

LAMPIRAN A
DOKUMENTASI KEGIATAN



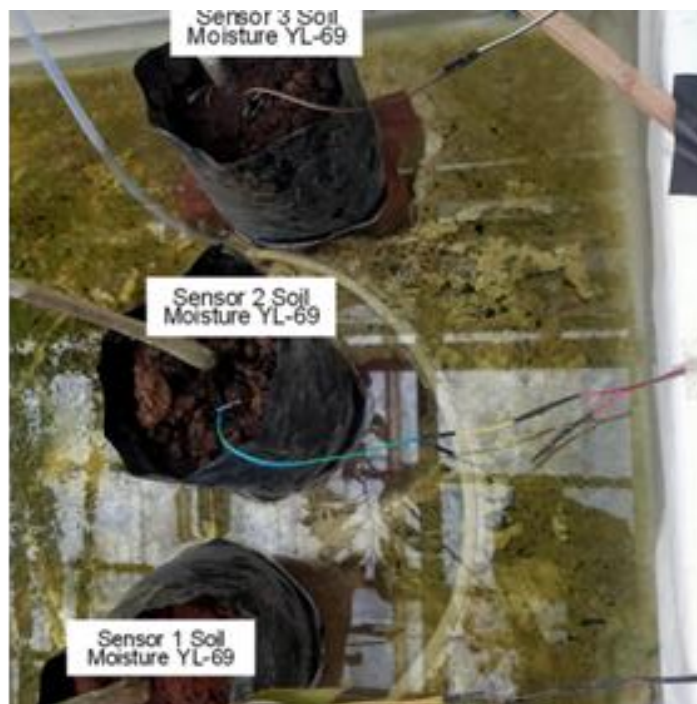
Gambar A.1 Tampak Luar *Greenhouse* Agroekoteknologi



Gambar A.2 Tampak Belakang *Greenhouse* Agroekoteknologi



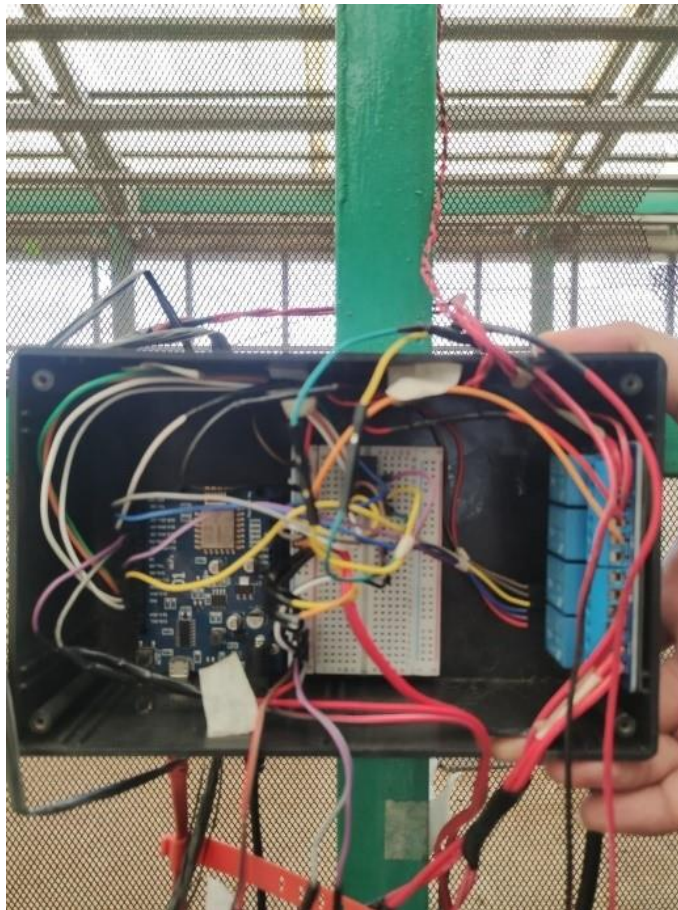
Gambar A.3 Posisi Penempatan Sensor DHT22 untuk Suhu dan Kelembaban



Gambar A.4 Posisi Penempatan Sensor *Soil Moisture* YL-69



Gambar A.5 Posisi Penempatan Sensor Ultrasonik HC-SR04



Gambar A.10 *Box* Rangkaian Alat



Gambar A.11 Peletakan Alat Penelitian

LAMPIRAN B
KUISIONER

Tabel B.1 Nilai

Pernyataan	STS	TS	N	S	SS
Nilai	1	2	3	4	5

Keterangan :

STS = Sangat Tidak Setuju

TS = Tidak Setuju

N = Netral

S = Setuju

SS = Sangat Setuju

Tabel B.2 Pertanyaan

Kode	Pertanyaan
P1	Apakah tampilan aplikasi mudah dikenali?
P2	Apakah aplikasi mudah dioperasikan?
P3	Apakah informasi yang disediakan oleh aplikasi ini mudah di mengerti ?
P4	Apakah menu dan tampilan halaman aplikasi mudah diingat?
P5	Apakah mudah mengakses informasi kondisi yang ditawarkan?
P6	Apakah tampilan warna pada aplikasi nyaman dilihat dan tidak membosankan?
P7	Apakah aplikasi dapat dengan mudah dipelajari ?
P8	Apakah informasi dan fitur yang tersedia sesuai dengan yang dibutuhkan?
P9	Secara keseluruhan apakah penggunaan aplikasi ini memuaskan?
P10	Apakah aplikasi membantu dan memberikan pengaruh terhadap usaha Pertanian?

