

LAMPIRAN

Lampiran 1 : Program Arduino .ino

```
#include <WiFi.h> // standard library
#include <WebServer.h> // standard library
#include "SuperMon.h" // .h file that stores your html page code
#include "SoftwareSerial.h"
#include "DFRobotDFPlayerMini.h"
#include <Wire.h>
#include <LiquidCrystal_I2C.h>

// Set the LCD address to 0x27 for a 16 chars and 2 line display
LiquidCrystal_I2C lcd(0x27, 16, 2);
// Use pins to communicate with DFPlayer Mini
static const uint8_t PIN_MP3_TX = 19; // Connects to module's RX
static const uint8_t PIN_MP3_RX = 18; // Connects to module's TX
SoftwareSerial softwareSerial(PIN_MP3_RX, PIN_MP3_TX);
// Create the Player object
DFRobotDFPlayerMini player;
#define USE_INTRANET
// replace this with your homes intranet connect parameters
#define LOCAL_SSID "cek"
#define LOCAL_PASS "12345678"
// start your defines for pins for sensors, outputs etc.
#define PIN_A0 34 // some analog input sensor
#define PIN_A1 35 // some analog input sensor
#define PIN_A2 32 // some analog input sensor
#define PIN_A3 33 // some analog input sensor
#define PIN_A4 39 // some analog input sensor

// variables to store measure data and sensor states
int BitsA00 = 0, BitsA11 = 0, BitsA22 = 0, BitsA33 = 0, BitsA44 = 0 ;
```

```

int BitsA0, BitsA1, BitsA2, BitsA3, BitsA4 ;
bool BUTTON = false;
uint32_t SensorUpdate = 0;

// the XML array size needs to be bigger than your maximum expected size. 2048
// is way too big for this example
char XML[2048];
// just some buffer holder for char operations
char buf[32];
// variable for the IP reported when you connect to your homes intranet (during
// debug mode)
IPAddress Actual_IP;
// definitions of your desired intranet created by the ESP32
IPAddress PageIP(192, 168, 1, 1);
IPAddress gateway(192, 168, 1, 1);
IPAddress subnet(255, 255, 255, 0);
IPAddress ip;
// gotta create a server
WebServer server(80);

void setup() {
  // standard stuff here
  Serial.begin(9600);
  // Init serial port for DFPlayer Mini
  softwareSerial.begin(9600);
  lcd.init();
  lcd.backlight();
  lcd.print("Hello, world!");
  delay(2000);
  // Start communication with DFPlayer Mini
  player.begin(softwareSerial);

```

```

BUTTON = false;
disableCore0WDT();
Serial.println("starting server");

#ifdef USE_INTRANET
  WiFi.begin(LOCAL_SSID, LOCAL_PASS);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.print("IP address: "); Serial.println(WiFi.localIP());
  Actual_IP = WiFi.localIP();
#endif
  printWifiStatus();
  server.on("/", SendWebsite);
  server.on("/xml", SendXML);
  server.on("/BUTTON_0", ProcessButton_0);
  server.begin();
}

void loop() {

  if (BUTTON == 1 || BitsA0 > 55 || BitsA1 > 55 || BitsA2 > 55 || BitsA3 > 55) {
    SendXML();
    delay(10);
    BUTTON = 0;
    player.play(1);
  delay(7000);
  }
}

```

```

if (BitsA4 > 1000) {
  lcd.setCursor(0,0);
  lcd.print("Dilarang Masuk");
}
if (BitsA4 <= 1000) {
  lcd.setCursor(0,0);
  lcd.print("Silahkan Masuk");
}
if ((millis() - SensorUpdate) >= 250) {
  SendXML();
  //Serial.println("Reading Sensors");
  SensorUpdate = millis();
  BitsA00 = analogRead(PIN_A0);
  BitsA11 = analogRead(PIN_A1);
  BitsA22 = analogRead(PIN_A2);
  BitsA33 = analogRead(PIN_A3);
  BitsA44 = analogRead(PIN_A4);
  BitsA0=map(BitsA00, 3950,4095,40,80);
  BitsA1=map(BitsA11, 3950,4095,40,80);
  BitsA2=map(BitsA22, 3950,4095,40,80);
  BitsA3=map(BitsA33, 3950,4095,40,80);
  BitsA4=map(BitsA44, 200,1947,469,2017);
  lcd.setCursor(0,1);
  lcd.print("CO2=");
  lcd.print(BitsA4/1000 % 10);
  lcd.print(BitsA4/100 % 10);
  lcd.print(BitsA4/10 % 10);
  lcd.print(BitsA4/1 % 10);
  lcd.print("ppm");
}

