

Home Automation

(Using Arduino Board)

Working on SDG Goal 7 & 11

A complex technology simplified



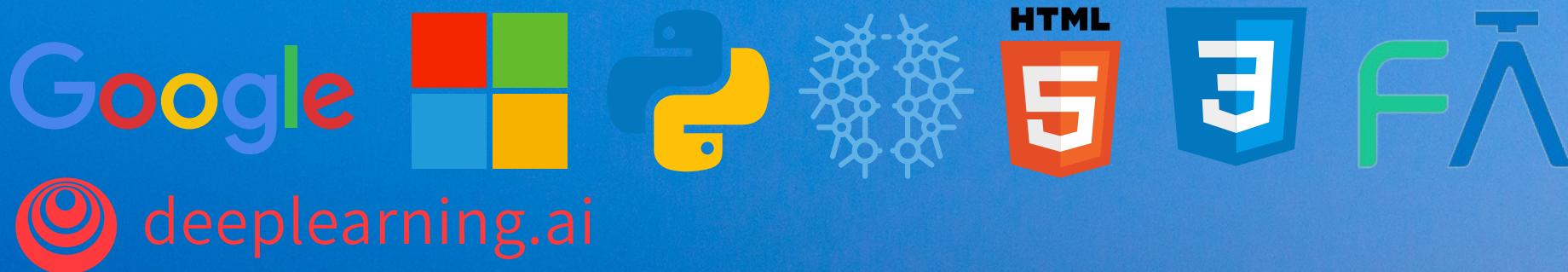
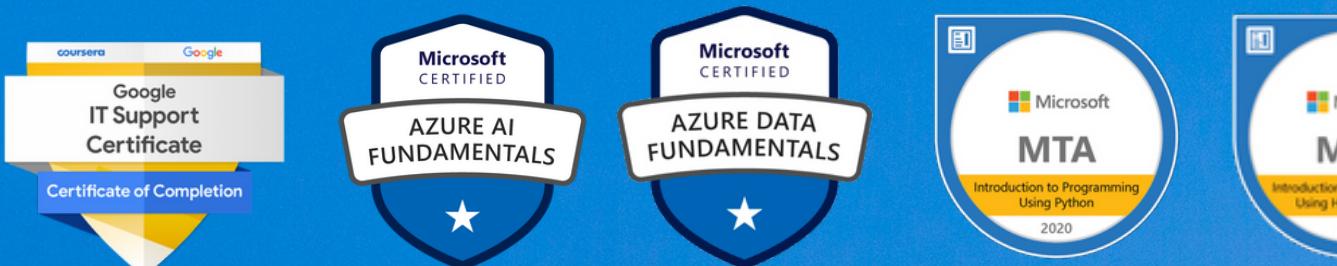
Mehar Khan Niazi
CSC-19F-050



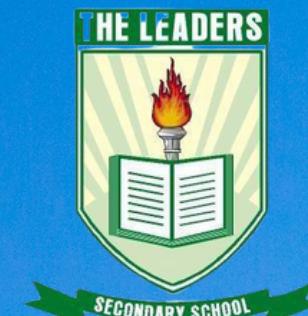
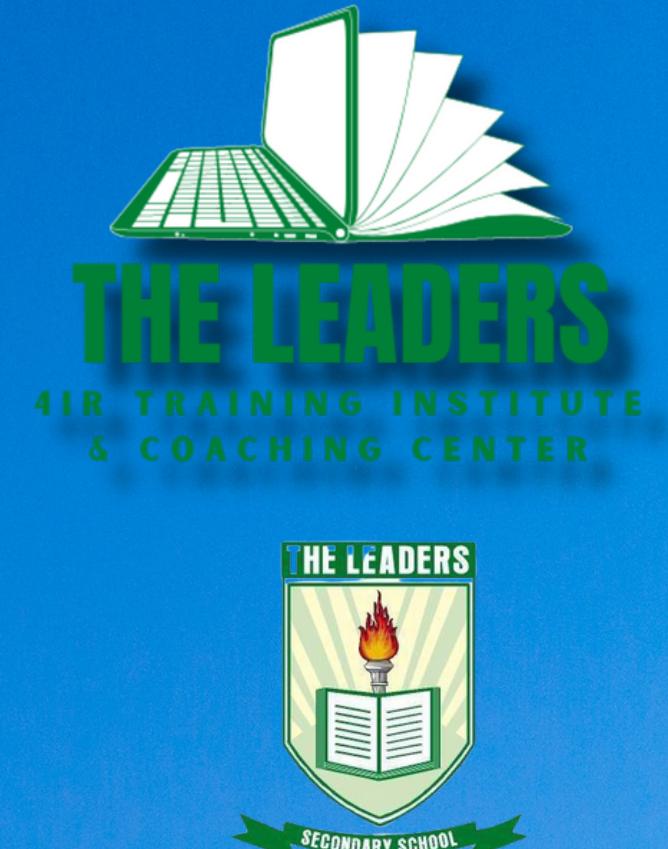
Team

An enthusiastic and motivated AI & Data Science Student.

- Google IT Support Specialist
- Microsoft Technology Associate
- Microsoft Python & HTML CSS Certified



in linkedin.com/in/meharkhanniazi
github github.com/meharkhanniazi



Team

**Marketing Expert at The
Moncko**



**Muhammad Fasih
CSC-19F-089**

Team



Muhammad Azhar
CSC-19F-069



A dynamic & motivated, currently exploring the knowledge of AI & Data Science.

- Microsoft Technology Associate
- Microsoft Python & HTML CSS
- IBM , Linux Foundation,AWS, Cisco Certified



in [linkedin.com/in/azharthegeek](https://www.linkedin.com/in/azharthegeek)

github.com/azharthegeek



COVERED TODAY



A BRIEF OUTLINE

- World challenges
 - IOT Importance, challenges.
 - Home Automation System
 - New Protocol Matter
- 

UN 17 goals





GOAL 7

**Ensure access to
affordable, reliable,
sustainable, and modern
energy for all**



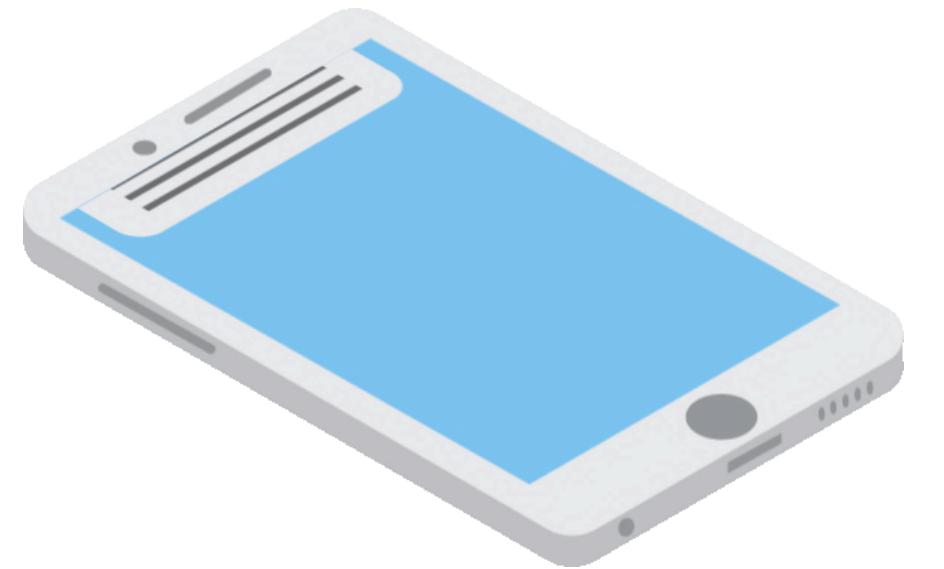
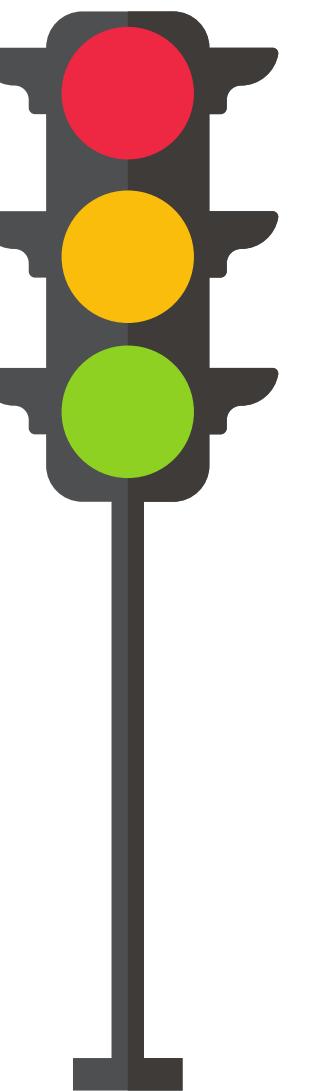
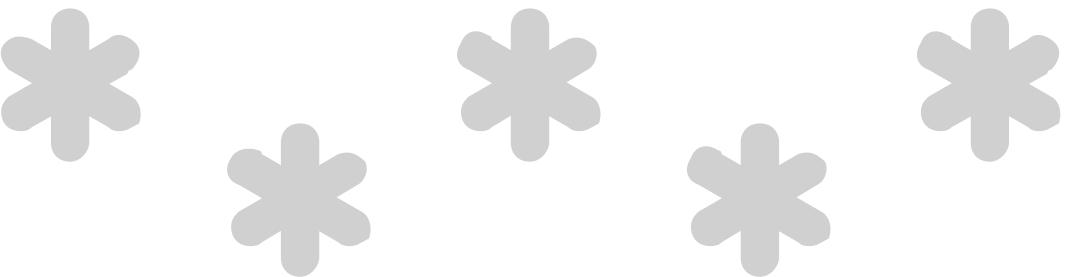
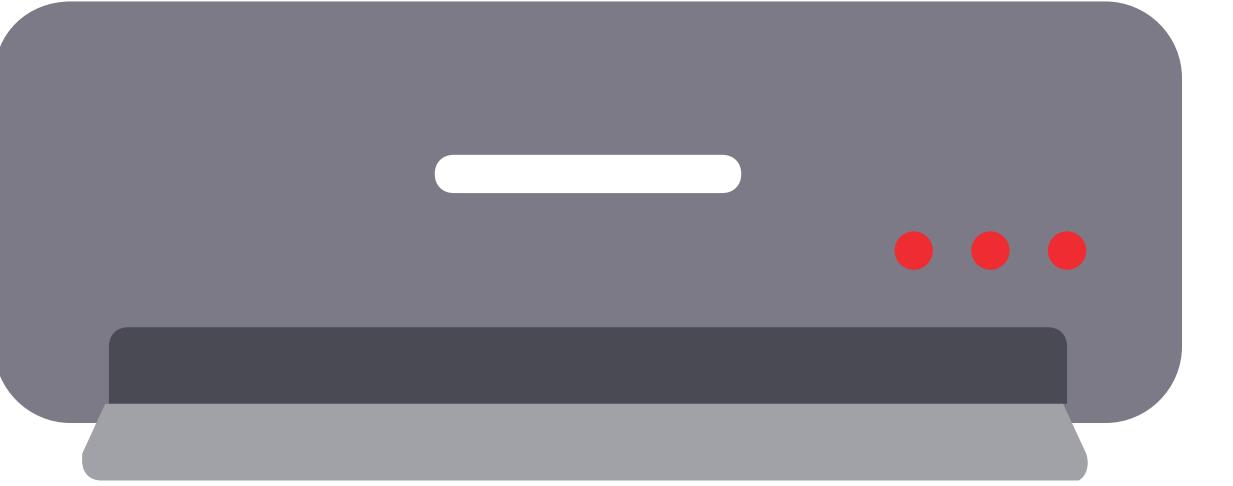
GOAL 11

