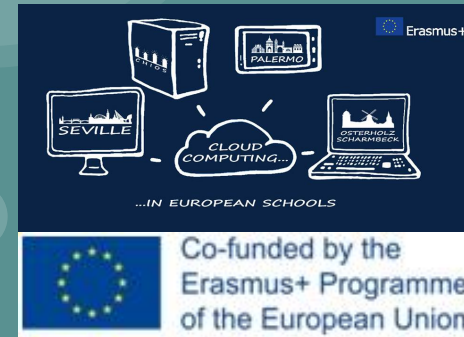




PaaS (Platform as a Service) study.

- The platform that we studied was [Thingspeak](#).
- We made a **Temperature Humidity logger** which is an **IOT** (Internet Of Things) application.



Co-funded by the Erasmus+ Programme of the European Union

What is **ThingSpeak** ?

It is PaaS solution that :

- Collect Data Send sensor data privately to the cloud.
- Analyze Data Analyze and visualize your data with MATLAB.
- Act Trigger a reaction.

ThingSpeak uses :

- **MATLAB** software in background and
- **Mathworks inc.** servers.

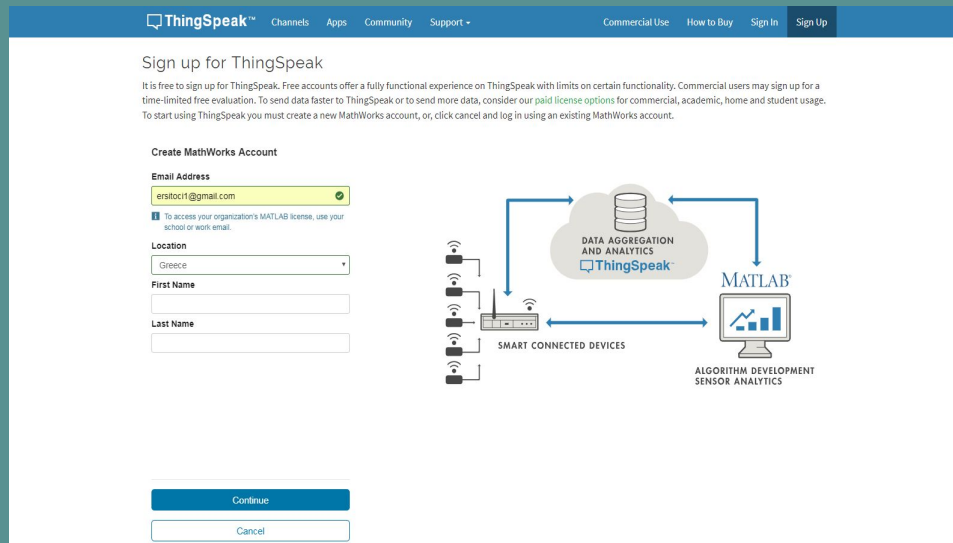


Co-funded by the
Erasmus+ Programme
of the European Union

Our Study on PAAS ThingSpeak

We discussed how :

- to Sign up
- API (Application Programming Interface) works.
- Basic examples.



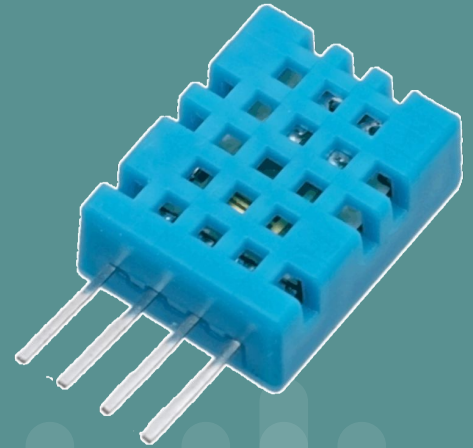
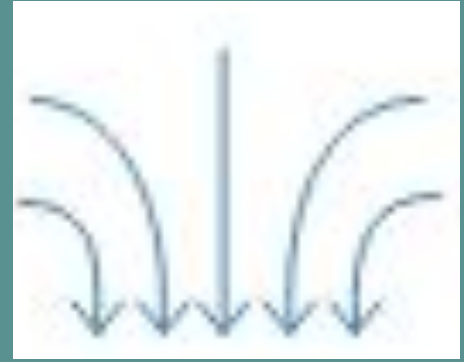
The screenshot shows the ThingSpeak sign-up page. The navigation bar includes "ThingSpeak™", "Channels", "Apps", "Community", "Support", "Commercial Use", "How to Buy", "Sign In", and "Sign Up". The main heading is "Sign up for ThingSpeak". Below this, there is a paragraph explaining the free sign-up process and the availability of paid license options for commercial, academic, and student use. The "Create MathWorks Account" section contains a form with the following fields: "Email Address" (with the value "erstoc1@gmail.com"), "Location" (a dropdown menu set to "Greece"), "First Name", and "Last Name". At the bottom of the form are "Continue" and "Cancel" buttons.

