Certification Page

This page must be the first page of your uploaded document.

Your assignment will <u>not be graded</u> without this page (completed with your full name in the area provided) as the first page of your uploaded document.

l, Ulvi Bajarani ,	certify that the work I am uploading represents efforts of my team
member and mine per the followin	g task-contribution table, and is not copied from anyone else or any
other resource (such as Internet).	

	Tasks on the schedule for this quiz are 10, 11. You may break these tasks further down into subtasks as needed.	Percent contributed	Percent contributed	Total percent
#	Subtask Description	Ulvi Bajarani	Gwendolyn	
			Poulos	
10.1	Design Login for Website	50%	50%	100%
10.2	Design Webpage	50%	50%	100%
11.1	Interface RPi with DB	50%	50%	100%
11.2	Interface App with DB	50%	50%	100%
11.3	Interface Website with DB	50%	50%	100%

The upgraded code of sync_rpi_data.php

```
<?php
require_once __DIR__ . '/../../required/db_connect.php';
$input = file_get_contents("php://input");
egree = 0;
$out_json = array();
$out_json['success'] = 1; //assume success
SW1 status = 0;
SW2 status = 0;
LED1_status = 0;
LED2 status = 0;
if ($input)
  $json = json_decode($input, true); //check if it json input
  if (json_last_error() == JSON_ERROR_NONE)
    if (isset($json["username"]) && isset($json["password"]) && isset($json["SW1"]) &&
isset($json["SW2"]) && isset($json["LED1"]) && isset($json["LED2"]))
       $in_username = $json["username"];
       $in password = $ison["password"]; //if the expected fields are not null, get them
       \sin_SW1 = \sin["SW1"];
                     \sin SW2 = \frac{1}{S} \sin["SW2"];
       $in_LED1 = $json["LED1"];
       $in_LED2 = $json["LED2"];
       if ($stmt = $mysqli->prepare("SELECT password FROM Users WHERE pname = ? LIMIT
1"))
         $stmt->bind param('s', $in username);
         $stmt->execute();
         $stmt->store_result(); //store_result to get num_rows etc.
         $stmt->bind_result($db_password); //get the hashed password
         $stmt->fetch():
         if (\text{stmt->num\_rows} == 1)
         { //if user exists, verify the password
            if (password_verify($in_password, $db_password))
            {
                                           $stmt->close();
              if ($stmt = $mysqli->prepare("UPDATE SensorsAndActuators SET DeviceStatus=?
WHERE DevID = 'SW1'"))
              { //update SW1
                $stmt->bind_param('i', $in_SW1);
                $stmt->execute();
              else
                error = 1:
```

```
$stmt->close();
             if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'SW1'")))
             { //read SW1
                $stmt->execute();
                $stmt->bind_result($SW1_status);
                $stmt->fetch();
             else
                ext{Serror} = 2;
             $stmt->close();
             if ($stmt = $mysqli->prepare("UPDATE SensorsAndActuators SET DeviceStatus=?
WHERE DevID = 'SW2'"))
             { //update SW1
                $stmt->bind_param('i', $in_SW2);
                $stmt->execute();
             }
             else
                error = 1;
             $stmt->close();
             if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'SW2'")))
             { //read SW1
                $stmt->execute();
                $stmt->bind_result($SW2_status);
                $stmt->fetch();
             }
             else
                error = 2;
             $stmt->close();
             if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'LED1'")))
             { //read LED1
                $stmt->execute();
                $stmt->bind_result($LED1_status);
                $stmt->fetch();
             }
             else
                error = 3;
             $stmt->close();
```

```
if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'LED2'")))
              { //read LED1
                 $stmt->execute();
                 $stmt->bind_result($LED2_status);
                 $stmt->fetch();
              }
              else
                 $error = 3;
              $stmt->close();
            }
            else
            {
              ext{Serror} = 4;
            }
          }
         else
            error = 5;
       }
       else
         $error = 6;
       }
     }
     else
       egree 7;
     }
  }
  else
  {
    $error = 8;
  }
}
else
  egree 9;
}
if ($error)
  $out_json['success'] = 0; //flag failure
$out_json['SW1'] = $SW1_status;
$out_json['SW2'] = $SW2_status;
```

```
$out_json['LED1'] = $LED1_status;
$out_json['LED2'] = $LED2_status;
$out_json['error'] = $error; //provide error (if any) number for debugging
echo json_encode($out_json); //encode the data in json format
```