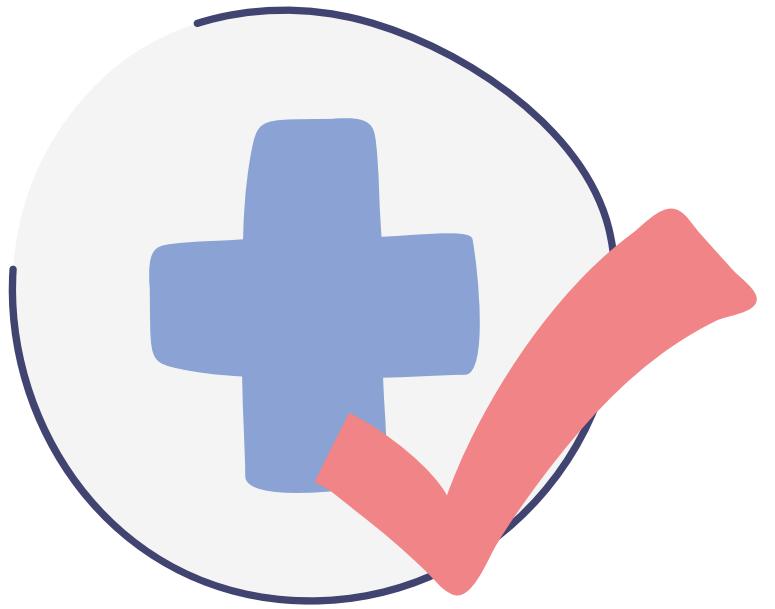
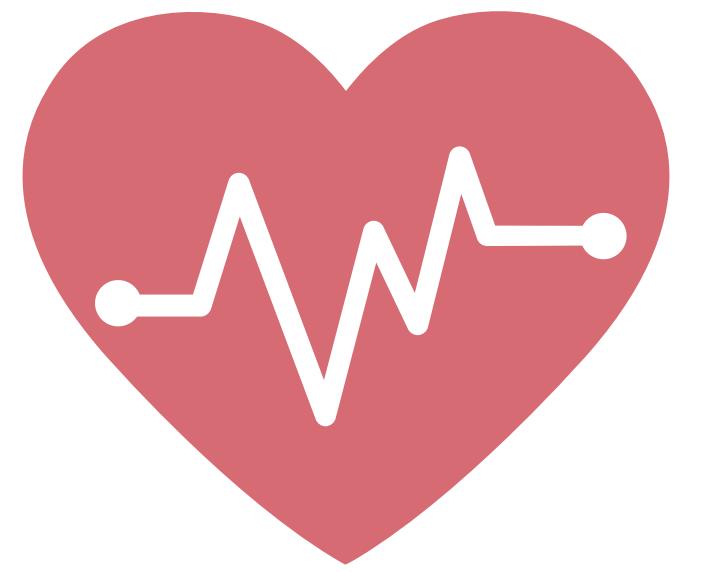
**Make cities and human
settlements inclusive,
safe, resilient, and
sustainable**

What is the Internet of Things?

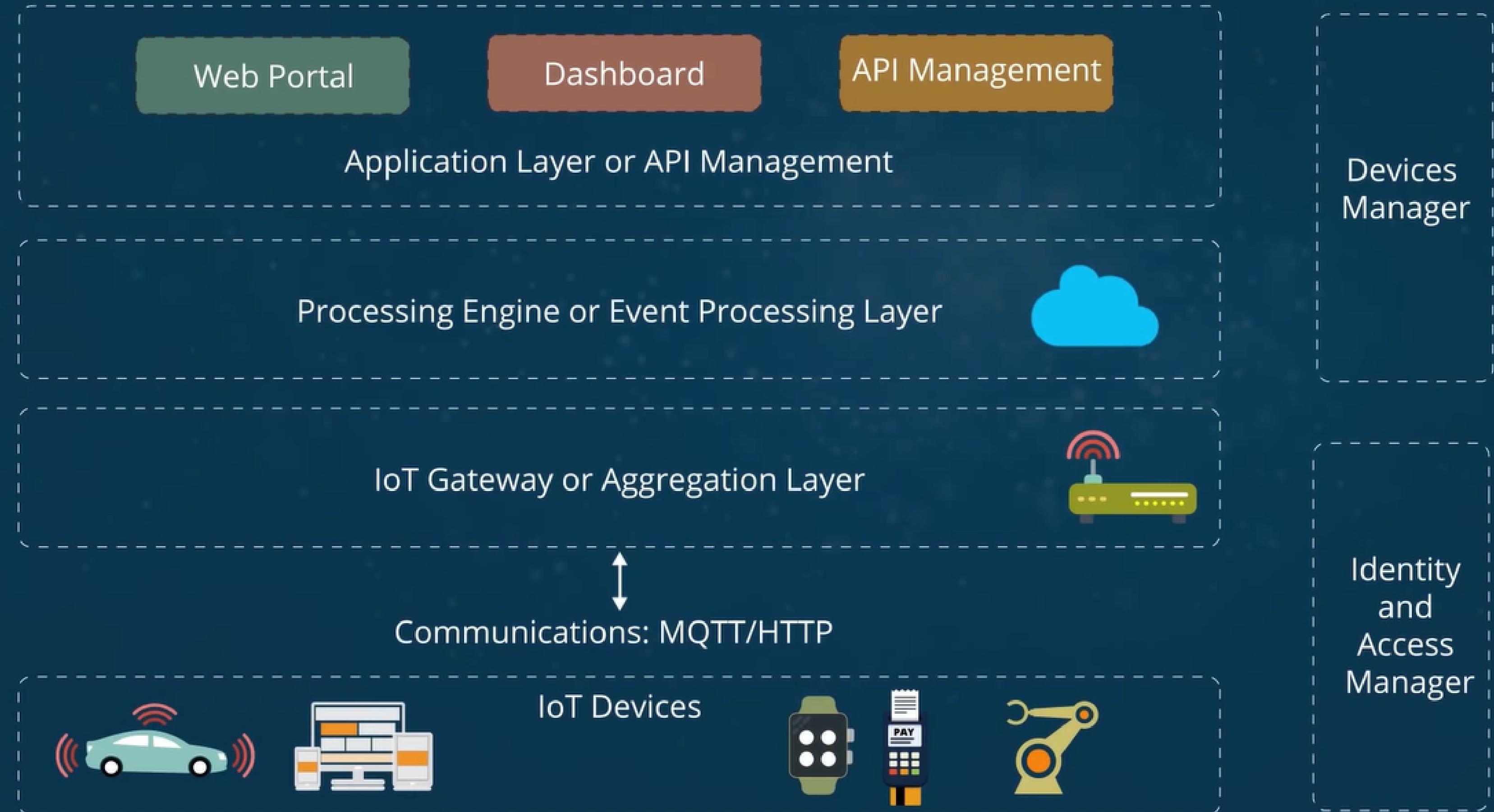


Internet connectivity
+ **digital intelligence**



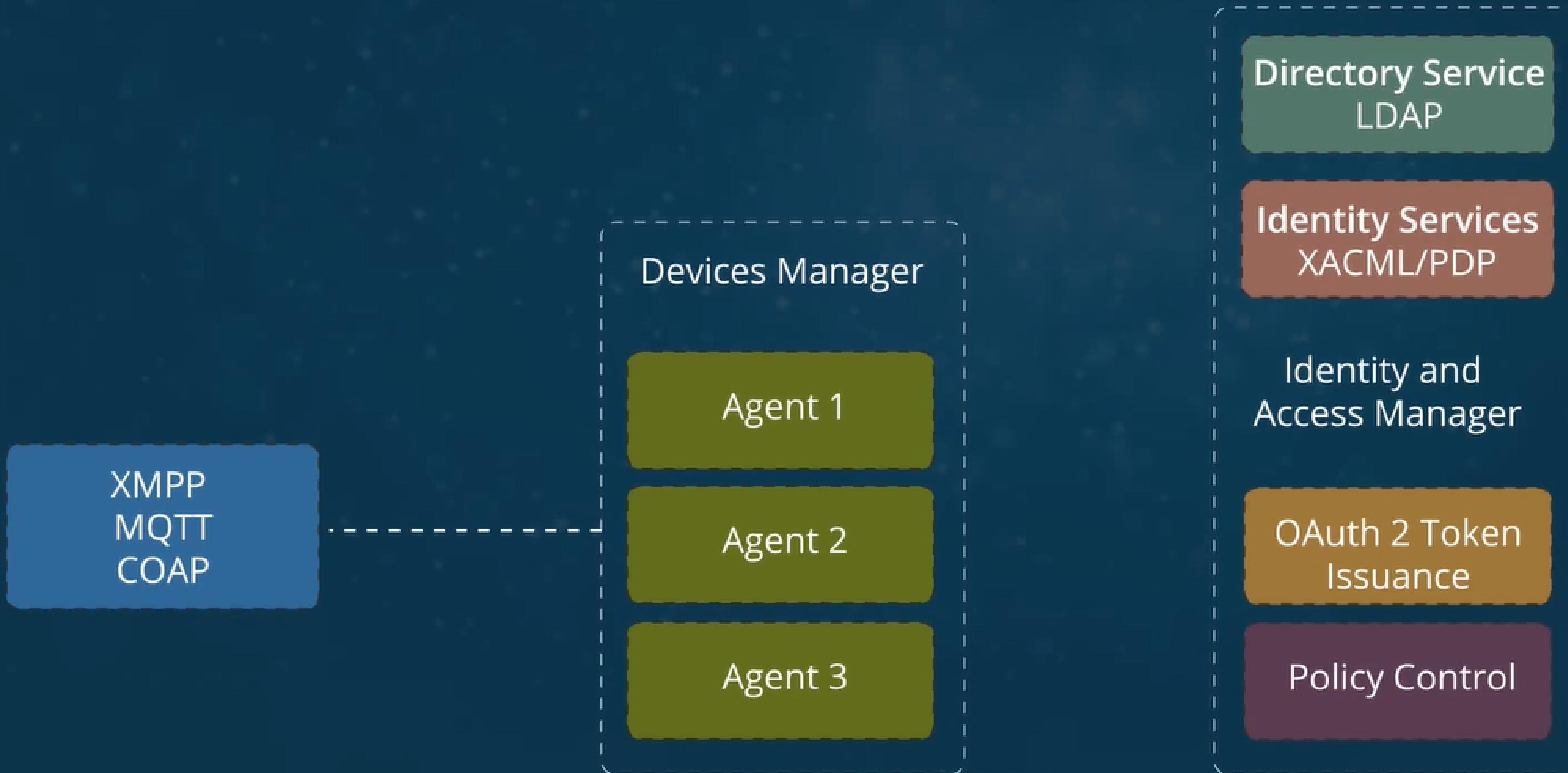


IoT Device Architecture



IoT Reference Architecture

Device manager enables cross functional architecture



IoT Reference Frameworks

Secure standards

Commonly used vocabulary

ISO 30141

Best practices

Reusable designs

Four Stages

Stage 1

Sensors/Actuators
(wired,wireless)



