

LISTING PROGRAM

-----**1on.py**-----

```
import RPi.GPIO as GPIO

import time

GPIO.setmode(GPIO.BCM)

GPIO.setwarnings(False)

GPIO.setup(14,GPIO.OUT)

GPIO.output(14,GPIO.HIGH)
```

-----**1off.py**-----

```
import RPi.GPIO as GPIO

import time

GPIO.setmode(GPIO.BCM)

GPIO.setwarnings(False)

GPIO.setup(14,GPIO.OUT)

GPIO.output(14,GPIO.LOW)
```

-----**lampuon.py**-----

```
import RPi.GPIO as GPIO

import time

GPIO.setmode(GPIO.BCM)

GPIO.setwarnings(False)

GPIO.setup(2,GPIO.OUT)

GPIO.output(2,GPIO.HIGH)
```

-----**lampuoff.py**-----

```
import RPi.GPIO as GPIO

import time

GPIO.setmode(GPIO.BCM)

GPIO.setwarnings(False)
```

```
GPIO.setup(2,GPIO.OUT)
GPIO.output(2,GPIO.LOW)
```

-----**pompaon.py**-----

```
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GPIO.setup(3,GPIO.OUT)
GPIO.output(3,GPIO.HIGH)
```

-----**pompaoff.py**-----

```
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GPIO.setup(3,GPIO.OUT)
GPIO.output(3,GPIO.LOW)
```

-----**2on.py**-----

```
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GPIO.setup(15,GPIO.OUT)
GPIO.output(15,GPIO.HIGH)
```

-----**2off.py**-----

```
import RPi.GPIO as GPIO
import time
GPIO.setmode(GPIO.BCM)
```

```
GPIO.setwarnings(False)
```

```
GPIO.setup(15,GPIO.OUT)
```

```
GPIO.output(15,GPIO.LOW)
```

```
-----crontab -e-----
```

```
# m h dom mon dow  command
```

```
* / 5 * * * * python /home/pi/DHT22-TemperatureLogger/DHT22logger.py
```

```
0 8 * * * python /home/pi/lampuon.py #lampu hidup jam 8 pagi
```

```
0 11 * * * python /home/pi/lampuoff.py #lampu mati jam 11 pagi
```

```
0 13 * * * python /home/pi/lampuon.py #lampu hidup jam 1 siang
```

```
0 15 * * * python /home/pi/lampuoff.py #lampu mati jam 3 sore
```

```
0 8 * * * python /home/pi/pompaon.py #pompa hidup jam 8 pagi
```

```
1 8 * * * python /home/pi/pompaoff.py #pompa mati jam 8 lewat 1 menit pagi
```

```
-----kipas.sh-----
```

```
#!/bin/bash
```

```
#import time
```

```
while :
```

```
do
```

```
now=$(date +"%T")
```

```
result=$(sudo /home/pi/Adafruit_Python_DHT/examples/AdafruitDHT.py 2302 4)
```

```
#ambil variabel dari sensor dht22 yang berada di pin 4
```

```
temp=$(echo $result | cut -c 6-7) #ambil hasil suhu
```

```
hum=$(echo $result | cut -c 21-22) #ambil hasil kelembapan
```

```
if [[ "$temp" >29 ]]; then #jika suhu di atas 29
```

```
sudo python /home/pi/1off.py #jalankan program 1on.py
```

```
else
```

```
sudo python /home/pi/1on.py #jika tidak jalanakan program 1off.py
```

```
fi
```

```

if [[ "$hum" <70 ]]; then    #Jika kelembapan di bawah 70
sudo python /home/pi/2off.py  #jalankan program 2on.py
else
sudo python /home/pi/2on.py  #jika tidak jalankan program 2off.py
fi

sleep 30 #jalankan setiap 30 detik

done

----- /etc/rc.local -----

# In order to enable or disable this script just change the execution
# bits.

#

# By default this script does nothing.

# init GPIO

sudo bash /etc/init.d/init_gpio.sh #inisialisasi gpio yang dipakai untuk relay
sudo bash /pi/home/kipas.sh #program otomatis untuk kipas

config.json
{
"mysql":[{
    "host":"localhost",
    "user":"logger",
    "password":"password",
    "database":"temperatures"
}],
"sensors":[{
    "sensor1":"DHT22",
    "sensor2":"Inside"
}],