The diagram on the right illustrates the ThingSpeak architecture. It shows "SMART CONNECTED DEVICES" sending data to a cloud labeled "DATA AGGREGATION AND ANALYTICS" which contains the ThingSpeak logo. The cloud is connected to a "MATLAB" interface, which is used for "ALGORITHM DEVELOPMENT" and "SENSOR ANALYTICS".

ThinkSpeak **Collects** data:

- I. Be able to collect data from your sensors.
- II. Send it to the cloud in a secure way.
- III. Use the data you collected for processing.

**In our case the sensor is DHT11
and microcontroller is ESP8266**



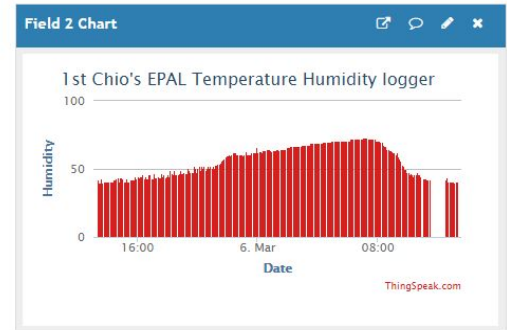
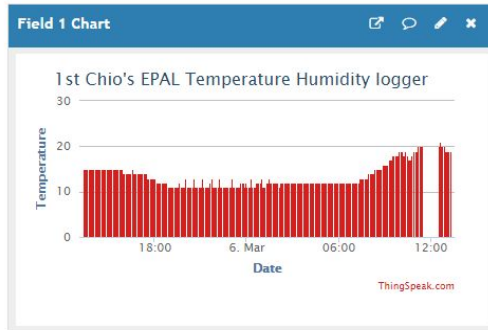
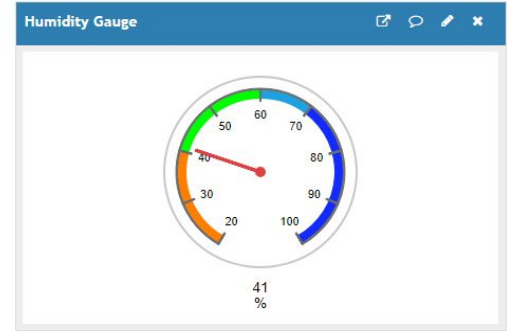
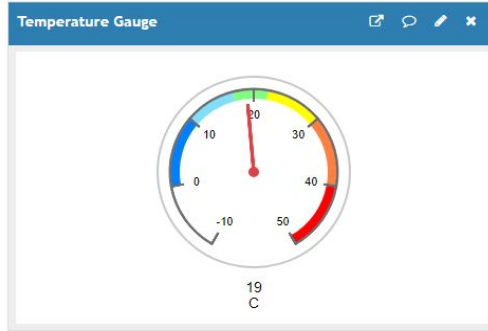
Analyze:

- I. Have access to your data anywhere through the cloud.
- II. Process your data.
- III. Visualize the outcome.

In Our case :

Gauges and histograms are **Thingspeaks API** examples.

In classroom we discussed matcad and the way that it is programming as a PAAS example.



Act:

React to data which means that commands are executed as a result.

