IoT Workshop

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What is IoT

Preparations

▶ Install Arduino IDE

▶ Install the "ESP8266 core" for Arduino, follow the guide on https://github.com/esp8266/Arduino#installing-with-boards-manager.

▶ Install PubSubClient library with Library manager from within the Arduino IDE.
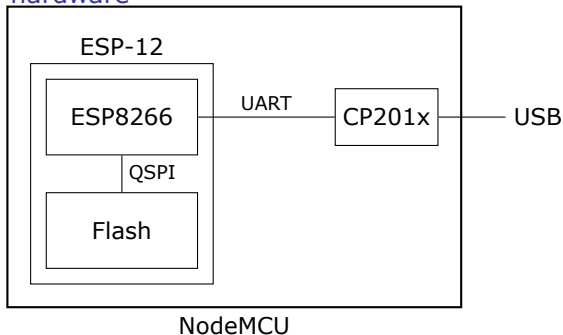
What is an IoT Device?

▶ Constrained in (one or more of):
  ▶ Memory
  ▶ CPU
  ▶ Network bandwidth and/or latency
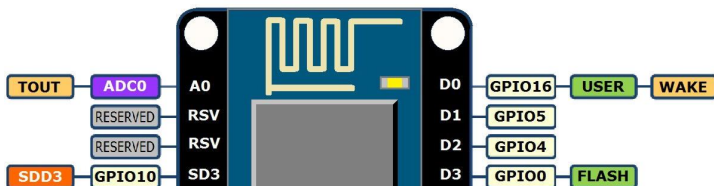 ▶ Storage
▶ Has connectivity

IoT Devices - Example chips

Protocol	Chip	Specs

NodeMCU

NodeMCU hardware

ESP-12

ESP8266 — UART — CP201x — USB

QSPI

Flash

NodeMCU

NodeMCU hardware

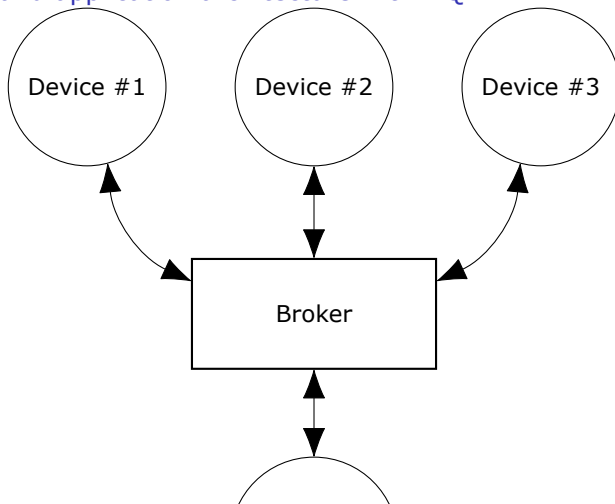|					
TOUT	ADC0	A0	D0	GPIO16	USER	WAKE
	RESERVED	RSV	D1	GPIO5		
	RESERVED	RSV	D2	GPIO4		
SDD3	GPIO10	SD3	D3	GPIO0	FLASH	

Assignment: `blink-a-led`

Lecture: MQTT

MQTT

- *Message Queuing Telemetry Transport*
- Wikipedia: MQTT

Device and application architecture with MQTT

Assignment: `mqtt-with-button`

Content

https://github.com/trygvis/iot-workshop-ndc-2018