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INTERNET OF THINGS

DEPARTMENT
OF COMPUTER
SCIENCE
SHIFT -1

The Internet of things (IoT) describes the network of physical objects—"things"—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the Internet.

Things have evolved due to the convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems. Traditional fields of embedded systems, wireless sensor networks, control systems, automation, and others all contribute to enabling the Internet of things.



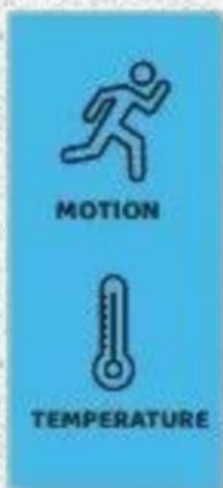
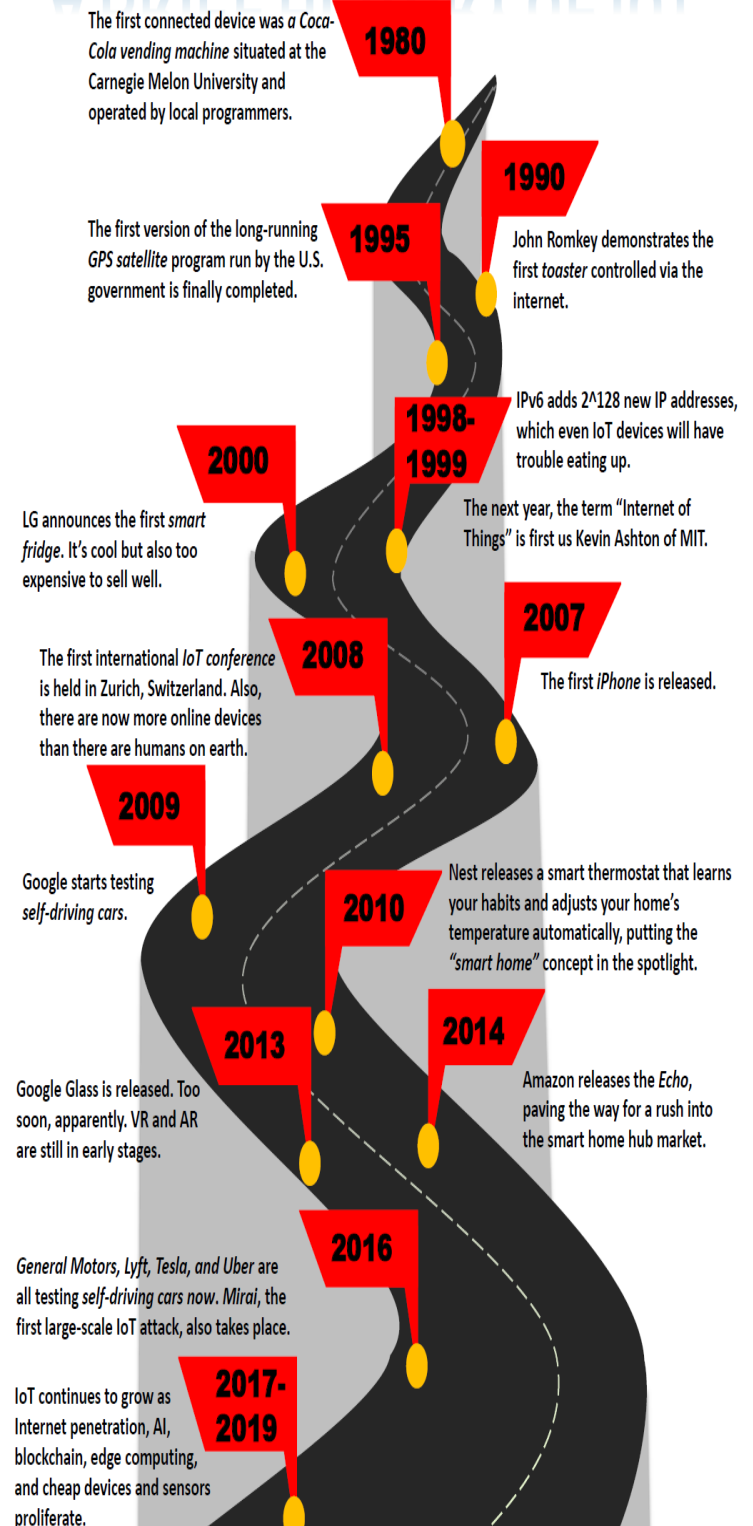
HISTORY

The term Internet of Things is 16 years old. But the actual idea of connected devices had been around longer, at least since the 70s. Back then, the idea was often called "embedded internet" or "pervasive computing". But the actual term "Internet of Things" was coined by *Kevin Ashton* in 1999 during his work at Procter&Gamble. Ashton who was working in supply chain optimization, wanted to attract senior management's attention to a new exciting technology called RFID. Because the internet was the hottest new trend in 1999 and because it somehow made sense, he called his presentation "Internet of Things". Even though Kevin grabbed the interest of some P&G executives, the term Internet of Things did not get widespread attention for the next 10 years.

