Certification Page

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I, ***___Ulvi Bajarani_____***, certify that the work I am uploading represents efforts of my team member and mine per the following 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 1, 2, 3, and 4. You may break these tasks further down into subtasks as needed.	Percent contributed	Percent contributed	Total percent
#	*Subtask* Description	Ulvi Bajarani	Gwendolyn Poulos	
1.1	Program Android App to interact with DB Tables in PaaS	50%	50%	100%
1.2	Test interaction between Android App and RPi through DB tables in PaaS	50%	50%	100%
1.3	Fixing Chart on the website	50%	50%	100%

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Яндекс.Диск | MySQL Databases | hPanel | auth-db136.hostinger.com / 12

https://auth-db136.hostinger.com/sql.php?db=u55100

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  - webuser

Server: 127.0.0.1:3306 » Database: u551001383_team » Table: TransactionalLogs

Browse | Structure | SQL | Search | Insert | Export | Import | Operations | Triggers

Showing rows 0 - 4 (5 total, Query took 0.0002 seconds.)

```
SELECT * FROM `TransactionalLogs`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	logID	TimestampInfo	MessageID	DataInformation
Edit Copy Delete		2020-06-28 15:57:01	9	Test
Edit Copy Delete	1	2020-03-11 12:23:16	7	Some
Edit Copy Delete	15	2020-06-26 11:50:11	9	Test
Edit Copy Delete	2	2020-03-12 10:8:37	9	ben
Edit Copy Delete	3	2020-03-12 10:8:37	11	ben

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

Print Copy to clipboard Export Display chart Create view

Console

ENG 20:51 28/06/2020

Welcome

Last update: 06/28/20 08:51:55pm

Status of Sensors and Acutators

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

Alarm Status

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

Logout

The link to the Timestamp chart

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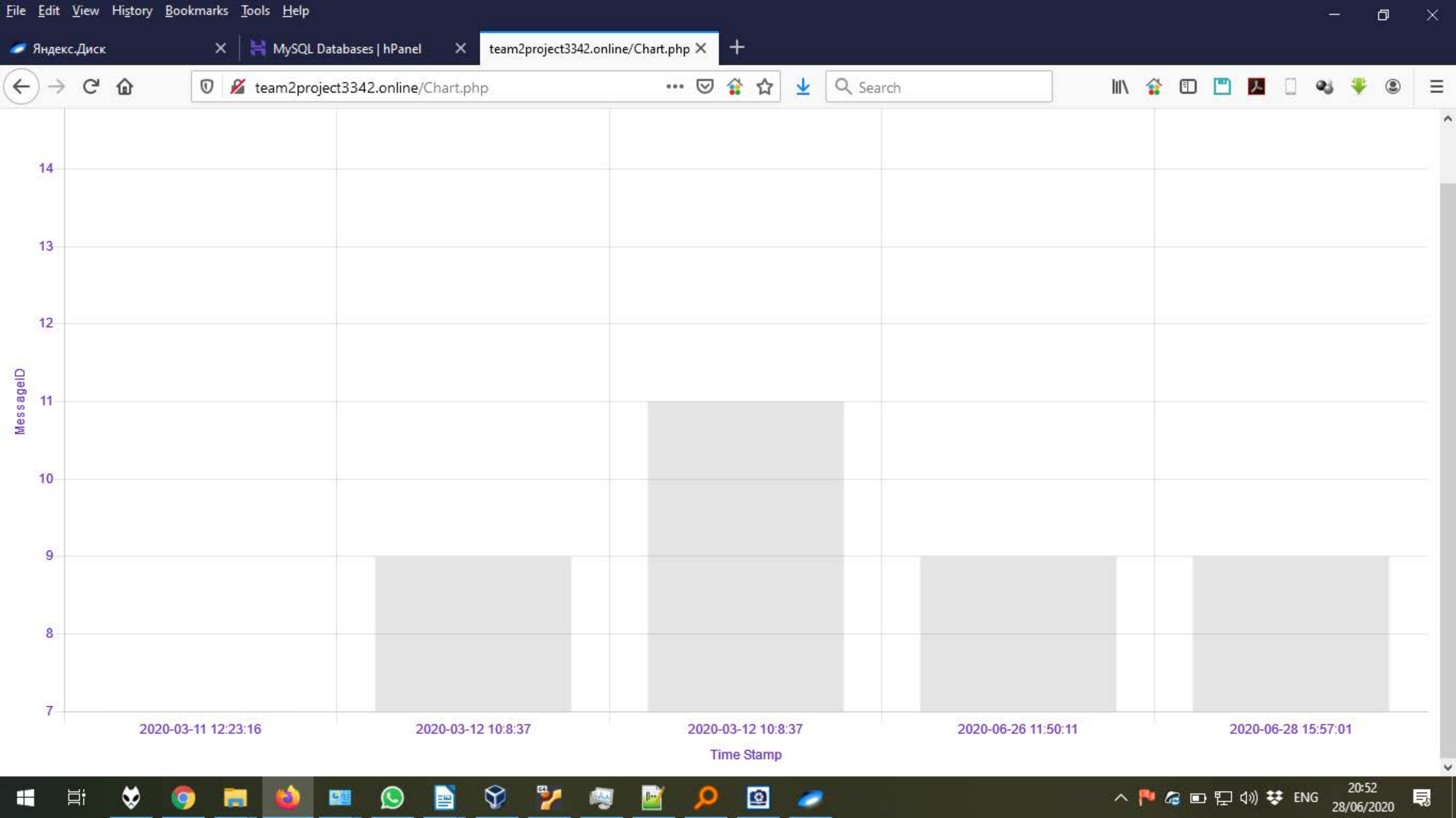
Яндекс.Диск | MySQL Databases | hPanel | team2project3342.online/Chart.php

team2project3342.online/Chart.php

Search

ENG 20:52 28/06/2020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Яндекс.Диск
MySQL Databases | hPanel
team2project3342.online/Chart.php
team2project3342.online/Chart.php
Search
14
13
12
11
10
9
8
7
MessageID
2020-03-11 12:23:16
2020-03-12 10:8:37
2020-03-12 10:8:37
2020-06-26 11:50:11
2020-06-28 15:57:01
Time Stamp
ENG
20:52
28/06/2020

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Яндекс.Диск | MySQL Databases | hPanel | auth-db136.hostinger.com / 12 | team2project3342.online/Chart.php

https://auth-db136.hostinger.com/sql.php?server=1&d

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  - device
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  - TransactionalLogs
  - Users
  - webuser

Server: 127.0.0.1:3306 » Database: u551001383_team » Table: SensorsAndActuators

Browse | Structure | SQL | Search | Insert | Export | Import | Operations | Triggers

Showing rows 0 - 7 (8 total, Query took 0.0002 seconds.)

