

Build a low-cost IoT setup for beginners

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Agenda

IoT

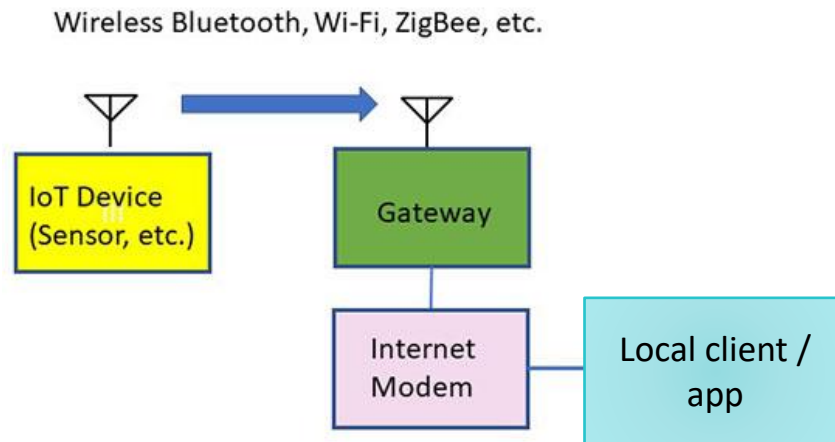
ESP8266

Arduino
IDE

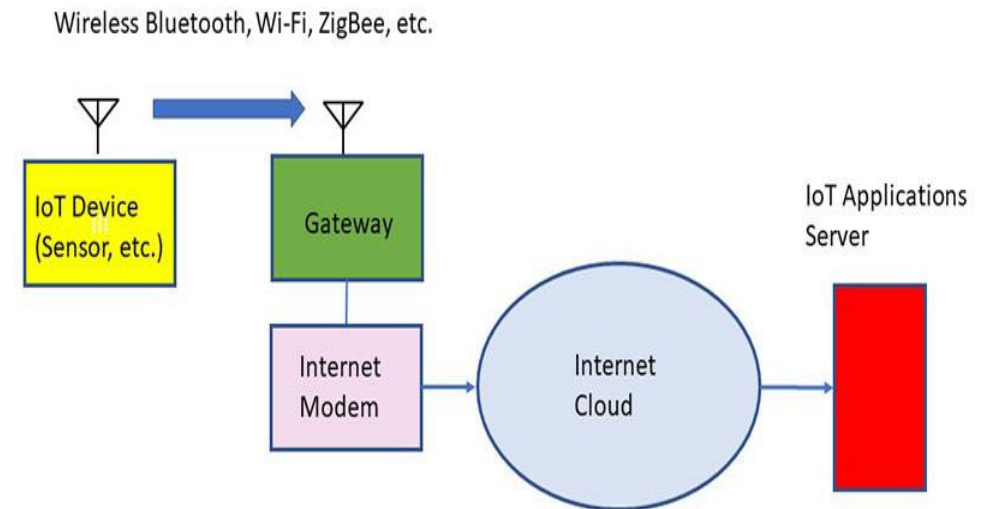
Freeboard

What is Intranet of things & Internet of Things?

