Co-funded by the Erasmus+ Programme of the European Union
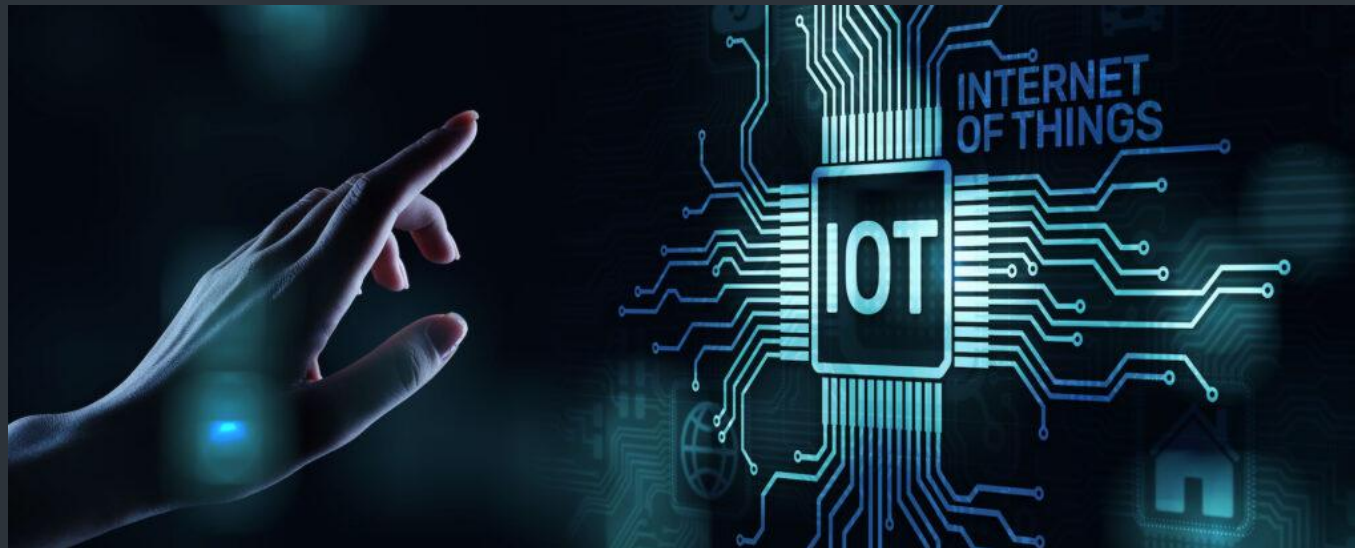
Realistic Education Among Digital Youth Project
# LTT in Bratislava, Slovakia

19.9. – 23.9.2022

IoT – Internet of Things

IoT is a sensor network of billions of smart devices that connect people, systems and other applications to collect and share data.

- The Internet of things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction - IoTAgenda
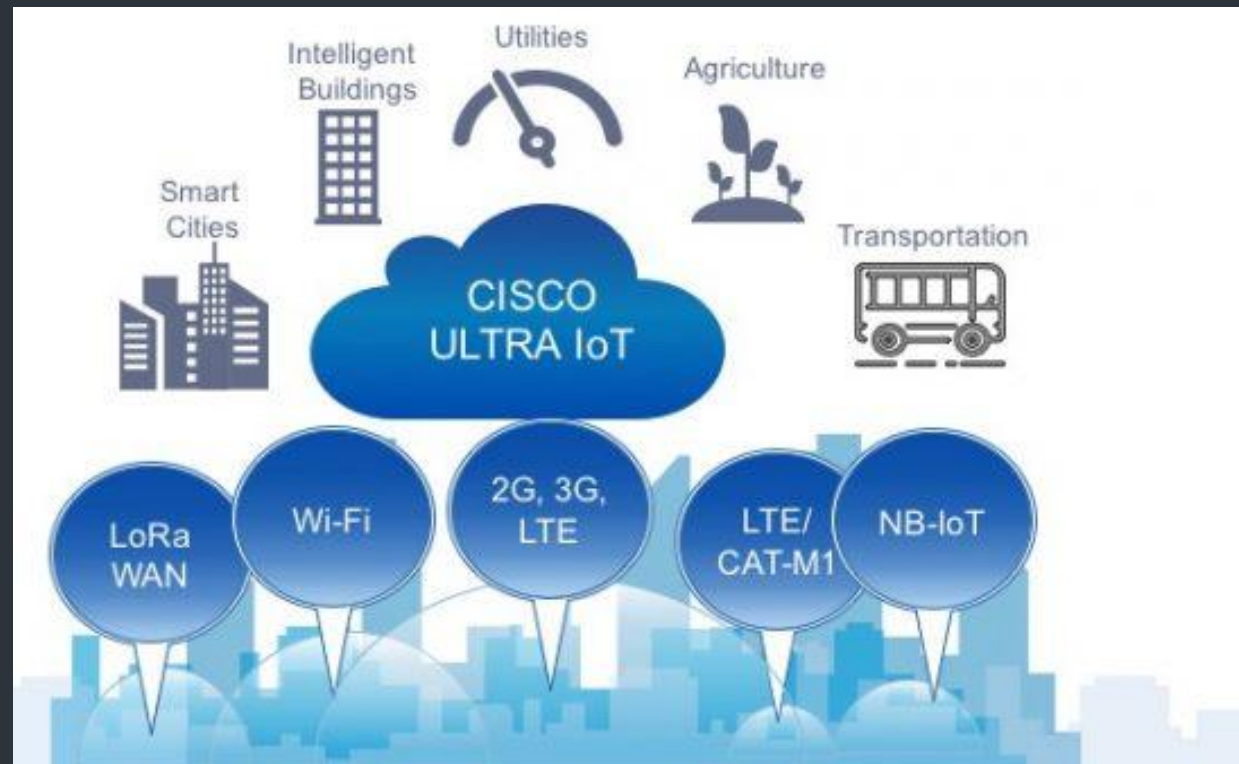
A thing in the IoT can be a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low or any other natural or man-made object that can be assigned an IP address and is able to transfer data over a network.