Tabel B.3 Skor Responden

Nama	Status responden	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Ade Kamilatus Soleha	Mahasiswa	5	5	5	5	5	5	5	5	5	5
Figo	Mahasiswa	5	5	5	5	5	3	4	5	5	5

Fachrudin	Mahasiswa	5	5	5	4	4	4	5	4	5	5
Maya Novianti	Mahasiswa	5	5	5	5	5	5	5	5	5	5
Asti	Mahasiswa	5	5	5	5	5	5	5	5	5	5
Anisa	Mahasiswa	5	4	4	4	5	4	3	4	3	4
Nanang Krisdianto	Dosen	5	5	5	4	3	4	4	4	4	4
Mutiara Ramadhani	Mahasiswa	5	4	5	4	5	5	5	5	4	5
Nurdiansyah	Mahasiswa	5	4	4	4	5	4	4	4	4	5
Dimas	Mahasiswa	5	5	5	5	5	5	5	5	5	5
Siti Anisa	Civitas akademika	4	4	3	4	4	4	3	4	3	3
Az-Zahra Farras	Mahasiswa	4	3	4	4	4	4	4	4	4	3
Nabila Khairunnisa	Mahasiswa	5	5	4	5	4	4	5	5	5	5
Esti Isnainiyati	Mahasiswa	5	5	5	5	5	4	5	5	5	5
Ivan	Mahasiswa	5	5	3	5	2	2	3	3	3	4
Yayu Rohmadona	Dosen	5	4	4	4	4	4	4	4	4	4
Novia Oktaviani	Mahasiswa	5	5	5	5	5	5	5	5	5	5
Maya	Mahasiswa	4	4	4	4	4	4	4	4	4	4
Lutfia	Mahasiswa	5	5	5	4	5	5	5	5	5	5
Cindy	Mahasiswa	4	4	5	5	4	4	5	4	4	3
Dzul hafizh amrullah	Mahasiswa	5	3	4	3	5	5	5	4	4	4
Akhdan	Mahasiswa	4	3	3	4	5	3	3	3	4	4
Monica Lidya Putri	Mahasiswa	4	5	5	5	4	5	5	4	5	5
Yusraini Muharni	Dosen	5	5	5	5	5	5	5	5	5	5

Hari Purnomo	Mahasiswa	4	3	4	4	3	3	4	3	3	3
Surya Atmadilaga Ananta	Mahasiswa	4	4	3	5	4	2	5	4	4	5
Safril	Mahasiswa	4	4	5	5	4	5	5	5	4	5
Andrian Azis	Mahasiswa	3	3	4	3	4	3	3	3	4	4
Dyah Lintang Trenggonowati	Dosen	5	5	4	5	4	4	4	4	4	4
Anita Shafarahmah	Mahasiswa	5	5	5	5	5	5	5	5	5	5
Ahmad Adriansyah	Mahasiswa	5	5	5	5	5	5	4	3	5	4

