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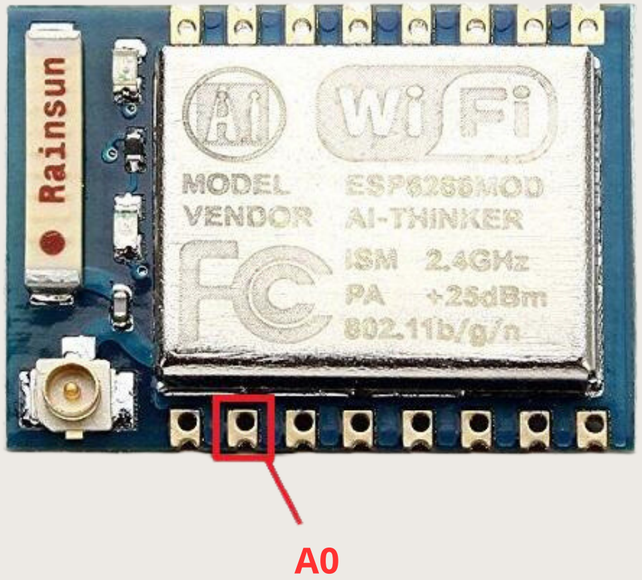
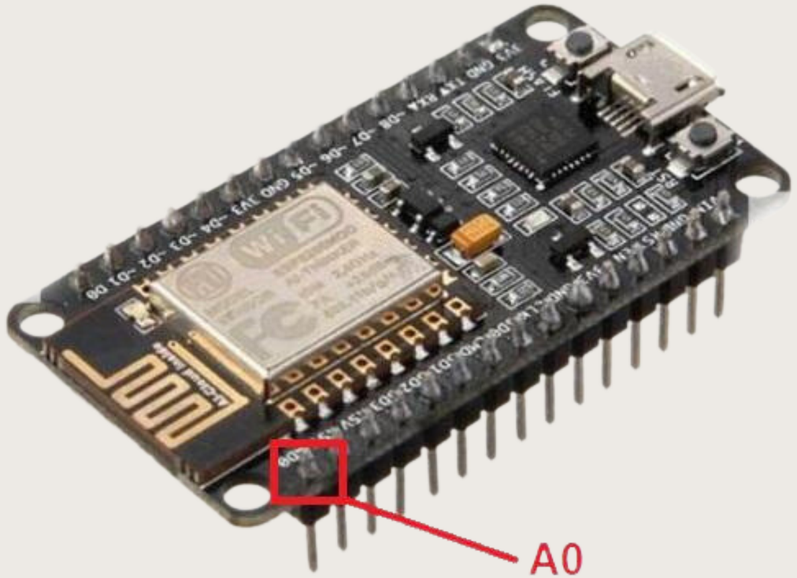
- Analog-to-Digital Convertor
- Pulse Width Modulation
- Deep Sleep

ESP8266 ADC – Read Analog Values with Arduino IDE



ESP8266 ADC PIN

- ADC (Analog-to-digital Converter)
- TOUT
- Pin6
- A0
- Analog Pin 0



- ADC Resolution - 10 Bit
- Input Voltage Range
  - 0 - 1v (Bare chip)
  - 0 - 3.3v (Development Board)