```
SELECT * FROM `SensorsAndActuators`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	DevID	DevType	FunctionDescription	Control	DeviceStatus
Edit Copy Delete	LED1	ACTUATOR	Administering Norephinephrine	ANDROID	0
Edit Copy Delete	LED2	ACTUATOR	Administering Nitroglcyerin	ANDROID	0
Edit Copy Delete	LED3	ACTUATOR	IV infusion of W to decrease blood sugar	ANDROID	0
Edit Copy Delete	LED4	ACTUATOR	IV infusion of Z to increase blood sugar	ANDROID	0
Edit Copy Delete	SW1	SENSOR	sense systolic BP > 120 mm Hg	RPI	0
Edit Copy Delete	SW2	SENSOR	sense diastolic BP < 60 mm Hg	RPI	0
Edit Copy Delete	SW3	SENSOR	sense blood sugar > 120 mg/dL	RPI	0
Edit Copy Delete	SW4	SENSOR	sense blood sugar < 50 mg/dL	RPI	0

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Console sults operations

ENG 22:31 28/06/2020

Monitoring System

Sun Jun 28 22:31:37 2020

Diastolic BP < 60mmHg: ON OFF

Diastolic BP > 120mmHg: ON OFF

Administering Norepinephrine: OFF

Administering Nitroglycerin: OFF

Alarm1 OFF On since: acknowledge

Alarm2 OFF On since: acknowledge

spense Norepinephr Dispense Nitroglycerii Dispense Auto

File Edit View History Bookmarks Tools Help

Яндекс.Диск | MySQL Databases | hPanel | auth-db136.hostinger.com / 12 | team2project3342.online/Chart.php

https://auth-db136.hostinger.com/sql.php?server=1&d

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Server: 127.0.0.1:3306 » Database: u551001383_team » Table: SensorsAndActuators