LAMPIRAN C
KODE PROGRAM

1. index.php

```
<?php include('layout/header.php') ?>
<?php include('layout/navbar_home.php') ?>

<div class="container">

    <div class=" d-flex flex-column mb-3 py-1 text-center">
        <?php
            if (isset($_GET['pesan'])) {
                if ($_GET['pesan'] == "username_salah") {
                    echo "<div class='alert alert-danger' role='alert'>Username tidak ditemukan!</div>";
                } else if ($_GET['pesan'] == "password_salah") {
                    echo "<div class='alert alert-danger' role='alert'>Password salah!</div>";
                } else if ($_GET['pesan'] == "logout") {
                    echo "<div class='alert alert-success' role='alert'>Anda telah berhasil logout!</div>";
                } else if ($_GET['pesan'] == "belum_login") {
                    echo "<div class='alert alert-danger' role='alert'>Anda harus login untuk mengakses halaman admin!</div>";
                } else if ($_GET['pesan'] == "signup") {
                    echo "<div class='alert alert-success' role='alert'>Akun anda berhasil disimpan, silahkan login!</div>";
                }
            }
        ?>

        <div>
            <div>
                <h2 class="mt-3">AMOR S-FARM</h2>
                <p>Aplikasi Sistem Monitoring Smart Farming</p>
                <div class="row ">
                    <div class="col-md-3">
                        
                    </div>

                    <div class="col-md-9 d-flex align-items-center ">
                        <p class="text-center p-3 m-4 fs-5">Kami yakin di era <i>modern
                            </i>ini, bidang
                            pertanian dapat
                            terintegrasi dengan teknologi yang ada, guna mempermudah dan memaksimalkan potensi
                            pertanian. AMOR
                            S-FARM hadir sebagai platform<q><strong><i>control dan monitoring</i></strong></q>pertanian,
                            guna
                            membantu masyarakat dalam kegiatan pertanian. Semua demi mengoptimalkan potensi agrikultur
                            Indonesia,
                            agar menjadi negara dengan mandiri pangan terbaik di lingkup asia maupun dunia.
                        </p>
                    </div>
                </div>
            </div>
        </div>

        <div class="pt-3">
            <h2 class="mb-3">EBB & Flow System</h2>
        </div>
    </div>
</div>
```

```

<div class="row ">
  <div class="col-md-3">
    
  </div>

  <div class="col-md-9">
    <p class="text-center p-3 m-4 fs-5">
      Ebb and Flow System atau teknik pasang surut merupakan salah satu teknik hidroponik yang
      memanfaatkan prinsip pasang surut. Pemberian larutan nutrisi pada akar tanaman dilakukan
      dengan
      cara menggenang (pasang dan surut secara bergantian) dan larutan yang tidak terserap
      dikembalikan
      lagi ke
      dalam bak penampungan.
    </p>
  </div>
</div>
</div>
</div>

<div class="card">
  <div class="card-header text-center fs-2 p-0 m-0 .bg-light">
    <strong>Fitur</strong>
  </div>

  <div class="card-body">
    <div class="d-flex justify-content-center">
      <p>AMOR S-FARM memiliki 4 fitur unggulan guna membantu petani dalam memantau kondisi tanaman</p>
    </div>

    <div class="d-flex justify-content-evenly container-fluid mt-2">
      <div class="d-flex flex-column col-sm-3 px-3 text-center">
        <div class="p-2">
          
        </div>
        <div>
          Kondisi <i>Real-time</i>
        </div>
      </div>

      <div class="d-flex flex-column mb-3 col-sm-3 px-3 text-center">
        <div class="p-2">
          
          <div>
            Data Dalam Bentuk Angka & Grafik
          </div>
        </div>
      </div>

      <div class="d-flex flex-column mb-3 col-sm-3 px-3 text-center">

```



```
<div class="p-2">
  
  <div>
    History Data Dapat Dilihat & Diunduh
  </div>
</div>
</div>

<div class="d-flex flex-column mb-3 col-sm-3 px-3 text-center">
  <div class="p-2">
    
    <div>
      User Friendly
    </div>
  </div>
</div>
</div>
</div>
</div>
</div>
</div>

<!-- Bootstrap JS (Popper.js and Bootstrap JS) -->
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"
  integrity="sha384-pzjw8r+ua/cACJd6UEd6TeUqQrUEHI8w7I1a2eO2nfbZt69TLw7Jt3dZV7T2SzX" crossorigin="anonymous"></script>
<?php include('layout/footer.php') ?>
```

2. dashboard.php

```
<?php include('layout/header.php') ?>
<?php include('layout/navbar_home.php') ?>

<div class="container">

    <main>

        <h2 class="m-3"> <i class="bi bi-speedometer2 px-2 "></i> Data Real-time</h2>

        <?php
        if (isset($_GET['pesan'])) {
            if ($_GET['pesan'] == "username_salah") {
                echo "<div class='alert alert-danger' role='alert'>Username tidak ditemukan!</div>";
            } else if ($_GET['pesan'] == "password_salah") {
                echo "<div class='alert alert-danger' role='alert'>Password salah!</div>";
            } else if ($_GET['pesan'] == "logout") {
                echo "<div class='alert alert-success' role='alert'>Anda telah berhasil logout!</div>";
            } else if ($_GET['pesan'] == "belum_login") {
                echo "<div class='alert alert-danger' role='alert'>Anda harus login untuk mengakses halaman admin!</div>";
            } else if ($_GET['pesan'] == "signup") {
                echo "<div class='alert alert-success' role='alert'>Akun anda berhasil disimpan, silahkan login!</div>";
            }
        }
        ?>

        <div class="row row-cols-1 row-cols-md-3 row-cols-2 g-4">

            <div class="col">
                <div class="card h-100 border-0 shadow-sm p-3">
                    <div class="card-body">
                        <p class="card-title">Humidity</p>
                        <h1 class="card-text text-secondary"><strong id='humidity' class="text-dark">00</strong> %</h1>
                    </div>
                </div>
            </div>

            <div class="col">
                <div class="card h-100 border-0 shadow-sm p-3">
                    <div class="card-body">
                        <p class="card-title">Temperature</p>
                        <h1 class="card-text text-secondary"><strong id='temperature' class="text-dark">00</strong> °C
                    </h1>
                </div>
            </div>

            <div class="col">
                <div class="card h-100 border-0 shadow-sm p-3">
                    <div class="card-body">
```

```

        <p class="card-title">Soil1</p>
        <h1 class="card-text text-secondary"><strong id='soil1' class="text-dark">00</strong> %</h1>
    </div>
</div>
</div>

<div class="col">
    <div class="card h-100 border-0 shadow-sm p-3">
        <div class="card-body">
            <p class="card-title">Soil2</p>
            <h1 class="card-text text-secondary"><strong id='soil2' class="text-dark">00</strong> %</h1>
        </div>
    </div>
</div>

<div class="col">
    <div class="card h-100 border-0 shadow-sm p-3">
        <div class="card-body">
            <p class="card-title">Soil3</p>
            <h1 class="card-text text-secondary"><strong id='soil3' class="text-dark">00</strong> %</h1>
        </div>
    </div>
</div>

<div class="col">
    <div class="card h-100 border-0 shadow-sm p-3">
        <div class="card-body">
            <p class="card-title">Water</p>
            <h1 class="card-text text-secondary"><strong id='water' class="text-dark">00</strong> cm</h1>
        </div>
    </div>
</div>

</div>

<p class="mt-5">Terakhir Update: <strong id='tanggal'>2021-07-01 00:00:00</strong></p>
</main>