The upgraded code of sync_android_data.php

?>

```
<?php
require_once __DIR__ . '/../../required/db_connect.php';
$input = file get contents("php://input");
end{serror} = 0:
$out ison = array();
$out_json['success'] = 1; //assume success
SW1 status = 0:
SW2 status = 0;
LED1_status = 0;
LED2 status = 0;
if ($input)
{
  $json = json decode($input, true); //check if it json input
  if (json_last_error() == JSON_ERROR_NONE)
  {
    if (isset($json["username"]) && isset($json["password"]) && isset($json["SW1"]) &&
isset($json["LED1"]) && isset($json["SW2"]) && isset($json["LED2"]))
       $in username = $ison["username"];
       $in_password = $json["password"]; //if the expected fields are not null, get them
       \sin_SW1 = \sin["SW1"];
       \sin_SW2 = \sin["SW2"];
       \sin \text{LED1} = \text{sison}[\text{"LED1"}];
       \sin_LED2 = \sin["LED2"];
       if ($stmt = $mysqli->prepare("SELECT password FROM Users WHERE pname = ? LIMIT
1"))
         $stmt->bind_param('s', $in_username);
         $stmt->execute();
         $stmt->store result(); //store result to get num rows etc.
         $stmt->bind_result($db_password); //get the hashed password
         $stmt->fetch();
         if (\$stmt->num rows == 1)
         { //if user exists, verify the password
            if (password_verify($in_password, $db_password))
            {
              $stmt->close():
              if ($stmt = $mysqli->prepare("UPDATE SensorsAndActuators SET DeviceStatus=?
WHERE DevID = 'SW1'"))
              { //update SW1
```

```
$stmt->bind_param('i', $in_SW1);
                $stmt->execute();
              }
              else
                error = 1;
              $stmt->close();
              if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'SW1'")))
              { //read SW1
                $stmt->execute();
                $stmt->bind_result($SW1_status);
                $stmt->fetch();
              else
                ext{Serror} = 2;
              $stmt->close();
             if ($stmt = $mysqli->prepare("UPDATE SensorsAndActuators SET DeviceStatus=?
WHERE DevID = 'SW2'"))
              { //update SW1
                $stmt->bind_param('i', $in_SW2);
                $stmt->execute();
              }
              else
                error = 1;
              }
              $stmt->close();
              if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'SW2'")))
              { //read SW1
                $stmt->execute();
                $stmt->bind_result($SW2_status);
                $stmt->fetch();
              else
                ext{Serror} = 2;
              $stmt->close();
             if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'LED1'")))
              { //read LED1
                $stmt->execute();
                $stmt->bind_result($LED1_status);
                $stmt->fetch();
```

```
}
               else
                 $error = 3;
              $stmt->close();
              if (!$error && ($stmt = $mysqli->prepare("SELECT DeviceStatus FROM
SensorsAndActuators WHERE DevID = 'LED2'")))
              { //read LED1
                 $stmt->execute();
                 $stmt->bind_result($LED2_status);
                 $stmt->fetch();
               }
               else
                 $error = 3;
               $stmt->close();
            }
            else
            {
              $error = 4;
            }
         }
         else
            error = 5;
       }
       else
         ext{Serror} = 6;
       }
     }
    else