As an example we discussed [IFTTT](#)

If This Then That

(example **If temp \geq 30 then send email**)



Turn off that humidifier! It's above 60

8

RETWEETS

11

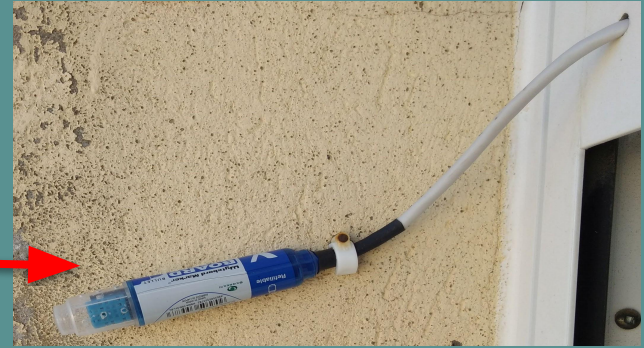
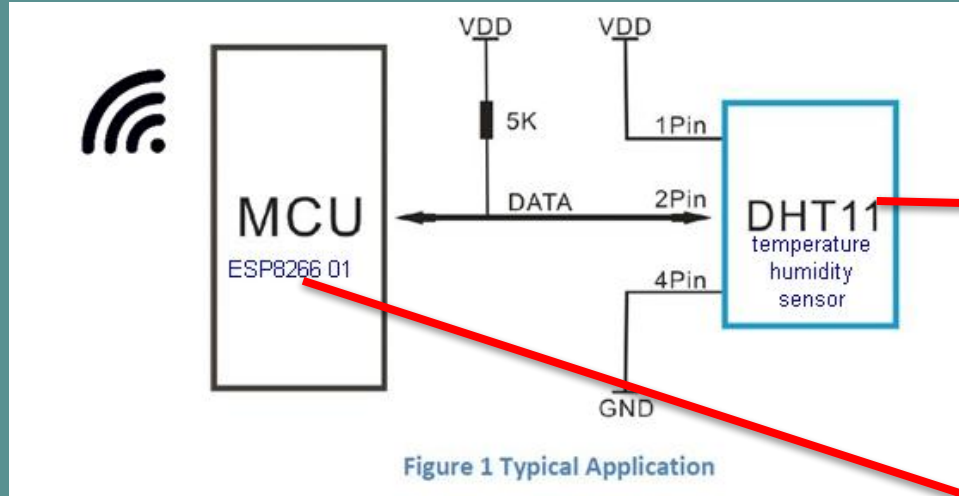
FAVORITES



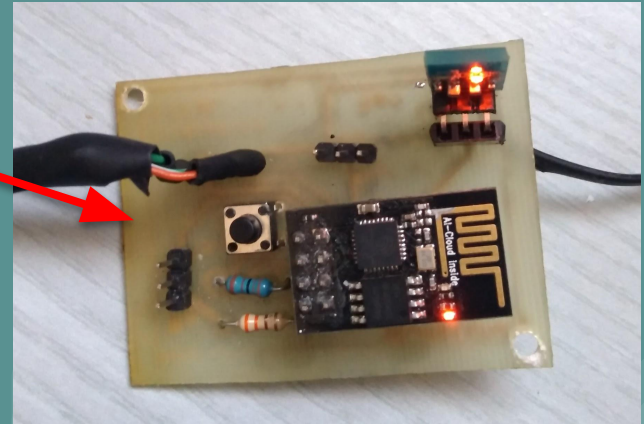
1:36 PM - 3 Jun 2015 - via Twitter - Embed this Tweet