```

```
"triggerlimits":[{
    "sensor1lowlimit":"20",
    "sensor2lowlimit":"5",
    "sensor1highlimit":"30",
    "sensor2highlimit":"20"
}],
"humiditytriggers":[{
    "sensor1_humidity_low_limit":"70",
    "sensor1_humidity_high_limit":"90",
    "sensor2_humidity_low_limit":"40",
    "sensor2_humidity_high_limit":"60"
}],
"sensorgpios":[{
    "gpiosensor1":"4",
    "gpiosensor2":"23"
}],
"mailinfo":[{
    "senderaddress":"tablock112@gmail.com",
    "password":"suci amalia123",
    "subjectmessage":"Info from temperature logger",
    "subjectwarning":"Warning from temperature logger"
}],
"sqlBackupDump":[{
    "backupDumpEnabled":"y",
    "backupHour":"23"
}],
"connectionCheck":[{
```

```
"connectionCheckEnabled":"y",
"connectionCheckDay":"5",
"connectionCheckHour":"23"
}],
"sensortype":"22",
"sensoramount":"1",
"sqlbackuppath":"/home/pi/DHT22-TemperatureLogger/Backups/",
"adafruitpath":"/home/pi/Adafruit_Python_DHT/examples/AdafruitDHT.py"
}
```

-----Source code hal1.php-----

```
<?php
    session_start();

    if (!isset($_SESSION['username'])) {
        header("location:index.php");
    }

?>

<?php
sleep(3);

?>

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<meta name="description" content="">

<meta name="author" content="">
```

```
<title>Rumah Kaca Berbasis Raspberry Pi</title>

<link href="css/bootstrap.min.css" rel="stylesheet">

<link href="css/portfolio-item.css" rel="stylesheet">

<script src="https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"></script>

<script src="https://oss.maxcdn.com/libs/respond.js/1.4.2/respond.min.js"></script>

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

<script src="js/bootstrap.min.js"></script>

</head>

<body>

<nav class="navbar navbar-inverse navbar-fixed-top" role="navigation">

<div class="container">

<!-- Brand and toggle get grouped for better mobile display -->

<div class="navbar-header">

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#bs-example-navbar-collapse-1">

<span class="sr-only">Toggle navigation</span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

</button>

<a class="navbar-brand" href="#">Rumah Kaca</a>

</div>

<div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">

<ul class="nav navbar-nav">

<li><a href="hal1.php">Status</a></li>

<li><a href="hal2.php">Tampilan langsung</a></li>

<li><a href="hal3.php">Riwayat suhu</a></li>
```

Tentang saya

Logout

</div>

</div>

</nav>

<div class="container">

<div class="row"><div class="col-lg-12">

<h1 class="page-header">Rumah Kaca Berbasis Raspberry Pi</h1>

</div>

</div>

<div class="row">

<div class="col-md-8"></div>

<div class="col-md-4">

<h3>Status</h3>

<?php

\$state[0] = "sedang aktif";

\$state[1] = "sedang tidak aktif";

?>

<p>Kondisi lampu saat ini

<?php \$pinStatus =trim(shell_exec("gpio read 8"));

//returns 0 = low; 1 = high

echo \$state[\$pinStatus];?>

</p>

<p>

Kondisi pompa saat ini

<?php \$pinStatus =trim(shell_exec("gpio read 9"));


```
//returns 0 = low; 1 = high
```

```
echo $state[$pinStatus];?>
```

```
</p></li>
```

```
<p><li>
```

Suhu dan Temperature saat ini

```
<?php $result = shell_exec("sudo  
/home/pi/Adafruit_Python_DHT/examples/AdafruitDHT.py 22 4");
```

```
echo $result;?>
```

```
</p></li>
```

```
<p><li>
```

Kondisi kipas saat ini

```
<?php $pinStatus = trim(shell_exec("gpio read 15"));
```

```
//returns 0 = low; 1 = high
```

```
echo $state[$pinStatus];?>
```

```
</p></li>
```

```
<p><li>
```