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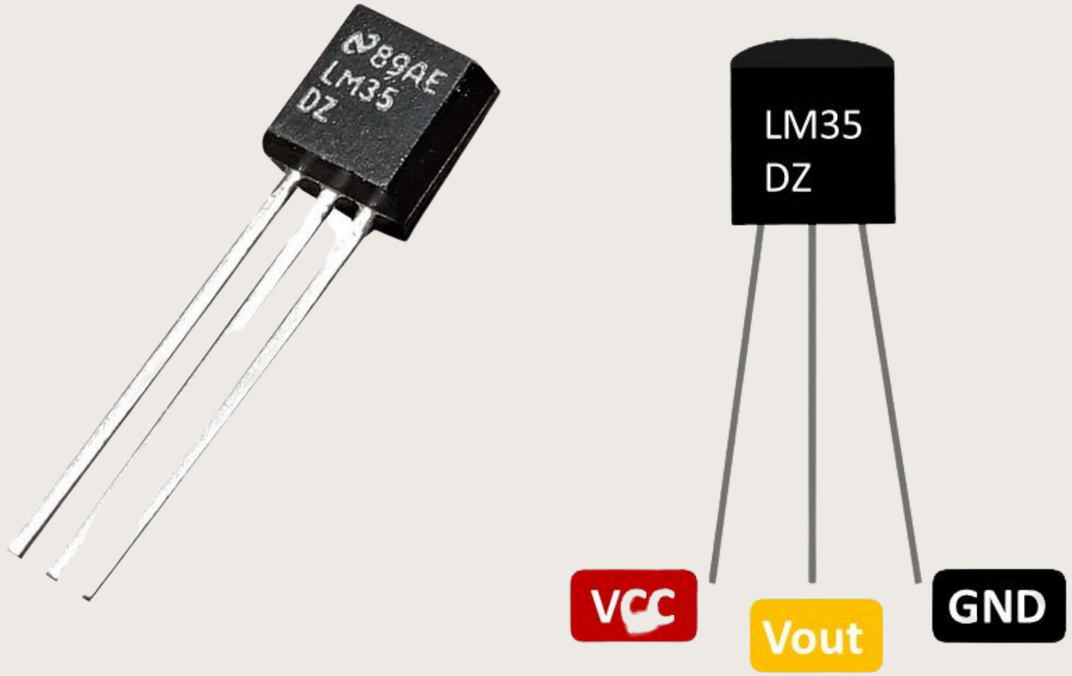
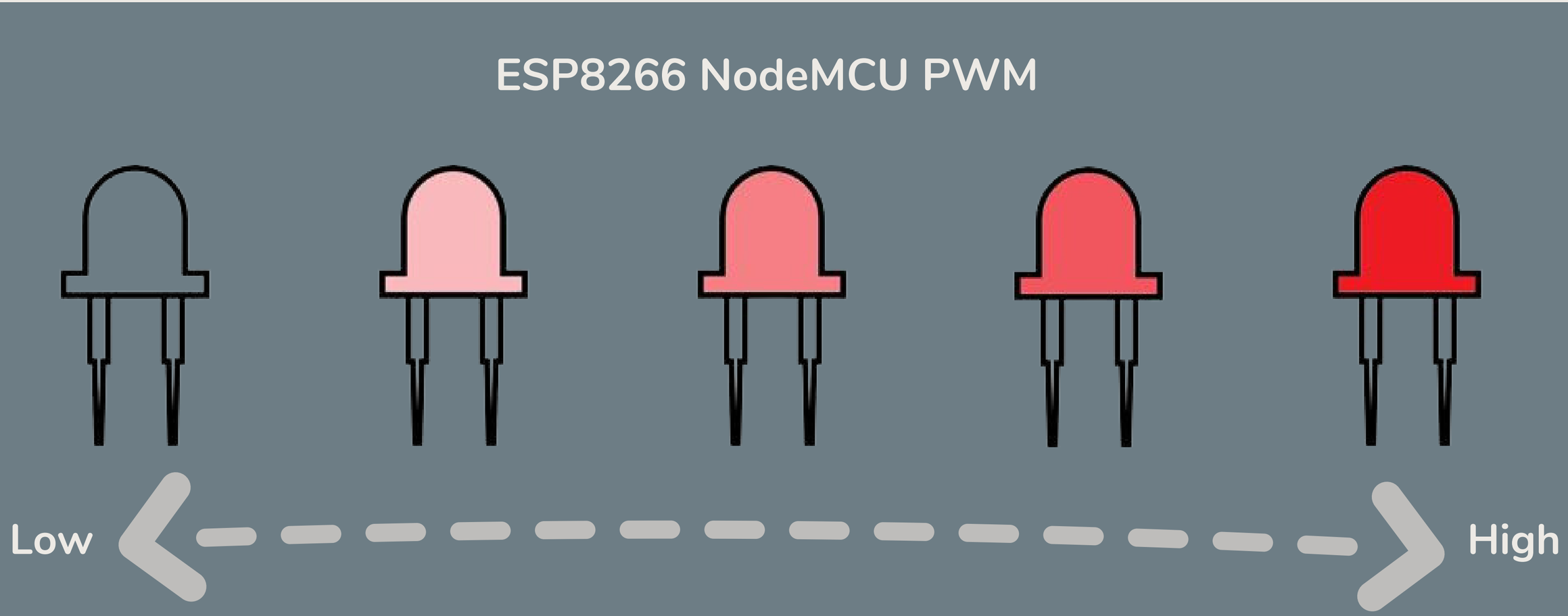
INTERFACING LM35 TEMPERATURE SENSOR WITH ESP8266