```

```

server.handleClient();
SendXML();
}

void ProcessButton_0() {

    BUTTON = !BUTTON;
    Serial.print("Button"); Serial.println(BUTTON);
    server.send(200, "text/plain", ""); //Send web page

}

// code to send the main web page
// PAGE_MAIN is a large char defined in SuperMon.h
void SendWebsite() {
    Serial.println("sending web page");
    server.send(200, "text/html", PAGE_MAIN);
}

void SendXML() {
    // Serial.println("sending xml");
    strcpy(XML, "<?xml version = '1.0'?>\n<Data>\n");
    // send bitsA0
    sprintf(buf, "<B0>%d</B0>\n", BitsA0);
    strcat(XML, buf);
    // send bits1
    sprintf(buf, "<B1>%d</B1>\n", BitsA1);
    strcat(XML, buf);
    // send bitsA2
    sprintf(buf, "<B2>%d</B2>\n", BitsA2);
    strcat(XML, buf);
    // send bitsA3

```

```

sprintf(buf, "<B3>%d</B3>\n", BitsA3);
strcat(XML, buf);
// send bitsA4
sprintf(buf, "<B4>%d</B4>\n", BitsA4);
strcat(XML, buf);

if (BUTTON) {
    strcat(XML, "<BUTTONN>1</BUTTONN>\n");

}
else {
    strcat(XML, "<BUTTONN>0</BUTTONN>\n");
}
strcat(XML, "</Data>\n");
Serial.println(XML);
server.send(200, "text/xml", XML);
}

void printWifiStatus() {
    // print the SSID of the network you're attached to:
    Serial.print("SSID: ");
    Serial.println(WiFi.SSID());
    // print your WiFi shield's IP address:
    ip = WiFi.localIP();
    Serial.print("IP Address: ");
    Serial.println(ip);
    // print the received signal strength:
    long rssi = WiFi.RSSI();
    Serial.print("signal strength (RSSI):");
    Serial.print(rssi);
    Serial.println(" dBm");
}

```

```

// print where to go in a browser:
Serial.print("Open http://");
Serial.println(ip);
}

