eSchool Garden

Semantic Annotation in IoT

The information contained in a message must be understood by the sender and the receiver. Assign values to the sensor types and identify each node with a unique value that corresponds to the organization of your garden.

Even if we use a syntactically correct message, for example using the JSON or XML standard, the content of the message must be "understandable" by the receiver. Therefore, in our garden we are going to identify:
- The spaces (each plot, the weather station, the compost space, the seednursery, etc.)
- The sensors (humidity, temperature, air quality, brightness, etc.)
- Each garden (identifies one or more gardens with the same system)

List your sensors

There are many and different sensors you can use in your garden

Temperature, humidity, air quality, soil moisture, soil temperature, anemomenter, pluviometer, brightness, movement, ...
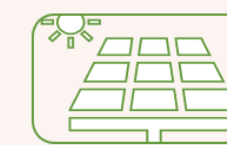
ARDUINO IoT 33
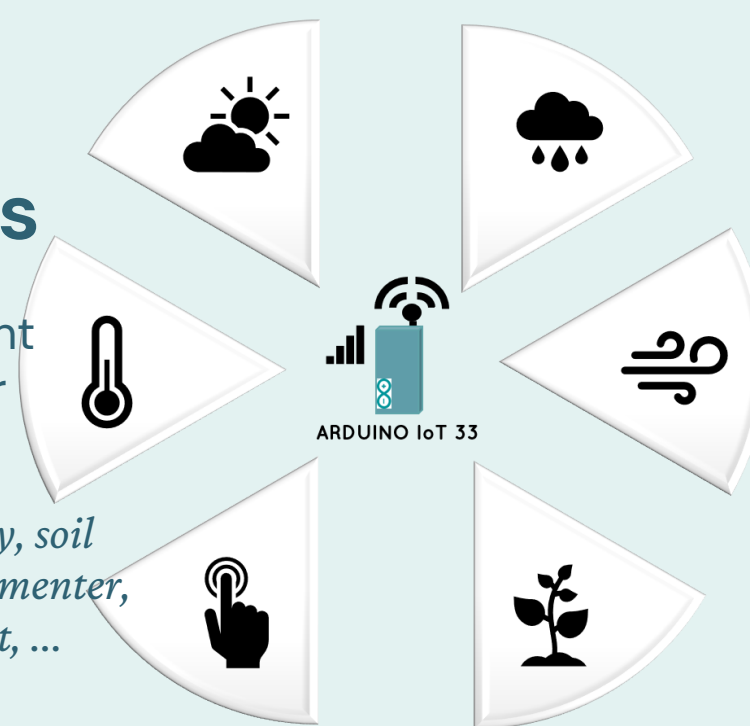
CODE EXAMPLE

Dowload this piece of code and try to understand it

List your spaces

How many spaces are in your garden? Plots, seedbeds, a weather station, a compost space, etc.

ID_NODE_01: Weather station

ID_NODE_02: Seed nursery

ID_NODE_03: Compost machine

ID_NODE_04: Bean plot

ID_NODE_05: Strawberry plot

ID_NODE_06: Aubergine plot

Assign numbers or strings to each type of sensor and space

Identify each type of sensor with a unique ID.

ID_SENSOR_00: "Brightness"

ID_SENSOR_01: "Temperature"

ID_SENSOR_02: "Humidity"

ID_SENSOR_03: "Rainfall"

ID_SENSOR_04: "Wind"

ID_SENSOR_05: "Soil humidity"

ID_SENSOR_06: "Soil temperature"

ID_SENSOR_07: "Electrovalve"

Package the information in a JSON message

IFind information about the standard in

The JSON object Includes the type of sensor, the measurement value or vector of values, the reading timestamp and the identifier of the space where the measurement was recorded.

```
{
"DATASLOT_0"
: { "Type" : 5, "Value": [ 74 ] },
"DATASLOT_1"
: { "Type": 1, "Value": [ 24] },
"DATASLOT_2"
: { "Type": 2, "Value": [ 0 ] },
"DATASLOT_3"
: { "Type": 6, "Value": [ 250 ] },
"ID_Node" : 1,
"timestamp" : 1605662192815
}
```