The LM35 is a temperature sensor, that outputs an analog voltage proportional to the temperature in Celsius



ESP8266 NodeMCU PWM with Arduino IDE – Dim LED (Analog Output)



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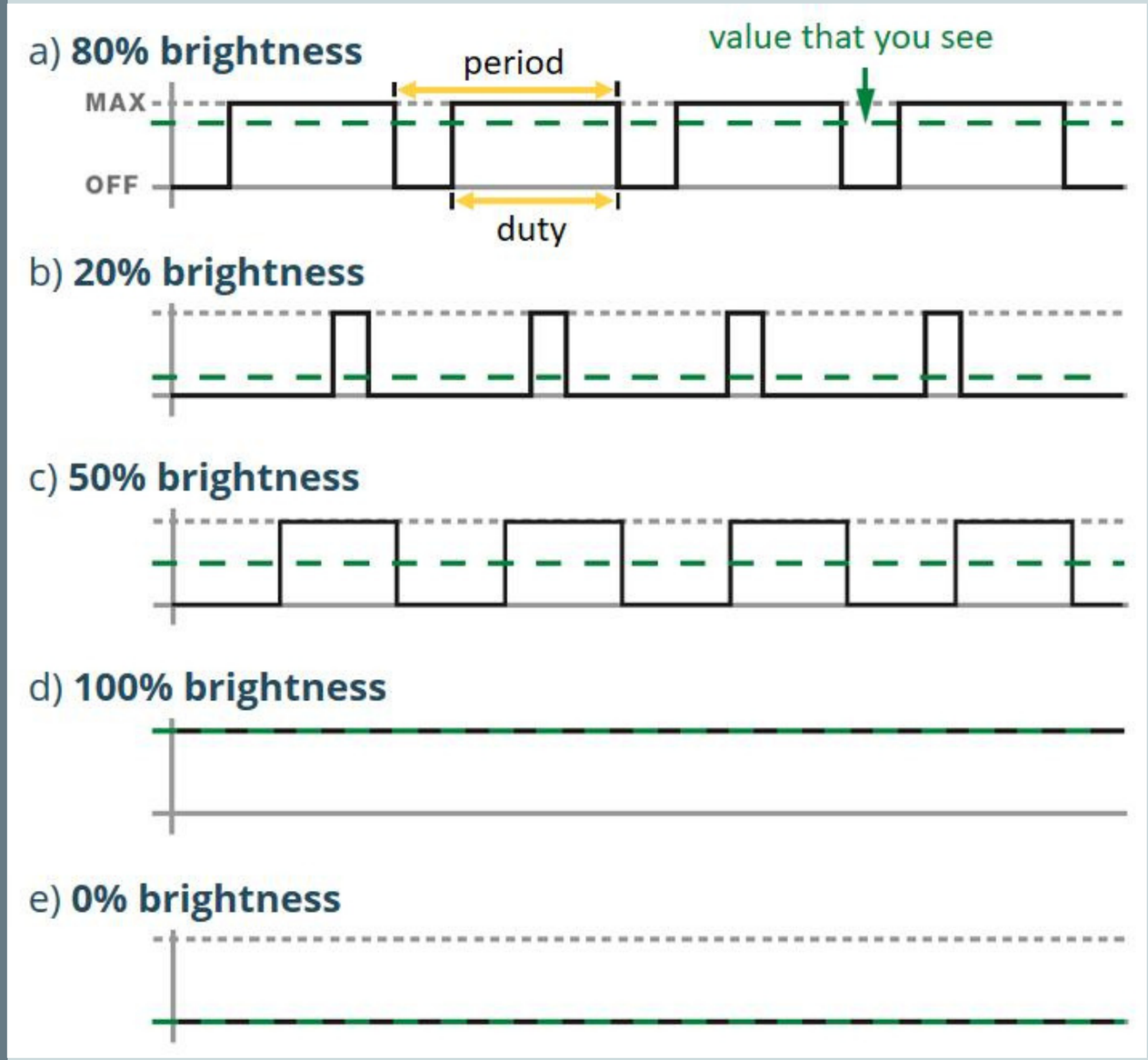
Duty Cycle of PWM