```

Lampiran 2 : Program .H

```

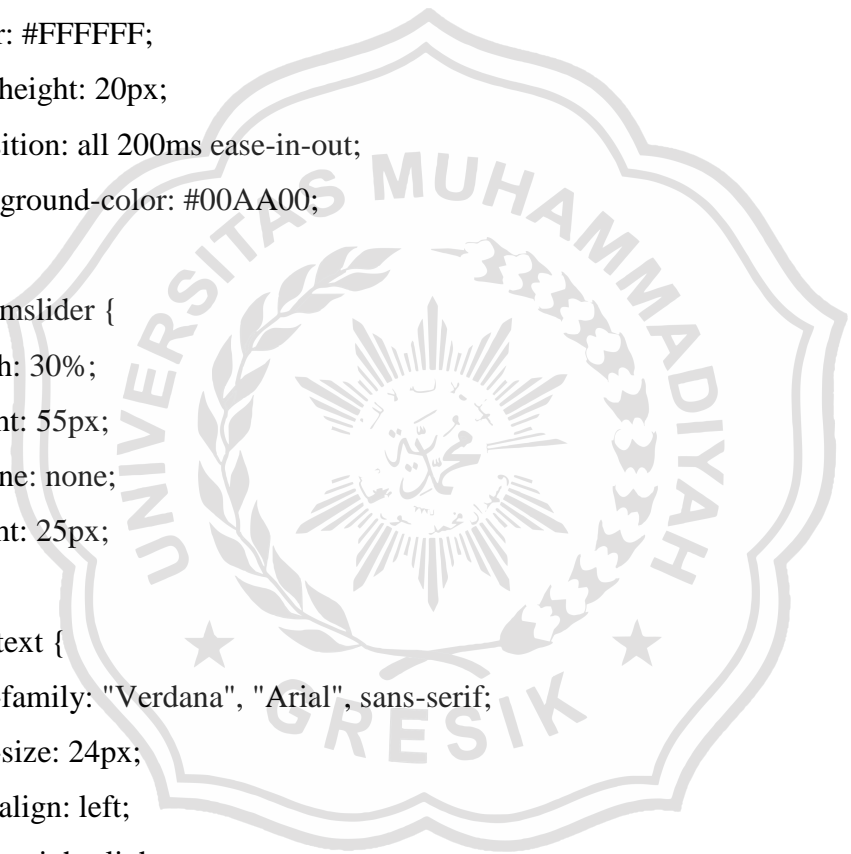
const char PAGE_MAIN[] PROGMEM = R"=====(
<!DOCTYPE html>
<html lang="en" class="js-focus-visible">
<title>ALAT PENGENDALI KEBISINGAN DAN CO2 PADA
PERPUSTAKAAN BERBASIS IOT</title>
<style>
table {
  position: relative;
  width:100%;
  border-spacing: 0px;
}
tr {
  border: 1px solid white;
  font-family: "Verdana", "Arial", sans-serif;
  font-size: 20px;
}
th {
  height: 20px;
  padding: 3px 15px;
  background-color: #343a40;
  color: #FFFFFF !important;
}
td {
  height: 20px;
  padding: 3px 15px;

```

```

}
.tabledata {
  font-size: 24px;
  position: relative;
  padding-left: 5px;
  padding-top: 5px;
  height: 25px;
  border-radius: 5px;
  color: #FFFFFF;
  line-height: 20px;
  transition: all 200ms ease-in-out;
  background-color: #00AA00;
}
.fanrpmslider {
