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Lampiran 1 Program pada ESP-32, ESP32-CAM, dan Website

1. Program ESP-32

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

const char* ssid = "ayeaye";
const char* password = "sagiri";

//Your Domain name with URL path or IP address with path
String serverName = "http://ssrc.web.id/api/motorstatus.php";

// the following variables are unsigned longs because the time,
measured in
unsigned long lastTime = 0;
// Timer set to 10 minutes (600000)
//unsigned long timerDelay = 600000;
// Set timer to 5 seconds (5000)
unsigned long timerDelay = 100;
int m1 = 33;
int m2 = 25;
int m3 = 26;
int m4 = 27;
int uvc = 32;

void setup() {
  Serial.begin(115200);

  pinMode(m1, OUTPUT);
  pinMode(m2, OUTPUT);
  pinMode(m3, OUTPUT);
  pinMode(m4, OUTPUT);
  pinMode(uvc, OUTPUT);

  WiFi.begin(ssid, password);
  Serial.println("Connecting");
  while(WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.print("Connected to WiFi network with IP Address: ");
  Serial.println(WiFi.localIP());

  Serial.println("Timer set to 5 seconds (timerDelay variable), it
will take 5 seconds before publishing the first reading.");
}

void loop() {

  //Send an HTTP POST request every 10 minutes
  if ((millis() - lastTime) > timerDelay) {
    //Check WiFi connection status
```

```

if(WiFi.status()== WL_CONNECTED){
  HTTPClient http;

  String serverPath = serverName ;

  // Your Domain name with URL path or IP address with path
  http.begin(serverPath.c_str());

  // Send HTTP GET request
  int httpResponseCode = http.GET();

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

    if (payload == "1") {
      maju();
    }else if (payload == "2") {
      mundur();
    }
    else if (payload == "3") {
      kiri();
    }
    else if (payload == "4") {
      kanan();
    }
    else if (payload == "5") {
      uvcon();
    }
    else if (payload == "6") {
      uvcoff();
    }
    else if (payload == "0") {
      berhenti();
    }
  }
  else {
    Serial.print("Error code: ");
    Serial.println(httpResponseCode);
    offstopmr();
  }
  // Free resources
  http.end();
}
else {
  Serial.println("WiFi Disconnected");
}
lastTime = millis();
}
}

void maju()
{

```

```

    digitalWrite(m1, HIGH);
    digitalWrite(m2, LOW);
    digitalWrite(m3, HIGH);
    digitalWrite(m4, LOW);
}

void mundur()
{
    digitalWrite(m1, LOW);
    digitalWrite(m2, HIGH);
    digitalWrite(m3, LOW);
    digitalWrite(m4, HIGH);
}

void kiri()
{
    digitalWrite(m1, LOW);
    digitalWrite(m2, HIGH);
    digitalWrite(m3, HIGH);
    digitalWrite(m4, LOW);
}

void kanan()
{
    digitalWrite(m1, HIGH);
    digitalWrite(m2, LOW);
    digitalWrite(m3, LOW);
    digitalWrite(m4, HIGH);
}

void berhenti()
{
    digitalWrite(m1, LOW);
    digitalWrite(m2, LOW);
    digitalWrite(m3, LOW);
    digitalWrite(m4, LOW);
}

void uvcon()
{
    digitalWrite(uvc, HIGH);
}

void uvcoff()
{
    digitalWrite(uvc, LOW);
}

void offstopmr()
{
    digitalWrite(m1, LOW);
    digitalWrite(m2, LOW);
    digitalWrite(m3, LOW);
    digitalWrite(m4, LOW);
    digitalWrite(uvc, LOW);
}

```

2. Program ESP-32 CAM

```
#include "esp_camera.h"
#include <WiFi.h>

//
// WARNING!!! Make sure that you have either selected ESP32 Wrover
Module,
//           or another board which has PSRAM enabled
//