| 01 IBM | 02 Google | 03 Microsoft Azure | 04 Intel | 05 Cisco |
| 06 Bosch | 07 Samsara | 08 Vates | 09 Oxagile | 10 Ge Digital |

CISCO IoT

Benefits of IoT

- Companies are able to use IoT in these ways :
  - Monitor their overall business processes
  - Improve the customer experience
  - Save time and money
  - Enhance employee productivity
  - Integrate and adapt business models
  - Make better business decisions
  - Generate more revenue

Top 8 IoT Trends :

1. Artificial Intelligence (AI)

- Data is the fuel that powers the IoT and the organization's ability to derive meaning from it will define their long term success.

2.

Social, Legal and Ethical IoT

- These include ownership of data and the deductions made from it, algorithmic bias, privacy and compliance with regulations such as the General Data Protection Regulation. "Successful deployment of an IoT solution demands that it's not just technically effective but also socially acceptable.
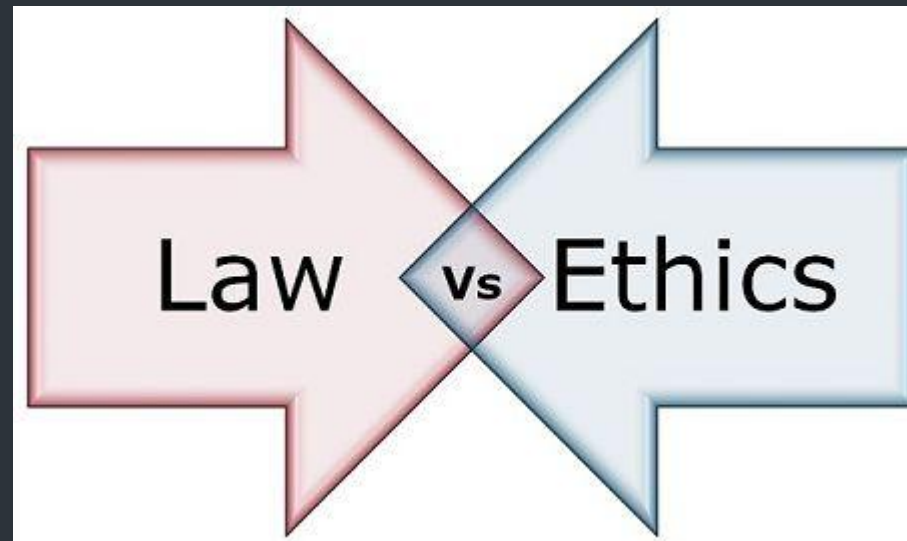
3.

Infonomics and Data Broking

- The theory of infonomics takes monetization of data further by seeing it as a strategic business asset to be recorded in the company accounts. By 2023, the buying and selling of IoT data will become an essential part of many IoT systems.

4.

IoT Governance

- As the IoT continues to expand, the need for a governance framework that ensures appropriate behaviour in the creation, storage, use and deletion of information related to IoT projects will become increasingly important.