  width: 30%;
  height: 55px;
  outline: none;
  height: 25px;
}
.bodytext {
  font-family: "Verdana", "Arial", sans-serif;
  font-size: 24px;
  text-align: left;
  font-weight: light;
  border-radius: 5px;
  display:inline;
}
.navbar {
  width: 100%;
  height: 50px;
  margin: 0;

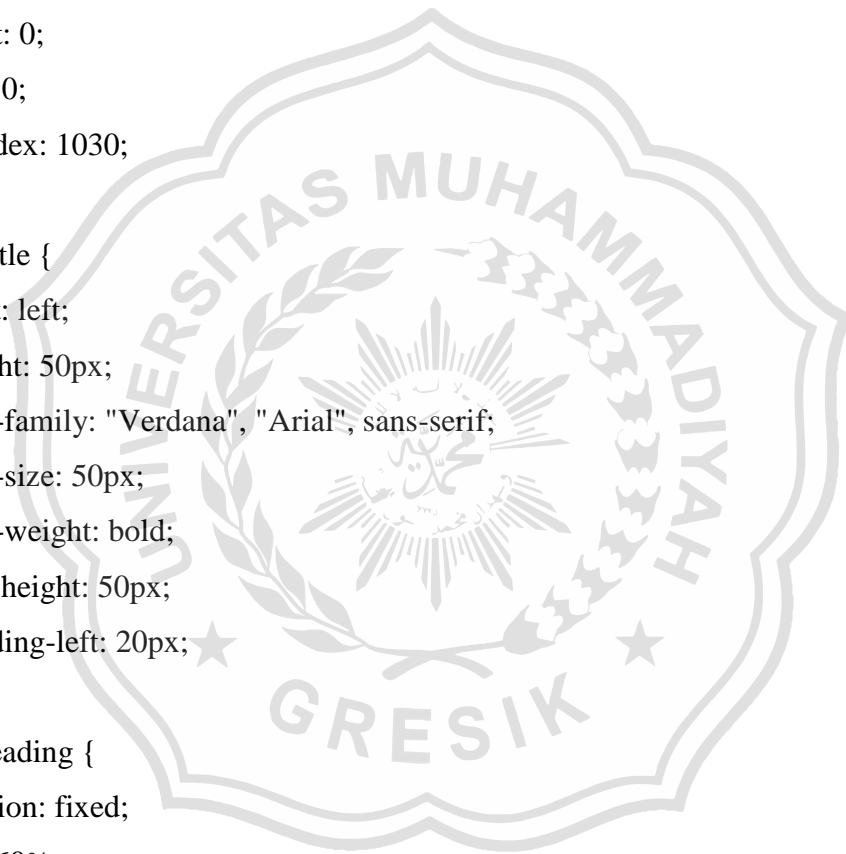
```




```

padding: 10px 0px;
background-color: #FFF;
color: #000000;
border-bottom: 5px solid #293578;
}
.fixed-top {
position: fixed;
top: 0;
right: 0;
left: 0;
z-index: 1030;
}
.navtitle {
float: left;
height: 50px;
font-family: "Verdana", "Arial", sans-serif;
font-size: 50px;
font-weight: bold;
line-height: 50px;
padding-left: 20px;
}
.navheading {
position: fixed;
left: 60%;
height: 50px;
font-family: "Verdana", "Arial", sans-serif;
font-size: 20px;
font-weight: bold;
line-height: 20px;
padding-right: 20px;
}

