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IoT Applications

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Abstract: The Internet of Things is actually a pretty simple concept; it means taking all the things in the world and connecting them to the internet. When something is connected to the internet that means that it can send information or receive information, or both. This ability to send and/or receive information makes things smart and smart is good. IOT is a technology that has gained momentum and is now silently shaping our future. It is a result of mankind's curiosity and intention to lead a convenient and connected life style, reducing labor and eliminating the chance of human error. There are billions of connected devices across the globe, collecting billions of pet bytes of data every single day. These chunks of data are home to crucial pieces of information that can take care of wearable's, home security, entertainment needs, saving water, control fuel emission, farming, health care, vehicle monitoring etc. In this paper we are emphasizing on the applications working using IOT.

Keywords: IOT, wearable's, health care, vehicle monitoring, security, technology, information

1. Introduction

Two decades ago, the Internet was the shiny new object in the room. The Worldwide Web was just emerging as a new paradigm for communication and commerce, and the world brimmed with possibilities. Today, not only has the Internet fulfilled those nascent dreams, it has become the undisputed foundation of the digital age. But now there's a new paradigm in town—the Internet of Things (IoT). For years, IoT has been growing up inside factories and oil platforms, in ships, trucks, and trains quietly changing long-standing industrial processes. It has made its way into virtually every industry agriculture, aviation, mining, healthcare, energy, transportation, smart cities, and on and on. IoT is no longer just the next phase of the Internet it's fundamentally reshaping the Internet in three-fold:

- The Internet has mostly been implemented in Greenfield environments, while IoT deployments are generally in Brownfield environments, requiring integration and migration of legacy and vendor-specific systems
- The IoT-enabled Internet has created an extremely rich, heterogeneous array of business and consumer use cases, requirements and environments
- With IoT, the Internet has been transformed into a real-time conduit of unimaginable amounts of data that can be analyzed to make better decisions, improve performance, and grow profits.

2. Applications of IoT

IoT is essentially a platform where embedded devices are connected to the internet, so they can collect and exchange data with each other. It enables devices to interact, collaborate and, learn from each other's experiences just like humans do. IoT applications are expected to equip billions of everyday objects with connectivity and intelligence. It is already being deployed extensively, in various domains, namely:

- Wearables
- Smart Home Applications
- Health Care
- Smart Cities
- Agriculture
- Industrial Automation

2.1 Wearables

Wearable technology is a hallmark of IoT applications and probably is one of the earliest industries to have deployed the IoT at its service. We happen to see Fit Bits, heart rate monitors and smart watches everywhere these days. One of the lesser-known wearables includes the Guardian glucose monitoring device. The device is developed to aid people suffering from diabetes. It detects glucose levels in the body, using a tiny electrode called glucose sensor placed under the skin and relays the information via Radio Frequency to a monitoring device.

2.2 Smart Home Applications

When we talk about IoT Applications, Smart Homes are probably the first thing that we think of. In IoT enabled Smart Home environment various things such as lighting, home appliances, computers, security camera etc. all are connected to the Internet and allowing user to monitor and control things regardless of time and location constraint.

2.3 Health Care

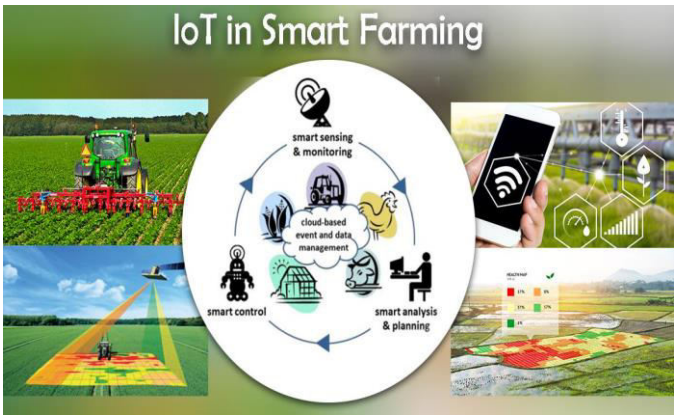
The current technology in healthcare and a general practice of medicine gets enhanced with the IoT system. Professionals reach is expanding within a facility. The diverse data collected from large sets of real-world cases increases both the accuracy and size of medical data. The precision of medical care delivery is also improved by incorporating more sophisticated technologies in the healthcare system.

2.4 Smart Cities

IoT solutions offered in the Smart City area solve various city-related problems comprising of traffic, reduce air and noise pollution and help make cities safer.

2.5 Agriculture

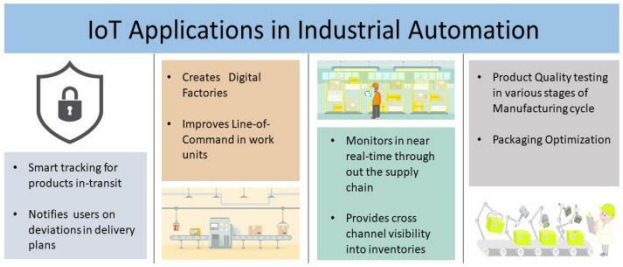
The number of farming operations is usually remote and the large number of livestock that farmers work on, all of this can be monitored by the Internet of Things and can also revolutionize the way farmers work. But this idea is yet to reach a large-scale attention. Nevertheless, it still remains to be one of the IoT applications that should not be underestimated. Smart farming has the potential to become an important application field specifically in the agricultural-product exporting countries.



2.6 Industrial Automation

This is one of the fields where both faster developments, as well as the quality of products, are the critical factors for a higher Return on Investment. With IoT Applications, one could even re-engineer products and their packaging to deliver better performance in both cost and customer experience. IoT here can prove to be game changing with solutions for all the following domains in its arsenal.

- Factory Digitalization
- Product flow Monitoring
- Inventory Management
- Safety and Security
- Quality Control
- Packaging optimization
- Logistics and Supply Chain Optimization



3. Conclusion:

Our society is now totally dependent on the biggest ever network, the Internet; one of the major and most astonishing of human inventions. In this network, most of the information traffic is created and generated by people through email, the web and other user services. Internet of Things (IoT) is somehow a leading path to the smart world with ubiquitous computing and networking to ease different tasks around users and provide other tasks, such as easy monitoring of different phenomena surrounding us. In the IoT, environmental and items from daily life, termed "things", "objects", or "machines" are enhanced with computing and communication technologies. They join the communication framework, meeting a variety of services based on person-to-person, person-to-machine, machine-to-person and machine-to-machine interactions using wired and wireless communication. These connected machines or objects/things will be the new Internet or network users and will generate data traffic of the emerging IoT. They will perform new services to be carried out by the current or future Internet. New functionalities, inspired mostly by human senses, will be introduced in the network, such as identifying, locating, sensing, deciding, actuating and acting, building more task automation and shaping the virtual world around the real world.

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