among devices / devices to the gateway. Further GSM 2G/ 3G/ LTE/ Wi-Max may be used for connecting M2M gateway to the desired server. The data so generated from the devices may also act as vital input for planning, management, policy and decision making .Examples of applications of IoT/M2M are in the domains such as smart energy, smart health, smart buildings, smart transport, smart living and smart cities.

Examples of applications of IoT/M2M are in the domains such as Automotive - Passenger vehicle anti theft , recovery, monitoring ,maintenance, safety control, entertainment, Security- Commercial and home security monitoring, Surveillance, applications, Fire alarm, medical alert, Health

care- Remote monitoring of patient after surgery (e-health), remote diagnostics, medication reminders, Tele-medicine

4. Results and discussion

IoT also aims to take this connectivity to another level by connecting multiple devices at a time to the internet there by facilitating *man to machine* and *machine* to machine interactions.

5.Conclusions

People who came up with this idea, have also realized that this IoT ecosystem is not limited to a particular field but has business applications in areas of home automation, vehicle automation, factory line automation, medical, retail, healthcare and more.

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