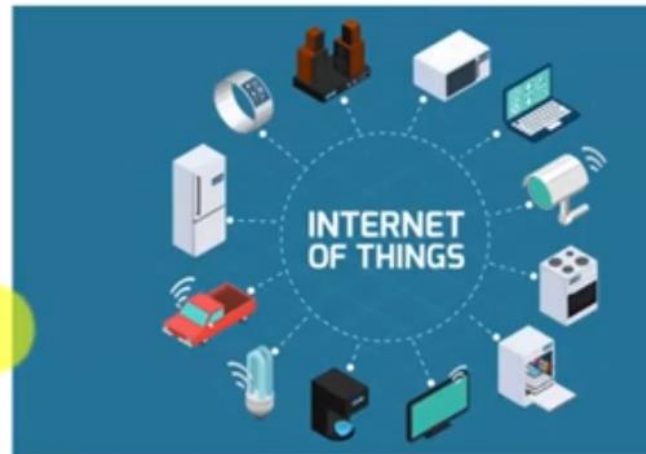


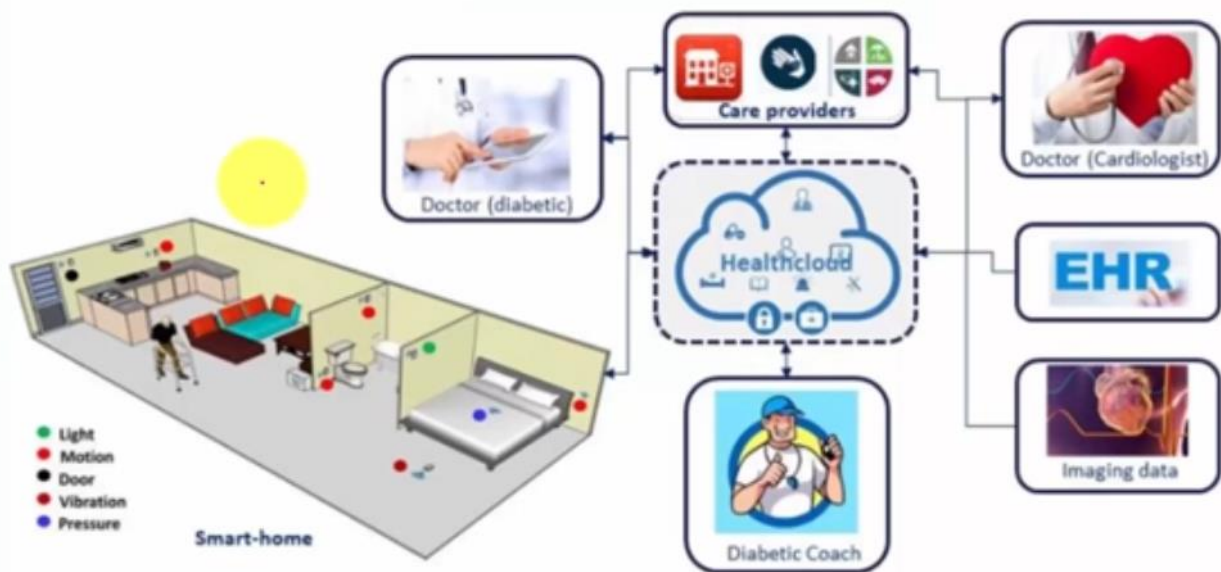
INTRODUCTION TO IOT

What is IoT?