       egree 7;
  }
  else
     $error = 8;
  }
}
else
  $error = 9;
if ($error)
```

```
$out ison['success'] = 0; //flag failure
$out_json['SW1'] = $SW1_status;
$out_json['SW2'] = $SW1_status;
$out_json['LED1'] = $LED1_status;
$out ison['LED2'] = $LED1 status;
$out json['error'] = $error; //provide error (if any) number for debugging
echo json encode($out json); //encode the data in json format
?>
The upgraded code of p2 t8.py
#!/usr/bin/python
import requests #import JSONRequests library
import time #import time library for sleep function
import datetime #import datetime library for timestamp
import RPi.GPIO as GPIO #import GPIO library
GPIO.setmode(GPIO.BCM) #set the pins according to BCM scheme
GPIO.setup(4,GPIO.OUT) #configure BCM Pin #4 as OUTPUT
GPIO.setup(6,GPIO.OUT) #configure BCM Pin #6 as OUTPUT
GPIO.setup(17,GPIO.IN) #configure BCM Pin #17 as INPUT
GPIO.setup(22,GPIO.IN) #configure BCM Pin #17 as INPUT
i=0; n=3; delay=5 #limit number of tries to 5 (initially set it to 1 for debugging)
while i<n:
      LED1=GPIO.input(4) #read what BCM Pin #4 is set to (LED1)
      LED2=GPIO.input(6) #read what BCM Pin #6 is set to (LED2)
      SW1=GPIO.input(17) #read the status of BCM Pin #17 (SW1)
      SW2=GPIO.input(22) #read the status of BCM Pin #22 (SW2)
      data = {'username': 'Test', 'password': 'Tester3', 'SW1': SW1, 'SW2': SW2, 'LED1': LED1,
'LED2': LED2}
      res = requests.post("https://team2project3342.online/scripts/sync_rpi_data.php", json=data)
      #in case of errors (especially, syntax), you may want to print res.text and comment out the
statements below
      r = res.json()
      ts = datetime.datetime.now() #get the time stamp
      if r['success']==1:
             print "+++++Server request successful: "
             if LED1!=r['LED1']:
                    print "Changing LED status as requested by the server"
                    if r['LED1']==1:
                           GPIO.output(4,GPIO.HIGH)
                    else: GPIO.output(4,GPIO.LOW)
             if LED2!=r['LED2']:
                    print "Changing LED status as requested by the server"
                    if r['LED2']==1:
```

```
GPIO.output(6,GPIO.HIGH)
                     else: GPIO.output(6,GPIO.LOW)
              print "The status of LED1 is " + str(r['LED1'])
              print "The status of LED2 is " + str(r['LED2'])
              print "The status of SW1 is " + str(r['SW1'])
              print "The status of SW2 is " + str(r['SW2'])
       else:
              print ">>>> Server request failed - Error #" + str(r['error'])
       time.sleep(delay) #wait for delay seconds before sending another request
GPIO.cleanup()
The code of Projectv3.py, which is the android app on kivy.
import time
import kivy
from kivy.app import App
from kivy.uix.button import Button
from kivy.uix.boxlayout import BoxLayout
from kivy.uix.label import Label
from kivy.uix.switch import Switch
from kivy.clock import Clock
from functools import partial
import requests
class BoxLayoutApp(App):
  #def __init__(self, **kwargs):
    #super(BoxLayoutApp,self). init (**kwargs)
  def build(self):
    self.superBox = BoxLayout(orientation ='vertical')
    self.VB1 = BoxLayout(orientation ='vertical')
    self.lbl1 = Label(text="Monitoring System")
    self.VB1.add_widget(self.lbl1)
    localtime = time.asctime(time.localtime(time.time()))
    self.lbl2 = Label(text=localtime)
    self.VB1.add_widget(self.lbl2)
    self.HB1 = BoxLayout(orientation ='horizontal')
    self.lbl3 = Label(text="Status SW1:")
```

