

DAFTAR LAMPIRAN

Lampiran – 1 Source code ESP32 menggunakan Arduino IDE

```
#include <WiFi.h>
#include <Firebase_ESP_Client.h>

// Insert your network credentials
#define WIFI_SSID "sawit"
#define WIFI_PASSWORD
"1234567890"

// Insert Firebase project API Key
#define API_KEY
"AIzaSyD0xlKOK0X5cNDK8chzFB
TaYoEpuRzUYGw"

// Insert RTDB URL
#define DATABASE_URL
"https://sawit-65f9f-default-
rtdb.firebaseio.com"

int SensorPin = 34;    // deklarasi
pin analog yg dipakai
int soilMoistureValue; //
menyimpan nilai analog dari sensor
ke esp32
int soilmoisturepercent; // nilai yg
diperoleh dalam bentuk persen
setelah dimaping
int LDR;
int lightSensor = 35; // ESP32 pin
GIOP36 (ADC0)

String cuaca;
String pompa;
String kabut;
String lampu;

float Temperature;
float Humidity;

// Define Firebase Data object
FirebaseData fbdo;
FirebaseAuth auth;

FirebaseConfig config;

#include <DHT.h>
#include <DHT_U.h>
#define DHTPIN 27
#define DHTTYPE DHT22
DHT dht(DHTPIN, DHTTYPE);

// Timer for sending data
unsigned long sendDataPrevMillis =
0;
bool signupOK = false;

void setup() {
  Serial.begin(115200); // Baudrate
  komunikasi dengan serial monitor

  pinMode(16, OUTPUT);
  pinMode(17, OUTPUT);
  pinMode(18, OUTPUT);
  digitalWrite(18, HIGH);
  digitalWrite(16, HIGH);
  digitalWrite(17, HIGH); //RELAY

  // Initialize Wi-Fi
  WiFi.begin(WIFI_SSID,
WIFI_PASSWORD);
  Serial.print("Connecting to Wi-
Fi");
  while (WiFi.status() !=
WL_CONNECTED) {
    Serial.print(".");
    delay(300);
  }
  Serial.println();
  Serial.print("Connected with IP:
");
  Serial.println(WiFi.localIP());
  Serial.println();
```

```

// Initialize Firebase
config.api_key = API_KEY;
config.database_url =
DATABASE_URL;

if (Firebase.signUp(&config,
&auth, "", "")) {
    Serial.println("Firebase signup
successful");
    signupOK = true;
} else {
    Serial.printf("Firebase signup
failed: %s\n",
config.signer.signupError.message.c
_str());
}

Firebase.begin(&config, &auth);
Firebase.reconnectWiFi(true);
dht.begin();
}

void loop() {

    soilMoistureValue =
analogRead(SensorPin);
    Serial.print("Nilai Soil = ");
    Serial.println(soilMoistureValue);
    soilmoisturepercent =
map(soilMoistureValue, 4095, 0, 0,
100);

    Serial.print("Presentase kelembaban
tanah= ");
    Serial.print(soilmoisturepercent);
    Serial.println("% ");
    float tanah = soilmoisturepercent;

    Temperature =
dht.readTemperature();
    Humidity = dht.readHumidity();
    Serial.print("Temperature = ");
    Serial.print(Temperature);
    Serial.print(" c ");

    Serial.print("Humidity = ");
    Serial.print(Humidity);
    Serial.println(" % ");
    float suhu = Temperature;
    float kelembaban = Humidity;

    // reads the input on analog pin
    (value between 0 and 4095)
    LDR = analogRead(lightSensor);
    Serial.print("LDR = ");
    Serial.print(LDR); // the raw
    analog reading
    // We'll have a few threshholds,
    qualitatively determined
    if (LDR < 200) {
        Serial.println(" => Cerah Sekali");
        digitalWrite(16, HIGH);
        cuaca = "Cerah Sekali";
        lampu = "Padam";
    } else if (LDR < 1000) {
        Serial.println(" => Cerah");
        digitalWrite(16, HIGH);
        cuaca = "Cerah";
        lampu = "Padam";
    } else if (LDR >= 1000){
        Serial.println(" => Mendung");
        digitalWrite(16, LOW);
        cuaca = "Mendung";
        lampu = "Menyala";
    }

    if (Temperature > 30) {
        digitalWrite(17, LOW);
        kabut = "Menyala";
    } else if (Temperature <= 30) {
        digitalWrite(17, HIGH);
        kabut = "Mati";
    }

    if (soilmoisturepercent < 65) {
        digitalWrite(18, LOW);
        pompa = "Menyala";
    } else if (soilmoisturepercent >=
65){