```

```
</div>
```

```
<script>
```

```

    if (typeof (EventSource) !== "undefined") {
        var source = new EventSource("sse_data.php");
        source.addEventListener('data', function (e) {
            var data = JSON.parse(e.data);
            var tanggal = data.tanggal;
            var waktu = data.waktu;
            var humidity = data.humidity;
            var temperature = data.temperature;
            var soil1 = data.soil1;
            var soil2 = data.soil2;
            var soil3 = data.soil3;

```

```
        var water = data.water;

        document.getElementById("humidity").innerText = humidity;
        document.getElementById("temperature").innerText = temperature;
        document.getElementById("soil1").innerText = soil1;
        document.getElementById("soil2").innerText = soil2;
        document.getElementById("soil3").innerText = soil3;
        document.getElementById("water").innerText = water;
        document.getElementById("tanggal").innerText = tanggal + " " + waktu;

    }, false);

} else {
    document.getElementById("result").innerHTML = "Not Support";
}
</script>

<?php include('layout/footer.php') ?>
```


3. home.php

```
<?php
session start();
include('layout/header.php');
include('layout/navbar.php');

if (!isset($_SESSION['status']) || $_SESSION['status'] !== 'login') {
    header("location: index.php?pesan=belum_login");
    exit();
}

include('config/connection.php');
$query = "SELECT * FROM pengaturan";
$read = mysqli_query($conn, $query);
$row = mysqli_fetch_array($read);
$relay_selenoid = $row['relay_selenoid'];
$relay_drain = $row['relay_drain'];
?>

<div class="container">

    <?php
        if (isset($_GET['pesan'])) {
            if ($_GET['pesan'] == "signup") {
                echo "<div class='alert alert-success' role='alert'>Akun anda berhasil disimpan, Selamat Datang!</div>";
            }
        }
    ?>

    <h1 class="mb-3"><i class="fa-solid fa-house px-3 "></i>Home</h1>

    <div class="row row-cols-1 row-cols-md-2 g-4 py-4">
        <div class="col">
            <div class="card h-100 border-0 shadow-sm p-3">
                <div class="card-body">
                    <p class="card-title">Water Pump / Pompa Air</p>
                    <div class="row">
                        <div class="col">
                            <div class="d-grid gap-2">
                                <a href="api/update.php?relay_selenoid=ON" class="btn btn-primary">ON</a>
                            </div>
                        </div>
                        <div class="col">
                            <div class="d-grid gap-2">
                                <a href="api/update.php?relay_selenoid=OFF" class="btn btn-danger">OFF</a>
                            </div>
                        </div>
                    </div>
                </div>
                <p class="mt-3">Status:
                    <strong>
```

```

        <?php
        if ($relay_selenoid == 'ON') {
            echo "<span class='text-primary'>" . $relay_selenoid . "</span>";
        } else if ($relay_selenoid == 'OFF') {
            echo "<span class='text-danger'>" . $relay_selenoid . "</span>";
        }
        ?>
    </strong>
</p>
</div>
</div>
</div>
</div>
<div class="col">
    <div class="card h-100 border-0 shadow-sm p-3">
        <div class="card-body">
            <p class="card-title">Drain Pump / Pompa Hisap</p>
            <div class="row">
                <div class="col">
                    <div class="d-grid gap-2">
                        <a href="api/update.php?relay_drain=ON" class="btn btn-primary">ON</a>
                    </div>
                </div>
                <div class="col">
                    <div class="d-grid gap-2">
                        <a href="api/update.php?relay_drain=OFF" class="btn btn-danger">OFF</a>
                    </div>
                </div>
            </div>
            <p class="mt-3">Status:
                <strong>
                    <?php
                    if ($relay_drain == 'ON') {
                        echo "<span class='text-primary'>" . $relay_drain . "</span>";
                    } else if ($relay_drain == 'OFF') {
                        echo "<span class='text-danger'>" . $relay_drain . "</span>";
                    }
                    ?>
                </strong>
            </p>
        </div>
    </div>
</div>
</div>
</div>
<div class="row row-cols-1 row-cols-md-3 row-cols-2 g-4 ">
    <div class="col">
        <div class="card h-100 border-0 shadow-sm p-3">
            <div class="card-body">
                <p class="card-title">Kelembaban Udara</p>
                <h1 class="card-text text-secondary"><strong id='humidity' class="text-dark">00</strong> %</h1>
            </div>
        </div>
    </div>

