**Attendance System using ESP8266(Wi-Fi) with My SQL:**

**Project Description:**

Here We are going to connect Node MCU ESP8266 and RFID- RC522 with MYSQL Database. So for that first we should connect our Node MCU ESP8266 Board with RFID Module. By using the RFID Module we are going to scan our RFID card and tag which are allow or not. And by using our ESP8266 we are going to send that data to our MYSQL Database which is connect through a php page.

**Software Required:**

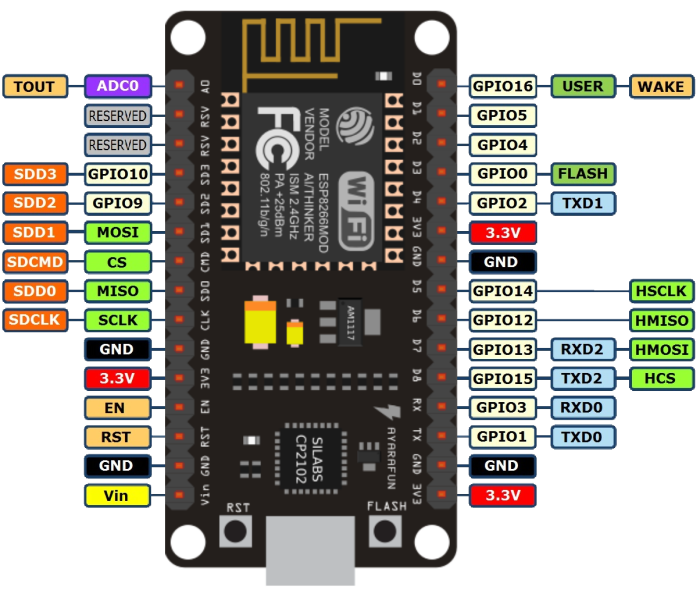
* Arduino IDE
* LAMP Server for Linux or WAMP Server for Windows or MAMP Server for MAC OS.

**Hardware Used:**

* Node MCU V3
* RFID Reader with Tag
* Jumper Wire

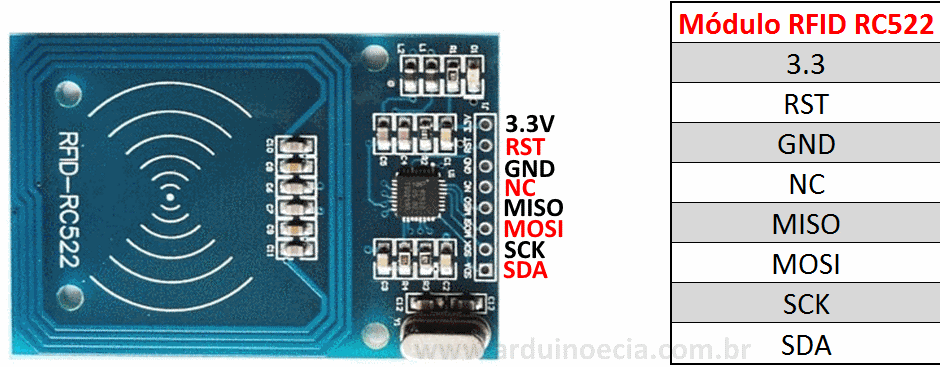
**Node MCU V3** :

Node MCU is an open source IOT platform. It includes firmware which runs on the ESP8266 Wi- Fi SoC from hardware which is based on the ESP-12 module. The term "Node MCU" by default refers to the firmware rather than the dev kits.