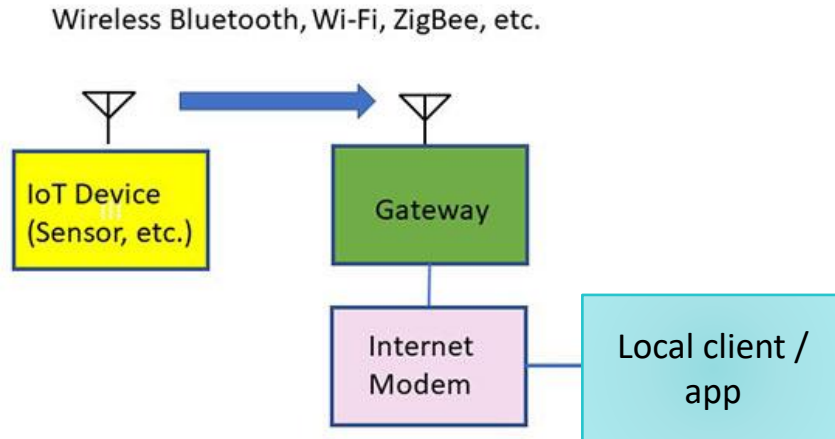
INTRANET OF THINGS



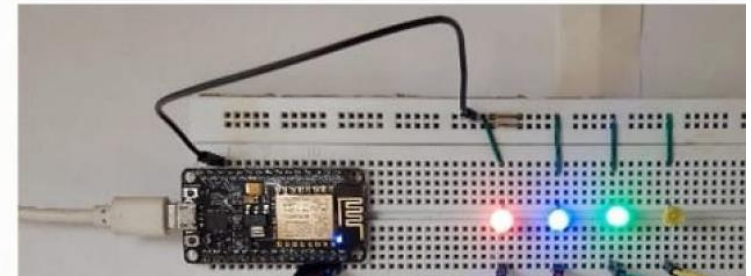
INTERNET OF THINGS (IOT)



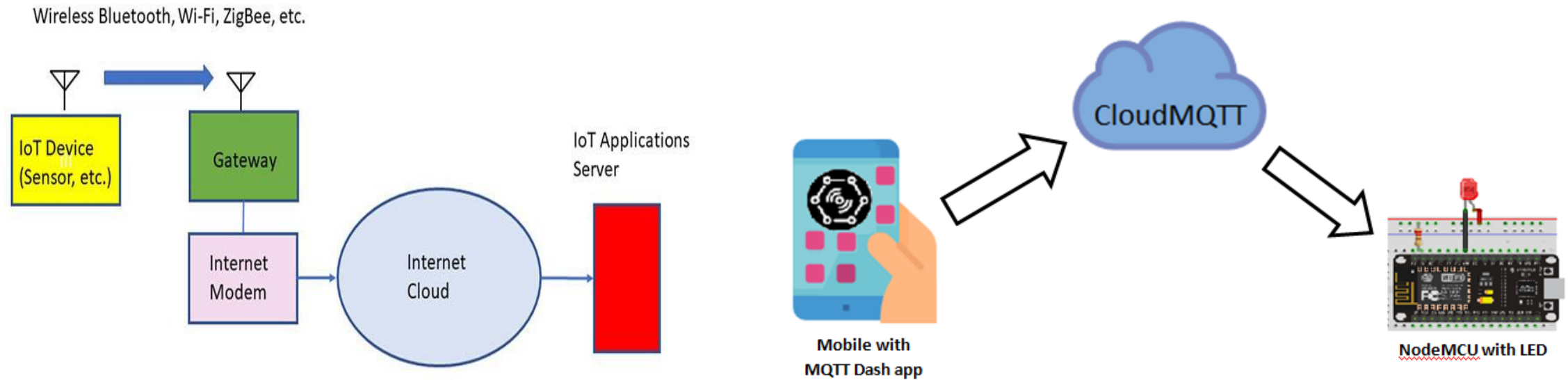
Intranet of Things



1. Client & control will be in same local network.
2. User have access of monitoring and controlling the things within the intra network. (E.g.: Local LAN, WiFi etc.)