```

```

    </div>
</div>
<div class="col">
  <div class="card h-100 border-0 shadow-sm p-3">
    <div class="card-body">
      <p class="card-title">Suhu Lingkungan</p>
      <h1 class="card-text text-secondary"><strong id='temperature' class="text-dark">00</strong> °C </h1>
    </div>
  </div>
</div>
<div class="col">
  <div class="card h-100 border-0 shadow-sm p-3">
    <div class="card-body">
      <p class="card-title">Kelembaban Tanah 1</p>
      <h1 class="card-text text-secondary"><strong id='soil1' class="text-dark">00</strong> %</h1>
    </div>
  </div>
</div>
<div class="col">
  <div class="card h-100 border-0 shadow-sm p-3">
    <div class="card-body">
      <p class="card-title">Kelembaban Tanah 2</p>
      <h1 class="card-text text-secondary"><strong id='soil2' class="text-dark">00</strong> %</h1>
    </div>
  </div>
</div>
<div class="col">
  <div class="card h-100 border-0 shadow-sm p-3">
    <div class="card-body">
      <p class="card-title">Kelembaban Tanah 3</p>
      <h1 class="card-text text-secondary"><strong id='soil3' class="text-dark">00</strong> %</h1>
    </div>
  </div>
</div>
<div class="col">
  <div class="card h-100 border-0 shadow-sm p-3">
    <div class="card-body">
      <p class="card-title">Ketinggian Air</p>
      <h1 class="card-text text-secondary"><strong id='water' class="text-dark">00</strong> cm</h1>
    </div>
  </div>
</div>
</div>
</div>

```

<p class="mt-5">Terakhir Update: <strong id='tanggal'>2021-07-01 00:00:00</p>

```
</div>
<script>
  if (typeof (EventSource) !== "undefined") {
    var source = new EventSource("sse_data.php");
    source.addEventListener('data', function (e) {
      var data = JSON.parse(e.data);
      var tanggal = data.tanggal;
      var waktu = data.waktu;
      var humidity = data.humidity;
      var temperature = data.temperature;
      var soil1 = data.soil1;
      var soil2 = data.soil2;
      var soil3 = data.soil3;
      var water = data.water;

      document.getElementById("humidity").innerText = humidity;
      document.getElementById("temperature").innerText = temperature;
      document.getElementById("soil1").innerText = soil1;
      document.getElementById("soil2").innerText = soil2;
      document.getElementById("soil3").innerText = soil3;
      document.getElementById("water").innerText = water;
      document.getElementById("tanggal").innerText = tanggal + " " + waktu;

    }, false);

  } else {
    document.getElementById("result").innerHTML = "Not Support";
  }
</script>
<?php include('logout_modal.php') ?>
<?php include('layout/footer.php') ?>
```


4. grafik.php

```
<?php
session start();
if ($_SESSION['status'] != 'login') {
    header("location: index.php?pesan=belum_login");
}
include('config/connection.php');
$query = "SELECT * FROM greenhouse ORDER BY id_data DESC LIMIT 25";
$waktu = mysqli_query($conn, $query);
$humidity = mysqli_query($conn, $query);
$temperature = mysqli_query($conn, $query);
$soil1 = mysqli_query($conn, $query);
$soil2 = mysqli_query($conn, $query);
$soil3 = mysqli_query($conn, $query);
$water = mysqli_query($conn, $query);
?>

<?php include('layout/header.php') ?>
<?php include('layout/navbar.php') ?>

<div class="container">

    <h1 class="mb-3">Grafik</h1>
<script src="https://cdn.jsdelivr.net/npm/chart.js"></script>

    <div class="row row-cols-1 row-cols-md-2 g-4">

        <!-- //-----GRAFIK HUMIDITY----- -->
        <div class="col">
            <div class="card tr-card h-100 border-0 shadow-sm p-3 p-3">
                <div class="card-body">
                    <h5 class="card-title">Kelembaban Udara (%)</h5>
                    <div>
                        <canvas id="humidityChart"></canvas>
                    </div>
                </div>
            </div>
        </div>

        <!-- /-----GRAFIK TEMPERATURE----- -->
        <div class="col">
            <div class="card tr-card h-100 border-0 shadow-sm p-3 p-3">
                <div class="card-body">
                    <h5 class="card-title">Suhu Lingkungan (°C)</h5>
                    <div>
                        <canvas id="temperatureChart"></canvas>
                    </div>
                </div>
            </div>
        </div>
    </div>
</div>
```

```

</div>

<!-- //-----GRAFIK SOIL1----- -->
<div class="col">
  <div class="card tr-card h-100 border-0 shadow-sm p-3 p-3">
    <div class="card-body">
      <h5 class="card-title">Kelembaban Tanah 1 (%)</h5>
      <div>
        <canvas id="soil1Chart"></canvas>
      </div>
    </div>
  </div>
</div>

<!-- //-----GRAFIK SOIL2----- -->
<div class="col">
  <div class="card tr-card h-100 border-0 shadow-sm p-3 p-3">
    <div class="card-body">
      <h5 class="card-title">Kelembaban Tanah 2 (%)</h5>
      <div>
        <canvas id="soil2Chart"></canvas>
      </div>
    </div>
  </div>
</div>

<!-- //-----GRAFIK SOIL3----- -->
<div class="col">
  <div class="card tr-card h-100 border-0 shadow-sm p-3 p-3">
    <div class="card-body">
      <h5 class="card-title">Kelembaban Tanah 3 (%)</h5>
      <div>
        <canvas id="soil3Chart"></canvas>
      </div>
    </div>
  </div>
</div>

<!-- //-----GRAFIK WATER----- -->
<div class="col">
  <div class="card tr-card h-100 border-0 shadow-sm p-3 p-3">
    <div class="card-body">
      <h5 class="card-title">Ketinggian Air (cm)</h5>
      <div>
        <canvas id="waterChart"></canvas>
      </div>
    </div>
  </div>
</div>
</div>