Kondisi ultrasonik humiditifier saat ini

```
<?php $pinStatus = trim(shell_exec("gpio read 16"));
```

```
//returns 0 = low; 1 = high
```

```
echo $state[$pinStatus];?>
```

```
</p></li>
```

```
</ul>
```

<h3>Alat yang digunakan</h3>

```
<ul>
```

```
<li>Lampu Grow light</li>
```

```
<p>Lampu yang dapat digunakan sebagai pengganti cahaya matahari</p>
```

```
<li>Pompa air</li>
```

<p>Pompa air berguna sebagai penyiram tanaman, terkontrol maupun terjadwal</p>

Suhu dan Temperatur

<p>Suhu dan Temperatur di dalam rumah kaca yang dapat diketahui melalui sensor DHT22</p>

Kipas

<p>Kipas berguna sebagai penurun suhu di dalam rumah kaca, bisa secara manual maupun otomatis melalui script yang telah diatur sebelumnya (>30Celcius)</p>

Ultrasonik Humidifier

<p>Ultrasonik Humidifier akan menaikkan kelembapan, bisa diatur manual maupun otomatis (<70%)</p>

</div>

</div><hr>

<footer><div class="row"><div class="col-lg-12">

<p>Copyright ©Rumah Kaca Raspberry Pi</p>

</div>

</div>

</div>

</body>

</html>

-----Source code hal2.php-----

<?php

session_start();

if (!isset(\$_SESSION['username'])) {

header("location:index.php");

}

?>

<!DOCTYPE html>

```
<html lang="en">

<head>

<meta charset="utf-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<meta name="description" content="">

<meta name="author" content="">


<title>Rumah kaca berbasis Raspberry Pi</title>

<link href="css/bootstrap.min.css" rel="stylesheet">

<link href="css/portfolio-item.css" rel="stylesheet">

<script src="https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"></script>

<script src="https://oss.maxcdn.com/libs/respond.js/1.4.2/respond.min.js"></script>

</head>

<?php

    if(isset($_POST['button_on_white']))

    {

        system("gpio write 8 1");

    }

    else if(isset($_POST['button_off_white']))

    {

        system("gpio write 8 0");

    }

    else if(isset($_POST['button_on_ir']))

    {

        system("gpio write 9 1");

    }
```

```

else if(isset($_POST['button_off_ir']))
{
    system("gpio write 9 0");
}

else if(isset($_POST['button_on_ki']))
{
    system("gpio write 15 1");
}

else if(isset($_POST['button_off_ki']))
{
    system("gpio write 15 0");
}

else if(isset($_POST['button_on_uh']))
{
    system("gpio write 16 1");
}

else if(isset($_POST['button_off_uh']))
{
    system("gpio write 16 0");
}
?>

<body>

<nav class="navbar navbar-inverse navbar-fixed-top" role="navigation">

<div class="container">

<div class="navbar-header">

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#bs-
example-navbar-collapse-1">

```

```

<span class="sr-only">Toggle navigation</span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

</button>

<a class="navbar-brand" href="#">Tampilan langsung</a>

<div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">

<ul class="nav navbar-nav">

<ul class="nav navbar-nav">

<li><a href="hal1.php">Status</a></li>

<li><a href="hal2.php">Tampilan langsung</a></li>

<li><a href="hal3.php">Riwayat suhu</a></li>

    <li><a href="hal4.php">Tentang saya</a></li>

    <li><a href="logout.php">Logout</a></li>

</ul>

<div class="container">

<div class="row">

<div class="col-lg-12">

<h1 class="page-header">Rumah Kaca Berbasis Raspberry Pi

</h1>

</div>

</div>

<body onload="setTimeout('init();', 100);" style="background:#FFFFFF">

<center>

<b><font face="Arial" color="#000000">Tampilan dalam rumah kaca melalui kamera</b>

<br><br>

<div><img id="mjpeg_dest" /></div>

```


Di bawah ini merupakan tombol untuk mengatur alat langsung secara manual

<?php

\$state[0] = "Hidup";

\$state[1] = "Mati";

?>

<form method="post">

<table border='1' align='center' bgcolor='#848484' bordercolor='#00000' c\$ tr>

<td> Daftar alat</td>

<td> Daftar perintah</td>

<td> Kondisi alat</td></tr>

<tr>

<td>Lampu </td>

<td><button name="button_on_white">Mati</button>

<button name="button_off_white">Hidup</button></td>

<td>

<?php \$pinStatus =trim(shell_exec("gpio read 8"));