```

```

    digitalWrite(18, HIGH);
    pompa = "Mati" ;
}

delay(2000);

if (Firebase.ready() && signupOK
&& (millis() - sendDataPrevMillis >
2000 || sendDataPrevMillis == 0)) {
    sendDataPrevMillis = millis();

    if
(Firebase.RTDB.setFloat(&fbdo,
"Sensor/suhu", suhu)) {
        Serial.println("PASSED");
        Serial.println("PATH: " +
fbdo.dataPath());
        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }

    if
(Firebase.RTDB.setFloat(&fbdo,
"Sensor/kelembaban", kelembaban))
{
        Serial.println("PASSED");
        Serial.println("PATH: " +
fbdo.dataPath());
        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }

    if
(Firebase.RTDB.setFloat(&fbdo,
"Sensor/tanah", tanah)) {
        Serial.println("PASSED");

```

```

        Serial.println("PATH: " +
fbdo.dataPath());
        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }

    if
(Firebase.RTDB.setString(&fbdo,
"Status/cuaca", cuaca)) {
        Serial.println("PASSED");
        Serial.println("PATH: " +
fbdo.dataPath());
        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }

    if
(Firebase.RTDB.setString(&fbdo,
"Status/lampu", lampu)) {
        Serial.println("PASSED");
        Serial.println("PATH: " +
fbdo.dataPath());
        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }

    if
(Firebase.RTDB.setString(&fbdo,
"Status/kabut", kabut)) {
        Serial.println("PASSED");
        Serial.println("PATH: " +
fbdo.dataPath());

```

```

        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }

    if
(Firebase.RTDB.setString(&fbdo,
"Status/pompa", pompa)) {
        Serial.println("PASSED");

```

```

        Serial.println("PATH: " +
fbdo.dataPath());
        Serial.println("TYPE: " +
fbdo.dataType());
    } else {
        Serial.println("FAILED");
        Serial.println("REASON: " +
fbdo.errorReason());
    }
}
}