Stage 2

Internet Gateways,
Data Acquisition
Systems
(data aggregation, A/D,
measurement, control)



Stage 3

Edge IT
(analytics,pre-
processing)



Stage 4

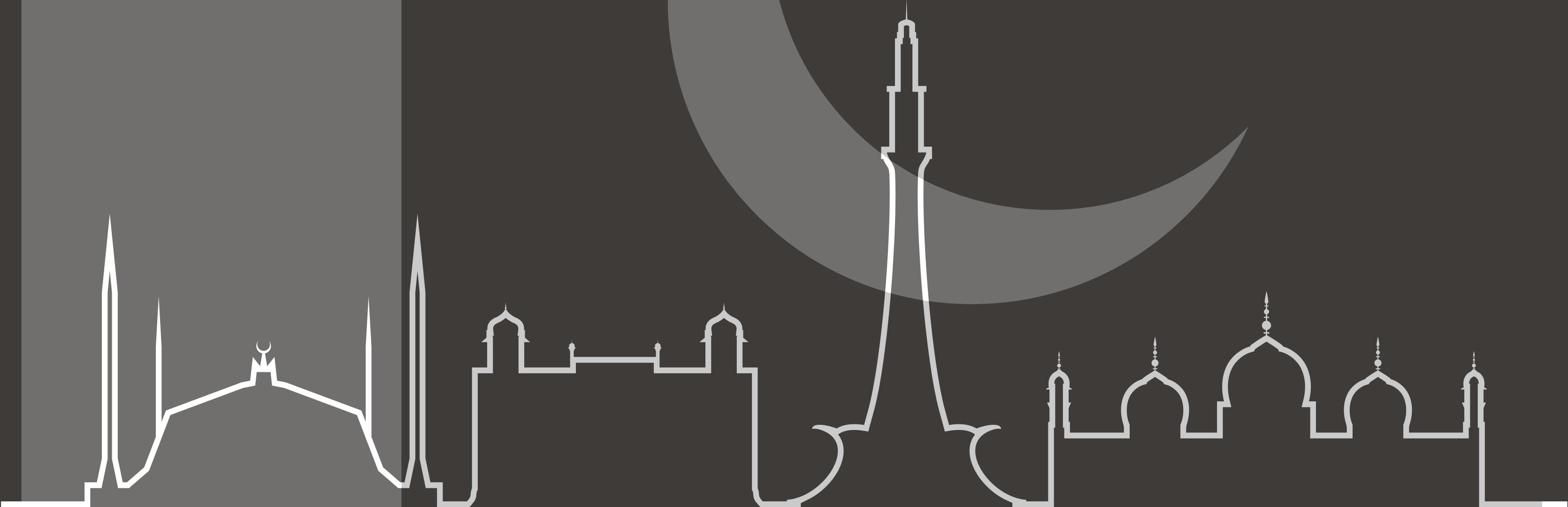
Data Center/ Cloud
(analytics management,
archive)





\$15 trillion

In next 20 Years



WHERE WE ARE TODAY

OUR WORLD

WHERE DO WE GO NEXT?

HOW DO WE GET THERE?



Home Automation



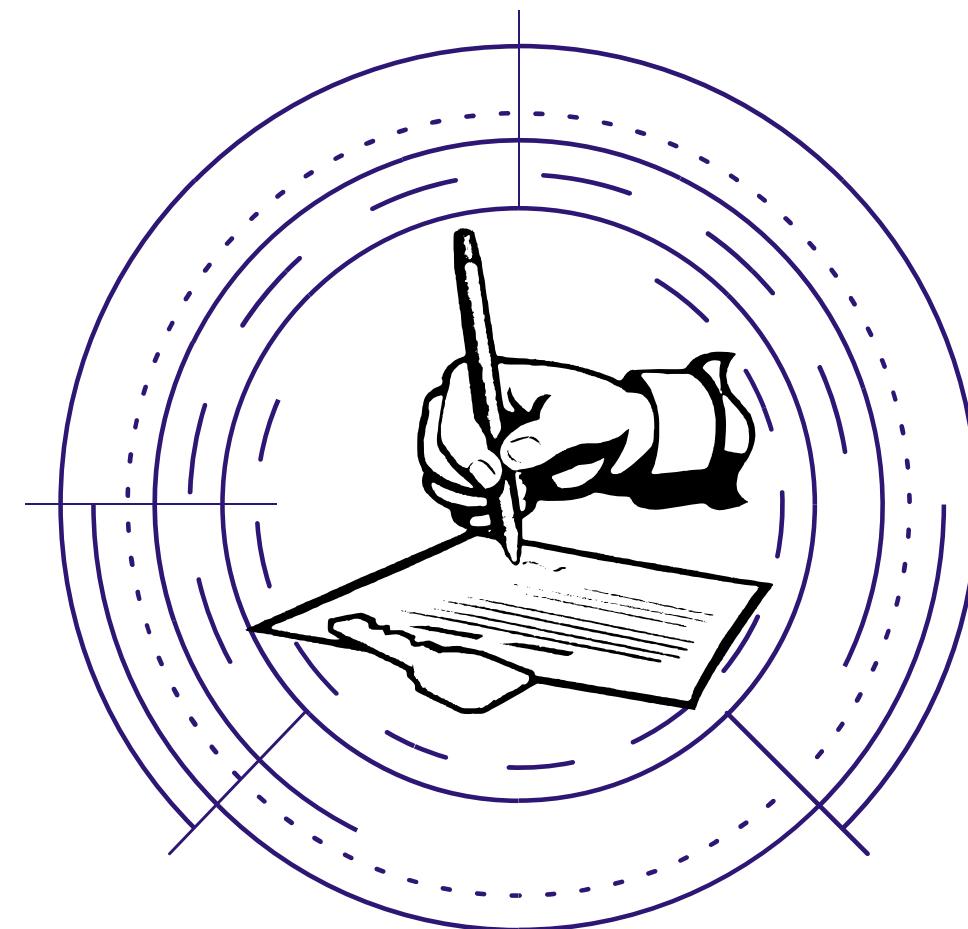
Use of Agile model

The screenshot shows a Trello board titled "Home Automation System". The board is organized into five columns: Done, In Progress, On Hold, Next-up, and User Requirement. Each column contains several cards representing tasks or features.

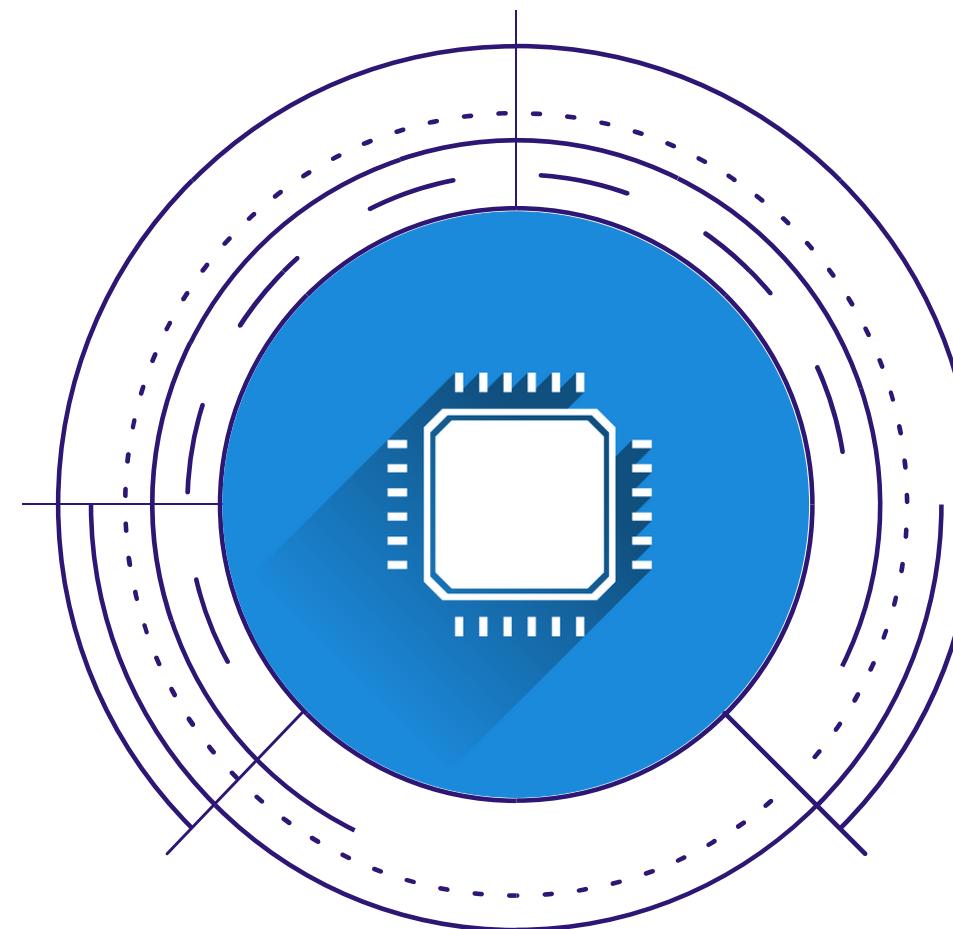
- Done:**
 - Project Report
 - Node MCU purchased
 - Relay modules purchased
 - Circuit Diagram
 - Camera connectivity
 - Slides
- In Progress:**
 - Open CV results Improvement
 - Project Estimation
 - Resource partner
 - Security Alert
- On Hold:**
 - Sensors
 - Dashboard
 - App UI
- Next-up:**
 - Site Connectivity (Mobile + Desktop)
 - One board product
 - wifi + bluetooth + Remote IR
 - Use of Mater Protocol
- User Requirement:**
 - Simple UI
 - Connectivity From Any where
 - Wifi over Bluetooth
 - Dashboard
 - Power usage statistic
 - Security
 - low cost

Each card includes a progress bar at the top and a "Add a card" button at the bottom right. The "In Progress" and "On Hold" columns have a yellow background, while the others have a grey background. The "User Requirement" column has a blue header.