5.

Sensor Innovation

- The sensor market will evolve continuously through 2023. New sensors will enable a wider range of situations and events to be detected.
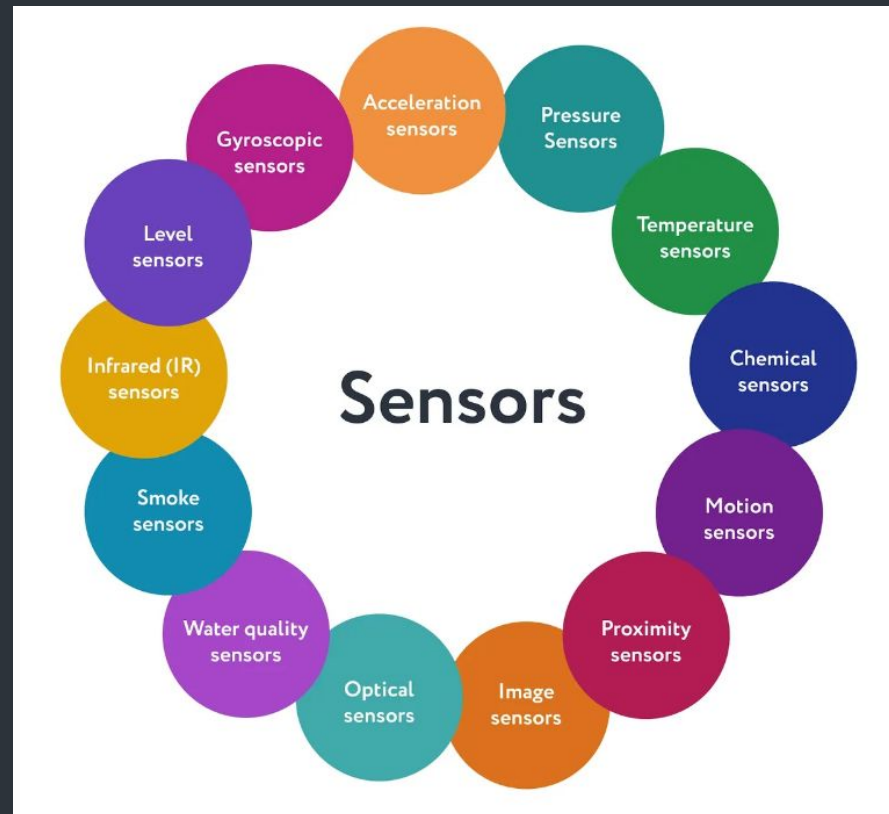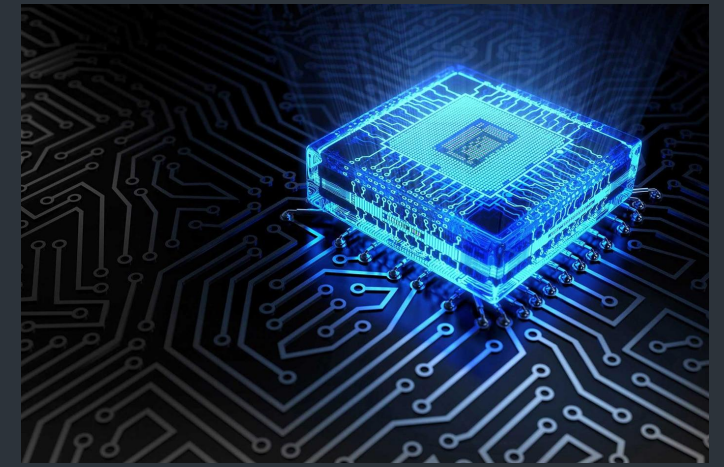
6.