FACTS

- ❑ By the end of 2019, 86 percent of healthcare organizations were using IoT devices. That's a growth of 26% in just three years.
- ❑ Asia and Australia collectively are the biggest users of industrial robots. That region currently uses over 60 percent of all worldwide industrial robot units, versus just around 20 percent in Europe, and around 13 percent in the Americas. That margin is expected to grow larger as Asian countries more rapidly grow their automated manufacturing capacity.
- ❑ Automated guidance and steering systems are extremely popular for many planted crops, with over 50 percent of rice acres being planted, fertilized and harvested in the US using this technology.

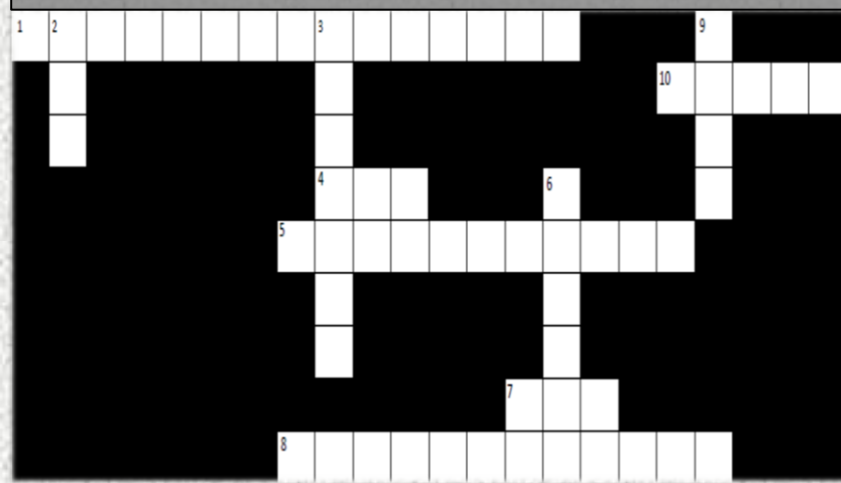
A BRIEF HISTORY OF IOT



Mobile app

4 common components of an IoT system

CROSSWORD



Answers Page No.4

“The Internet of Things has the potential to change the world, just as the Internet did. Maybe even more so.”

Kevin Ashton

Across:

1. Information is conveyed by SSID that is configured on an IoT devices_____
4. Which type of network is used to connect a company located in one of a city to another location in a city far away_
5. ____needed in a smart home to connect sensor and smart devices to a network.
7. Which type of computing is located at the edge of a business_____
8. Which tool allows a user to simulate real network_____
10. Which type of wireless network is used to connect devices within a city to create a metropolitan-area network_____

Down:

2. What is comprised of million of smart devices and sensors connected to the internet?
3. What allows digital devices to interconnect and transmit data_____
6. A devices that detects or measures an event_____
9. which command is used to test network connectivity and provide a response to each packet received by the remote host_____

IoT Applications in Health care

IoT applications can turn reactive medical-based systems into proactive wellness-based systems. The resources that current medical research uses, lack critical real-world information. It mostly uses leftover data, controlled environments, and volunteers for medical examination. IoT opens ways to a sea of valuable data through analysis, real-time field data, and testing. The Internet of Things also improves the current devices in power, precision, and availability. IoT focuses on creating systems rather than just equipment.



IoT Applications in Health Care

- Across:**
1. Wireless network
 4. WAN
 5. Home gateway
 7. Fog
 8. Packet tracer
 10. WiMAX
- Down:**
2. IoT
 3. Network
 6. Sensor
 9. Ping

IoT Applications in Agriculture

❑ Statistics estimate the ever-growing world population to reach nearly 10 billion by the year 2050. To feed such a massive population one needs to marry agriculture to technology and obtain best results. There are numerous possibilities in this field. One of them is the Smart Greenhouse.

❑ A greenhouse farming technique enhances the yield of crops by controlling environmental parameters.

❑ However, manual handling results in production loss, energy loss, and labor cost, making the process less effective.

❑ A greenhouse with embedded devices not only makes it easier to be monitored but also, enables us to control the climate inside it. Sensors measure different parameters according to the plant requirement and send it to the cloud. It, then, processes the data and applies a control action.