Creation of Home Automation Project



PLANNING



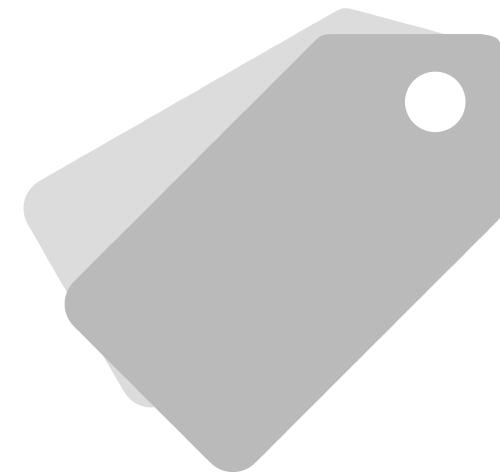
PRODUCTION



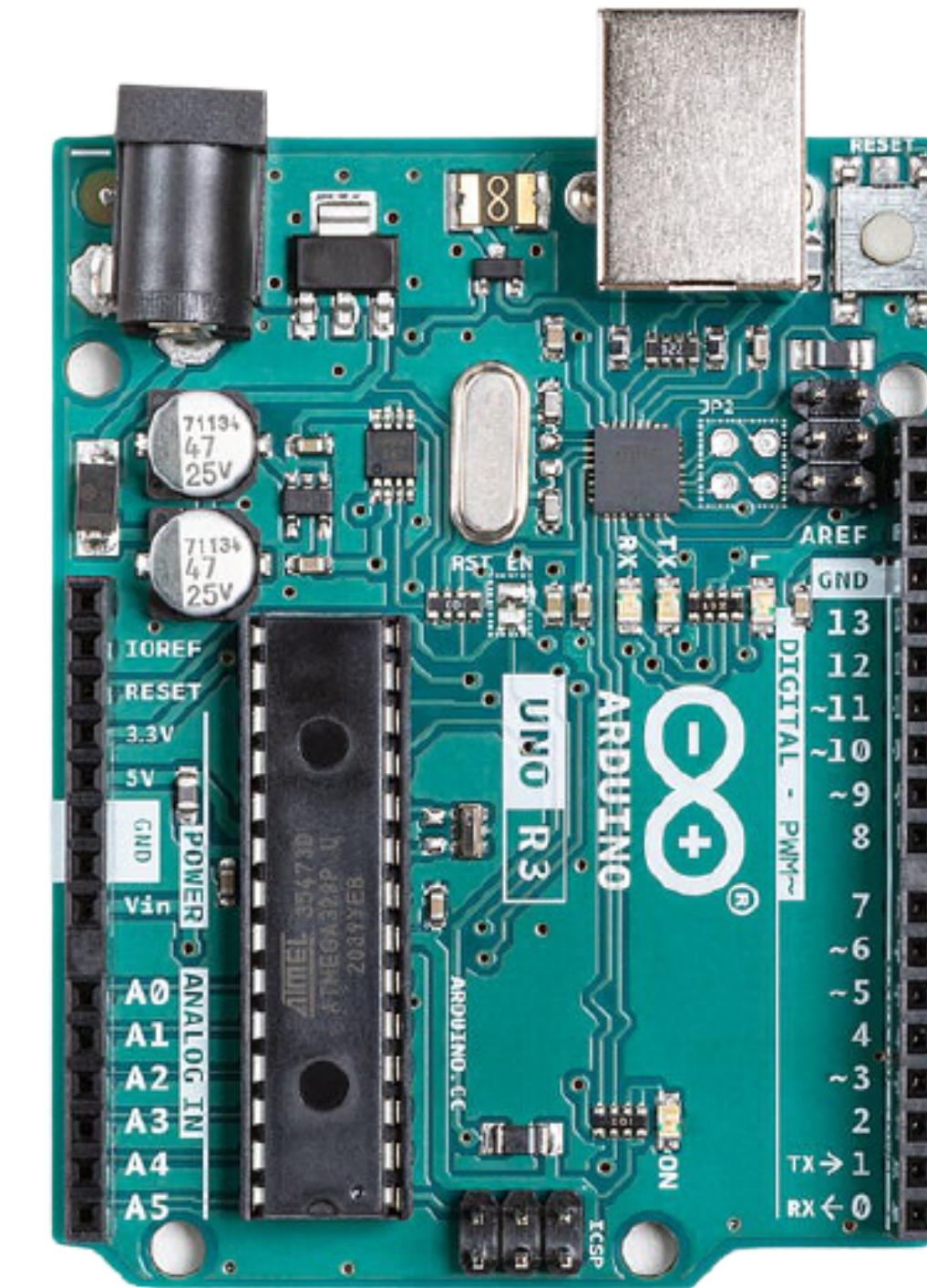
IMPLEMENTATION

Arduino Uno R3

First Release : 2010



Rs : 4100

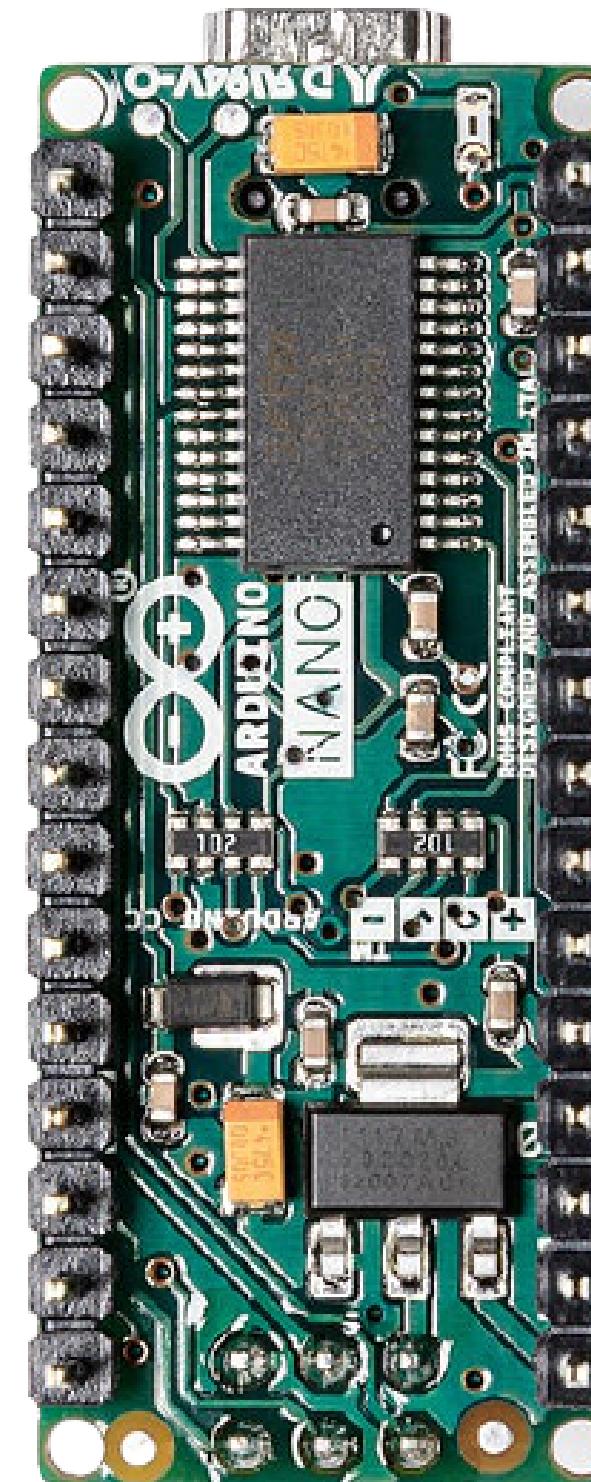


Arduino nano

First Release : 2008

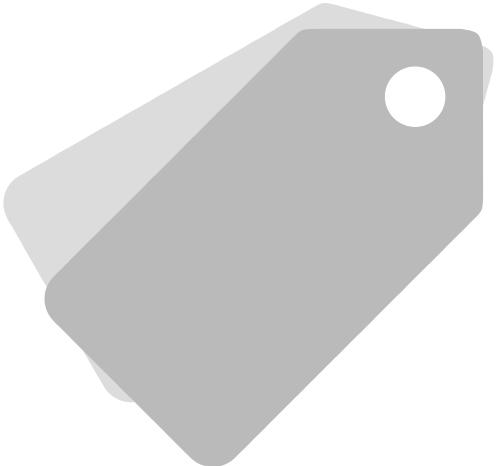


