



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A+’ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME : 19AUT205 – INTERNET OF THINGS IN AUTOMOTIVE SAFETY

II YEAR /IV SEMESTER

Unit 4- Interfacing of Arduino & ESP8266 with Input / Output Devices

Topic : Interfacing of ESP8266 with Analog Sensor



1. What is Node MCU?
2. What is GPRS?

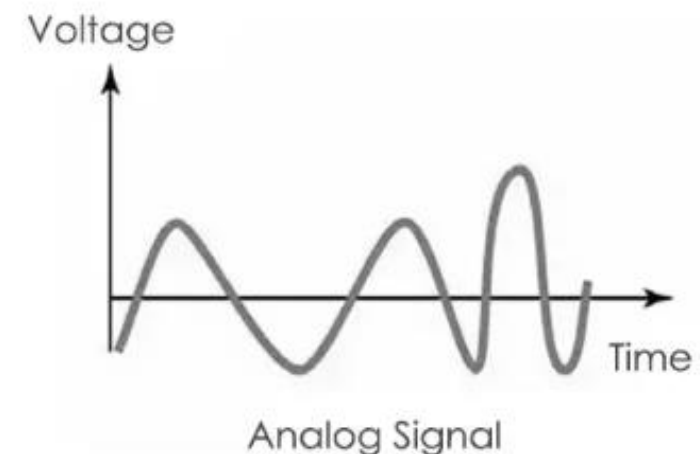




ANALOG SENSOR



- ❖ Analog Sensor produces continuous analog output signal and these sensors are analog sensors.
- ❖ This continuous output signal produced by the analog sensors is proportional to the measurand.
- ❖ The Analog sensor senses the external parameters (and gives analog voltage as an output.
- ❖ The output voltage may be in the range of 0 to 5 V





ESP8266



- The ESP8266 is a low-cost Wi-Fi microchip, with built-in TCP/IP networking software, and microcontroller capability, produced by Espressif Systems in Shanghai, China.
- ESP8266.
- ESP8266 is a microcontroller with WiFi capability. it requires external flash memory and some antenna to work.
- There are different modules and development boards with this system.
- NodeMcu is a development board with esp8266





Use of ESP8266 with Arduino



- The ESP8266 module enables microcontrollers to connect to 2.4 GHz Wi-Fi, using IEEE 802.11 bgn. It can be used with ESP-AT firmware to provide Wi-Fi connectivity to external host MCUs, or it can be used as a self-sufficient MCU by running an RTOS-based SDK.
- Arduino Cloud supports a wide range of ESP32 / ESP8266 based development boards. The ESP chips are great for any IoT project, and they can be programmed using the Arduino language (C++). Setting up ESP based boards in the Arduino Cloud is quick and simple.





Components



- Nodemcu ESP8266 wifi module.
- 5x7 cm Vero board
- 470 uf capacitors, we will need two of these
- Female DC socket
- 7805 voltage regulator.
- Led.
- 330-ohm resistor
- Female headers
- Variable resistor



CONSTRUCTION



- ❖ There are three pins in the Sensor out of which two are for power and one is for the output data transmission.
- ❖ You have to connect all three pins to the nodemcu.
- ❖ Connect the VCC pin of the sensor with the VIN pin of the nodemcu.
- ❖ Join the GND pin of the sensor to the GND pin of the nodemcu.
- ❖ At last, connect the remaining pin that is OUT pinned with the Analog-4 pin of the nodemcu.
- ❖ Before uploading the code please check that connections are correct and tight.



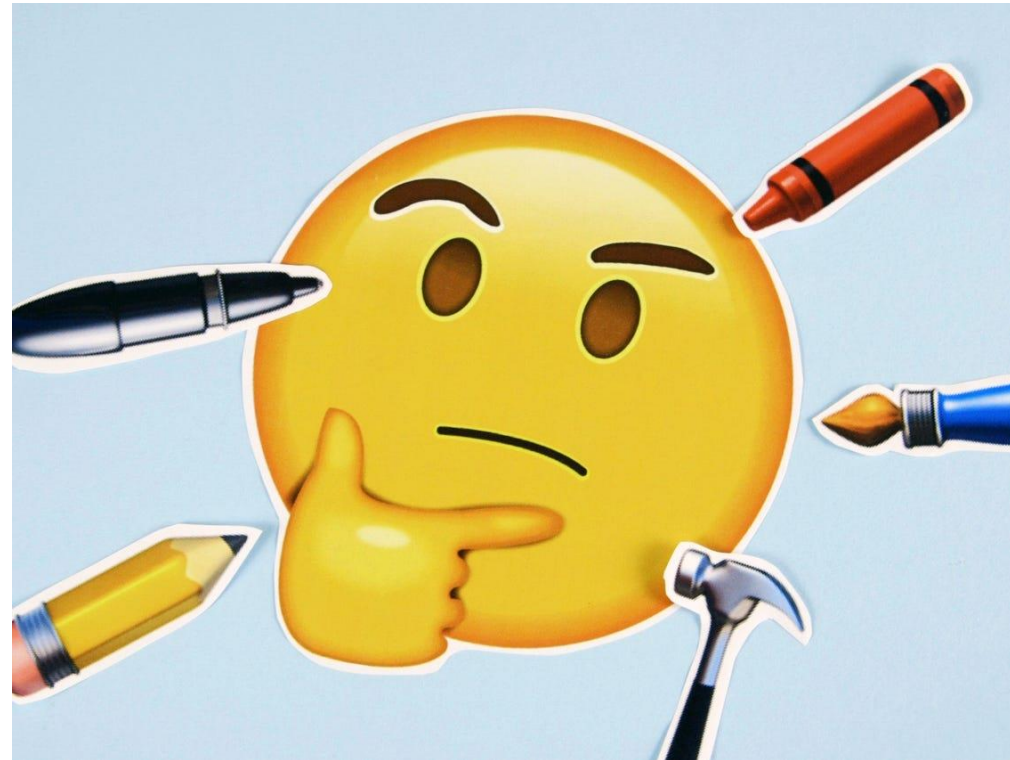
WORKING



<https://www.youtube.com/watch?v=10iKkgUBJBk>



Task





1. What is ESP8266
2. What is Analog Sensor?
3. Mention any four Analog sensors.

ASSESSMENT





REFERENCE



- ❖ <https://www.youtube.com/watch?v=1OiKkgUBJBk>
- ❖ <https://techatronic.com/interfacing-of-dht11-sensor-with-esp8266-nodemcu/>



THANK YOU !!!