```

```

<script>
  const labels = [
    <?php
      while ($row = mysqli_fetch_array($waktu)) {
        echo "' . $row['waktu'] . ",";
      }
    ?>
  ]

  // -----GRAFIK HUMIDITY-----
  const dataHumidity = {
    labels: labels,
    datasets: [{
      label: 'Gafik Humidity',
      backgroundColor: 'rgb(255, 99, 132)',
      borderColor: 'rgb(255, 99, 132)',
      data: [
        <?php
          while ($row = mysqli_fetch_array($humidity)) {
            echo $row['humidity'] . ",";
          }
        ?>
      ],
    }]
  };

  const configHumidity = {
    type: 'line',
    data: dataHumidity,
    options: {}
  };

  const humidityChart = new Chart(
    document.getElementById('humidityChart'),
    configHumidity
  )

  // -----GRAFIK TEMPERATURE-----
  const dataTemperature = {
    labels: labels,
    datasets: [{
      label: 'Gafik Temperature',
      backgroundColor: '#36a2eb',
      borderColor: '#36a2eb',
      data: [
        <?php
          while ($row = mysqli_fetch_array($temperature)) {
            echo $row['temperature'] . ",";
          }
        ?>
      ],
    }]
  };

```

```

const configTemperature = {
  type: 'line',
  data: dataTemperature,
  options: {}
};

const temperatureChart = new Chart(
  document.getElementById('temperatureChart'),
  configTemperature
)

// -----GRAFIK SOIL1-----
const dataSoil1 = {
  labels: labels,
  datasets: [{
    label: 'Gafik Soil1',
    backgroundColor: '#6FCDCD',
    borderColor: '#6FCDCD',
    data: [
      <?php
        while ($row = mysqli_fetch_array($soil1)) {
          echo $row['soil1'] . ",";
        }
      ?>
    ],
  }]
};

const configSoil1 = {
  type: 'line',
  data: dataSoil1,
  options: {}
};

const soil1Chart = new Chart(
  document.getElementById('soil1Chart'),
  configSoil1
)

// -----GRAFIK SOIL2-----
const dataSoil2 = {
  labels: labels,
  datasets: [{
    label: 'Gafik Soil2',
    backgroundColor: '#8F57FF',
    borderColor: '#8F57FF',
    data: [
      <?php
        while ($row = mysqli_fetch_array($soil2)) {
          echo $row['soil2'] . ",";
        }
      ?>
    ]
  }]
};

```



```

    ],
  ]]
};

const configSoil2 = {
  type: 'line',
  data: dataSoil2,
  options: {}
};

const soil2Chart = new Chart(
  document.getElementById('soil2Chart'),
  configSoil2
)

// -----GRAFIK SOIL3-----
const dataSoil3 = {
  labels: labels,
  datasets: [{
    label: 'Gafik Soil3',
    backgroundColor: '#FFA449',
    borderColor: '#FFA449',
    data: [
      <?php
      while ($row = mysqli_fetch_array($soil3)) {
        echo $row['soil3'] . ",";
      }
      ?>
    ],
  }]
};

const configSoil3 = {
  type: 'line',
  data: dataSoil3,
  options: {}
};

const soil3Chart = new Chart(
  document.getElementById('soil3Chart'),
  configSoil3
)

// -----GRAFIK WATER-----
const dataWater = {
  labels: labels,
  datasets: [{
    label: 'Gafik Water',
    backgroundColor: '#333538',
    borderColor: '#333538',
    data: [
      <?php
      while ($row = mysqli_fetch_array($water)) {

```

```
                echo $row['water'] . ",";
            }
        ?>
    ],
    }]
};

const configWater = {
    type: 'line',
    data: dataWater,
    options: {}
};

const waterChart = new Chart(
    document.getElementById('waterChart'),
    configWater
)

</script>
</div>
<?php include('logout_modal.php') ?>
<?php include('layout/footer.php') ?>
```

