INTERNET OF THINGS

THEME	Creating an Internet of Things project
FORMAT	Group (all students work simultaneously)
PREPARATION TIME	1 hour
ACTIVITY LENGHT	30-45 minutes
DIFFICULTY LEVEL	average

PEDAGOGICAL GOALS

From a group discussion, to goal is to exercise the creation of a project on Internet of Things. Also, to be able to define the smart objects in the proposed project.

To use basic architectural concepts in Internet of Things to identify components of smart objects and their respective functions.

NECESSARY MATERIALS

Paper with printed text.
Blackboard and pen.

Preparation:

- Prepare the formulation of the activity (see below) and print some copies to distribute to students:

> *"**Smart House***
>
> *Imagine a smart house with Internet of Things technologies that bring benefits to its residents. Think of the comfort of the people and pets that live in the house. Try to innovate, don't restrict yourself to equipment and installations that already exist or that you know. Let your imagination take over. Create without thinking if you can implement everything you envisioned.*
>
> *Identify the smart objects in the house.*
>
> *Identify the components of the basic architecture for smart objects: perception/performance, network, application.*
>
> *Think about your smart house and design where it will be necessary to place hardware and software elements, how it will be communicating with other smart objects or computers, what the power source of your system will be.*

INTERNET OF THINGS

Preparation (continued from previous page):

Activity:
Describe your smart house and how Internet of Things technologies bring benefits to its residents.

Identify where there will be smart objects and how they will work.

For each smart object in the house:

- *Describe the perception/performance component indicating how the system interacts with the physical world. Describe what sensors/actuators you will need.*
- *Explain the network component, how the object makes connections to other smart objects or computers.*
- *Say what you will have in the application component, the part of the system that delivers services to people.*
- *Indicate your system's power source. ”*

Write on the board the three components of the basic architecture of an intelligent object and their functions:

- **Perception / performance:** parts of the IoT system that interact with the physical world (sensors and actuators);
- **Network**: responsible for making connections in the IoT system (as objects make connections with other objects);
- **Application:** uses the other two components to do something useful, deliver services to people;

Leading the activity:
- Divide the class into small groups of 4 to 5 students.
- Give a copy of the text to each group.
- Ask the groups to discuss and imagine a smart house. Ask them to design the house and describe the technological details that make it a smart home.
- Share the result. Ask each group to present their house to the class.

Discussion and reflection:
After completing the activity, create a collective discussion with the whole class about the ideas that came up. See some examples of possible questions.
- What did you think of the smart houses that the groups presented?
- What are the most creative ideas that came up?
- Would it be possible to create a class Smart House with the best ideas from all groups? What would it look like?

Credits:
Ana Grasiele Dionisio Correa (LSITec)
Irene Karaguilla Ficheman (LSITec)