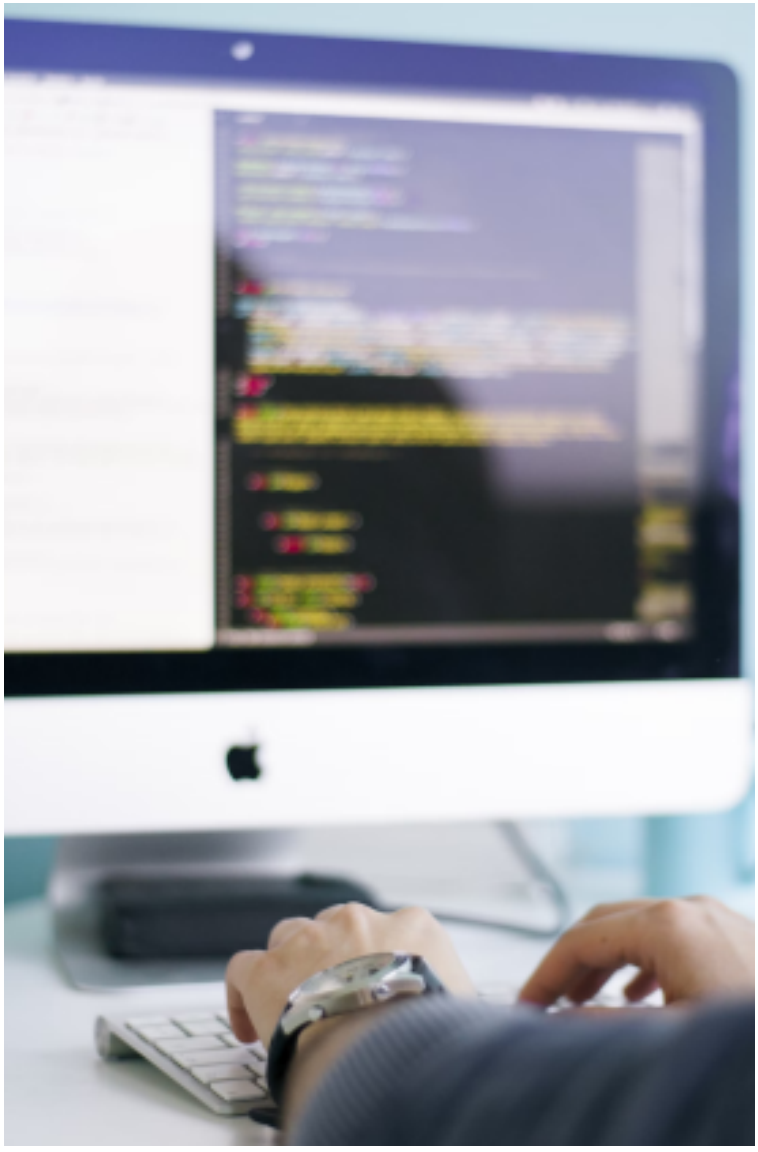
TIC

Unit 6 – Lesson 1: Basics of Internet of Things



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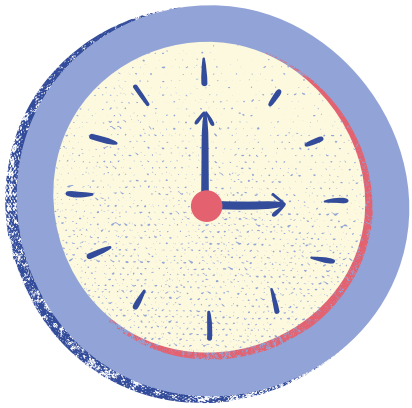

Lesson 1: Basics of Internet of Things

Time available: 4 hours

Lesson programmation:

1. Introduce the technology idiom of the day.
2. Discussion questions about the topic "Internet of Things".
3. Watch the video "Internet of Things"
4. Game: Multiple-choice questions about the previous video
5. Pre-reading: Socialize vocabulary about the reading "What is the Internet of Things?"
6. Reading: "What is the Internet of Things?"
7. Matching word activity about the previous reading.
8. Category activity: Drag the sentences to the corresponding category.
9. Multiple choice activity.

Learning materials:

Video Internet of Things:
https://www.youtube.com/watch?v=LIhmzVL5bm8

Kahoot game:

https://create.kahoot.it/share/internet-of-things/f721ccb1-7069-4426-ba3e-2f5aff58bfd8

Reading

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Lesson 1: Basics of Internet of Things

1-Idiom of the day:

- **Game-changer:** This expression refers to a revolutionary innovation that significantly alters the status quo in an industry or field. The implication is that nothing will be the same again.

"The introduction of cloud computing was a game-changer for businesses worldwide."