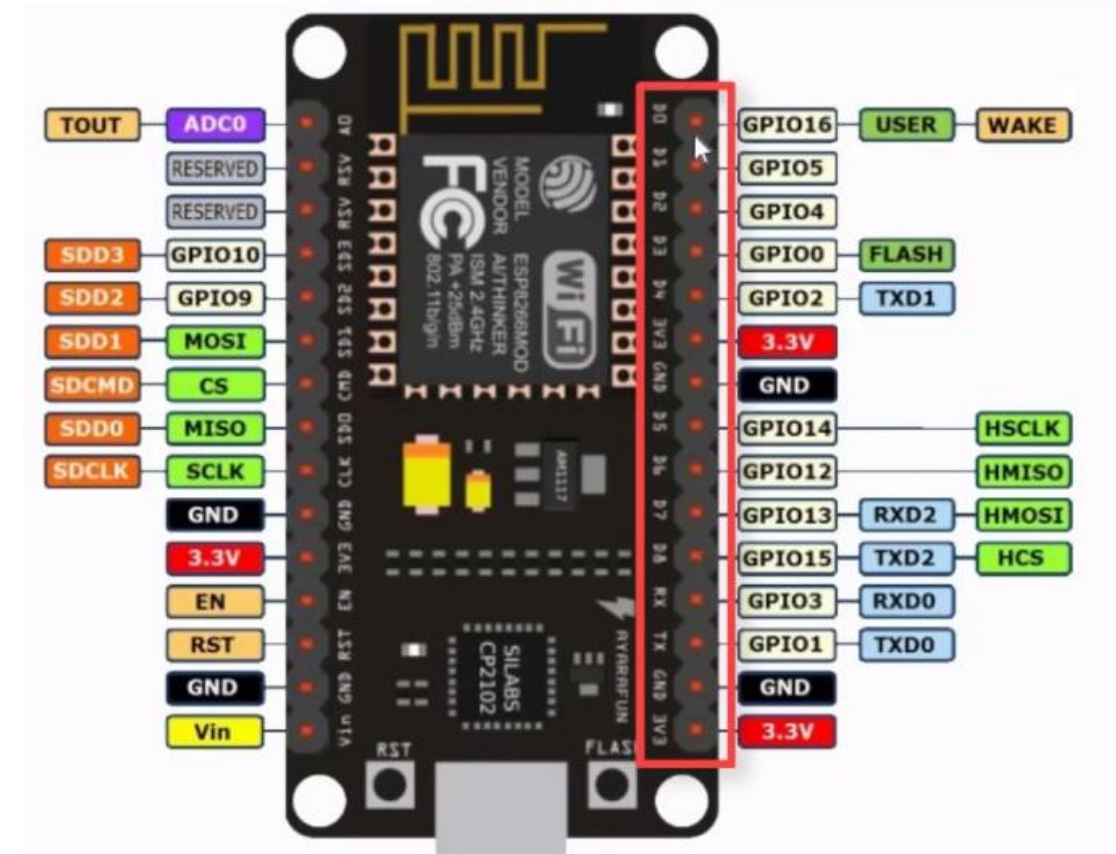
Internet of Things



1. Client & control will be in different network inter connected via internet.
2. User have access of monitoring and controlling the things within the internet. (E.g.: ISP, 4G, NB-IOT etc.)

NodeMCU – ESP8266-12E based IoT board

1. Microcontroller: Tensilica 32-bit RISC CPU Xtensa LX106
2. Operating Voltage: 3.3V
3. Input Voltage: 7-12V
4. Digital I/O Pins (DIO): 16
5. Analog Input Pins (ADC): 1 (10 bit)
6. UARTs: 1
7. SPIs: 1
8. I2Cs: 1
9. Flash Memory: 4 MB
10. SRAM: 64 KB
11. Clock Speed: 80 MHz
12. USB-TTL based on CP2102 is included onboard, Enabling Plug n Play
13. PCB Antenna