Browse | Structure | SQL | Search | Insert | Export | Import | Operations | Triggers

Showing rows 0 - 7 (8 total, Query took 0.0002 seconds.)

```
SELECT * FROM `SensorsAndActuators`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

```
UPDATE `SensorsAndActuators` SET `DeviceStatus` = '1' WHERE `SensorsAndActuators`.`DevID` = 'SW1';
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	DevID	DevType	FunctionDescription	Control	DeviceStatus
Edit Copy Delete	LED1	ACTUATOR	Administering Norephinephrine	ANDROID	0
Edit Copy Delete	LED2	ACTUATOR	Administering Nitroglcyerin	ANDROID	0
Edit Copy Delete	LED3	ACTUATOR	IV infusion of W to decrease blood sugar	ANDROID	0
Edit Copy Delete	LED4	ACTUATOR	IV infusion of Z to increase blood sugar	ANDROID	0
Edit Copy Delete	SW1	SENSOR	sense systolic BP > 120 mm Hg	RPI	1
Edit Copy Delete	SW2	SENSOR	sense diastolic BP < 60 mm Hg	RPI	0
Edit Copy Delete	SW3	SENSOR	sense blood sugar > 120 mg/dL	RPI	0
Edit Copy Delete	SW4	SENSOR	sense blood sugar < 50 mg/dL	RPI	0