Rs : 3500

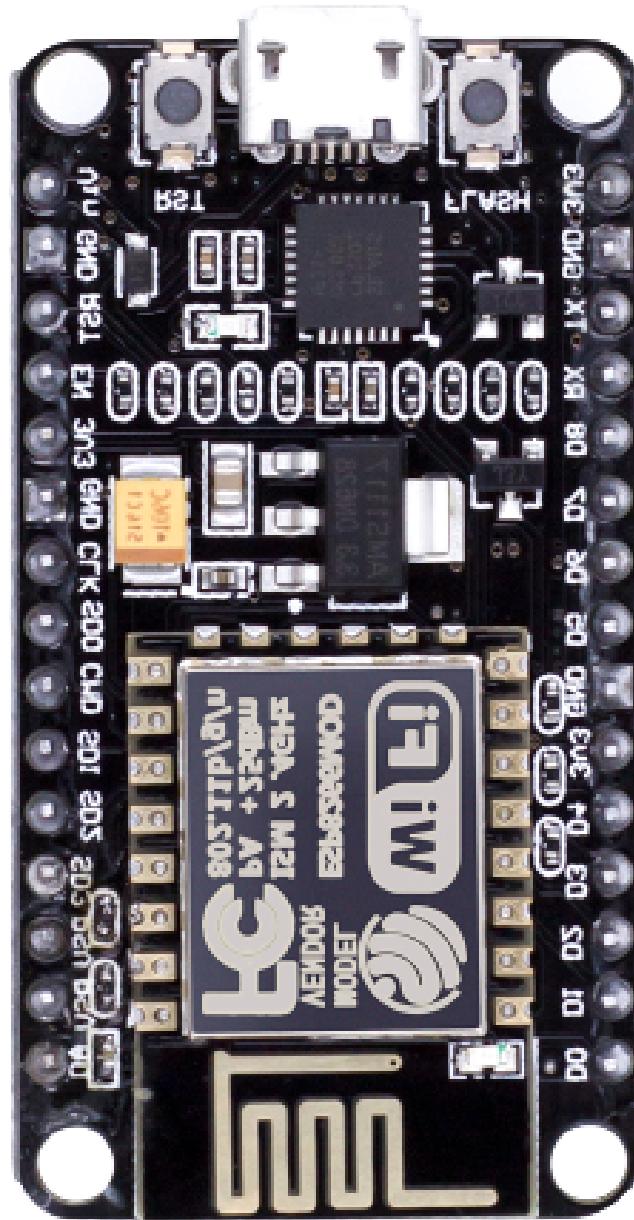


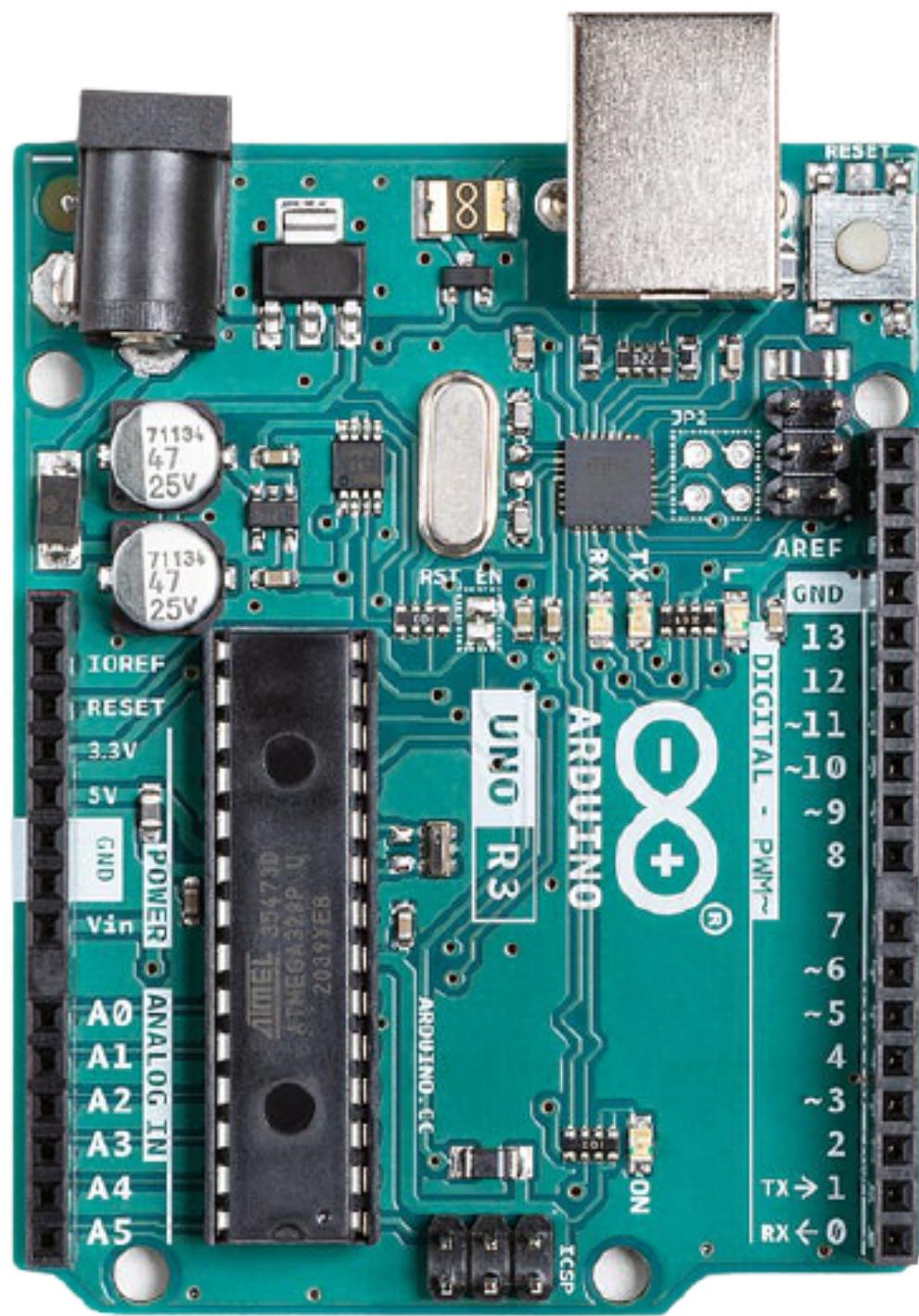
Node mcu

First Release : Oct 2014



Rs : 620

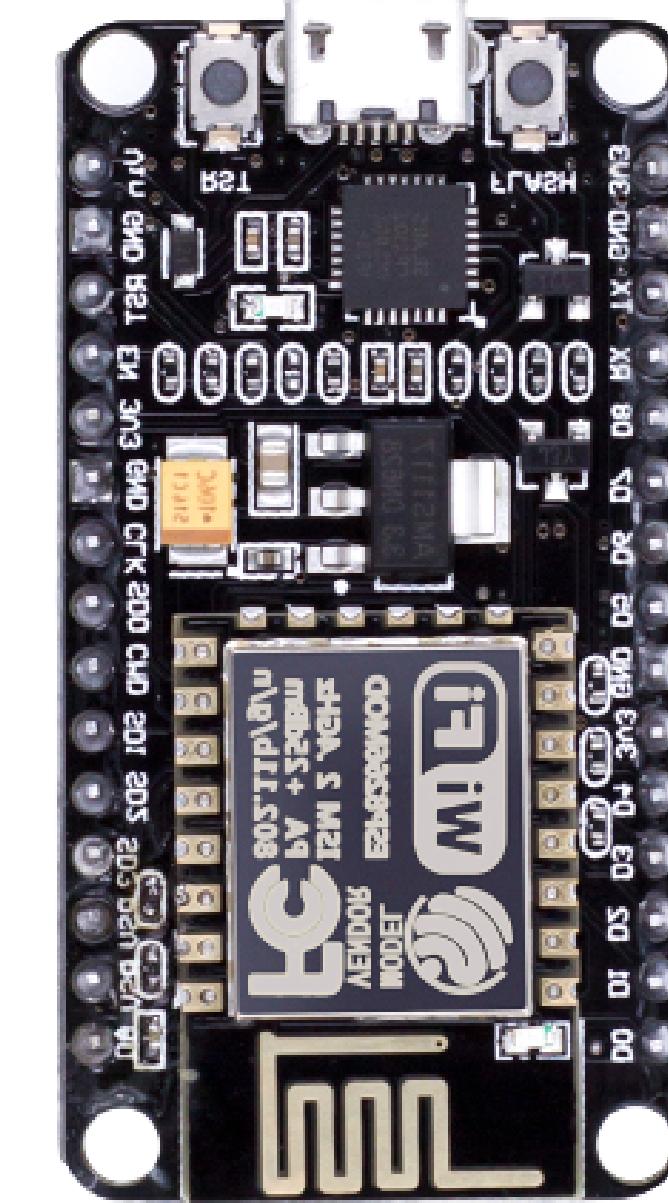




Arduino Uno R3

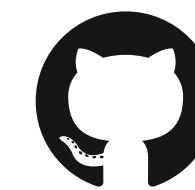
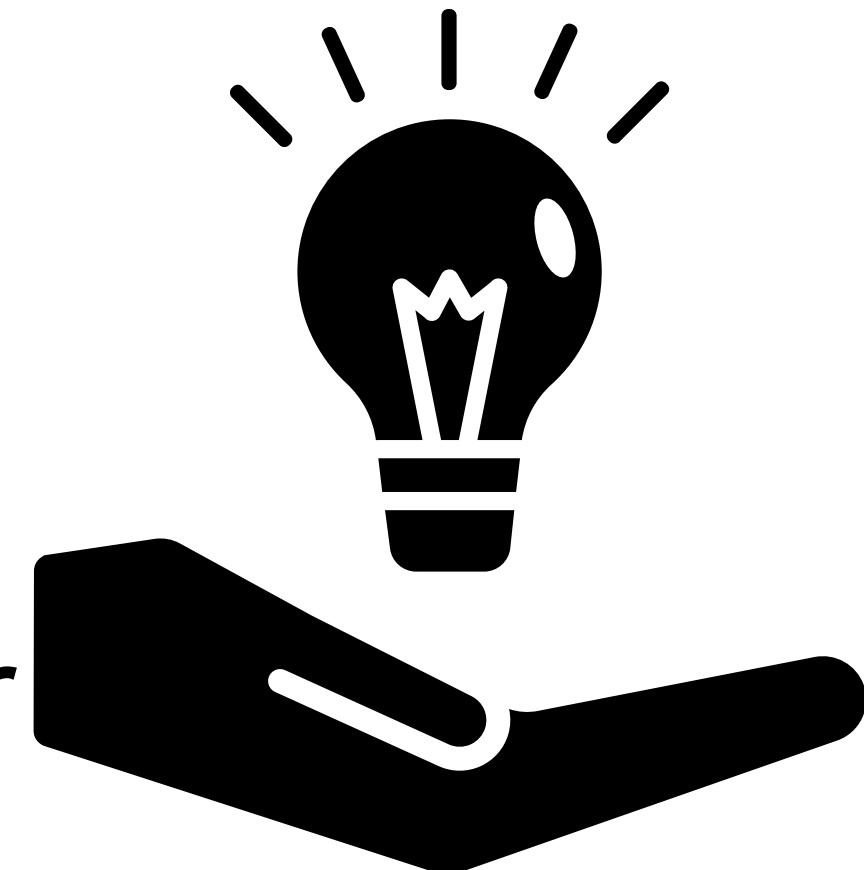
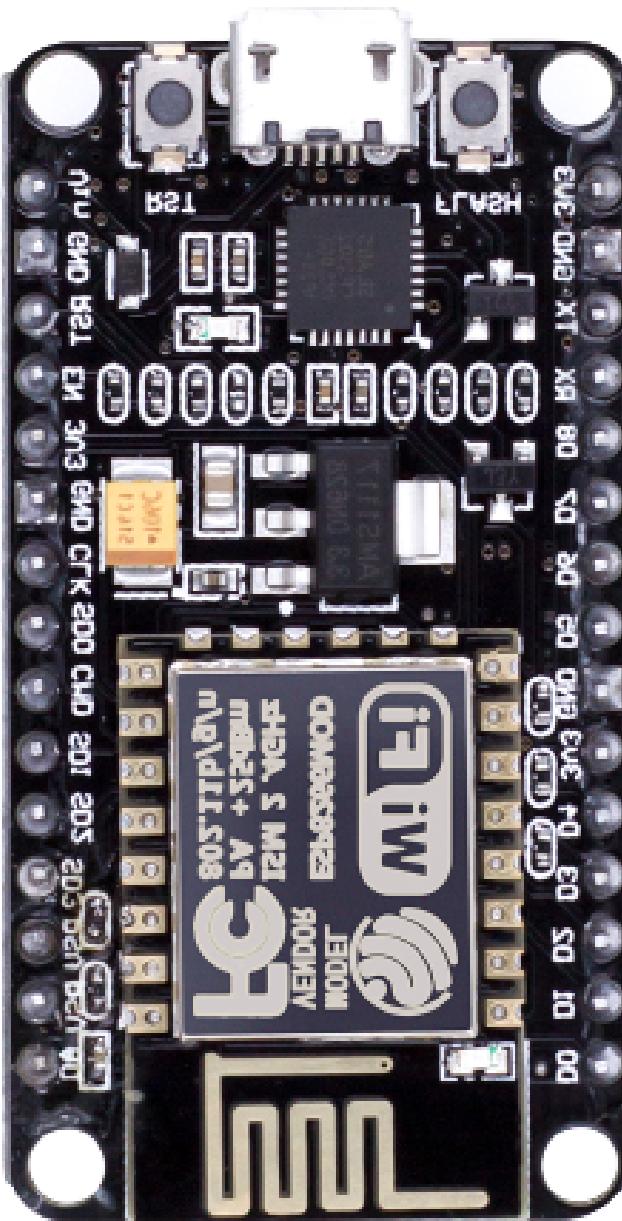