← Reply 🗑 Delete ★ Favorite

Our hardware



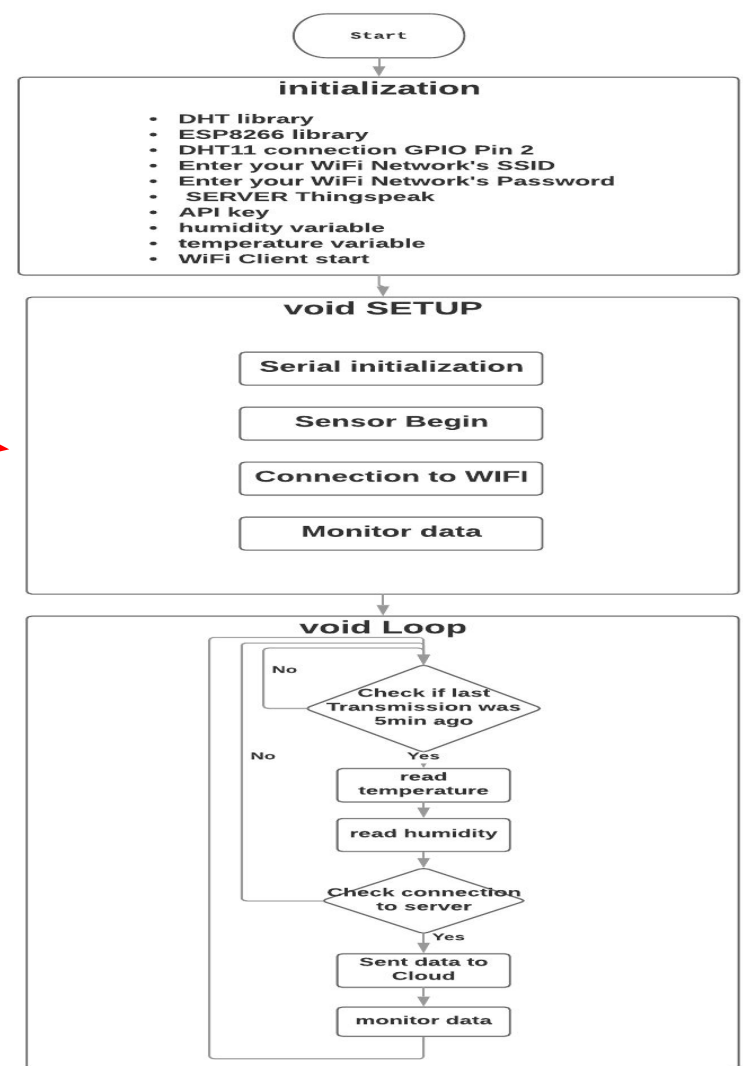
We collect and send data (temperature - humidity) to cloud platform with dht 11 sensor and ESP8266 microcontroller



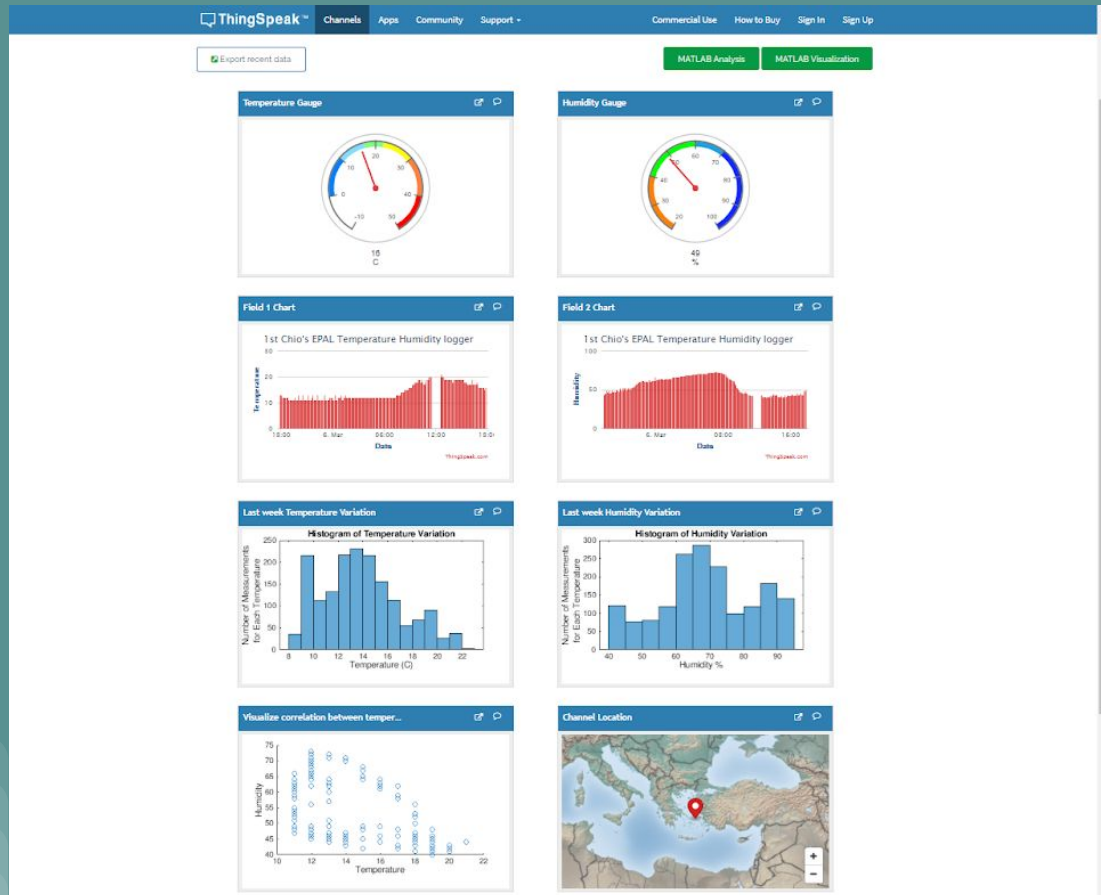
Our code

block diagram

for the programming we used
arduino IDE [more...](#)