```

Lampiran – 2 Source code Aplikasi monitoring

```
<!DOCTYPE html>

<html>

<head>

<meta name="viewport"
content="width=device-width,
initial-scale=1">

<script type="text/javascript"
charset="utf-8"
src="cordova.js"></script><meta
name="viewport" content="initial-
scale=1">

<meta name="apple-mobile-web-
app-capable" content="yes" />

<meta name="apple-mobile-web-
app-status-bar-style"
content="black" />

<meta name="apple-touch-
fullscreen" content="yes" />

<script
src="http://cdn.firebase.com/js/client/1.0.6/firebase.js"></script>

<script
src="https://www.gstatic.com/firebasejs/5.0.4/firebase.js"></script>

<link rel="apple-touch-icon"
href="apple-touch-icon.png" />

<link rel="apple-touch-icon-
precomposed" sizes="144x144"
href="apple-touch-icon-144x144-
precomposed.png" />

<link rel="apple-touch-icon-
precomposed" sizes="114x114"
href="apple-touch-icon-114x114-
precomposed.png" />

<link rel="apple-touch-icon-
precomposed" sizes="72x72"
href="apple-touch-icon-72x72-
precomposed.png" />

<link rel="apple-touch-icon-
precomposed" sizes="57x57"
href="apple-touch-icon-57x57-
precomposed.png" />

<link rel="stylesheet"
href="css/style.css">

<script src="jquery/jquery-
1.11.3.min.js"></script>

<script
src="js/mainUrl.js"></script>

<link rel="stylesheet"
href="jquery/jquery.mobile-
1.4.5.min.css">

<script src="jquery/jquery-
1.11.3.min.js"></script>

<script src="jquery/jquery.mobile-
1.4.5.min.js"></script>

<script>

var config = {

apiKey:
"AIzaSyD0xlKOK0X5cNDK8chzF
BTaYoEpuRzUYGw",

authDomain: "sawit-
65f9f.firebaseio.com",

databaseURL: "https://sawit-65f9f-
```

```

default-rtdb.firebaseio.com",

projectId: "sawit-65f9f",

storageBucket: "sawit-
65f9f.appspot.com",

messagingSenderId:
"738126564852",

appId:
"1:738126564852:web:9da11c97c4e
d9899437da1",

measurementId: "G-
W4RZFBXBD0"

};

firebase.initializeApp(config);

var f_database = firebase.database();

f_database.ref().on("value",
function(snapshot) {

var KELEMBABAN =
snapshot.child("Sensor/kelembaban")
).val();

document.getElementById("KELE
MBABAN").innerHTML =
""+KELEMBABAN+" %";

var SUHU =
snapshot.child("Sensor/suhu").val();

document.getElementById("SUHU"
).innerHTML = ""+SUHU+" C";

var TANAH =
snapshot.child("Sensor/tanah").val()
;

document.getElementById("TANA
H").innerHTML = ""+TANAH+"
%";

var CUACA =
snapshot.child("Status/cuaca").val();

document.getElementById("CUAC
A").innerHTML = ""+CUACA;

var KABUT =
snapshot.child("Status/kabut").val();

document.getElementById("KABU
T").innerHTML = ""+KABUT;

var LAMPU =
snapshot.child("Status/lampu").val()
;

document.getElementById("LAMP
U").innerHTML = ""+LAMPU;

var POMPA =
snapshot.child("Status/pompa").val(
);

document.getElementById("POMP
A").innerHTML = ""+POMPA;

});

function reloadpage(){
window.location.reload();
}

</script>

<script>

function openMenu(par)
{

```

```

window.open(par,"_blank");
}
</script>
<style>
.fullSize
{
width : 90%;
position : relative;
left : 0%;
}
.oddCell
{
background-color : white;
}
.evenCell
{
background-color : lightGray;
}
.header
{
background-color : lightGray;
color : #4CAF50;
}
.button {
background-color: #4CAF50;
border: none;
color: white;
padding: 15px 20px;
text-align: center;
text-decoration: none;
display: inline-block;
font-size: 16px;
margin: 4px 2px;
cursor: pointer;
}
td
{
direction: ltr;
margin:auto;
text-align:justify;
word-break: break-word;
white-space: pre-line;
overflow-wrap: break-word;
-ms-word-break: break-word;
word-break: break-word;
word-break: break-word;
-ms-hyphens: auto;
-moz-hyphens: auto;

```

```

-webkit-hyphens: auto;

hyphens: auto;
}

table

{
table-layout:fixed;

width:100%;
}

</style>

</head>

<body class=""
onload="loadForm();">

<header class="main">

<h2
class='header'><center>MONITORI
NG PEMBIBITAN KELAPA
SAWIT</h2>

</header>

<br>

<div class="content">

<section class="intro">

<ul data-role="listview" data-
inset="true" data-split-theme="b">

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">KELEMBABAN UDARA :
<span
id="KELEMBABAN">Mohon

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```

tunggu...</span></label></li>

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">SUHU UDARA: <span
id="SUHU">Mohon
tunggu...</span></label></li>

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">KELEMBABAN TANAH :
<span id="TANAH">Mohon
tunggu...</span></label></li>

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">STATUS POMPA : <span
id="POMPA">Mohon
tunggu...</span></label></li>

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">STATUS CUACA: <span
id="CUACA">Mohon
tunggu...</span></label></li>

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">STATUS KABUT: <span
id="KABUT">Mohon
tunggu...</span></label></li>

<li class="fullSize"><label
style="font-weight : bold; text-align:
center">STATUS LAMPU: <span
id="LAMPU">Mohon
tunggu...</span></label></li>

<br>

</ul>

</section>

```


</div>

</body>

</html>