2- Let's discuss the following questions to activate your prior knowledge and spark curiosity about IoT.

- **Imagine a Day in a 'Smart City':** What would a typical day look like in a city fully integrated with IoT technology? Think about transportation, shopping, and home life.

- **Your Dream IoT Device**: If you could invent one IoT device to make your life easier, what would it be and why?

- **IoT in Movies:** Can you recall any movies where IoT-like technologies were used? How realistic do they seem now?

- **The Flip Side of IoT**: What concerns might you have about living in a world where everything is connected to the internet?

- **Future Predictions:** How do you think IoT will change our world in the next 20 years?

3- Watch the Video "Internet of Things (IoT)" Pay close attention to the definitions, examples, and future predictions about IoT.

Video URL:
https://www.youtube.com/watch?v=LIhmzVL5bm8

4- Go to Kahoot: After watching the video, go to Kahoot and answer the five multiple-choice questions provided. Each question has four options; choose the one you believe is correct based on the video's content.

URL for teachers:

https://create.kahoot.it/share/internet-of-things/f721ccb1-7069-4426-ba3e-2f5aff58bfd8

URL for students:
https://kahoot.it/ (Each teacher will give a code to the students to play).

5- Socialize the following vocabulary:

- **Internet of Things (IoT):** A network of physical objects with sensors and internet connectivity.

- **Devices:** Objects like smartphones, computers, or any IoT equipment.
- **Data:** Information collected by devices.
- **Smart:** Term used to describe devices that can automate tasks and make decisions.
- **Automate:** To make a process operate automatically without human intervention.
- **Pattern:** A repeated design or regular way in which something happens.
- **Trend:** A general direction in which something is developing or changing.
- **Manage:** To be in charge of something, controlling or organizing it.
- **Optimize:** To make something as effective or functional as possible.
- **Interoperability**: The ability of different systems, devices, or applications to work together.

6- Reading: What is the Internet of Things (IoT)?

7- Matching word activity. Based on the reading "What is the internet of things?", match the word with its correct definition below.

Words:

1. IoT _____
2. Sensors _____
3. Cloud Computing _____
4. Big Data Analytics _____
5. Cybersecurity _____
6. Interoperability _____
7. Sustainability _____

Definitions:

a. The practice of protecting internet-connected systems and data from digital attacks.
b. The ability of different systems and devices to work together without problems.
c. A technology that allows data to be stored and processed over the internet.
d. Analyzing large and varied data sets to uncover patterns and insights.
e. A network of devices with internet connectivity that can collect and share data.
f. Devices that detect changes in the environment like temperature or motion.
g. The ability to maintain processes in a way that avoids wasting natural resources.

8- Grouping Activity: Understanding IoT. Read the sentences below and decide which category they belong to. The categories are: Technologies in IoT, Applications of IoT, and Challenges in IoT.

1. IoT devices can monitor the temperature and humidity in manufacturing facilities. _____
2. Using IoT in agriculture helps in monitoring soil conditions and crop growth. _____
3. In healthcare, IoT devices monitor patients' vital signs remotely. _____
4. Sensors in IoT devices detect environmental changes like temperature. _____
5. Data from IoT devices is stored and processed in the cloud. _____
6. IoT uses technologies like Wi-Fi and Bluetooth for connectivity. _____
7. Implementing IoT systems can be expensive and complex. _____
8. IoT can lead to privacy concerns and increase the risk of cyberattacks. _____
9. Managing large volumes of data from IoT devices can be overwhelming. _____

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9- Multiple choice activity: Understanding IoT. Choose the best answer for each of the following questions based on the text "The Internet of Things (IoT)".

- **What is IoT primarily about?**
  a. Internet services
  b. Online gaming
  c. Network of interconnected devices
  d. Social media platforms

- **Which of these is an example of IoT technology in homes?**
  a. Regular thermostat
  b. Smartphone-controlled air conditioner
  c. Traditional wristwatch
  d. Ordinary light bulb

- **IoT, what is the role of sensors?**
  a. They enhance the device's appearance.
  b. They detect changes in the environment.
  c. They play music.
  d. They display advertisements.

- **What does 'Big Data Analytics' in IoT refer to?**
  a. Storing large files online
  b. Analyzing large sets of data for insights
  c. Creating big advertisements
  d. Designing large IoT devices

What challenge is associated with IoT regarding data?

a. Too little data to analyze
b. Data overload and its management
c. Data is always lost
d. Data is irrelevant to IoT

Which industry benefits from IoT through remote patient monitoring?

a. Education
b. Healthcare
c. Agriculture
d. Retail

What is a significant concern regarding IoT devices?

a. They are too colorful
b. They can't connect to the internet
c. Security and privacy risks
d. They are too large