```

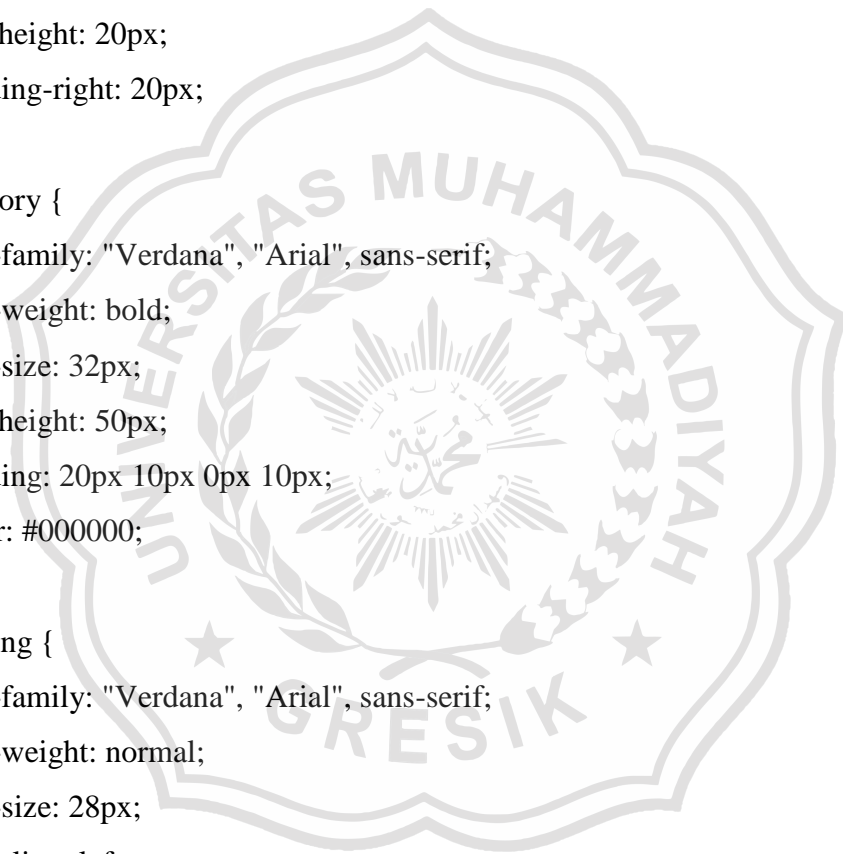


```
.navdata {
  justify-content: flex-end;
  position: fixed;
  left: 70%;
  height: 50px;
  font-family: "Verdana", "Arial", sans-serif;
  font-size: 20px;
  font-weight: bold;
  line-height: 20px;
  padding-right: 20px;
}

.category {
  font-family: "Verdana", "Arial", sans-serif;
  font-weight: bold;
  font-size: 32px;
  line-height: 50px;
  padding: 20px 10px 0px 10px;
  color: #000000;
}

.heading {
  font-family: "Verdana", "Arial", sans-serif;
  font-weight: normal;
  font-size: 28px;
  text-align: left;
}

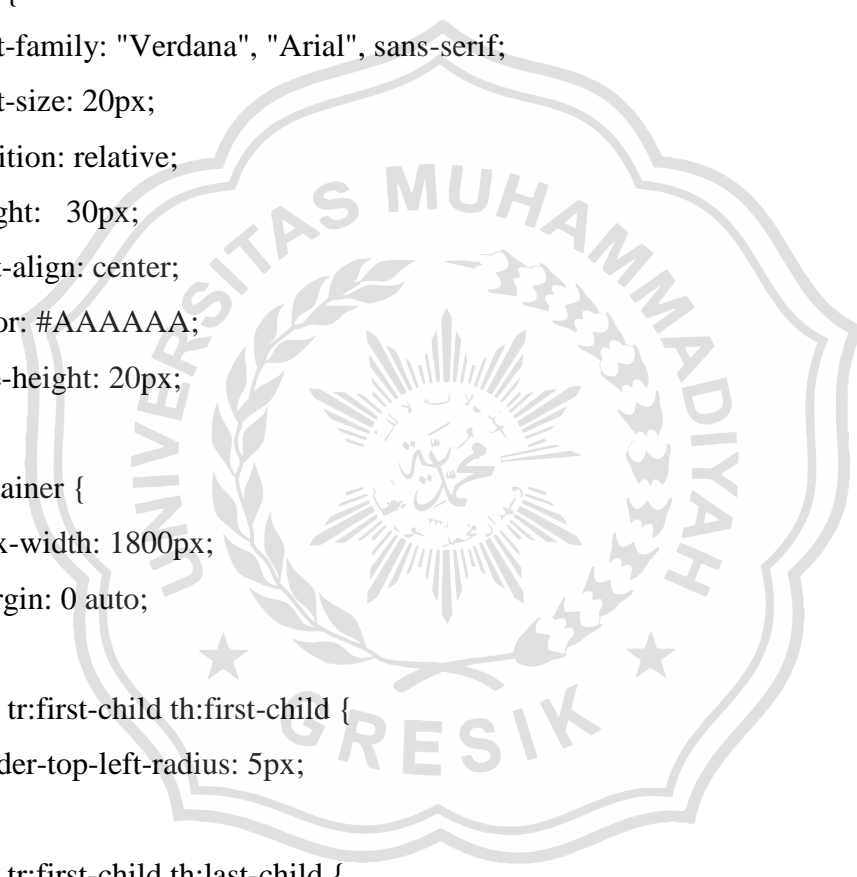
.btn {
  background-color: #444444;
  border: none;
  color: white;
  padding: 10px 20px;
```



```

text-align: center;
text-decoration: none;
display: inline-block;
font-size: 16px;
margin: 4px 2px;
cursor: pointer;
}
.foot {
font-family: "Verdana", "Arial", sans-serif;
font-size: 20px;
position: relative;
height: 30px;
text-align: center;
color: #AAAAAA;
line-height: 20px;
}
.container {
max-width: 1800px;
margin: 0 auto;
}
table tr:first-child th:first-child {
border-top-left-radius: 5px;
}
table tr:first-child th:last-child {
border-top-right-radius: 5px;
}
table tr:last-child td:first-child {
border-bottom-left-radius: 5px;
}
table tr:last-child td:last-child {
border-bottom-right-radius: 5px;
}