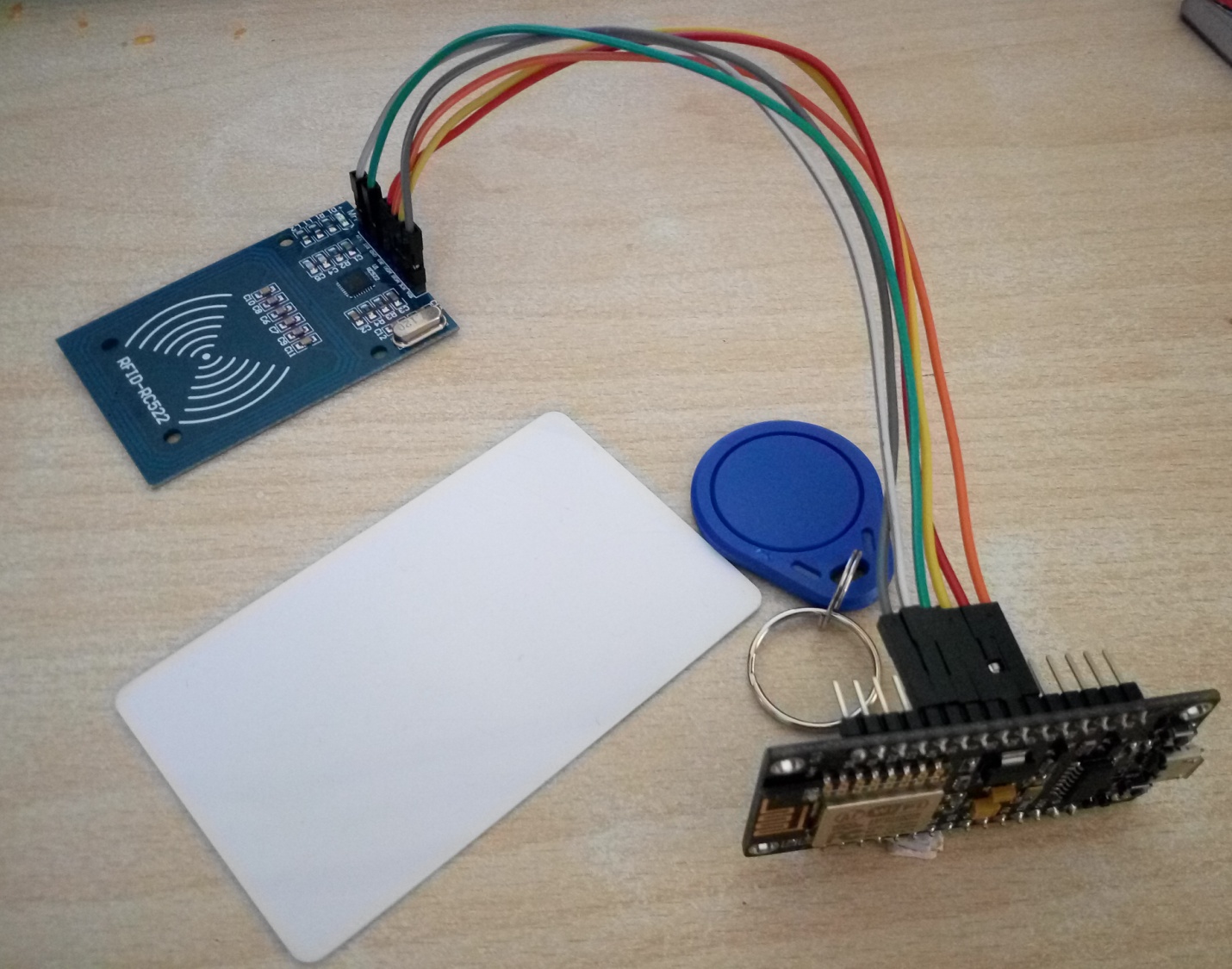
**RFID- RC522:**

RFID RC522 is a low cost and easy to use module suitable for equipment and advanced application development that needs RFID applications. RFID application. RFID stands for Radio-Frequency Identification. The acronym refers to small electronic devices that consist of a small chip and an antenna.

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**Circuit Diagram:**





**CODE: (Node MCU ESP8266):**

#include<SoftwareSerial.h>

#include <ESP8266WiFi.h>

#include <WiFiClient.h>

#include <ESP8266WebServer.h>

#include <ESP8266mDNS.h>

#include <SPI.h>

#include <MFRC522.h>

const char\* ssid = "TP-LINK\_28C6";

const char\* password = "02105604";

//WiFiClient client;

char server[] = "192.168.0.115"; //YOUR SERVER

#define SS\_PIN 2 //FOR RFID SS PIN BECASUSE WE ARE USING BOTH ETHERNET SHIELD AND RS-522

#define RST\_PIN 15

#define No\_Of\_Card 3

WiFiClient client;

//WiFiServer server(80);

SoftwareSerial mySerial(8,9);