// Select camera model
// #define CAMERA_MODEL_WROVER_KIT
// #define CAMERA_MODEL_ESP_EYE
// #define CAMERA_MODEL_M5STACK_PSRAM
// #define CAMERA_MODEL_M5STACK_WIDE
#define CAMERA_MODEL_AI_THINKER

#include "camera_pins.h"

const char* ssid = "ayeaye";
const char* password = "pahasagiri";

void startCameraServer();

void setup() {
  Serial.begin(115200);
  Serial.setDebugOutput(true);
  Serial.println();

  camera_config_t config;
  config.ledc_channel = LEDC_CHANNEL_0;
  config.ledc_timer = LEDC_TIMER_0;
  config.pin_d0 = Y2_GPIO_NUM;
  config.pin_d1 = Y3_GPIO_NUM;
  config.pin_d2 = Y4_GPIO_NUM;
  config.pin_d3 = Y5_GPIO_NUM;
  config.pin_d4 = Y6_GPIO_NUM;
  config.pin_d5 = Y7_GPIO_NUM;
  config.pin_d6 = Y8_GPIO_NUM;
  config.pin_d7 = Y9_GPIO_NUM;
  config.pin_xclk = XCLK_GPIO_NUM;
  config.pin_pclk = PCLK_GPIO_NUM;
  config.pin_vsync = VSYNC_GPIO_NUM;
  config.pin_href = HREF_GPIO_NUM;
  config.pin_sscb_sda = SIOD_GPIO_NUM;
  config.pin_sscb_scl = SIOC_GPIO_NUM;
  config.pin_pwdn = PWDN_GPIO_NUM;
  config.pin_reset = RESET_GPIO_NUM;
  config.xclk_freq_hz = 2000000;
  config.pixel_format = PIXFORMAT_JPEG;
  //init with high specs to pre-allocate larger buffers
  if(psramFound()){
    config.frame_size = FRAMESIZE_UXGA;
    config.jpeg_quality = 10;
    config.fb_count = 2;
  }
}
```

```

} else {
    config.frame_size = FRAMESIZE_SVGA;
    config.jpeg_quality = 12;
    config.fb_count = 1;
}

#if defined(CAMERA_MODEL_ESP_EYE)
    pinMode(13, INPUT_PULLUP);
    pinMode(14, INPUT_PULLUP);
#endif

// camera init
esp_err_t err = esp_camera_init(&config);
if (err != ESP_OK) {
    Serial.printf("Camera init failed with error 0x%x", err);
    return;
}

sensor_t * s = esp_camera_sensor_get();
//initial sensors are flipped vertically and colors are a bit
saturated
if (s->id.PID == OV3660_PID) {
    s->set_vflip(s, 1); //flip it back
    s->set_brightness(s, 1); //up the blightness just a bit
    s->set_saturation(s, -2); //lower the saturation
}
//drop down frame size for higher initial frame rate
s->set_framesize(s, FRAMESIZE_QVGA);

#if defined(CAMERA_MODEL_M5STACK_WIDE)
    s->set_vflip(s, 1);
    s->set_hmirror(s, 1);
#endif

WiFi.begin(ssid, password);

while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
}
Serial.println("");
Serial.println("WiFi connected");

startCameraServer();

Serial.print("Camera Ready! Use 'http://");
Serial.print(WiFi.localIP());
Serial.println("' to connect");
}

void loop() {
    // put your main code here, to run repeatedly:
    delay(10000);
}

```

3. Program Website

a. Index.php

```
<?php
define("BASEPATH", dirname(__FILE__));
include_once('header.php');
include_once('link.php');
include_once('footer.php');

if(isset($_GET['pesan'])){
    if($_GET['pesan']=="belumlogin"){
        echo '<script>alert("silahkan login")</script>';
    }
}
?>

```

b. Welcome.php

```
<!--
Into this file, we create a layout for welcome page.
-->

<?php
define("BASEPATH", dirname(__FILE__));
include_once('link.php');
include_once('header1.php');
require_once('datauser.php');
require_once('api/caminfo.php');