```



```

}

</style>

<body style="background-color: #efefef" onload="process()">

<header>
  <div class="navbar fixed-top">
    <div class="container">
      <div class="navtitle">Perpustakaan</div>
      <div class="navdata" id = "date">mm/dd/yyyy</div>
      <div class="navheading">DATE</div><br>
      <div class="navdata" id = "time">00:00:00</div>
      <div class="navheading">TIME</div>
    </div>
  </div>
</header>

<main class="container" style="margin-top:70px">
  <div class="category">Monitoring Sensor</div>
  <div style="border-radius: 10px !important;">
    <table style="width:50%">
      <colgroup>
        <col span="1" style="background-color:rgb(230,230,230); width: 20%;
color:#000000 ;">
        <col span="1" style="background-color:rgb(200,200,200); width: 20%;
color:#000000 ;">
        <col span="1" style="background-color:rgb(180,180,180); width: 60%;
color:#000000 ;">
      </colgroup>

```

```

<col span="2" style="background-color:rgb(0,0,0); color:#FFFFFF">
<col span="2" style="background-color:rgb(0,0,0); color:#FFFFFF">
<col span="2" style="background-color:rgb(0,0,0); color:#FFFFFF">
<tr>
  <th colspan="1"><div class="heading">Sensor</div></th>
  <th colspan="1"><div class="heading">Nilai</div></th>
  <th colspan="1"><div class="heading">Level</div></th>
</tr>
<tr>
  <td><div class="bodytext">KY-037 titik A</div></td>
  <td><div class="bodytext" id = "b0"></div><div
class="bodytext">dB</div></td>
  <td><div class="tabledata" id = "v0"></div></td>
</tr>
<tr>
  <td><div class="bodytext">KY-037 titik B</div></td>
  <td><div class="bodytext" id = "b1"></div><div
class="bodytext">dB</div></td>
  <td><div class="tabledata" id = "v1"></div></td>
</tr>
<tr>
  <td><div class="bodytext">KY-037 titik C</div></td>
  <td><div class="bodytext" id = "b2"></div><div
class="bodytext">dB</div></td>
  <td><div class="tabledata" id = "v2"></div></td>
</tr>
<tr>
  <td><div class="bodytext">KY-037 titik D</div></td>
  <td><div class="bodytext" id = "b3"></div><div
class="bodytext">dB</div></td>
  <td><div class="tabledata" id = "v3"></div></td>

```

```

</tr>
<tr>
  <td><div class="bodytext">MQ-135(CO2)</div></td>
  <td><div class="bodytext" id = "b4"></div><div
class="bodytext">ppm</div></td>
  <td><div class="tabledata" id = "v4"></div></td>
</tr>
</table>
</div>
<br>
<div class="category"></div>
<div class="category">Tombol Peringatan Manual : </div>
<button type="button" class = "btn" id = "btn0"
onclick="ButtonPress0()">Toggle</button>
</div>
<br>
<br>
</main>
<footer div class="foot" id = "temp" >ALAT PENGENDALI KEBISINGAN
DAN CO2 PADA PERPUSTAKAAN BERBASIS IOT</div></footer>
</body>
<script type = "text/javascript">

// global variable visible to all java functions
var xmlhttp=createXmlHttpRequest();

// function to create XML object
function createXmlHttpRequest(){
  if(window.XMLHttpRequest){
    xmlhttp=new XMLHttpRequest();
  }
}

```

```

else{
    xmlHttp=new XMLHttpRequest("Microsoft.XMLHTTP");
}
return xmlHttp;
}

```

```

// function to handle button press from HTML code above
// and send a processing string back to server
// this processing string is use in the .on method

```

```

function ButtonPress0() {
    var xhttp = new XMLHttpRequest();
    var message;
    /*
    xhttp.onreadystatechange = function() {
        if (this.readyState == 4 && this.status == 200) {
            message = this.responseText;
            // update some HTML data
        }
    }
    */

    xhttp.open("PUT", "BUTTON_0", false);
    xhttp.send();
}