Arduino nano

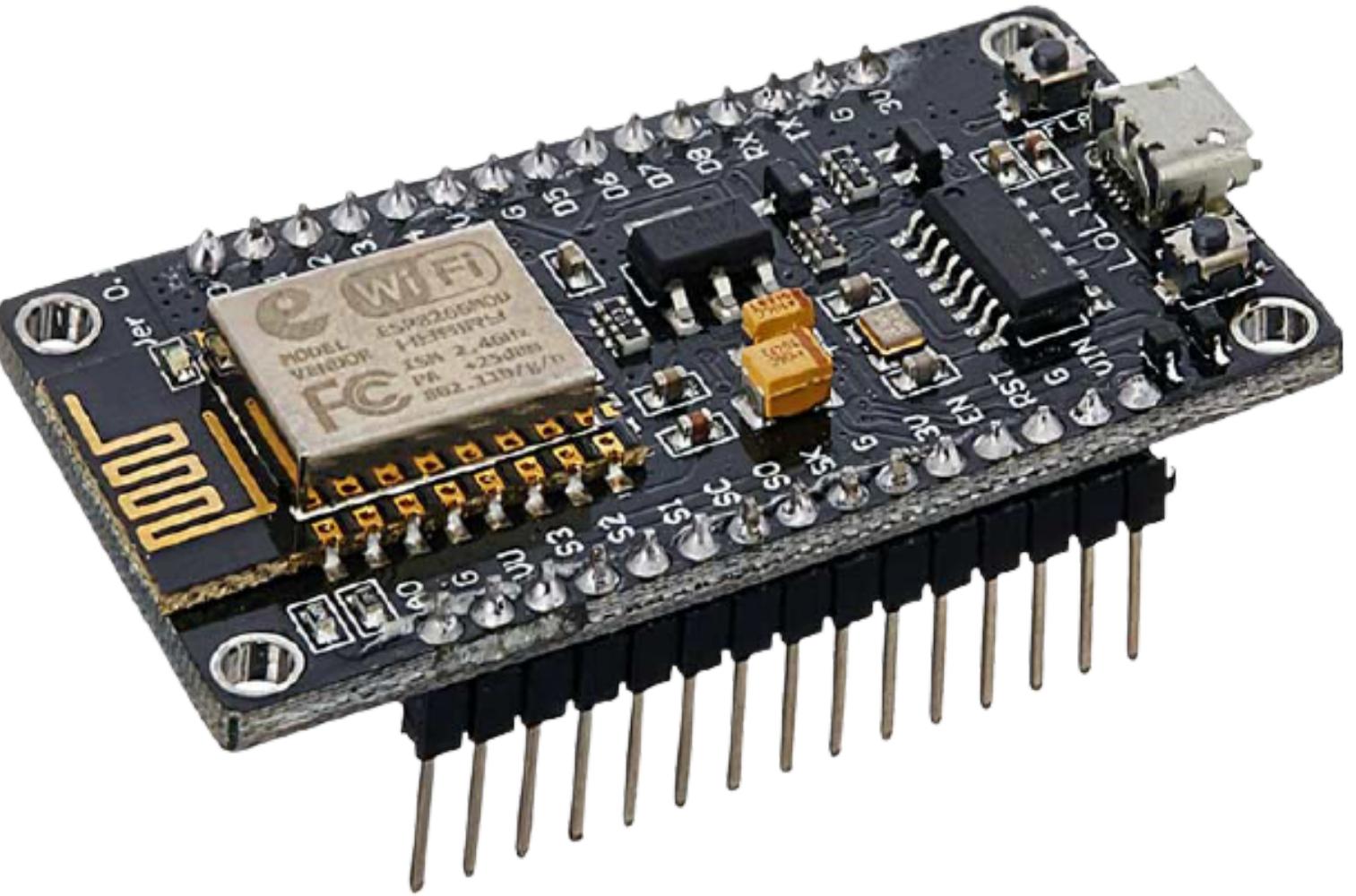


Node mcu

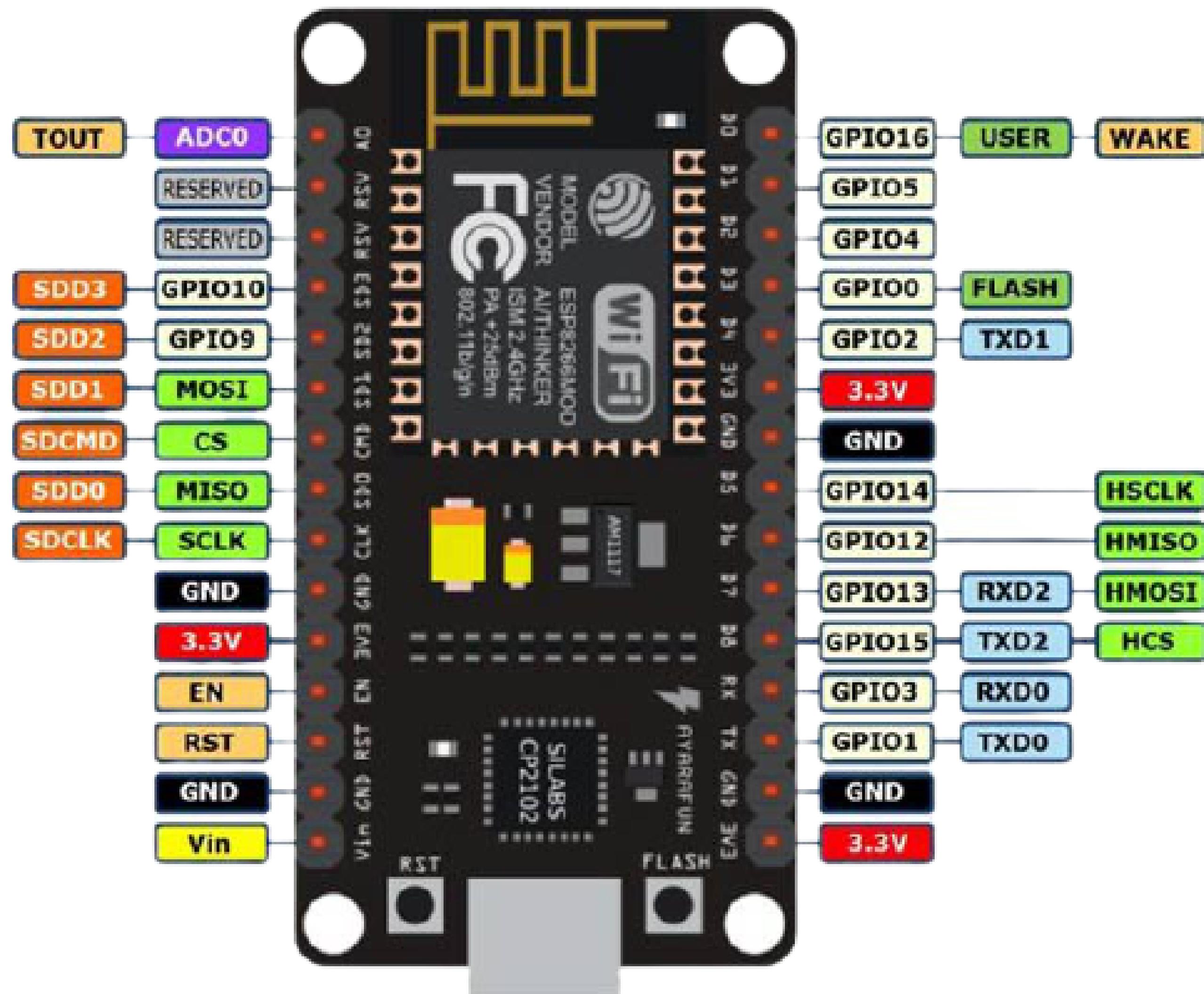
Huang Rui

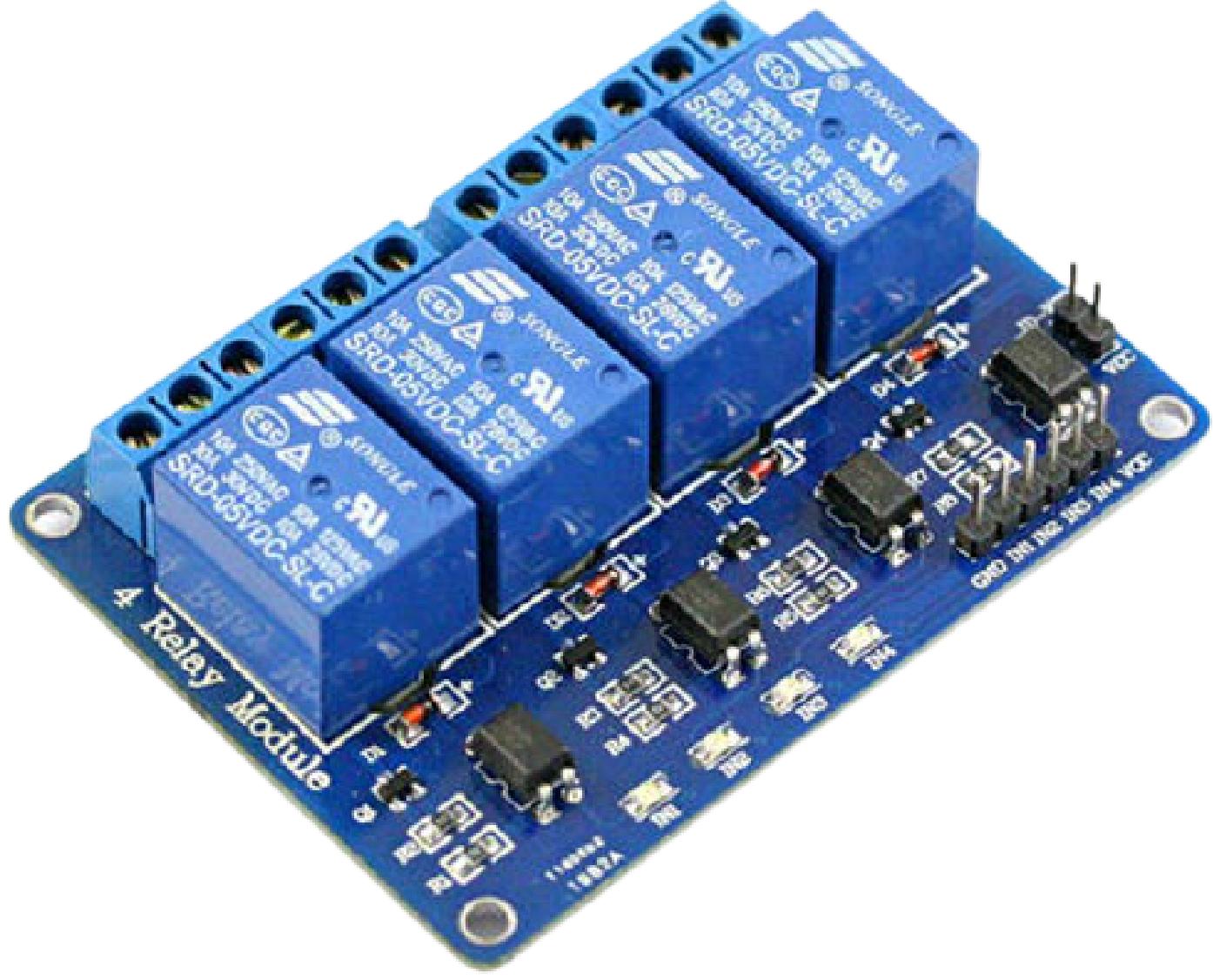


github.com/vowstar



- Open-source board
- Connect objects & let data transfer using Wi-Fi protocol
- Providing some features of microcontrollers
- Such as GPIO, PWM, ADC, and etc