?>
<div class="jumbotron">
    <center>
        <h1>Sistem pengendalian Mobile Robot Disinfektan UVC</h1>
    </center>

    <center>
<div class="row">

    <div class="column" style="background-color:#fff; width: 31.5%;
height: 400px; ">
    <br>
    <br>

        <center><h2>Control</h2> </center>
    <center>

        <form action="" method="get">
            <button type="button" id="M1-on" class="button
button1" >Maju</button>
```



```

        <button type="button" id="M2-on" class="button
button3" >Mundur</button>
        <button type="button" id="M3-on" class="button
button1" >Kiri</button>
        <button type="button" id="M4-on" class="button
button3" >Kanan</button>
        <br>
        <br>
        <button type="button" id="off" class="button
button3" >Stop</button>
        <br>
        <br>
        <button type="button" id="uvcon" class="button
button3" >UVC On</button>
        <button type="button" id="uvcoff" class="button
button3" >UVC Off</button>
    </form>
</center>

</div>

<div class="column" style="background-color:#fff; width: 55%;
height: 400px;">
    <center>
        <iframe width=400px height=300px src="<?php echo $urlcam;?" >
    </center>

</div>

</div>

</div>

</div>

</center>

<script>
    document.getElementById('M1-
on').addEventListener('mouseup', function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=1";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });

    document.getElementById('M1-
on').addEventListener('mousedown', function() {

```

```

        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=0";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });

    document.getElementById('M2-on').addEventListener('click',
function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=2";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });

    document.getElementById('M3-on').addEventListener('click',
function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=3";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });

    document.getElementById('M4-on').addEventListener('click',
function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=4";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });
    document.getElementById('off').addEventListener('click',
function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=0";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });
    document.getElementById('uvcon').addEventListener('click',
function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=5";
        $.getJSON(url, function(data) {
            console.log(data);
        });
    });

document.getElementById('uvcoff').addEventListener('click',
function() {
        var url =
"http://127.0.0.1/api/updatemotor.php?id=1&status=6";
        $.getJSON(url, function(data) {

```

```

        console.log(data);
    });
});
</script>
</div>

```

c. Header1.php

```

<!--
this is second header file which is visible after login.
-->

<?php
include_once('link.php');
session_start();
$email = $_SESSION['email'];
if($_SESSION['email']==""){
    header("location:index.php?pesan=belumlogin");
}
?>

<nav class="navbar navbar-default">
    <div class="container-fluid">
        <div class="navbar-header" style="height:80px; margin-
top:10px; " >
            <img src = '/img/unhas.png' height="60px" width="60px"
/> <img src = '/img/5g.png' height="60px" width="90px" />
        </div>
        <div class="dropdown navbar-right" id="right">
            <button class="btn btn-primary dropdown-toggle" type="button"
data-toggle="dropdown"><?php echo $email;?>
            <span class="caret"></span></button>
            <ul class="dropdown-menu">
                <li><a href="logout.php">Logout</a></li>
                <li><a href="sensor.php">Sensor UV</a></li>
                <li><a href="welcome.php">Home</a></li>
            </ul>
        </div>
    </div>
</nav>

```

d. Link.php

```

<!--
Here i put all the link like a css, js for project.
-->

<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstra
p.min.css">
<link rel="stylesheet" type="text/css" href="css/style.css">
<link rel="stylesheet" type="text/css" href="css/account.css">
<script type="text/javascript" src="js/jquery-3.3.1.js"></script>

```

```
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.
min.js"></script>
```

e. Datauser.php

```
<?php
require_once('connection.php');

$id = $_SESSION['id'];
$username = $email = '';
$sql = "SELECT * FROM user WHERE id='$id'";
$result = mysqli_query($conn, $sql);
if(mysqli_num_rows($result) > 0)
{
    while($row = mysqli_fetch_assoc($result))
    {
        $username = $row["username"];
        $email = $row["email"];
    }
}

?>
```

f. Footer.php

```
<?php
defined("BASEPATH") or exit("No direct access allowed");
include_once('link.php');

?>

<div class="footer">
    <p>Teknik Mesin | Universitas Hasanuddin 2021</p>
</div>
```

g. Connection.php

```
<?php
defined("BASEPATH") or exit("No direct access allowed");

$conn = mysqli_connect("localhost","root","","mrduvc");

if(!$conn)
{
    echo "Database connection failed...";
}

?>
```

h. Header.php

```
<!--
```

this is header file which is visible in registration and login page.