```

```

function response(){
    var message;
    var barwidth;
    var currentsensor;
    var xmlResponse;
    var xmldoc;
}

```

```

var dt = new Date();
var color = "#e8e8e8";

// get the xml stream
xmlResponse=xmlHttp.responseXML;

// get host date and time
document.getElementById("time").innerHTML = dt.toLocaleTimeString();
document.getElementById("date").innerHTML = dt.toLocaleDateString();

// A0
xmlDoc = xmlResponse.getElementsByTagName("B0"); //bits for A0
message = xmlDoc[0].firstChild.nodeValue;

if (message > 55 && message <= 69){
    document.getElementById("v0").innerHTML="Bising";
    color = "#FFB700";
}
else if (message > 69){
    document.getElementById("v0").innerHTML="Terlalu Bising";
    color = "#aa0000" ;
}
else {
    document.getElementById("v0").innerHTML="Kebisingan Normal";
    color = "#00AA00";
}

barwidth = message / 40.95;
document.getElementById("b0").innerHTML=message;
document.getElementById("b0").style.width=(barwidth+"%");
document.getElementById("v0").style.backgroundColor=color;

```



```

// A1
xmldoc = xmlResponse.getElementsByTagName("B1");
message = xmldoc[0].firstChild.nodeValue;

if (message > 55 && message <= 69){
    document.getElementById("v1").innerHTML="Bising";
    color = "#FFB700";
}
else if (message > 69){
    document.getElementById("v1").innerHTML="Terlalu Bising";
    color = "#aa0000" ;
}
else {
    document.getElementById("v1").innerHTML="Kebisingan Normal";
    color = "#00AA00";
}

barwidth = message / 40.95;
document.getElementById("b1").innerHTML=message;
document.getElementById("b1").style.width=(barwidth+"%");
document.getElementById("v1").style.backgroundColor=color;

// A2
xmldoc = xmlResponse.getElementsByTagName("B2"); //bits for A0
message = xmldoc[0].firstChild.nodeValue;

if (message > 55 && message <= 69){
    document.getElementById("v2").innerHTML="Bising";
    color = "#FFB700";
}

```

```

else if (message > 69){
    document.getElementById("v2").innerHTML="Terlalu Bising";
    color = "#aa0000" ;
}
else {
    document.getElementById("v2").innerHTML="Kebisingan Normal";
    color = "#00AA00";
}

barwidth = message / 40.95;
document.getElementById("b2").innerHTML=message;
document.getElementById("b2").style.width=(barwidth+"%");
document.getElementById("v2").style.backgroundColor=color;

// A3
xmldoc = xmlResponse.getElementsByTagName("B3"); //bits for A0
message = xmldoc[0].firstChild.nodeValue;

if (message > 55 && message <= 69){
    document.getElementById("v3").innerHTML="Bising";
    color = "#FFB700";
}
else if (message > 69){
    document.getElementById("v3").innerHTML="Terlalu Bising";
    color = "#aa0000" ;
}
else {
    document.getElementById("v3").innerHTML="Kebisingan Normal";
    color = "#00AA00";
}

