Node MCU

NodeMCU is an open-source LUA based firmware developed for the ESP8266 wifi chip. By exploring functionality with the ESP8266 chip, NodeMCU firmware comes with the ESP8266 Development board/kit i.e. NodeMCU Development board. Since NodeMCU is an open-source platform, its hardware design is open for edit/modify/build. NodeMCU Dev Kit/board consist of ESP8266 wifi enabled chip. The ESP8266 is a low-cost Wi-Fi chip developed by Espressif Systems with TCP/IP protocol. Additionally, it contains the crucial elements of a computer: CPU, RAM, networking (WiFi), and even a modern operating system and SDK. That makes it an excellent choice for Internet of Things (IoT) projects of all kinds. It collects and transfers data from the sensors to the cloud based server [1] [2].

BH1750

The BH1750 is a calibrated digital light sensor IC that measures the incident light intensity and converts it into a 16-bit digital number. The sensor directly gives a digital output. The sensor output can be accessed through an I2C interface. It measures ambient light intensity and the measurement unit is Lux [3].

DHT22

The DHT-22 (also named as AM2302) is a digital-output relative humidity and temperature sensor. It uses a capacitive humidity sensor and a thermistor to measure the humidity and temperature of the surrounding air, and spits out a digital signal on the data pin [4].

Relay

A relay is a programmable electrical switch that can be controlled by a microcontroller. It is used to programmatically control the switching on/off of devices which use high voltage and/or high current. For this reason a relay can be thought of as a bridge between the microcontroller and high voltage devices [5].

Servo motor

Servo motors are great devices that can turn to a specified position. Usually, they have a servo arm that can turn 180 degrees. Using a microcontroller, we can tell a servo to go to a specified position and it will go there. As simple as that! Servo motors were first used in the Remote Control (RC) world, usually to control the steering of RC cars or the flaps on a RC plane. With time, they found their uses in robotics, automation, and of course, the Arduino world [5]. The servo motors will act as actuators when a certain condition is met.