self.HB1.add_widget(self.lbl3)

self.sw1=Switch(active=False, disabled=True)

```
self.HB1.add_widget(self.sw1)
#self.sw1.bind(active=switch callback1)
self.HB2 = BoxLayout(orientation ='horizontal')
self.lbl4 = Label(text="Status SW2:")
self.HB2.add_widget(self.lbl4)
self.sw2=Switch(active=False,
         disabled=True)
self.HB2.add widget(self.sw2)
#self.sw2.bind(active=switch_callback2)
self.HB3 = BoxLayout(orientation ='horizontal')
self.lbl5 = Label(text="Status LED1:")
self.HB3.add_widget(self.lbl5)
self.led1=Switch(active=False,
          disabled=False)
self.HB3.add_widget(self.led1)
self.led1.bind(active=switch callback3)
self.HB4 = BoxLayout(orientation ='horizontal')
self.lbl6 = Label(text="Status LED2:")
self.HB4.add widget(self.lbl6)
self.led2=Switch(active=False,
          disabled=False)
self.HB4.add_widget(self.led2)
self.led2.bind(active=switch_callback4)
self.HB5 = BoxLayout(orientation ='horizontal')
self.lbl7 = Label(text="Alarm1")
self.HB5.add_widget(self.lbl7)
self.settings5=Switch(active=False)
self.HB5.add_widget(self.settings5)
self.settings5.bind(active=self.switch_callback5)
self.lbl71=Label(text="On since: ")
self.HB5.add widget(self.lbl71)
self.btn5 = Button(text="acknowledge")
self.btn5.bind(on press=self.pressed2)
self.HB5.add_widget(self.btn5)
self.HB6 = BoxLayout(orientation ='horizontal')
self.lbl8 = Label(text="Alarm2")
self.HB6.add widget(self.lbl8)
self.settings6=Switch(active=False)
```

```
self.HB6.add_widget(self.settings6)
  self.settings6.bind(active=self.switch_callback6)
  self.lbl81=Label(text="On since: ")
  self.HB6.add_widget(self.lbl81)
  self.btn6 = Button(text="acknowledge")
  self.btn6.bind(on_press=self.pressed3)
  self.HB6.add_widget(self.btn6)
  self.HB7 = BoxLayout(orientation ='horizontal')
  self.btn7 = Button(text="Dispense Norepinephrine")
  self.btn7.bind(on_press=self.pressed1)
  self.HB7.add widget(self.btn7)
  self.btn8 = Button(text="Dispense Nitroglycerin")
  self.btn8.bind(on_press=self.pressed)
  self.HB7.add_widget(self.btn8)
  self.btn9 = Button(text="Dispense Auto")
  self.btn9.bind(on_press=self.presseda)
  self.HB7.add_widget(self.btn9)
  self.superBox.add_widget(self.VB1)
  self.superBox.add_widget(self.HB1)
  self.superBox.add widget(self.HB2)
  self.superBox.add_widget(self.HB3)
  self.superBox.add_widget(self.HB4)
  self.superBox.add_widget(self.HB5)
  self.superBox.add_widget(self.HB6)
  self.superBox.add_widget(self.HB7)
  #schedule the JSONrequest function to trigger every 5 seconds to read/write database
  event = Clock.schedule_interval(partial(self.JSONrequest),5)
  return self.superBox
def JSONrequest(self, *largs):
  if(self.sw1.active==True):
    SW1=1
  else:
    SW1=0
  if(self.sw2.active==True):
    SW2=1
  else:
    SW2 = 0
  if(self.led1.active==True):
    LED1=1
  else:
    LED1=0
  if(self.led2.active==True):
```

```
LED2=1
  else:
     LED2=0
  data={'username':'Test', 'password':'Tester3','SW1':SW1,'LED1':LED1,'SW2':SW2,'LED2':LED2}
  res=requests.post("http://team2project3342.online/scripts/sync_android_data.php",json=data)
  print(res)
  r=res.json()
  if(SW1!=r['SW1']):
    print("Changing SW1 status to the value in the database.")
    if self.sw1.active==True:
      self.sw1.active=False
      self.led1.active=False
    else:
      self.sw1.active=True
  if(SW2!=r['SW2']):
    print("Changing SW2 status to the value in the database.")
    if self.sw2.active==True:
       self.sw2.active=False
      self.led2.active=False
    else:
      self.sw2.active=True
  return
def pressed(self,instance):
  print ("you picked " + instance.text)
  self.led2.active=True
def pressed1(self,instance):
  print ("you picked " + instance.text)
  self.led1.active=True
def presseda(self,instance):
  print ("you picked " + instance.text)
  if self.sw1.active==True:
     self.led1.active=True
  else:
     self.led1.active=False
  if self.sw2.active==True:
     self.led2.active=True
  else:
     self.led2.active=False
def pressed2(self,instance):
  print ("you acknowleged Alarm1")
  self.settings5.active=False
  print("turning alarm1 off")
def pressed3(self,instance):
  print ("you acknowleged Alarm2")
  self.settings6.active=False
```

```
print("turning alarm1 off")
  def switch callback5(self, switchObject, switchValue):
    print('Value of Alarm1: ', switchValue)
    if self.settings5.active==True:
       ltm = time.asctime(time.localtime(time.time()))
       self.lbl71.text+=ltm
    else:
       self.lbl71.text = "On since: "
  def switch_callback6(self, switchObject, switchValue):
    print('Value of Alarm2: ', switchValue)
    if self.settings6.active==True:
       ltm = time.asctime(time.localtime(time.time()))
       self.lbl81.text+=ltm
    else:
       self.lbl81.text = "On since: "
def switch_callback1(switchObject, switchValue):
    print('Value of SW1: ', switchValue)
def switch_callback2(switchObject, switchValue):
    print('Value of SW2: ', switchValue)
def switch_callback3(switchObject, switchValue):
    print('Value of LED1: ', switchValue)
def switch_callback4(switchObject, switchValue):
    print('Value of LED2: ', switchValue)
#class myApp(App):
   def build(self):
     return BoxLayout()
#
if __name__=="__main__":
  myApp=BoxLayoutApp()
  myApp.run()
 # myApp().run()
The code of index.php
<?php
require_once __DIR__ . '/../required/db_connect.php';
<html>
  <head>
     <title>Team Project</title>
     <link rel="stylesheet" type="text/css" href="prict.css"/>
  </head>
  <body>
     <div id="Header">
       <h1>Monitoring System</h1>
    </div>
```