Duty cycle = Turn ON Time / Turn ON Time + Turn OFF Time



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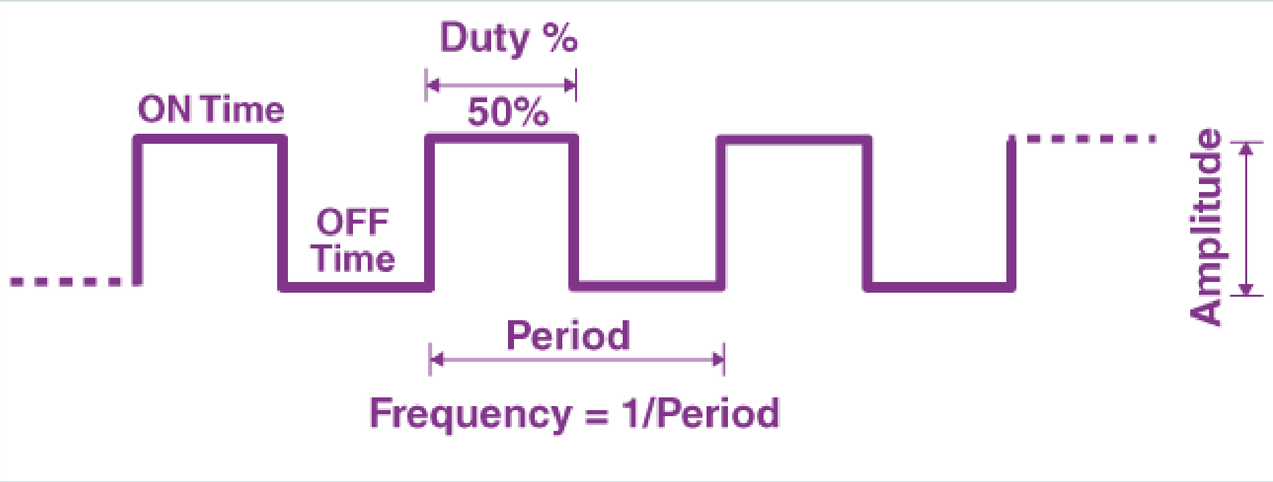
Frequency of PWM

Frequency = 1/Time Period

Time Period = On Time + OFF time



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analogWrite();

analogWrite(pin,value);	analogWriteRange(new_range);	analogWriteFreq(new_frequency);
• Pin : 0 - 16 • Value : 0 - 255	• Frequency : 1 KHz	• Values : 100 Hz - 40000 Hz