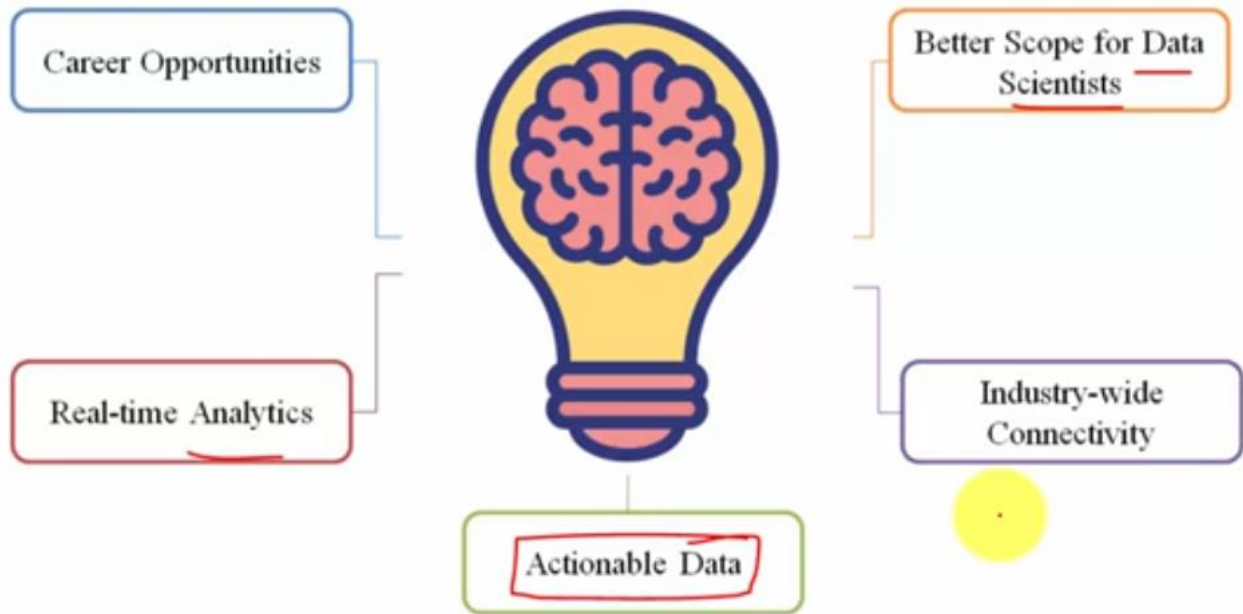
The Internet of things is a system of interrelated computing devices, provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction