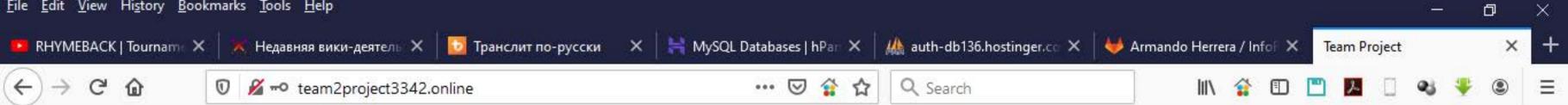
```
<div id="bodv">
       <h3>Login</h3>
       <form id="form1" method="post" action="">
         <div>
            <label for="usernm">Username: </label>
            <input type="text" name="usernm" id="usernm" required><br><br><
         </div>
         <div>
            <label for="psswrd">Password: </label>
            <input type="password" name="psswrd" id="psswrd" required><br><br>
         </div>
         <button id="sub" type="Submit">Submit</button>
       </form>
    </div>
    <div id="check">
       <?php
      if(isset($_POST['usernm']) and isset($_POST['psswrd'])){
         $uname=$_POST['usernm'];
         $passwrd=$_POST['psswrd'];
         if($query = $mysqli->prepare("SELECT * FROM Users WHERE pname='$uname'")){
            $query->execute();
           $query->bind_result($username,$password);
           $count=0;
           while($query->fetch()){
              $count=$count+1;
           if (\$count == 1)
              if(password_verify($passwrd,$password)){
                $query->close();
                $id='9':
                date_default_timezone_set("America/Chicago");
                $date=date("Y-m-d H:i:s");
                $stmt=$mysqli->prepare("INSERT INTO
TransactionalLogs(TimestampInfo,MessageID,DataInformation) VALUES(?,?,?)");
                $stmt->bind_param('sss',$date,$id,$uname);
                $stmt->execute();
                $stmt->close();
                echo "<script type='text/javascript'>alert('Login Credentials verified')</script>";
                echo "<script> window.location.assign('welcome.php');</script>";
              }
              else{
              //echo "Login Credentials verified";
              echo "<script type='text/javascript'>alert('Login Credentials do not match')</script>";
              }
           }
           else{
           echo "<script type='text/javascript'>alert('Invalid Login Credentials')</script>";
```

```
//echo "Invalid Login Credentials";
}
else{
echo "Error in if 2";
}
}
?>
</div>
</body>
</html>
```