Our Channel 1st Chio's EPAL Temperature Humidity logger

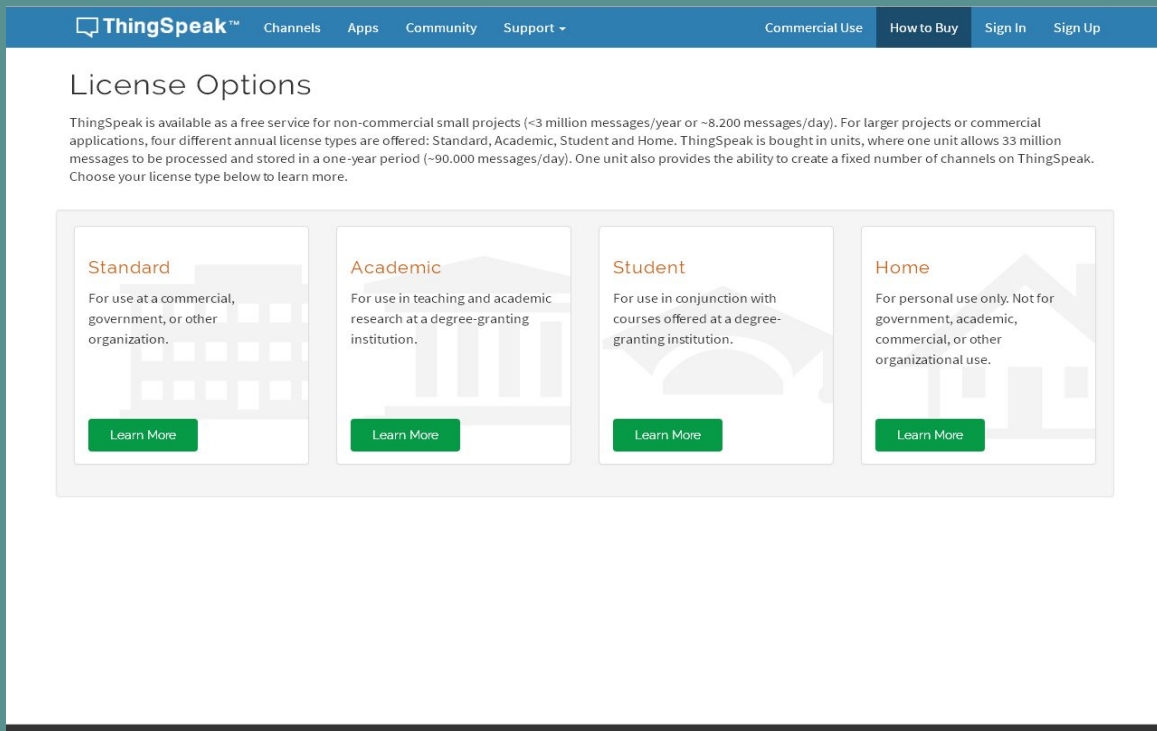


ThingSpeak is a commercial solution

licence options

- Standard
- Academic
- Student
- Home

In our case we used **free Home licence**



The screenshot shows the 'License Options' page on the ThingSpeak website. The page has a blue header with the ThingSpeak logo and navigation links: Channels, Apps, Community, Support, Commercial Use, How to Buy, Sign In, and Sign Up. The main content area is titled 'License Options' and contains a paragraph explaining that ThingSpeak is available as a free service for non-commercial small projects and offers four annual license types: Standard, Academic, Student, and Home. Below this text are four cards, each representing a license type with a background image and a 'Learn More' button.

Standard
For use at a commercial, government, or other organization.

Academic
For use in teaching and academic research at a degree-granting institution.

Student
For use in conjunction with courses offered at a degree-granting institution.

Home
For personal use only. Not for government, academic, commercial, or other organizational use.

We encourage to try it.

**This could be a cloud project for all schools
and a way to show our work in cloud.**

Thank You