```
-->
<?php
defined("BASEPATH") or exit("No direct access allowed");
include_once('link.php');

?>

<nav class="navbar navbar-default">
  <div class="container-fluid">
    <div class="navbar-header">
      <a href="index.php" class="navbar-brand">Sistem
Kontrol Mobile Robot Disinfektan UVC</a>
    </div>
    <ul class="nav navbar-nav navbar-right">
      <li><a href="login.php">Login</a></li>
      <li><a href="registration.php">Registration</a></li>
    </ul>
  </div>
</nav>
```

i. Login_code.php

```
<!--
Here, we write code for login.
-->
<?php
define("BASEPATH", dirname(__FILE__));
require_once('connection.php');
$email = $password = $pwd = '';

$email = $_POST['email'];
$pwd = $_POST['password'];
$password = MD5($pwd);
$sql = "SELECT * FROM user WHERE email='$email' AND
password='$password'";
$result = mysqli_query($conn, $sql);
if(mysqli_num_rows($result) > 0)
{
  while($row = mysqli_fetch_assoc($result))
  {
    $id = $row["id"];
    $email = $row["email"];
    session_start();
    $_SESSION['id'] = $id;
    $_SESSION['email'] = $email;
  }
  header("Location: welcome.php");
}
else
{
  header("location:login.php?pesan=gagal");
}
```

```
}  
?>
```

j. Login.php

```
<!--  
Into this file, we create a layout for login page.  
-->
```

```
<?php  
define("BASEPATH", dirname(__FILE__));  
include_once('header.php');  
include_once('link.php');  
if(isset($_GET['pesan'])){  
    if($_GET['pesan']=="gagal"){  
        echo '<script>alert("username atau password  
salah")</script>';  
    }  
}  
?>  
  
<div id="frmRegistration">  
<form class="form-horizontal" method="POST"  
action="login_code.php">  
    <h1>User Login</h1>  
  
    <div class="form-group">  
        <label class="control-label col-sm-2"  
for="email">Email:</label>  
        <div class="col-sm-4">  
            <input type="email" class="form-control" name="email"  
id="email" placeholder="Enter email">  
        </div>  
    </div>  
    <div class="form-group">  
        <label class="control-label col-sm-2"  
for="pwd">Password:</label>  
        <div class="col-sm-4">  
            <input type="password" class="form-control" name="password"  
id="pwd" placeholder="Enter password">  
        </div>  
    </div>  
    <div class="form-group">  
        <div class="col-sm-offset-2 col-sm-10">  
            <button type="submit" name="login" class="btn btn-  
primary">Login</button>  
        </div>  
    </div>  
</form>  
</div>
```

k. api/caminfo.php

```
<?php  
require_once('connection.php');
```

```

$query = "SELECT * from cam"; // Select all data
in table "status"
$result = $conn->query($query);

$row = mysqli_fetch_assoc($result);
{
    $idcam = $row["id"];
    $urlcam = $row["url"];
}
?>

```

l. api/connection.php

```

<?php
defined("BASEPATH") or exit("No direct access allowed");

$conn = mysqli_connect("localhost","root","","mrduvc");

if(!$conn)
{
    echo "Database connection failed...";
}
?>

```

m. api/motorstatus.php

```

<?php
define("BASEPATH", dirname(__FILE__));
require_once('connection.php');

$query = "SELECT * from motor"; // Select all data
in table "status"
$result = $conn->query($query);

$row = mysqli_fetch_assoc($result);
{
    $id1 = $row["id"];
    $status1 = $row["status"];
}
mysqli_query($conn, "INSERT INTO datadelay (ok) VALUES ('1')");

echo $status1 ;