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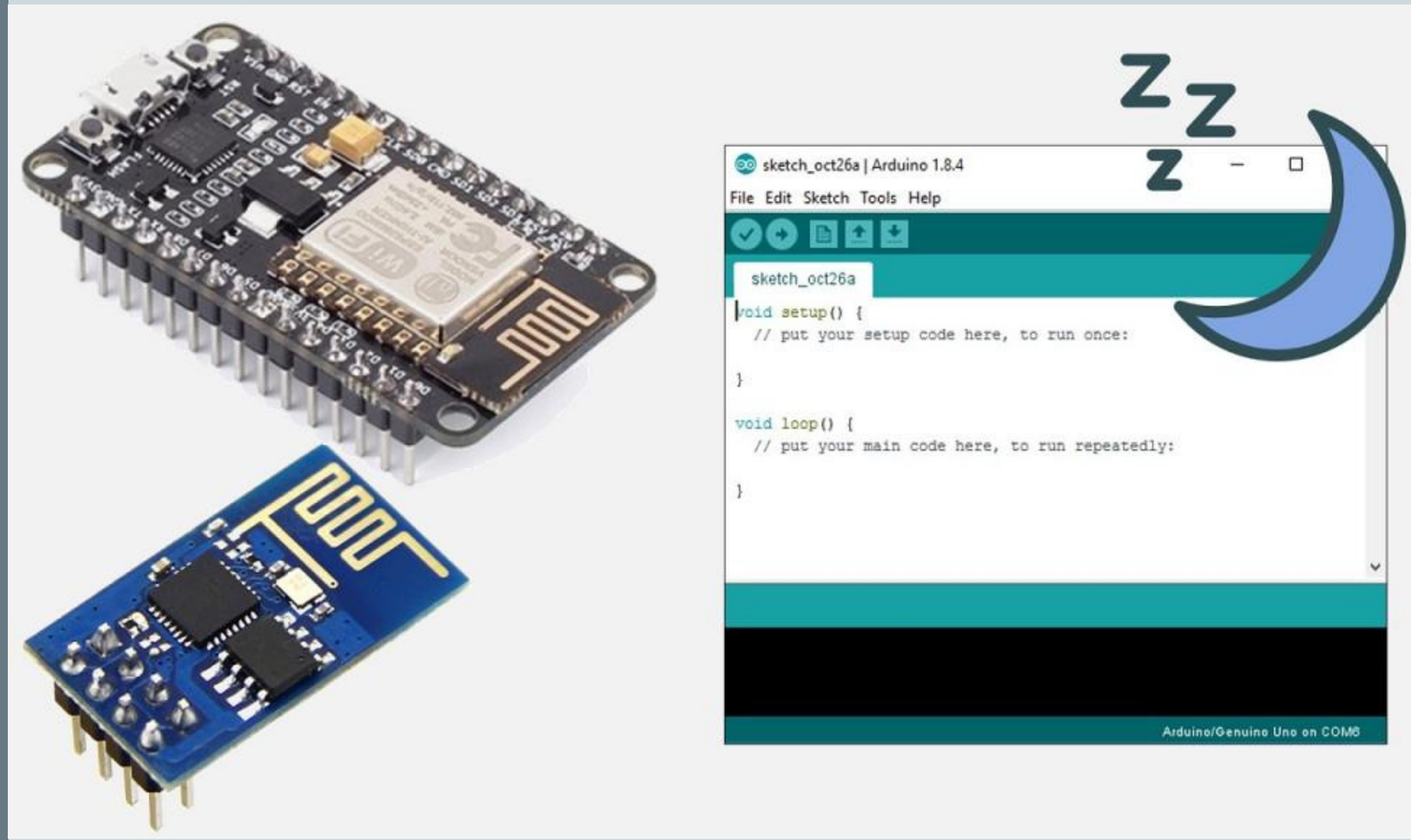
ESP8266 DEEP SLEEP WITH ARDUINO IDE (NODEMCU)



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Introducing Deep Sleep Mode

LiPo Battery

Power Bank

Li-ion

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Types of Sleep

- Modem Sleep
- Light Sleep
- Deep Sleep

Item	Modem-sleep	Light-sleep	Deep-sleep
Wi-Fi	OFF	OFF	OFF
System clock	ON	OFF	OFF
RTC	ON	ON	ON
CPU	ON	ON	OFF
Substrate current	15 mA	0.4 mA	20 uA
Average current (DTIM = 1)	16.2 mA	1.8 mA	-
Average current (DTIM = 3)	15.4 mA	0.9 mA	-
Average current (DTIM = 10)	15.2 mA	0.55 mA	-