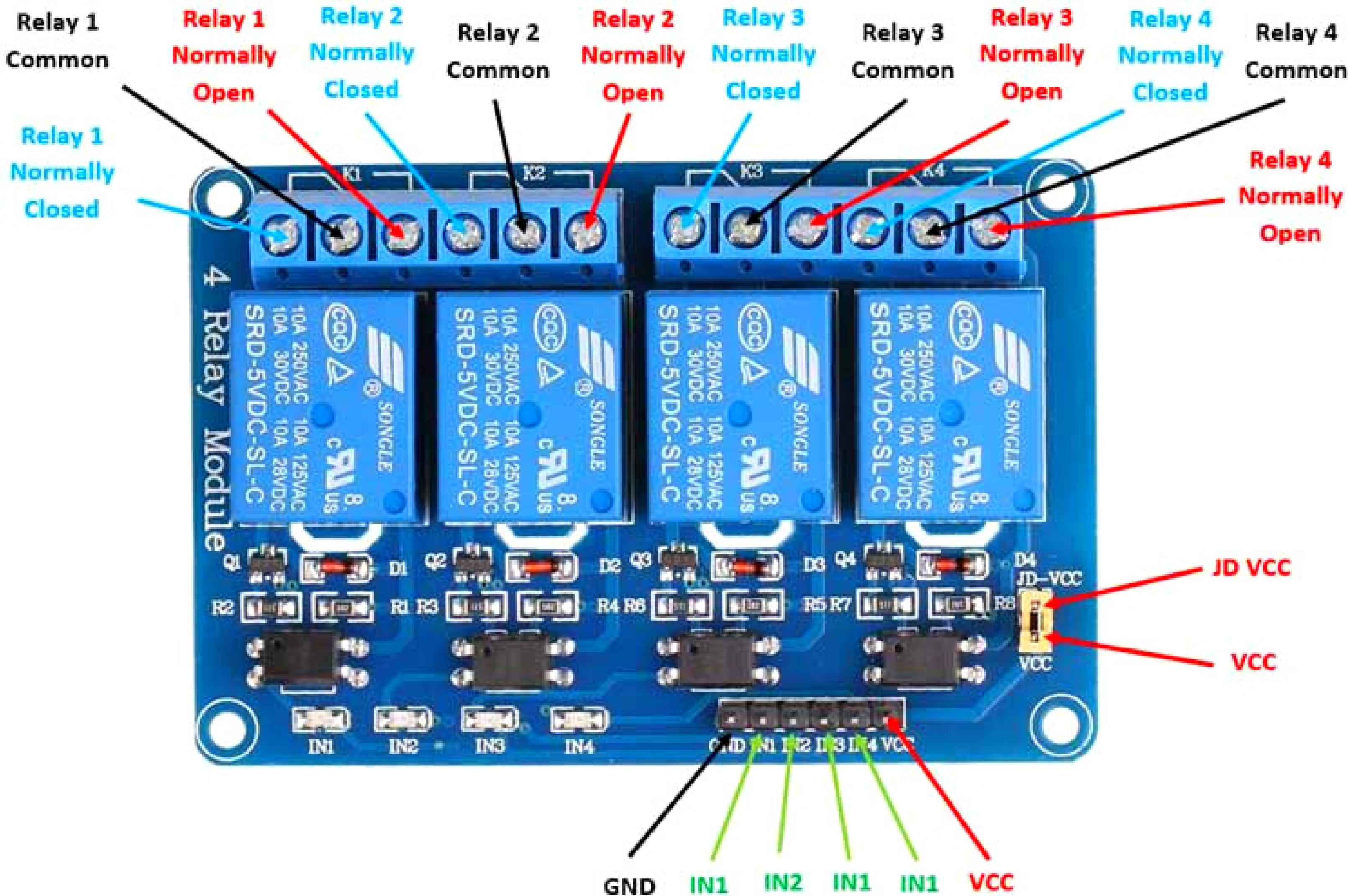


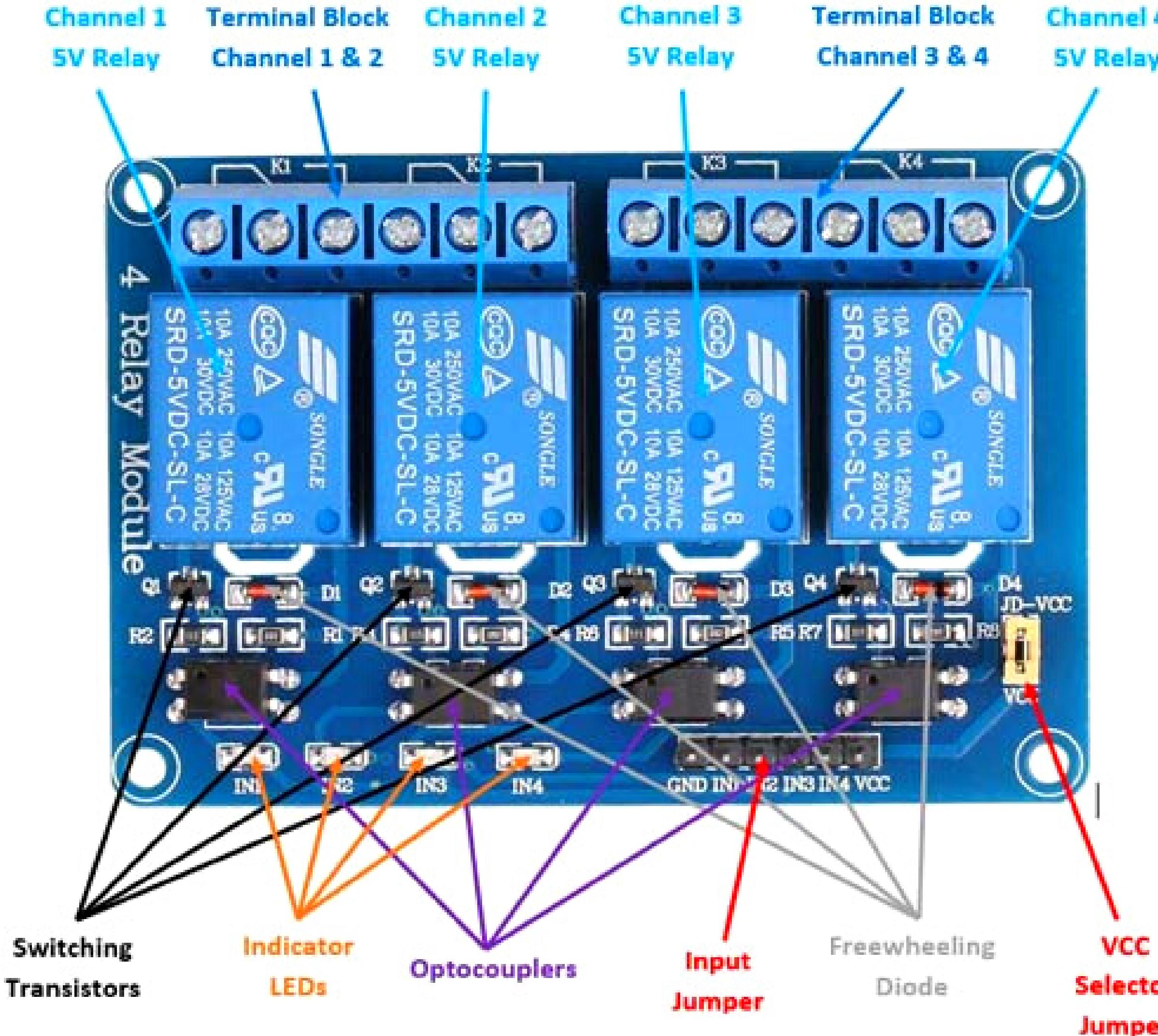


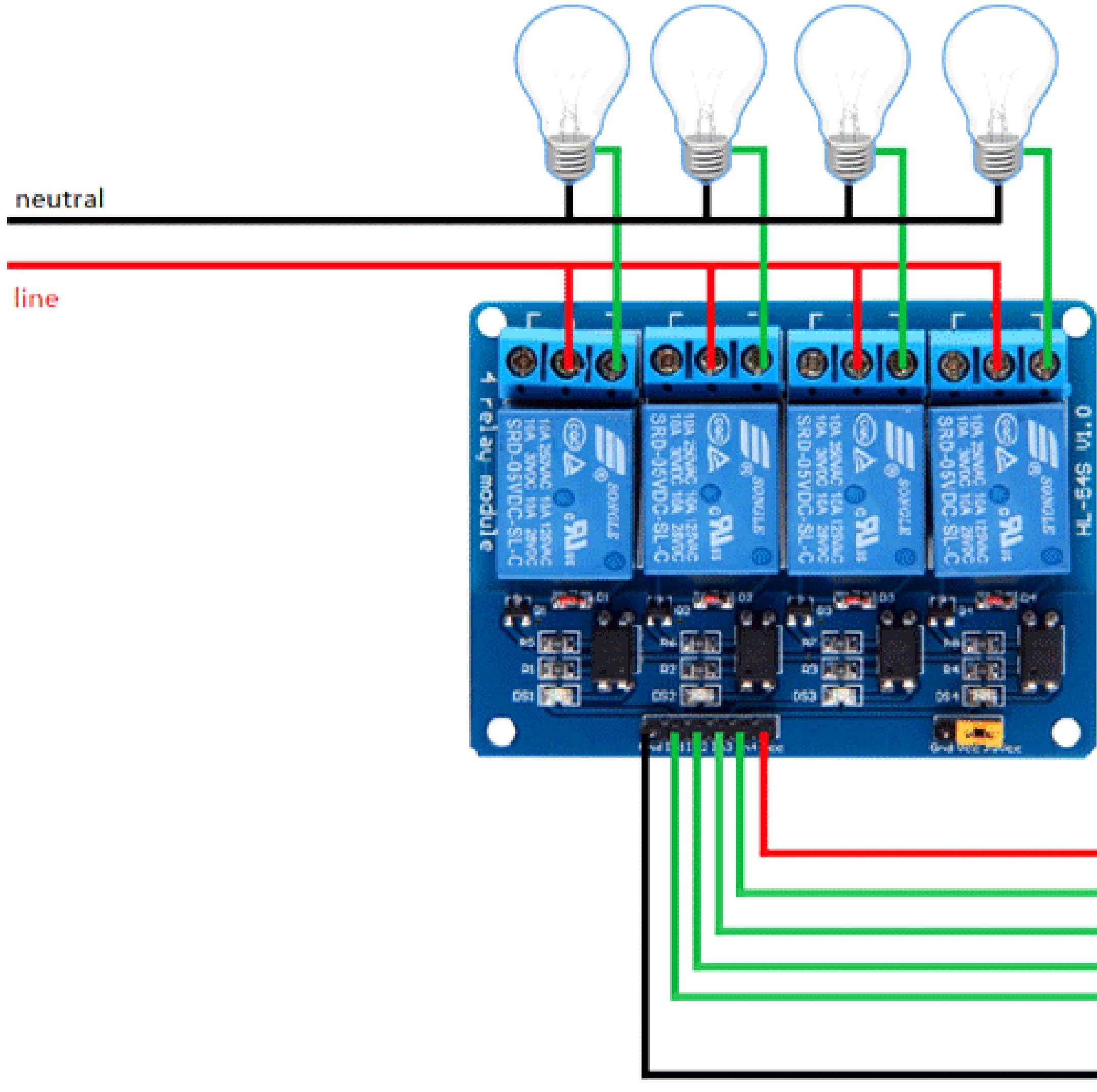
4 channel Realy Module

switching and isolating

Bitwise 0-1

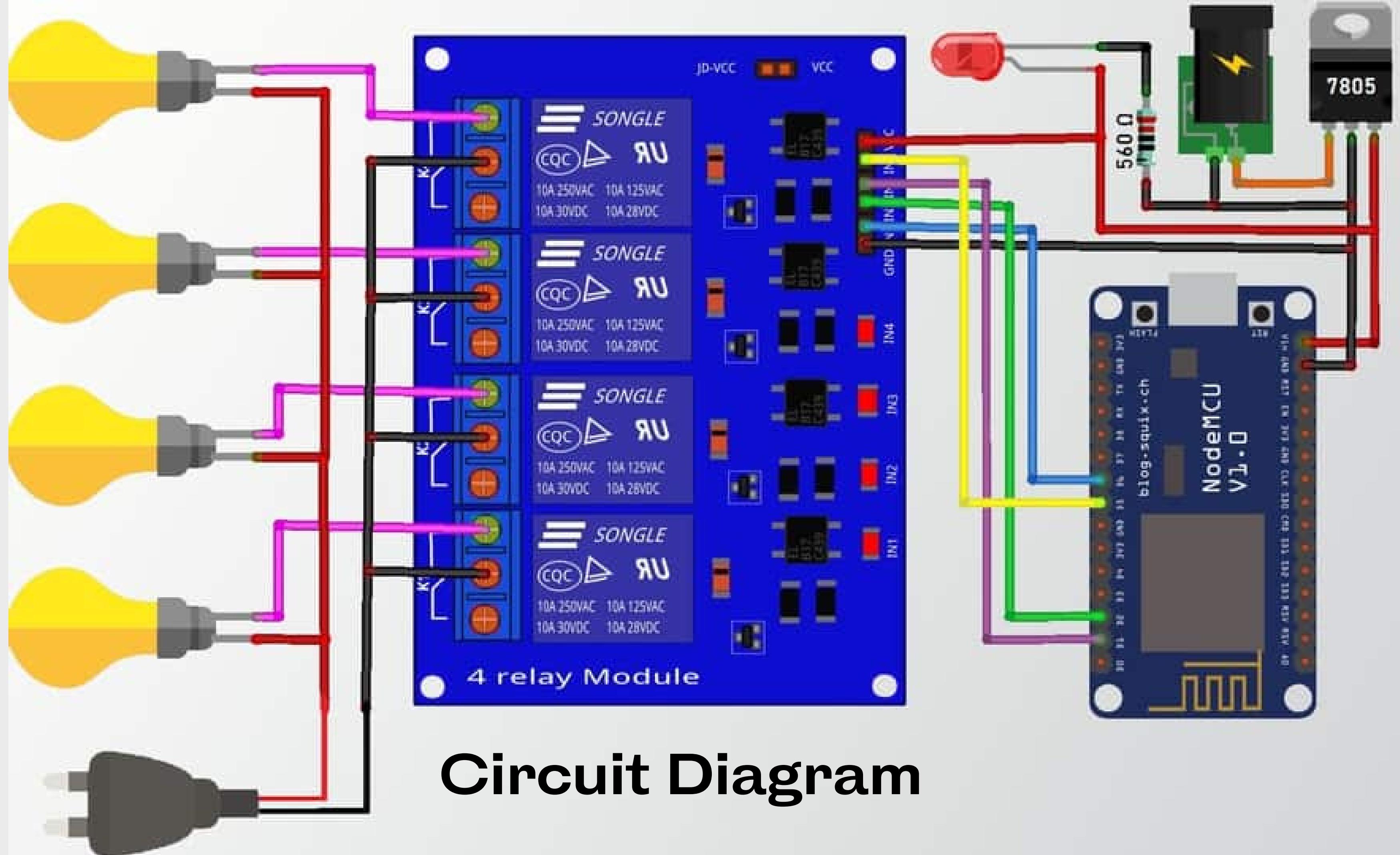




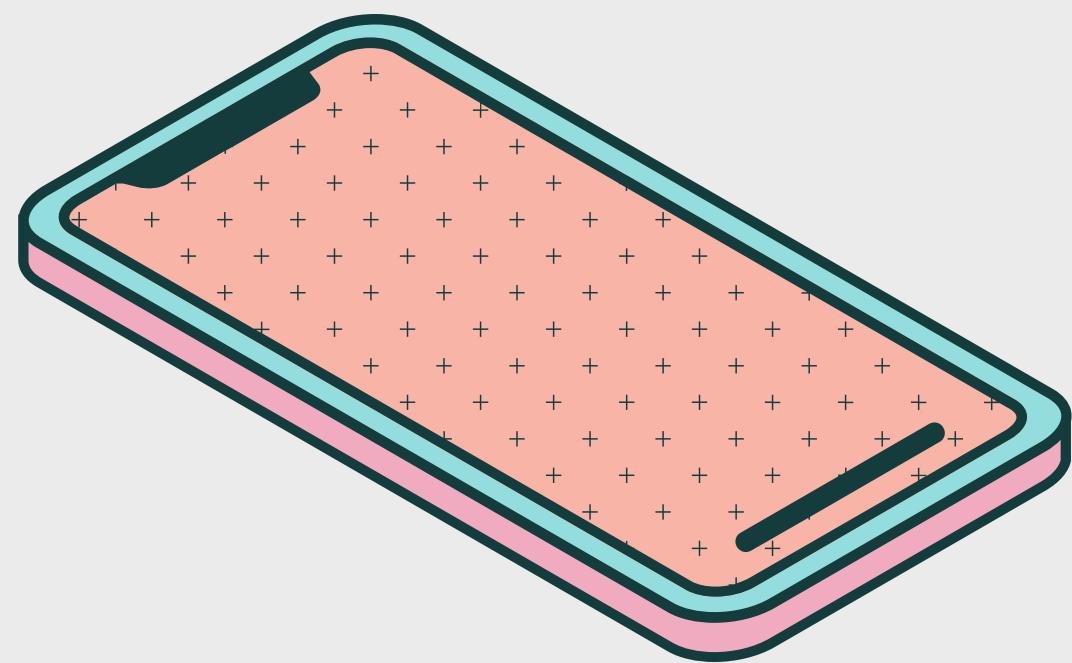


microcontroller

VCC
in4
in3
in2
in1
gnd



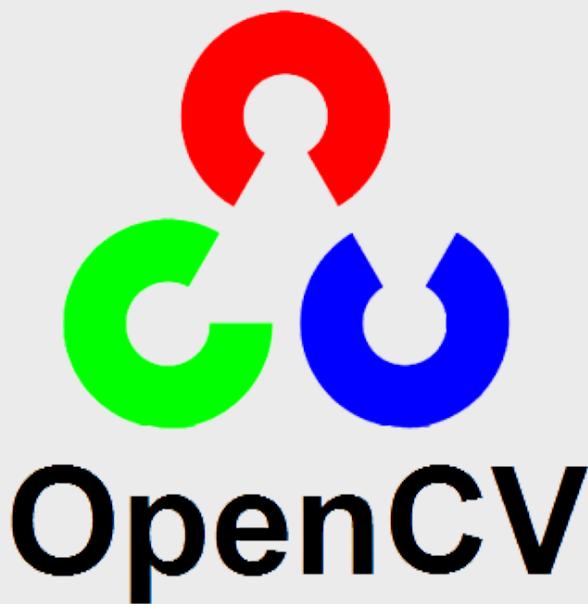