MFRC522 rfid(SS\_PIN,RST\_PIN);

MFRC522::MIFARE\_Key key;

byte id[No\_Of\_Card][4]={

{44,153,22,219}, //RFID NO-1

{112,224,72,84}, //RFID NO-2

{151,94,80,84} //RFID NO-3

};

byte id\_temp[3][3];

byte i;

int j=0;

void setup()

{

Serial.begin(115200);

delay(10);

mySerial.begin(115200);

SPI.begin();

rfid.PCD\_Init();

for(byte i=0;i<6;i++)

{

key.keyByte[i]=0xFF;

}

// Connect to WiFi network

Serial.println();

Serial.println();

Serial.print("Connecting to ");

Serial.println(ssid);

WiFi.begin(ssid, password);

while (WiFi.status() != WL\_CONNECTED) {

delay(500);

Serial.print(".");

}

Serial.println("");

Serial.println("WiFi connected");

// Start the server

// server.begin();

Serial.println("Server started");

Serial.print(WiFi.localIP());

delay(1000);

Serial.println("connecting...");

}

void loop()

{ // Check if a client has connected

int m=0;

if(!rfid.PICC\_IsNewCardPresent())

return;

if(!rfid.PICC\_ReadCardSerial())

return;

for(i=0;i<4;i++)

{

id\_temp[0][i]=rfid.uid.uidByte[i];

delay(50);

}

for(i=0;i<No\_Of\_Card;i++)

{

if(id[i][0]==id\_temp[0][0])

{

if(id[i][1]==id\_temp[0][1])

{

if(id[i][2]==id\_temp[0][2])

{

if(id[i][3]==id\_temp[0][3])

{

Serial.print("your card no :");

for(int s=0;s<4;s++)

{

Serial.print(rfid.uid.uidByte[s]);

Serial.print(" ");

}

Serial.println("\nVALID");

Sending\_To\_DB();

j=0;

rfid.PICC\_HaltA(); rfid.PCD\_StopCrypto1(); return;

}

}

}

}

else

{j++;

if(j==No\_Of\_Card)

{

Serial.println("inVALID");

Sending\_To\_DB();

j=0;

}

}

}

// Halt PICC

rfid.PICC\_HaltA();

// Stop encryption on PCD

rfid.PCD\_StopCrypto1();

}

void Sending\_To\_DB() //CONNECTING WITH MYSQL

{

if (client.connect(server, 80)) {

Serial.println("connected");

// Make a HTTP request:

Serial.println("GET /rfid/rfid\_read.php?allow="); //YOUR URL /rfid/rfid\_read.php?allow

client.print("GET /rfid/nodemcu\_rfid/rfid\_read.php?allow="); //YOUR URL /rfid/rfid\_read.php?allow /var/www/html/rfid/rfid\_read.php

if(j!=No\_Of\_Card)

{

Serial.println('1');

client.print('1');

}

else

{

Serial.println('0');

client.print('0');

}

Serial.println("&id=");

client.print("&id=");

for(int s=0;s<4;s++)

{

Serial.println(rfid.uid.uidByte[s]);

client.print(rfid.uid.uidByte[s]);

}

client.print(" "); //SPACE BEFORE HTTP/1.1

client.print("HTTP/1.1");

client.print("Host: ");

client.println(server);

client.println("Host: 192.168.0.115");

client.println("Connection: close");

client.println();

} else {

// if you didn't get a connection to the server:

Serial.println("connection failed");

}

client.stop();

}

**CODE: (PHP):**

<?php

class rfid{

public $link='';

function \_\_construct($allow, $id){

$this->connect();

$this->storeInDB($allow, $id);

}

function connect(){

$this->link = mysqli\_connect('localhost','root','Deligence@1') or die('Cannot connect to the DB');

mysqli\_select\_db($this->link,'rfidesp') or die('Cannot select the DB');

}

function storeInDB($allow, $id){

$query = "insert into rfid set rfid='".$id."', allow='".$allow."'";

$result = mysqli\_query($this->link,$query) or die('Errant query: '.$query);

}

}

if($\_GET['allow'] != '' and $\_GET['id'] != ''){

$rfid=new rfid($\_GET['allow'],$\_GET['id']);

}

?>