

Q Project – Techequation.org

Building a LoRa Gateway and End Node

Week 2 – Part 1

Presented by Solomon Denning

Recap: What is LoRa?

Spend a few minutes in chat answering this question. Afterwards, we will discuss it fully.

LoRa and LoRaWAN

Low Power Communication

Devices communicating with LoRa require little energy, and batteries can last months to years.

Affordable Communication

Buying devices that work through LoRa are fairly cheap, making it great for low budget projects or when quality isn't necessary.

Future of Technology

LoRaWAN aims to be the protocol that serves all IoT devices. Since IoT is the path future technology is taking, we can expect LoRa to grow.

LoRa Gateway vs LoRa End Node

LoRa/LoRaWAN tutorial 2: What is LoRa and LoRaWAN

mobilefish.com Watch later Share

LORA / LORAWAN TUTORIAL 2

What is LoRa & LoRaWAN

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graph LR; GW[Orange Box] <--> N1[Purple Node]; GW <--> N2[Purple Node]; GW <--> N3[Purple Node]; GW <--> N4[Purple Node]; N1 <--> S1[Red Square]; N2 <--> S2[Red Square]; N3 <--> S3[Red Square]; N4 <--> S4[Red Square]
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v1.0.0

LoRa Gateways are always on,
connected to power and internet.

Gateways have main two parts:

- Radio module and Antenna
- Microprocessor



LoRa Nodes require Gateways to
communicate with each other,
and are often battery powered.

Nodes have main two parts:

- Radio module and Antenna
- Microprocessor



What to know about Gateways and Nodes

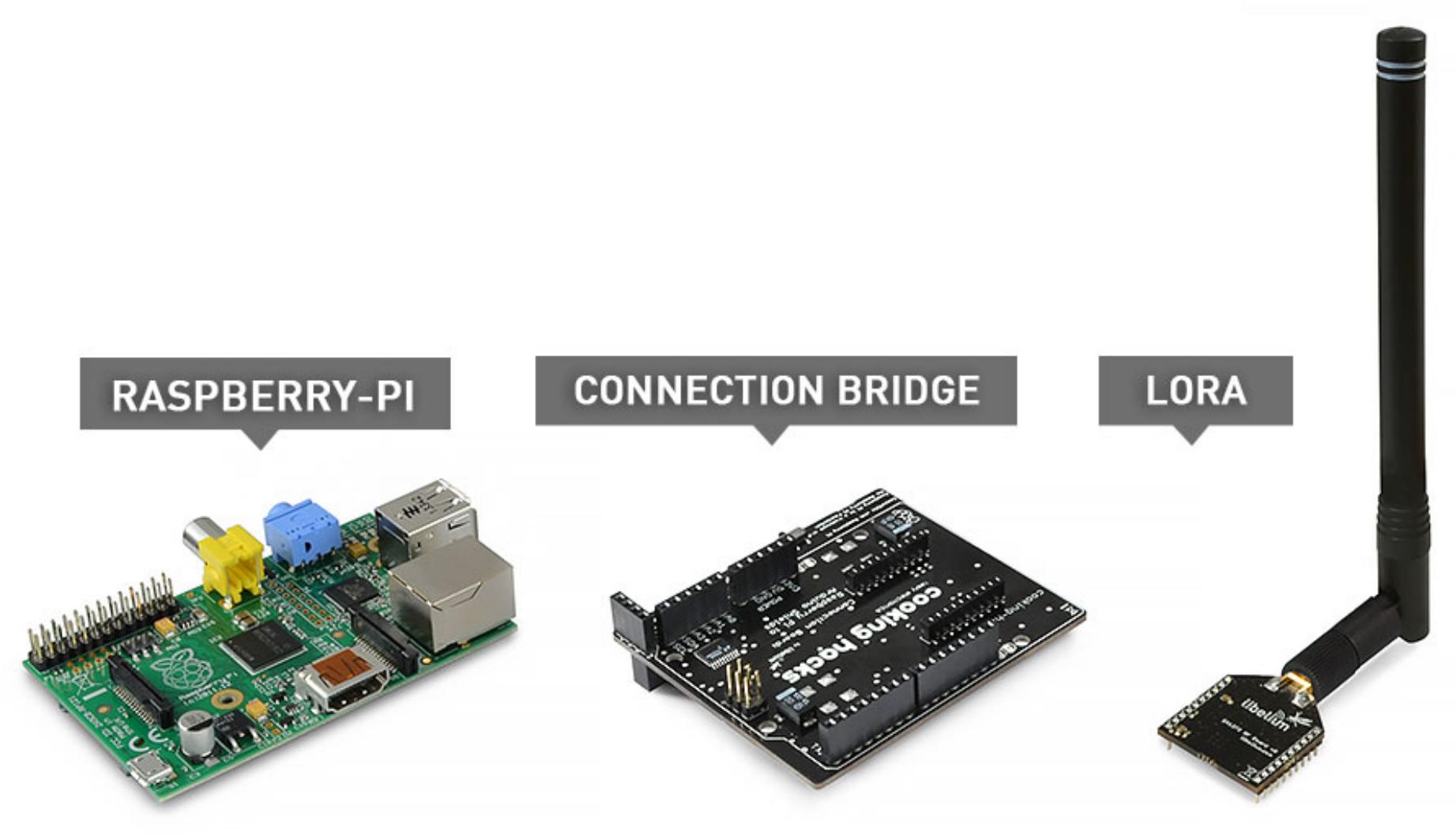
Key Ideas

The Microprocessor

No matter what we are building-Gateway or End Node-the device needs to have a microprocessor to control it.

There are different routes for this, with Raspberry Pi's and Arduino's being two well known options.

To eventually build our nodes, we will need a microprocessor.



The background features three large, semi-transparent circles with a gradient from dark purple to light blue. One circle is centered in the middle, another is in the top right corner, and a third is in the bottom left corner.

Questions?

Assignment 2: Web Search

A google form will be posted by tonight with questions about LoRa. Some of the questions will require searching the web, with website hints where helpful.

Due on Saturday, June 27 11:59 PM

Sources

Video: <https://www.youtube.com/watch?v=6WMzRrmMjQU>

Photo: <https://www.cooking-hacks.com/documentation/tutorials/extreme-range-lora-sx1272-module-shield-arduino-raspberry-pi-intel-galileo.html>