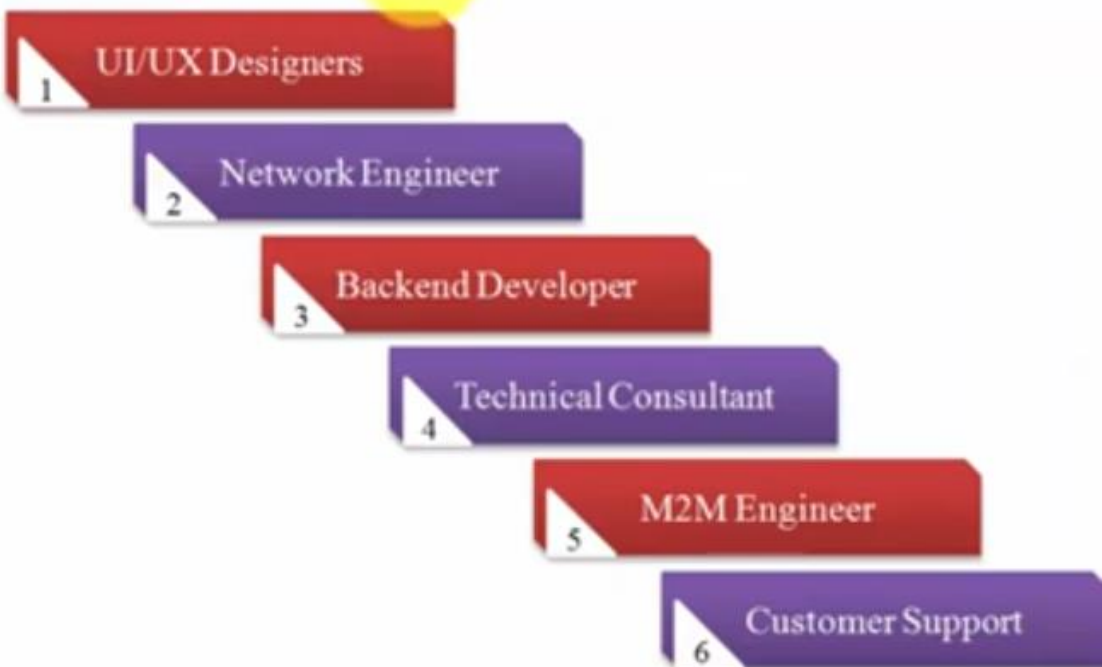
IoT Healthcare – An Example



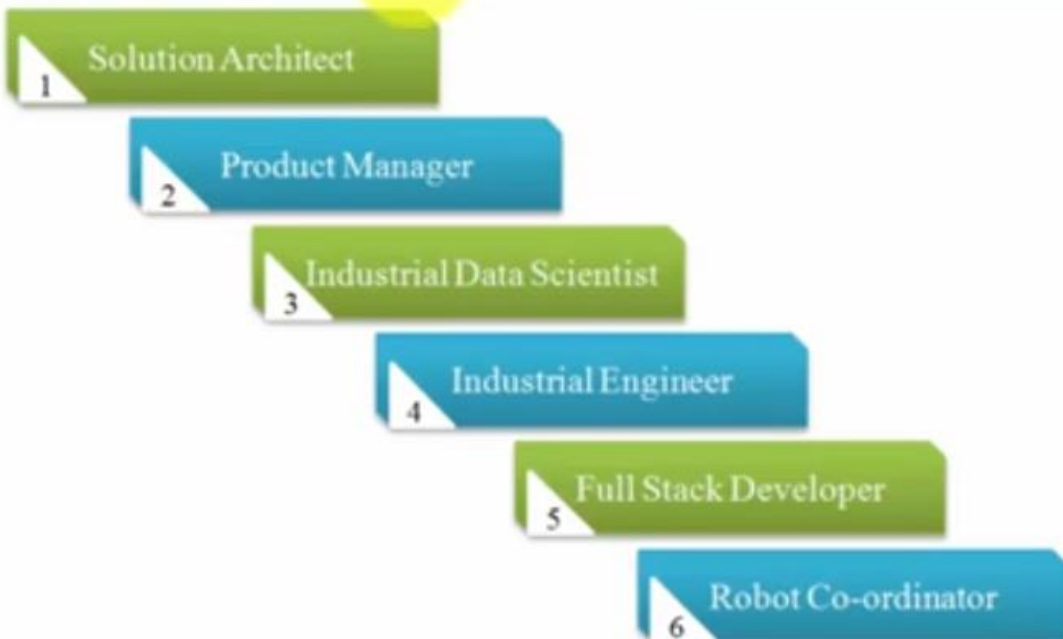
Why IoT?



Current Roles for IoT Professional



Emerging Roles for IoT Professional



Skills Required



IoT Products

Google Home, the connected voice controller from Google. Besides controlling your home it also comes with Google Assistant, helping with lists, translation, news, music, calendar and many many more.

Google Home Voice controller




Video


Website

The connected voice controller from Google. Besides controlling your home it... »[read more](#)

Amazon Echo, the connected voice controller from Amazon, can give you information, music, news, weather, add things to todo lists, wake you up and, of course, control your home.

Video: <https://youtu.be/6J5ztsA8V3c>




Video


Buy


Website

The connected voice controller from Amazon. Can give you information, music... »[read more](#)

How Smart Light Bulbs Work

1. Use a smart assistant



OR 2. Use a smart phone app



Constellation
Smart Lighting

Nest Cam Outdoor is the monitoring tool you've been waiting for. It brings all the benefits of modern streaming technology and a sleek design so you can watch your home from anywhere.



Video

Buy

Website

Mr. Coffee 10-Cup Smart Optimal Brew Coffeemaker makes it easy to schedule, monitor, and modify your brew from anywhere.



TrackR bravo is the coin-sized tracking device that locates your belongings in real time & notifies you their location, whether they are lost or misplaced. Great for wallets, keys, phones or pets.



Nest Protect is the smoke alarm other alarms look up to. With an industrial-grade smoke sensor, automatic self testing, it's the first home alarm you can hush from your phone without any extra hardware.