5. data.php

```
<?php
session start();
if ($_SESSION['status'] != 'login') {
    header("location: index.php?pesan=belum_login");
}
?>
<?php include('layout/header.php') ?>
<?php include('layout/navbar.php') ?>
<?php
include('config/connection.php');
$query = "SELECT * FROM greenhouse";
$read = mysqli_query($conn, $query);
$jumlahData = mysqli_num_rows($read);
?>

<div class="container">

    <h1 class="text-center mb-3">Data Table</h1>

    <h2 class="text-center mt-4 mb-4"></h2>

    <p>Total Data: <strong>
        <?php echo $jumlahData ?>
    </strong></p>
    <div class="card border-0 shadow-sm p-3">
        <div class="card">

            <div class="card-header">
                <!-- <div class="row">
                    <div class="col col-md-6">Export HTML table data to excel using JavaScript</div>
                    <div class="col col-md-6 text-right">
                        <button onclick="ExportToExcel('xlsx')">Export table to excel</button>
                    </div>
                </div> -->
            </div>
        </div>

        <div class="card-body">
            <table id="example" class="display" style="width:100%">
                <!-- <table id="data_greenhouse" class="table table-striped"> -->
                <thead>
                    <tr>
                        <th scope="col">NO</th>
                        <th scope="col">Tanggal</th>
                        <th scope="col">Waktu</th>
                        <th scope="col">Kelembaban Udara (%)</th>
                        <th scope="col">Suhu Lingkungan (°C)</th>
                        <th scope="col">Kelembaban Tanah 1 (%)</th>
                        <th scope="col">Kelembaban Tanah 2 (%)</th>
                        <th scope="col">Kelembaban Tanah 3 (%)</th>
                        <th scope="col">Ketinggian Air (cm)</th>
                    </tr>
                </thead>
            </table>
        </div>
    </div>
</div>
```

```

        </tr>
    </thead>
    <tbody>
        <?php
            $query = "SELECT * FROM greenhouse ORDER BY id_data DESC";
            $read = mysqli_query($conn, $query);
            $no = 0;
            while ($row = mysqli_fetch_array($read)) {
                $no++;
                ?>
                <tr>
                    <th scope="row">
                        <?php echo $no; ?>
                    </th>
                    <td>
                        <?php echo $row['tanggal']; ?>
                    </td>
                    <td>
                        <?php echo $row['waktu']; ?>
                    </td>
                    <td>
                        <?php echo $row['humidity']; ?>
                    </td>
                    <td>
                        <?php echo $row['temperature']; ?>
                    </td>
                    <td>
                        <?php echo $row['soil1']; ?>
                    </td>
                    <td>
                        <?php echo $row['soil2']; ?>
                    </td>
                    <td>
                        <?php echo $row['soil3']; ?>
                    </td>
                    <td>
                        <?php echo $row['water']; ?>
                    </td>
                <?php } ?>
            </tbody>
        </table>
    </div>
</div>
</div>
</div>
<script>
    $(document).ready(function () {
        // Inisialisasi DataTable
        $('#example').DataTable({
            scrollX: true,

```

```
        dom: 'Bfrtip',
        buttons: [
            'csv', 'excel', 'pdf', 'print'
        ]
    });
</script>
<?php include('logout_modal.php') ?>
<?php include('layout/footer.php') ?>
```