//returns 0 = low; 1 = high

echo \$state[\$pinStatus];?></td></tr>

<tr>

<td>Pompa </td>

<td><button name="button_on_ir">Mati</button>

<button name="button_off_ir">Hidup</button></td>

<td>

<?php \$pinStatus =trim(shell_exec("gpio read 9"));

//returns 0 = low; 1 = high

echo \$state[\$pinStatus];?></td></tr>

```

<br><tr>

<td>Kipas </td>

<td><button name="button_on_ki">Mati</button>

<button name="button_off_ki">Hidup</button></td>

<td>

<?php $pinStatus =trim(shell_exec("gpio read 15"));

//returns 0 = low; 1 = high

echo $state[$pinStatus];?></td></tr>

<br><tr>

<td>Humiditifier </td>

<td><button name="button_on_uh">Mati</button>

<button name="button_off_uh">Hidup</button></td>

<td>

<?php $pinStatus =trim(shell_exec("gpio read 16"));

//returns 0 = low; 1 = high

echo $state[$pinStatus];?></td></tr>

</table>

</form>

</div>

</div>

<hr>

<footer>

<div class="row">

<div class="col-lg-12">

<p>Copyright &copy; Raspberry Pi Green house</p>

</div>

</div></footer>

```

```
</div>
```

```
</body>
```

```
</html>
```

Source code hal3.php

```
<?php
```

```
    session_start();
```

```
    if (!isset($_SESSION['username'])) {
```

```
        header("location:index.php");
```

```
    }
```

```
?>
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
<meta charset="utf-8">
```

```
<meta http-equiv="X-UA-Compatible" content="IE=edge">
```

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

```
<meta name="description" content="">
```

```
<meta name="author" content="">
```

```
<title>Rumah Kaca Berbasis Raspberry Pi</title>
```

```
<link href="css/bootstrap.min.css" rel="stylesheet">
```

```
<link href="css/portfolio-item.css" rel="stylesheet">
```

```
</head>
```

```
<body>
```

```
<nav class="navbar navbar-inverse navbar-fixed-top" role="navigation">
```

```
<div class="container">
```

```
<div class="navbar-header">
```



```
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#bs-example-navbar-collapse-1">
```

```
<span class="sr-only">Toggle navigation</span>
```

```
<span class="icon-bar"></span>
```

```
<span class="icon-bar"></span>
```

```
<span class="icon-bar"></span>
```

```
</button>
```

```
<a class="navbar-brand" href="#">Riwayat suhu</a>
```

```
</div>
```

```
<div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">
```

```
<ul class="nav navbar-nav">
```

```
<li><a href="hal1.php">Status</a></li>
```

```
<li><a href="hal2.php">Tampilan langsung</a></li>
```

```
<li><a href="hal3.php">Riwayat suhu</a></li>
```

```
    <li><a href="hal4.php">Tentang saya</a></li>
```

```
    <li><a href="logout.php">Logout</a></li>
```

```
</ul>
```

```
</div>
```

```
</div>
```

```
</nav>
```

```
<div class="container">
```

```
<div class="row">
```

```
<div class="col-lg-12">
```

```
<h1 class="page-header">Rumah Kaca Berbasis Raspberry Pi
```

```
<small></small>
```

```
</h1>
```

```
</div>
```

</div>

<div class="col-md-4">

<h3>Riwayat suhu dan kelembapan</h3>

<?php

\$host = "localhost";

\$user = "logger";

\$password = "password";

\$database = "temperatures";

\$hours = 12;

\$con = mysql_connect(\$host,\$user,\$password);

mysql_select_db(\$database,\$con);

\$sql="SELECT * FROM temperaturedata WHERE dateandtime >= (NOW() - INTERVAL \$hours HOUR)";

\$temperatures = mysql_query(\$sql);