```

```

barwidth = message / 40.95;
document.getElementById("b3").innerHTML=message;
document.getElementById("b3").style.width=(barwidth+"%");
document.getElementById("v3").style.backgroundColor=color;

// A4
xmldoc = xmlResponse.getElementsByTagName("B4"); //bits for A0
message = xmldoc[0].firstChild.nodeValue;

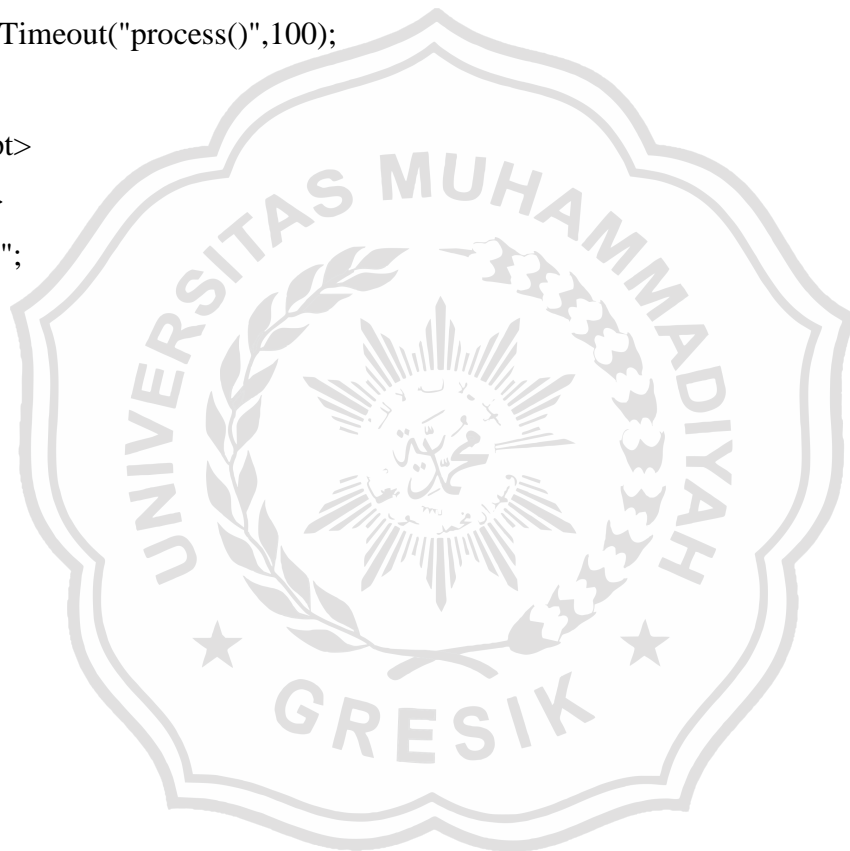
if (message > 1000 && message <= 1500){
    document.getElementById("v4").innerHTML="Kualitas Udara Kurang
Bagus";
    color = "#FFB700";
}
else if (message > 1500){
    document.getElementById("v4").innerHTML="Kualitas Udara Tidak
Bagus";
    color = "#aa0000" ;
}
else {
    document.getElementById("v4").innerHTML="Kualitas Udara Bagus";
    color = "#00AA00";
}

barwidth = message / 40.95;
document.getElementById("b4").innerHTML=message;
document.getElementById("b4").style.width=(barwidth+"%");
document.getElementById("v4").style.backgroundColor=color;

xmldoc = xmlResponse.getElementsByTagName("BUTTONN");
message = xmldoc[0].firstChild.nodeValue;

```

```
document.getElementById("btn0").innerHTML="Turn ON";  
}  
function process(){  
if(xmlHttp.readyState==0 || xmlHttp.readyState==4) {  
xmlHttp.open("PUT","xml",true);  
xmlHttp.onreadystatechange=response;  
xmlHttp.send(null);  
}  
setTimeout("process()",100);  
}  
</script>  
</html>  
)=====";
```



DAFTAR RIWAYAT HIDUP

A. Biodata Pribadi

1. Nama : Abdullah Ni'am
2. Tempat/Tanggal Lahir : Gresik, 03 Mei 2001
3. Jenis Kelamin : Laki-Laki
4. Kewarganegaraan : Indonesia
5. Agama : Islam
6. Status : Belum Menikah
7. Alamat : Jalan Airlangga Rt.02/Rw.01, Kel. Ngawen,
Kec. Sidayu, Kab. Gresik, Jawa Timur 61153
8. Nomor HP : 085843987334
9. Email : abdullahniam123@gmail.com

B. Riwayat Pendidikan

1. 2008-2014 : MI Kanjeng Sepuh 1 Ngawen
2. 2014-2017 : SMP Negeri 1 Sidayu
3. 2017-2020 : SMK Muhammadiyah 1 Gresik
4. 2020-2024 : Universitas Muhammadiyah Gresik, Program
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