6. ArduinoIDE

```
#define BLYNK_TEMPLATE_ID "TMPL6PDv30Ano"
#define BLYNK_TEMPLATE_NAME "Monitoring Suhu dan Kelembaban Tanah"
#define BLYNK_AUTH_TOKEN "jTTWb1pzPjPmcr18tZwLFyNn3SGz3Sh5"

#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include <DHT.h> //Library untuk DHT
#include <Adafruit MCP3008.h>
Adafruit_MCP3008 adc;
#include <ArduinoJson.h>
#include <ESP8266HTTPClient.h>
#include <BearSSLHelpers.h>
#include <BearSSLWiFiClient.h>
#define DHTPIN D3 //deklarasi pin D0 untuk output dari DHT22
#define DHTTYPE DHT22 //Tipe DHT22
#define selenoid D8
#define push D7
#define drain D6

DHT dht(DHTPIN, DHTTYPE);
BlynkTimer timer;
WidgetLED led1(V6);
WidgetLED led2(V7);

char auth[] = BLYNK_AUTH_TOKEN; //Auth Token
char ssid[] = "UNTIRTA"; //nama hotspot yang digunakan
char pass[] = "untirtajawara"; //password hotspot yang digunakan
String serverUrl = "https://amor.my.id/api/create.php";
const unsigned long jeda = 500;
unsigned long zero = 0;

float soil1 = 0;
float soil2 = 0;
float soil3 = 0;
const int triggerPin = D5;
const int echoPin = D4;
long duration = 0;
float water = 0;
float temperature = 0;
float humidity = 0;

void setup() {
  Serial.begin(9600);
  pinMode(triggerPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(selenoid, OUTPUT); //deklarasi relay sebagai output
  digitalWrite(selenoid, HIGH); //
  // pinMode(push, OUTPUT);
  // digitalWrite(push, HIGH);
  // pinMode(drain, OUTPUT); //deklarasi relay sebagai output
```

```

// digitalWrite(drain, HIGH);

Blynk.begin(auth, ssid, pass);

// Menghubungkan ke jaringan Wi-Fi
WiFi.begin(ssid, password);
while (WiFi.status() != WL_CONNECTED) {
  delay(1000);
  Serial.println("Connecting to WiFi...");
}
Serial.println("Connected to WiFi");
Serial.print("OK! IP=");
Serial.println(WiFi.localIP());

// Membuat objek WiFiClientSecure tanpa verifikasi sertifikat
BearSSL::WiFiClientSecure client;

// Mengatur objek client ke HTTPClient
HTTPClient http;
http.begin(client, serverUrl);

adc.begin();
dht.begin();
}

void loop() {
//-----SOIL MOISTURE-----
int Soil1 = adc.readADC(1);
int Soil2 = adc.readADC(3);
int Soil3 = adc.readADC(5);
soil1 = map(Soil1, 211, 1023, 100, 0); //ganti x dengan nilai saat sensor1 dicelupkan ke air
soil2 = map(Soil2, 142, 1023, 100, 0); //ganti x dengan nilai saat sensor2 dicelupkan ke air
soil3 = map(Soil3, 434, 1023, 100, 0); //ganti x dengan nilai saat sensor3 dicelupkan ke air

Serial.println("Kelembaban Tanah 1: " + String(soil1) + " %");
Serial.println("Kelembaban Tanah 2: " + String(soil2) + " %");
Serial.println("Kelembaban Tanah 3: " + String(soil3) + " %");

//-----HC-SR04-----
digitalWrite(triggerPin, LOW);
delayMicroseconds(2);
digitalWrite(triggerPin, HIGH);
delayMicroseconds(10);
digitalWrite(triggerPin, LOW);
duration = pulseIn(echoPin, HIGH);
water = duration * 0.0343 / 2; //Perhitungan untuk pembacaan water
Serial.print("water: ");
Serial.print(water);
Serial.println(" cm");

//-----DHT-22-----
float temperature = dht.readTemperature();

```

```

float humidity = dht.readHumidity();
Serial.print("% Temperature: ");
Serial.print(temperature);
Serial.println("C ");
Serial.print("% Kelembaban: ");
Serial.print(humidity);
Serial.println("%");
delay(500);

//-----Sending DATA-----
if (millis() - zero >= jeda) {
  HTTPClient http;

  Serial.println("Connecting to server...");
  if (http.begin(client, serverUrl)) {
    http.addHeader("Content-Type", "application/x-www-form-urlencoded");

    String httpRequestData = String() + "humidity=" + humidity + "&temperature=" + temperature + "&soil1=" + soil1 + "&soil2=" + soil2 + "&soil3=" + soil3 +
    "&water=" + water;

    int httpResponseCode = http.POST(httpRequestData);

    if (httpResponseCode > 0) {
      Serial.print("HTTP ");
      Serial.println(httpResponseCode);
      String payload = http.getString();
      Serial.println();
      Serial.println(payload);

      //----- ARDUINO JSON-----
      -----;
      StaticJsonDocument<128> doc;
      DeserializationError error = deserializeJson(doc, payload);
      if (error) {
        Serial.print(F("deserializeJson() failed: "));
        Serial.println(error.f_str());
        return;
      }
      String status = doc["status"]; // "OK"
      String relay_solenoid = doc["relay_solenoid"]; // "ON"
      String relay_drain = doc["relay_drain"]; // "ON"
      Serial.println("Status: " + status);
      Serial.println("Relay_solenoid: " + relay_solenoid);
      Serial.println("Relay_drain: " + relay_drain);

      // -----r--- end json-----
      -----

    } else {
      Serial.print("Error code: ");
      Serial.println(httpResponseCode);
      Serial.println(":-(");

```



```

    }

    http.end();
  } else {
    Serial.println("Unable to begin HTTP connection.");
  }

  zero = millis();
}

//-----RELAY-----
if (soil1 < 50 && soil2 < 50 && soil3 < 50 || relay_solenoid == "ON") {
  digitalWrite(solenoid, LOW);
  //    digitalWrite(push, LOW);
}
if (water <= 5 || relay_solenoid == "OFF") {
  digitalWrite(solenoid, HIGH);
  digitalWrite(push, HIGH);
}
if (soil1 > 70 && soil2 > 70 && soil3 > 70 || relay_drain == "ON") {
  digitalWrite(drain, LOW);
}
if (water >= 18 || relay_drain == "OFF") {
  //    digitalWrite(drain, HIGH);
}

Blynk.virtualWrite(V0, soil1);
Blynk.virtualWrite(V1, soil2);
Blynk.virtualWrite(V2, soil3);
Blynk.virtualWrite(V4, temperature);
Blynk.virtualWrite(V3, humidity);
Blynk.virtualWrite(V5, water);

Blynk.run();
timer.run();
}

```