?>

```

n. api/offmotor.php

```

<?php

```

```

define("BASEPATH", dirname(__FILE__));
require_once('connection.php');

$response = array();

// Check if we got the field from the user
if ( isset($_GET['status'])) {

    $status= $_GET['status'];

    // Fire SQL query to update LED status data by id
    $result = mysqli_query($conn,"UPDATE motor SET status=
'$status' ");

    // Check for succesfull execution of query and no results
found
    if ($result) {
        // successfully updation of LED status (status)
        $response["success"] = 1;
        $response["message"] = "Motor Status successfully
updated.";

        // Show JSON response
        echo json_encode($response);
    } else {

    }
} else {
    // If required parameter is missing
    $response["success"] = 0;
    $response["message"] = "Parameter(s) are missing. Please check
the request";

    // Show JSON response
    echo json_encode($response);
}
?>

```

o. api/updatecam.php

```

<?php
define("BASEPATH", dirname(__FILE__));
require_once('connection.php');

header("Access-Control-Allow-Origin: *");
header("Content-Type: application/json; charset=UTF-8");
//Creating Array for JSON response
$response = array();

// Check if we got the field from the user
if (isset($_GET['id']) && isset($_GET['url'])) {

```



```

$id = $_GET['id'];
$url= $_GET['url'];

// Fire SQL query to update cam data by id
$result = mysqli_query($conn,"UPDATE cam SET url= '$url' WHERE
id = '$id'");

// Check for succesfull execution of query and no results
found
if ($result) {
    // successfully upadation of url (url)
    $response["success"] = 1;
    $response["message"] = "cam Data successfully updated.";

    // Show JSON response
    echo json_encode($response);
} else {

}
} else {
    // If required parameter is missing
    $response["success"] = 0;
    $response["message"] = "Parameter(s) are missing. Please check
the request";

    // Show JSON response
    echo json_encode($response);
}
?>

```

p. api/updatemotor.php

```

<?php

define("BASEPATH", dirname(__FILE__));
require_once('connection.php');

$response = array();

// Check if we got the field from the user
if (isset($_GET['id']) && isset($_GET['status'])) {

    $id = $_GET['id'];
    $status= $_GET['status'];

    // Fire SQL query to update LED status data by id
    $result = mysqli_query($conn,"UPDATE motor SET status=
'$status' WHERE id = '$id'");

```

```
// Check for succesfull execution of query and no results
found
  if ($result) {
    // successfully updation of LED status (status)
    $response["success"] = 1;
    $response["message"] = "Motor Status successfully
updated.";

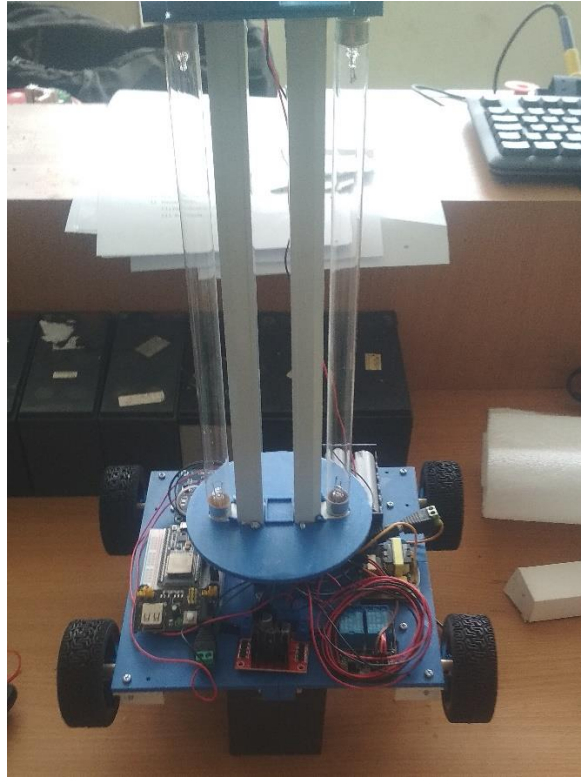
    // Show JSON response
    echo json_encode($response);
  } else {