?>

<table width="600" border="1" cellpadding="1" cellspacing="1" align="center">

<tr>

<th>Tanggal</th>

<th>Sensor</th>

<th>Suhu</th>

<th>Kelembapan</th>

<tr>

<?php

while(\$temperature=mysql_fetch_assoc(\$temperatures)){

echo "<tr>";

echo "<td>".\$temperature['dateandtime']. "</td>";

```

        echo "<td>".$temperature['sensor']."</td>";

        echo "<td>".$temperature['temperature']."</td>";

        echo "<td>".$temperature['humidity']."</td>";

        echo "<tr>";

    }

    ?>

</table>

</div>

</div>

<hr>

<footer>

<div class="row">

<div class="col-lg-12">

<p>Copyright &copy; Raspberry Pi Green house</p>

</div>

</div>

</footer>

</div>

</body>

</html>

```

-----Source code hal4.php-----

```

<?php

    session_start();

    if (!isset($_SESSION['username'])) {

        header("location:login.php");

    }

    ?>

```

```
<!DOCTYPE html>

<html lang="en">

<head>

<title>Rumah Kaca Berbasis Raspberry Pi</title>

</head>

<body>

<nav class="navbar navbar-inverse navbar-fixed-top" role="navigation">

<div class="container">

<div class="navbar-header">

<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#bs-
example-navbar-collapse-1">

<span class="sr-only">Toggle navigation</span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

<span class="icon-bar"></span>

</button>

<a class="navbar-brand" href="#">Tentang saya</a>

</div>

<div class="collapse navbar-collapse" id="bs-example-navbar-collapse-1">

<ul class="nav navbar-nav">

<li><a href="hal1.php">Status</a></li>

<li><a href="hal2.php">Tampilan langsung</a></li>

<li><a href="hal3.php">Riwayat suhu</a></li>

<li><a href="hal4.php">Tentang saya</a></li>

<li><a href="logout.php">Logout</a></li>

</ul>

</div>
```

</div>

</nav>

<div class="container">

<div class="row">

<div class="col-lg-12">

<h1 class="page-header">Rumah Kaca Berbasis Raspberry Pi

<small></small>

</h1>

</div>

</div>

<div class="row">

<div class="col-md-4">

<h3>Tentang Saya</h3>

<p>Nama saya Muhammad Luthfi, salah satu mahasiswa politeknik negeri sriwijaya. Proyek rumah kaca berbasis raspberry pi ini saya buat secara independen dalam rangka tugas akhir di jurusan teknik komputer.</p>

<h3>Terima kasih kepada :</h3>

Tuhan yang Maha Esa

Orang tua saya yang mendukung saya dalam pembuatan proyek ini

Dosen pembimbing saya, Pak Herlambang Saputra dan Ibu Isnainy Azro yang membantu saya dalam menyempurnakan alat dan laporan saya

Semua dosen jurusan teknik komputer, karena berkat ilmu dari mereka semua sehingga saya mampu merealisasikan proyek ini

Teman-teman saya, yang selalu mendukung saya

</div>

</div>

```
</div>

<hr>

<footer>

<div class="row">

<div class="col-lg-12">

<p>Copyright &copy; Raspberry Pi Green house</p>

</div>

</div>

</footer>

</div>

<script src="js/jquery.js"></script>
```

-----Source code Index.php-----

```
<?php

    $err = isset($_GET['error']) ? "salah username atau password" : null;

?>

<!DOCTYPE html>

<html>

<head>

    <title>Login</title>

    <style>

        #login {

            text-align: center;

            padding: 10px;

            border:1px solid black;

            width: 350px;

            margin: 20px auto;

        }
```

```
#login input[type='text'] {  
    margin: 10px;  
}  
  
#login input[type='submit'] {  
    margin-top: 10px;  
    margin-bottom: 10px;  
    border-collapse: collapse;  
    border: 0;  
    width: 70px;  
    color: #fff;  
    border-radius: 3px;  
    height: 30px;  
    padding: 5px;  
    background: #00C2FD;  
    cursor: pointer;  
}  
  
.error {  
    color: red;  
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div id="login">
```

```
<h2>Silahkan Login</h2>
```

```
<form method="post" action="proses_login.php">
```

```
<label for="username">Username</label>
<input type="text" name="username" placeholder="username"
required><br>
<label for="password">Password</label>
<input type="password" name="password" placeholder="password"
required><br>
<input type="submit" name="login" value="Login">
<div class="error"><?php echo $err; ?></div>
</form>
</div>
</body>
</html>
```