- **The “Internet” of “Things”**

- What is common in all the examples (IoT products)?
 - All those products use **Internet** to perform their functionality
 - All those products are not **computers** or laptops; but **things**
- The **things** receive inputs (using **sensors**) and transform them into data that is transmitted through **Internet**
- The things also can produce output or take action using **actuators**

$$\begin{array}{c}
 \text{Internet of Things} \\
 = \\
 \text{Things} \\
 + \\
 \text{Sensors, Actuators, Controllers} \\
 + \\
 \text{Internet}
 \end{array}$$

- Textbook definition:
 A **dynamic** global network infrastructure with **self-configuring capabilities** based on standard and interoperable **communication protocols** where physical and virtual "**things**" have identities, physical attributes, and virtual personalities and use **intelligent interfaces**, and are seamlessly integrated into the information network, often **communicate data** associated with users and their **environments**

Data

Raw and unprocessed data from IoT devices/sensors



72, 73, 80, 68, 64

Information

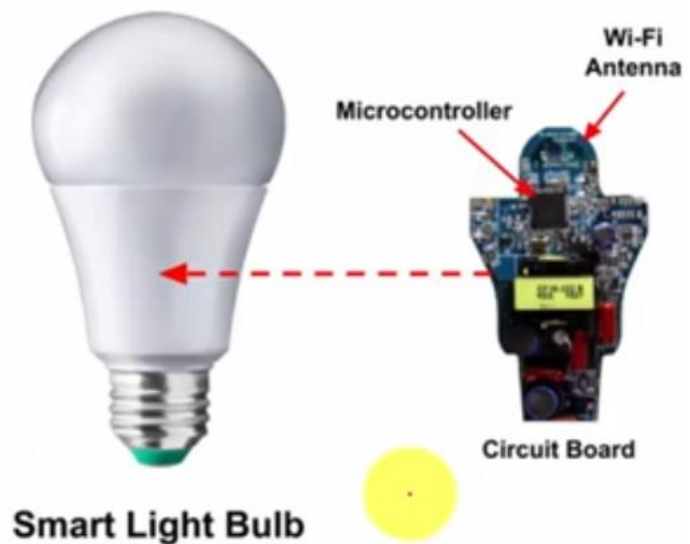
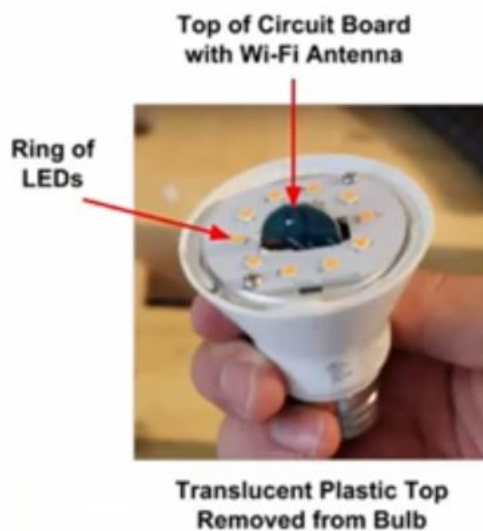
Obtained from data by filtering, processing, categorizing, and contextualizing data

Average heart rate

Knowledge

Inferred from information by organizing and structuring the data

POTS ?



Network ...

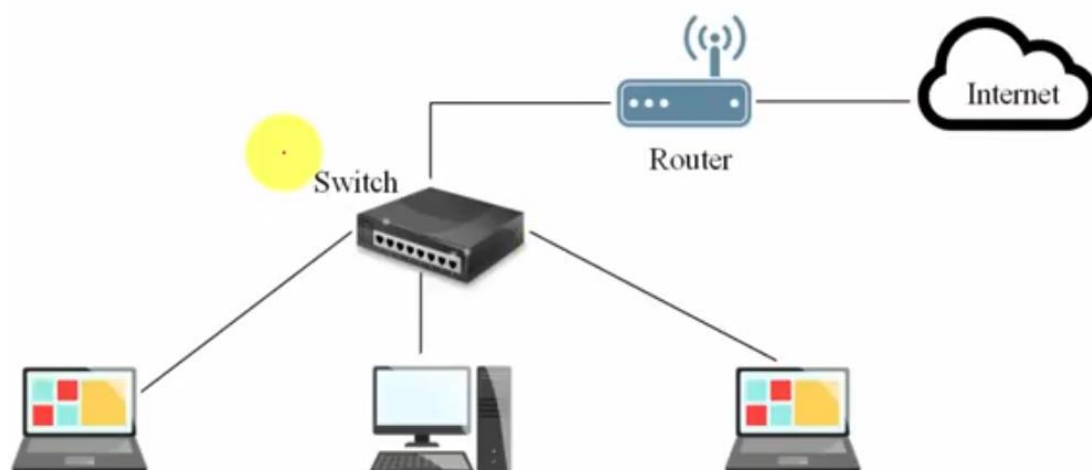
A computer network is a collection of interconnected computers that can communicate with each other