The code of DBDevice.php

```
<?php
require_once __DIR__ . '/../required/db_connect.php';
?>
<?php
date default timezone set("America/Chicago");
echo "Last update: " . date('m/d/y') . " " . date('h:i:sa') . "<br>";
echo "<h3>Status of Sensors and Acutators</h3>";
if ($stmt=$mysqli->prepare("SELECT * FROM SensorsAndActuators LIMIT 100")) {
  $stmt->execute();
 $stmt->bind_result($devid,$devtype,$devfun,$ctrl,$status);
 echo "Device NameStatus";
 while ($stmt->fetch()) {
    echo "$devid$status";
  }
 echo "":
 $stmt->close();
}
else {
 echo "error";
 $mysqli->close();
}
echo "=======". "<br>";
echo "<h3>Alarm Status</h3>";
if ($stmt=$mysqli->prepare("SELECT a1.AlarmID, a1.SinceTS,
a1.AcknowledgementStatus,c1.MessageDescription FROM ActiveAlarms a1 LEFT JOIN Alarms a2
ON a1.AlarmID=a2.AlarmID LEFT JOIN CannedMessages c1 ON a2.MessageID=c1.MessageID")) {
 $stmt->execute();
 $stmt->bind_result($alarmid,$since,$acknowl,$description);
 echo "AlarmDescriptionSinceAcknowledged
tr>";
 while ($stmt->fetch()) {
   if ($acknowl!=1){
     echo "$alarmid$description$since$acknowl<'tr>";
    }
```

```
}
  echo "";
  $stmt->close();
}
else {
  echo "error";
  $mysqli->close();
echo "=======". "<br>";
echo "<h3>Charts</h3>";
if($stmt = $mysqli->prepare("Select MessageID, TimestampInfo FROM TransactionalLogs WHERE
MessageID=13 OR MessageID=14 ORDER BY TimestampInfo")){
  $stmt->execute();
  $stmt->bind_result($idNum,$time);
}
$datat[]=array();
$datan[]=array();
while($stmt->fetch()){
  $datat[]=$time;
  $datan[]=$idNum;
}
?>
<script src='https://cdn.jsdelivr.net/npm/chart.js@2.8.0'></script>
<script>var ctx = document.getElementById('chart1').getContext('2d');
  var chart=newChart(ctx,{
    type:'line',
    data:{
      labels:$datat,
      datasets:[{label:'LED Tracking',
         data:$datan
      }]
    },
    options:{}
  });
</script>";
```

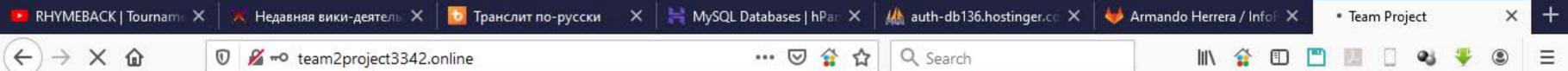


Monitoring System

<u>File Edit View History Bookmarks Tools Help</u>

Login Username: Password: Submit

导



Monitoring System

<u>File Edit View History Bookmarks Tools Help</u>

Login

Username:

Password:

Submit

Invalid Login Credentials

OK

Transferring data from team2project3342.online...























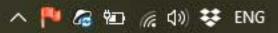


























O



Monitoring System

<u>File Edit View History Bookmarks Tools Help</u>

Login

Username: Password:

Submit

Login Credentials verified

OK

Transferring data from team2project3342.online...



































