

IoT Greenhouse

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Our project

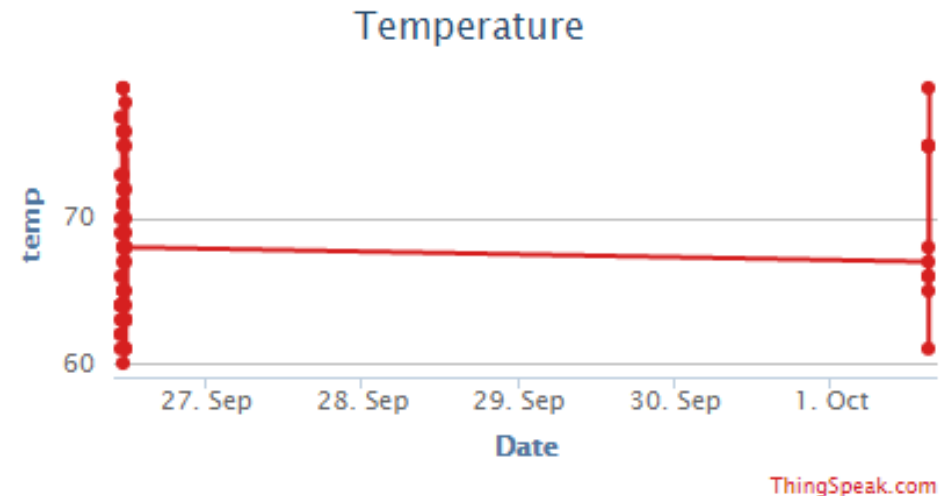
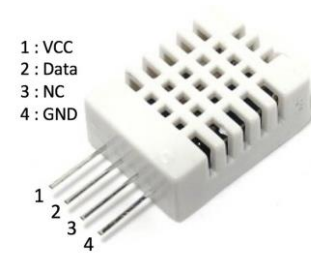
- Smart features in a greenhouse
- Optimizing plant growth
- Automation of simple tasks
- Alert system
 - Has the system done anything
 - Warnings for user if there are problems

Requirements

- Operating in temperature range of -10 to 50 degrees
- Operating relative humidity range of 0 to 90%
- Logging temperature and humidity in the greenhouse every 15 minutes
- Visualization of climate history in the greenhouse
- Can send email/sms
- Get weather forecast to warn the owner
- Preferably powered through solar panels (12V)

Sensors, Actuators & API

- Sensors
 - Temperature/Humidity (DHT-22)
 - Water Level (HC-SR04)
- Actuators
 - Water pump (12V)
- API
 - OpenWeatherMap
 - Database(Firebase)/Thingspeak
 - To visualize (Maybe hosting a webserver to ease access to visualization, and possible configuration)



Testing

- Simple setup with sensors and actuators in lab
 - Connecting the whole system to a lab power supply
 - Having two buckets of water to pump from and to
 - Verifying
 - Successful logging of data
 - Correct measuring of water level
 - Correct response to low water level
 - Correct response to temperature above threshold
- If successful possibly installing in Lasse's greenhouse
 - With power from an outlet in the house