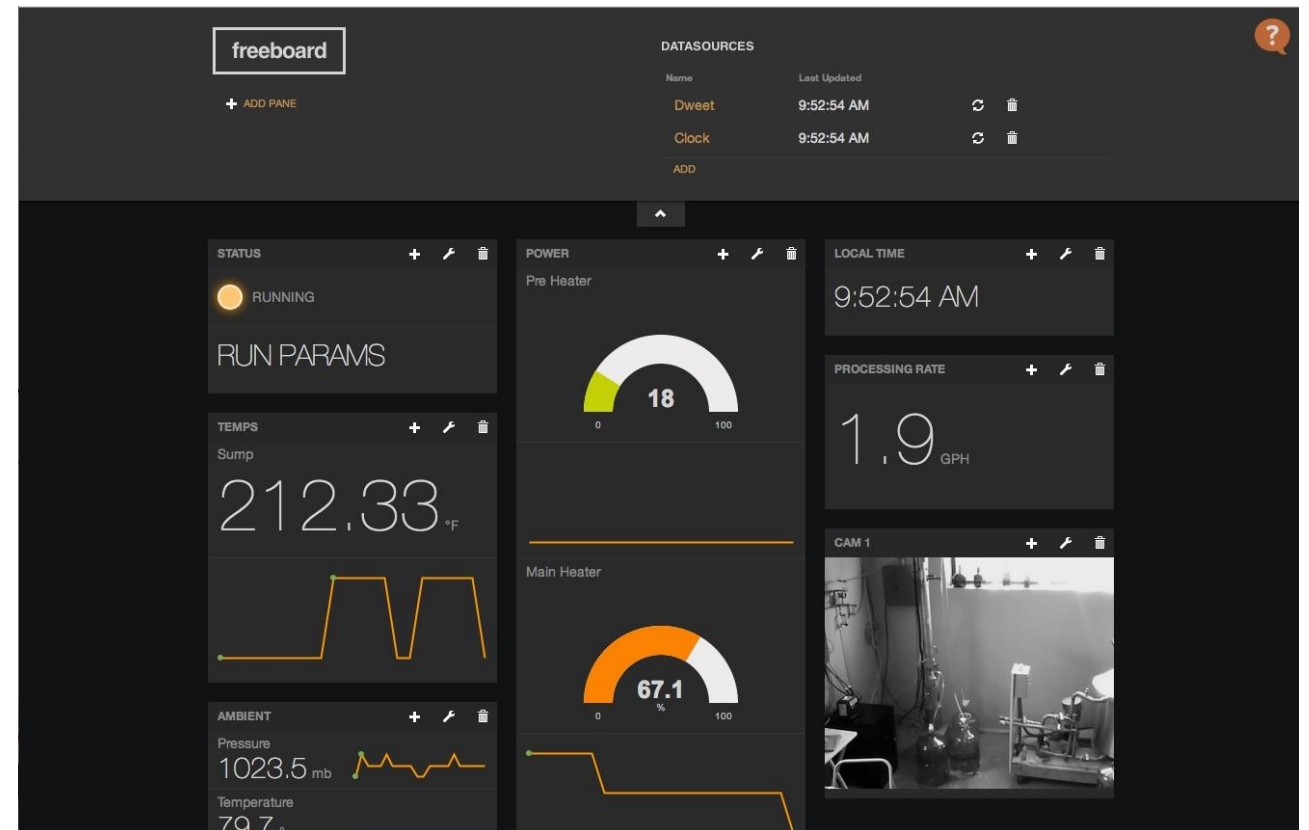
Arduino IDE

Instructions to add NodeMCU to Arduino IDE:

1. Start Arduino (version should be above 1.6.5) and open Preferences window.
2. Enter http://arduino.esp8266.com/stable/package_esp8266com_index.json into Additional Board Manager URLs field. You can add multiple URLs, separating them with commas.
3. Open Boards Manager from Tools > Board menu and find esp8266 platform.
4. Select the version you need from a drop-down box.
5. Click install button.
6. Don't forget to select your ESP8266 board from Tools > Board menu after installation.
7. Select the right port in port menu. (COM PORT → windows, /dev/tty**** → Linux, /dev/tty.usbmodem* → MAC)

Freeboard visualization platform

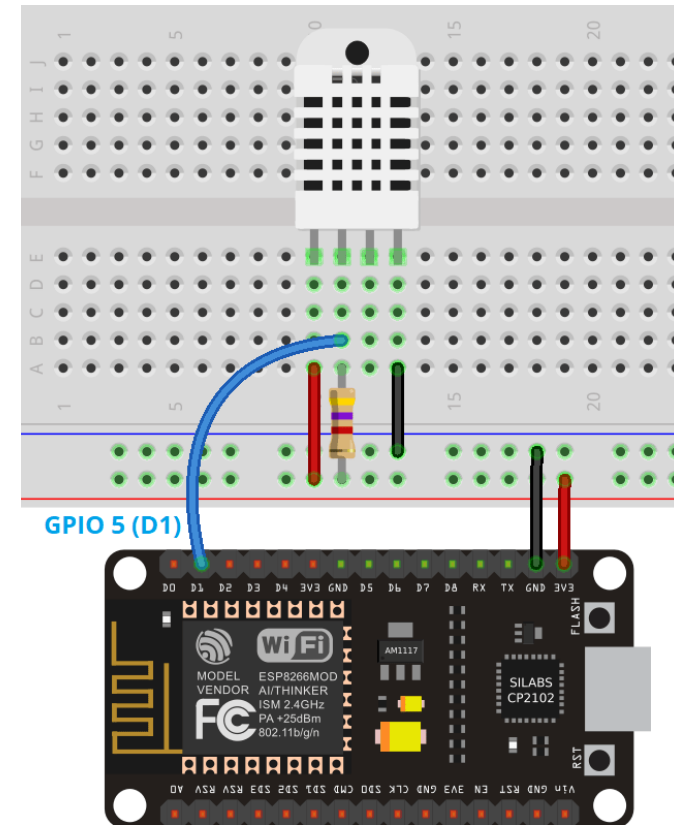
1. It provides a plugin architecture for creating data-sources (which fetch data) and widgets (which display data)
2. Can fetch data from multiple data formats like JSON, MQTT, HTTP etc.



demo

Code Link:

<https://github.com/priyablue/EFY-ITW-HOME-2020-.git>



Thank you

For any doubts / queries contact us:

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