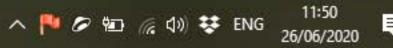












O

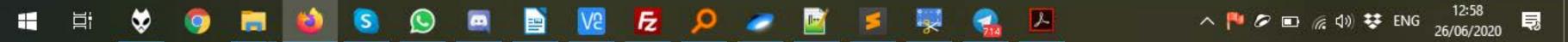


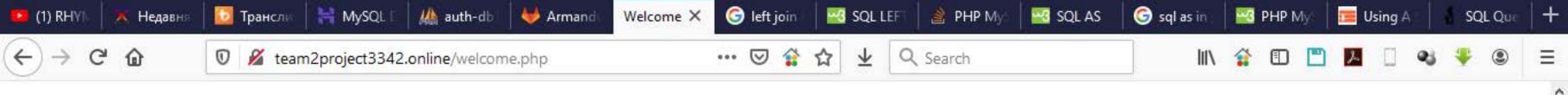
O

Welcome

File Edit View History Bookmarks Tools Help

Logout





Welcome

Last update: 06/26/20 12:58:40pm

Status of Sensors and Acutators

<u>File Edit View History Bookmarks Tools Help</u>

Device Name Status LED1 0 LED2 LED3 LED4 SW1 SW2 SW3 SW4

Alarm Status

Alarm Description Acknowledged Since BLOOD SUGAR HIGH 2020-03-11 14:25:21 0

Charts









































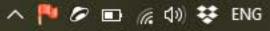












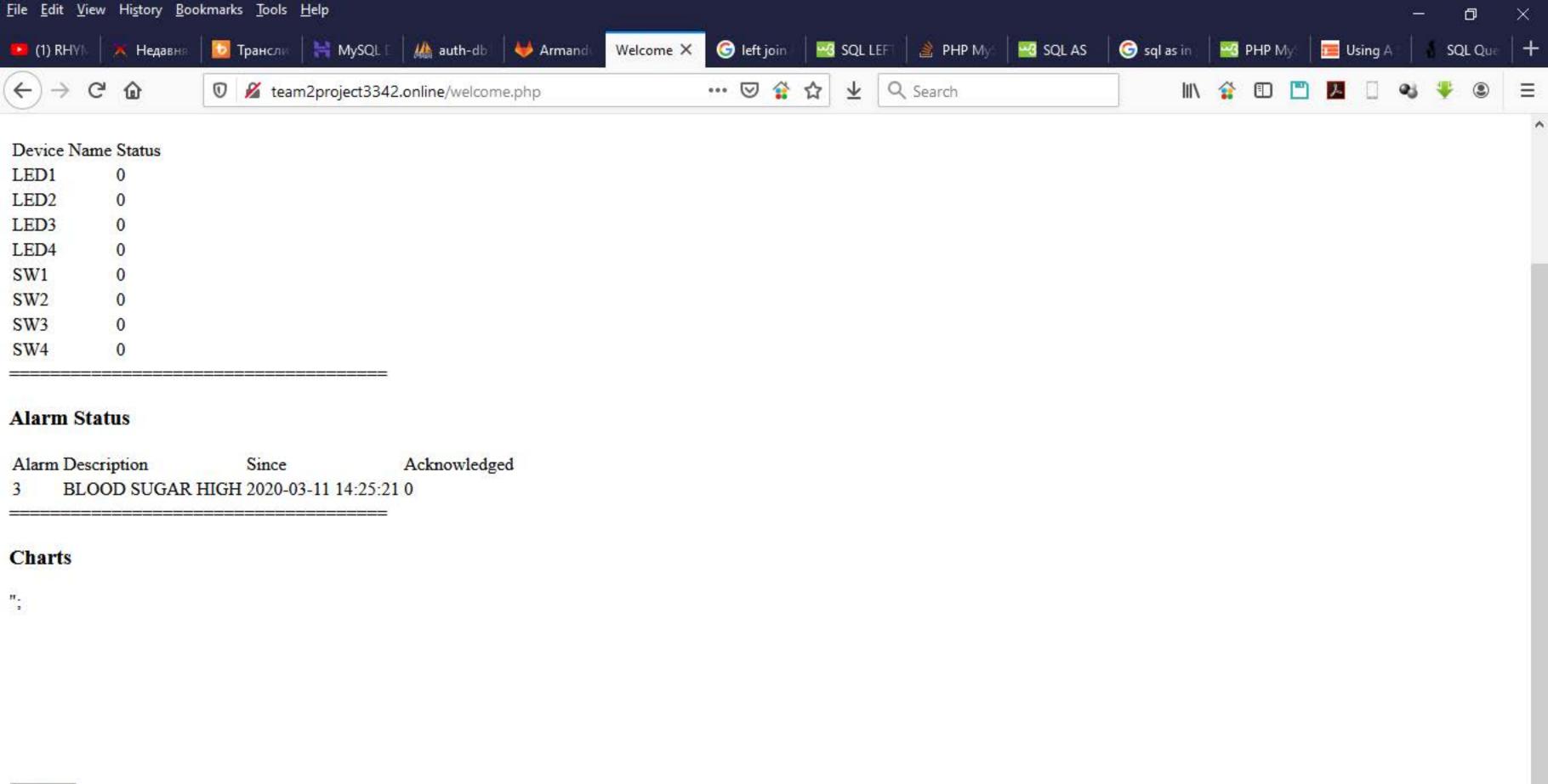








O



Logout















