Trustedhardware and Operating System

- By 2023, we expect to see the deployment of hardware and software combinations that together create more trustworthy and secure IoT systems.
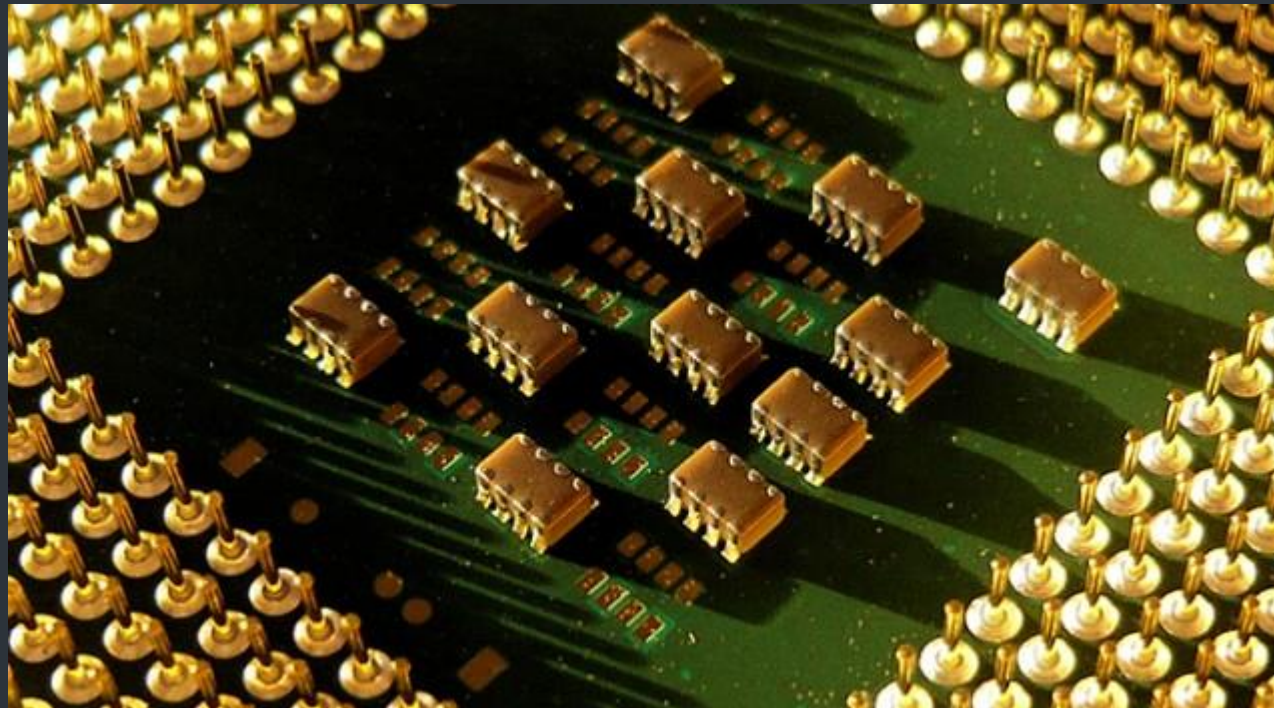
Software

OS, Hypervisor

Hardware

Trusted Computing Base
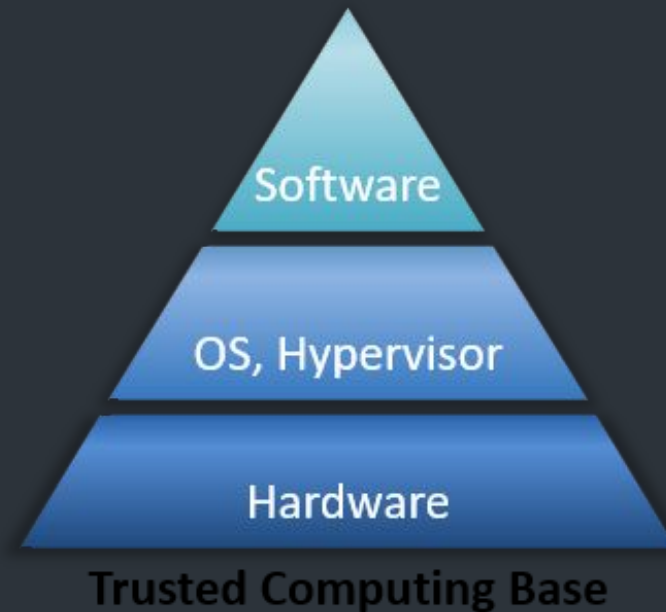
7.

Silicon Chip Innovation

- By 2023, it's expected that new special-purpose chips will reduce the power consumption required to run IoT devices.

8.

New Wireless Networking Technologies for IoT

☐ IoT networking involves balancing a set of competing requirements. In particular they should use 5G, the forthcoming generation of low earth orbit satellites, and backscatter networks.

	Range	Bandwith	Power consumption	Nods	Application
WiFi	90 m	Very high	High	32	Data, Audio, Video
Bluetooth	60 m	Medium-High	Medium	7	Audio, PC peripherals
Bluetooth SMART	20 m	Low	Low	10	Smart devices
ZigBee THREAD	140 m	Low	Low	250	Automation + control
Proprietary wireless	Varying	Medium	Low	100	Varying

Thank you for your attention

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