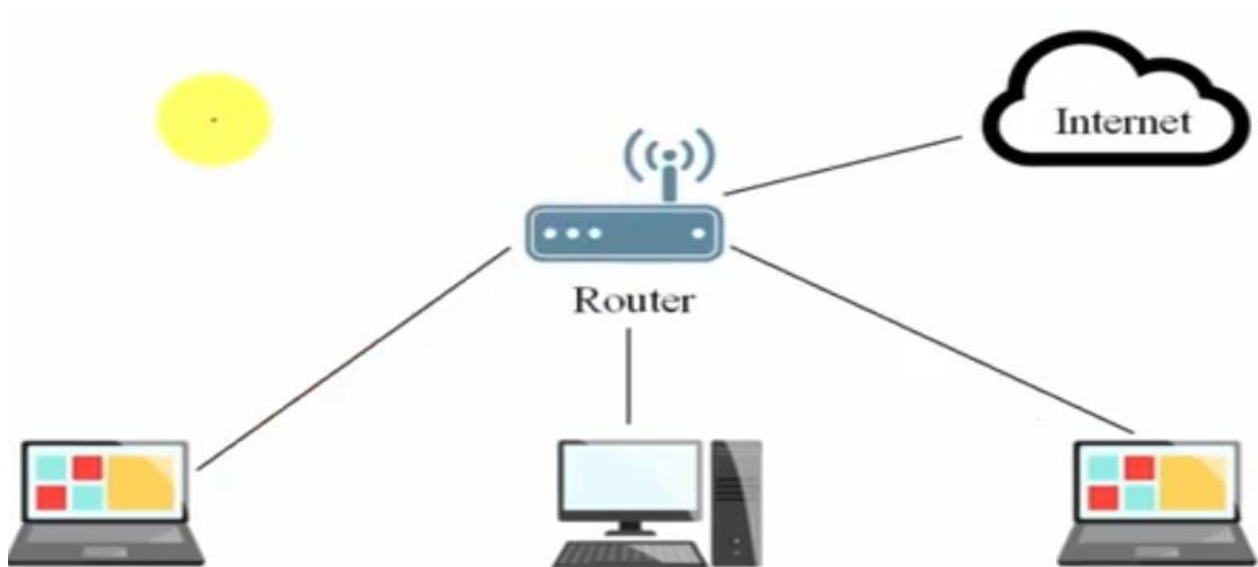
Wireless Router



Network ...

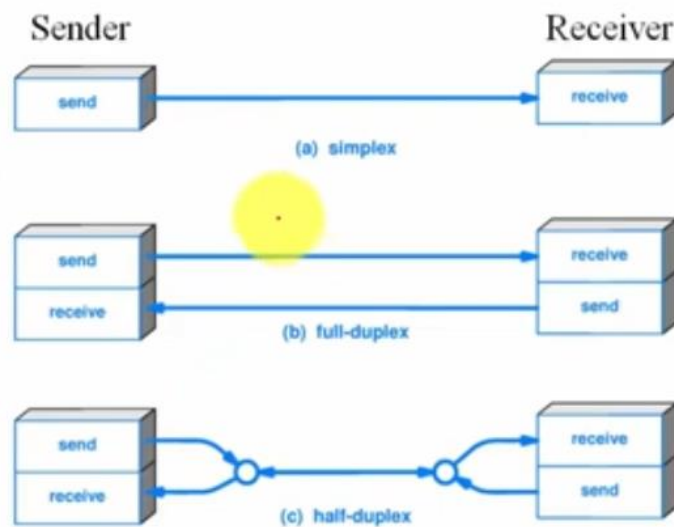


BEST FOR OFFICE



BEST FOR HOMES

Networking Concepts – Communication Modes



Networking Concepts – Network Types

Based on geography