}
} else {
  // If required parameter is missing
  $response["success"] = 0;
  $response["message"] = "Parameter(s) are missing. Please check
the request";

  // Show JSON response
  echo json_encode($response);
}
?>
```

Lampiran 2 Foto Kegiatan

1. Proses Perakitan dan pengujian Mobile Robot

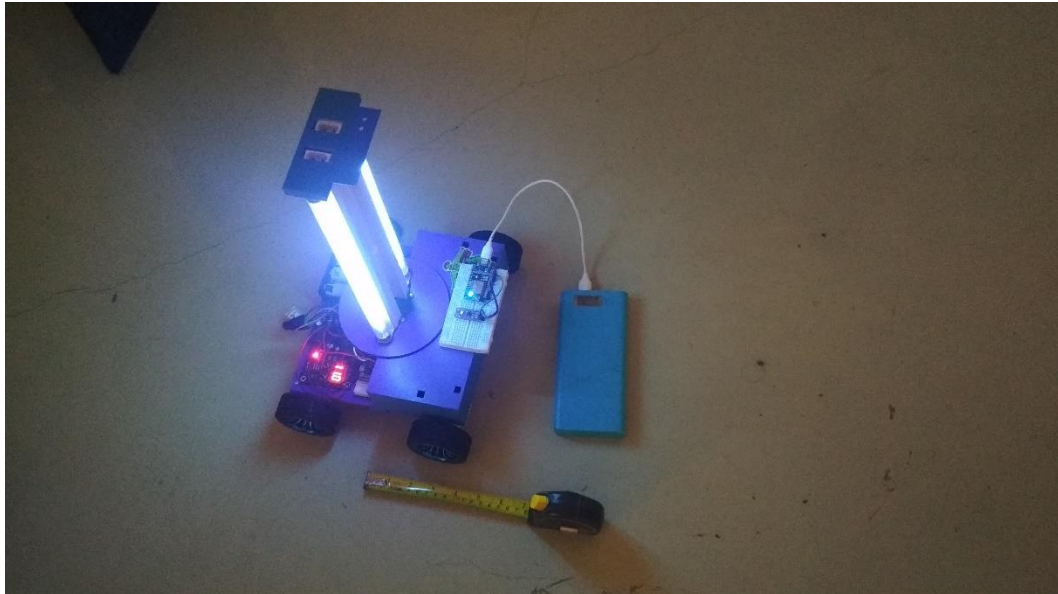


a.1. Perakitan Mobile Robot



b.1. Pengujian Mobile robot

2. Proses Pengambilan data



a.2 Pengambilan data Intensitas UVC

	id	time	ok
<input type="checkbox"/>	1862	2021-12-03 08:13:56.003	3
<input type="checkbox"/>	1863	2021-12-03 08:13:56.623	3
<input type="checkbox"/>	1864	2021-12-03 08:13:57.239	3
<input type="checkbox"/>	1865	2021-12-03 08:13:57.839	3
<input type="checkbox"/>	1866	2021-12-03 08:13:58.439	3
<input type="checkbox"/>	1867	2021-12-03 08:13:59.064	3
<input type="checkbox"/>	1868	2021-12-03 08:13:59.679	3
<input type="checkbox"/>	1869	2021-12-03 08:14:00.281	3
<input type="checkbox"/>	1870	2021-12-03 08:14:00.912	3
<input type="checkbox"/>	1871	2021-12-03 08:14:01.537	3
<input type="checkbox"/>	1872	2021-12-03 08:14:02.136	3
<input type="checkbox"/>	1873	2021-12-03 08:14:02.760	3
<input type="checkbox"/>	1874	2021-12-03 08:14:03.351	3
<input type="checkbox"/>	1875	2021-12-03 08:14:03.999	3

b.2. Pengambilan data delay tiap provider melalui datalogger MySQL