Control using App





Smart Security Camera

(Using Open CV)



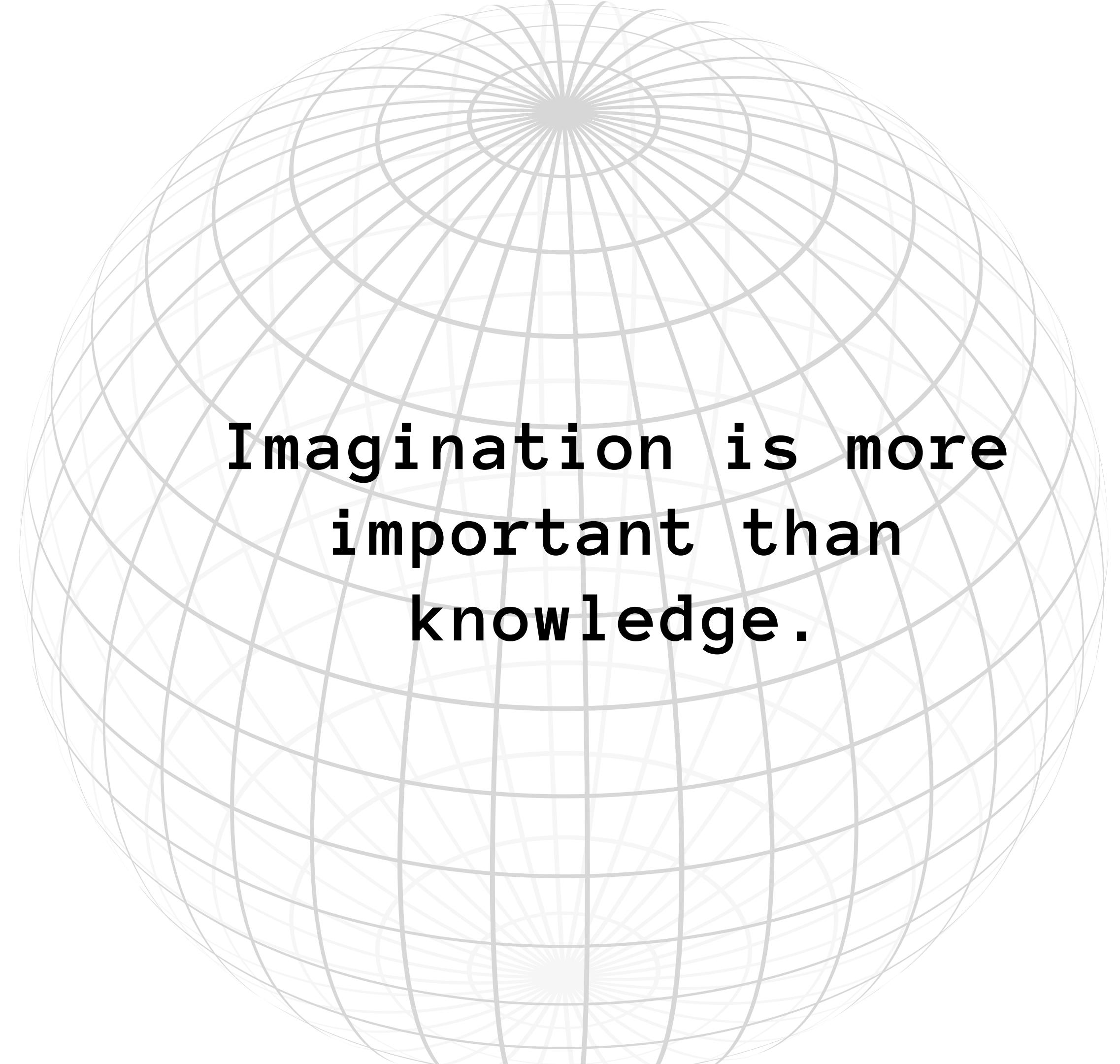
- Start recording on Object detection
- Reduce the data size
- Increase the number of days record
- To the point records

BE INSPIRED

“

Imagination is more
important than
knowledge.

ALBERT EINSTEIN



Sponcers and resource sharing partner



شگریب