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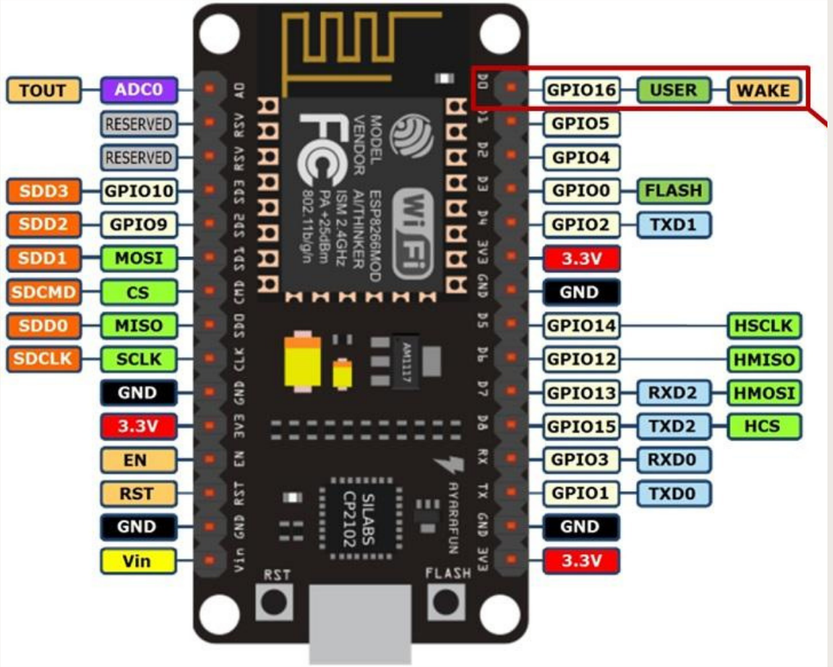
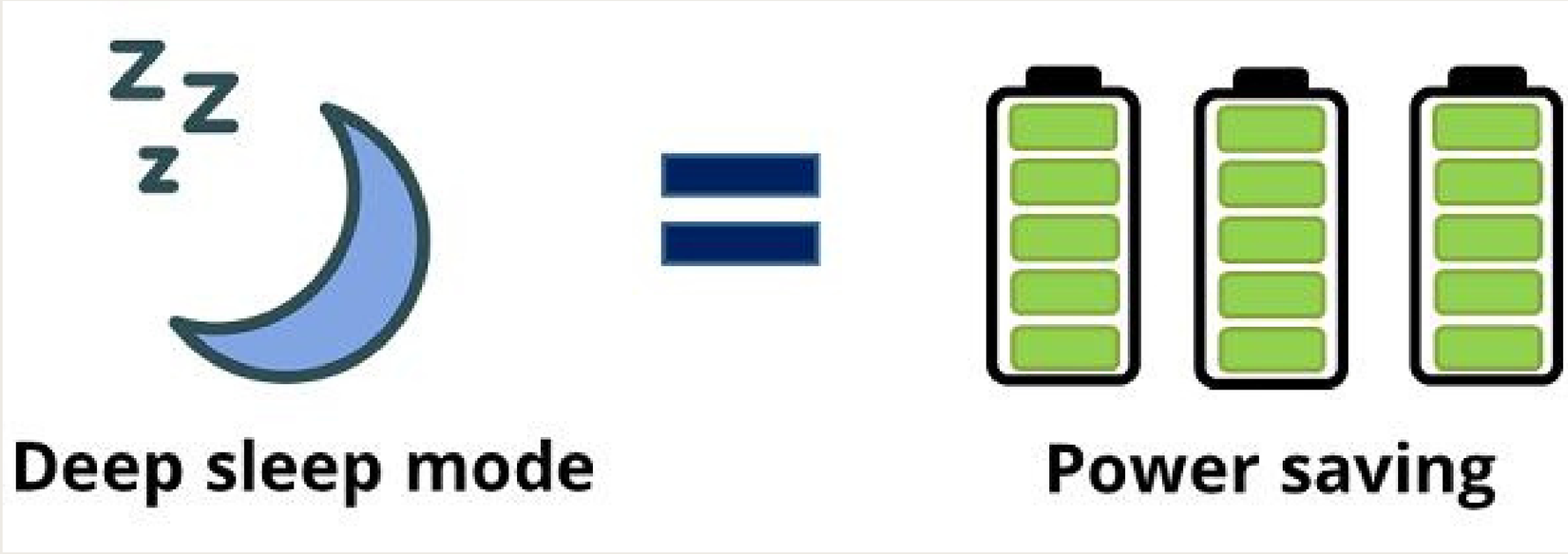
WAKEUP SOURCES





#1

Timer wake up: The ESP8266 wakes itself up after a predefined period of time

#2

External wake up: The ESP8266 wakes up when you press the RST button (the ESP8266 restarts)

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Thank you