Check all *With selected:* Edit Copy Delete Export

Console

ENG 22:32 28/06/2020

Monitoring System

Sun Jun 28 22:31:37 2020

Diastolic BP < 60mmHg: ON OFF

Diastolic BP > 120mmHg: ON OFF

Administering Norepinephrine: OFF

Administering Nitroglycerin: OFF

Alarm1 OFF On since: acknowledge

Alarm2 OFF On since: acknowledge

spense Norepinephr Dispense Nitroglycerii Dispense Auto

Monitoring System

Sun Jun 28 22:31:37 2020

Diastolic BP < 60mmHg: ON OFF

Diastolic BP > 120mmHg: ON OFF

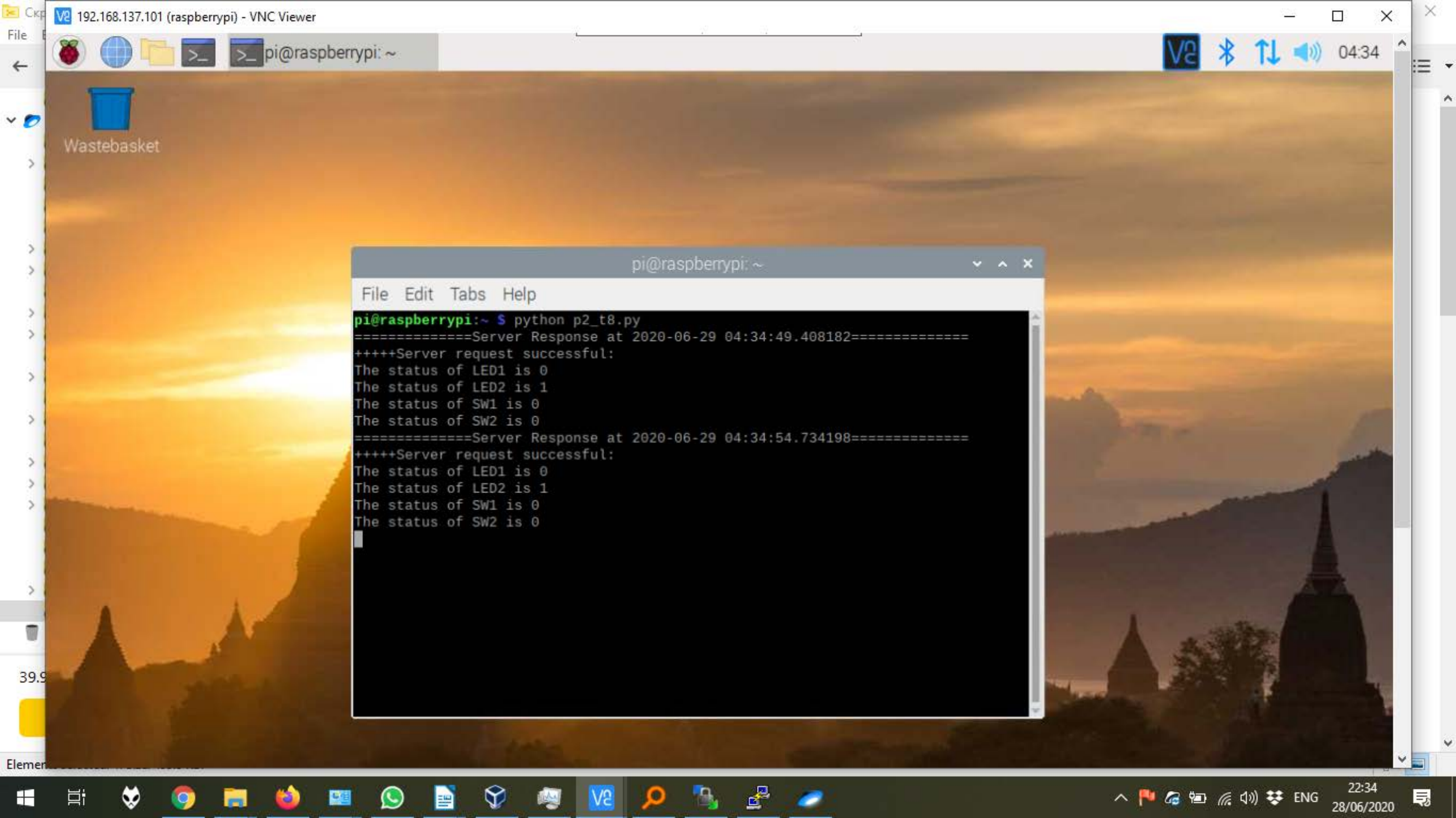
Administering Norepinephrine: OFF

Administering Nitroglycerin: ON

Alarm1 OFF On since: acknowledge

Alarm2 OFF On since: acknowledge

spense Norepinephr Dispense Nitroglycerii Dispense Auto


192.168.137.101 (raspberrypi) - VNC Viewer
pi@raspberrypi: ~
04:34
Wastebasket
pi@raspberrypi: ~
File Edit Tabs Help
pi@raspberrypi:~ $ python p2_t8.py
==========Server Response at 2020-06-29 04:34:49.408182==========
+++++Server request successful:
The status of LED1 is 0
The status of LED2 is 1
The status of SW1 is 0
The status of SW2 is 0
==========Server Response at 2020-06-29 04:34:54.734198==========
+++++Server request successful:
The status of LED1 is 0
The status of LED2 is 1
The status of SW1 is 0
The status of SW2 is 0
ENG
22:34
28/06/2020

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Server: 127.0.0.1:3306 » Database: u551001383_team » Table: SensorsAndActuators

Browse | Structure | SQL | Search | Insert | Export | Import | Operations | Triggers

Showing rows 0 - 7 (8 total, Query took 0.0003 seconds.)

```
SELECT * FROM `SensorsAndActuators`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	DevID	DevType	FunctionDescription	Control	DeviceStatus
Edit Copy Delete	LED1	ACTUATOR	Administering Norephinephrine	ANDROID	0
Edit Copy Delete	LED2	ACTUATOR	Administering Nitroglcyerin	ANDROID	1
Edit Copy Delete	LED3	ACTUATOR	IV infusion of W to decrease blood sugar	ANDROID	0
Edit Copy Delete	LED4	ACTUATOR	IV infusion of Z to increase blood sugar	ANDROID	0
Edit Copy Delete	SW1	SENSOR	sense systolic BP > 120 mm Hg	RPI	0
Edit Copy Delete	SW2	SENSOR	sense diastolic BP < 60 mm Hg	RPI	0
Edit Copy Delete	SW3	SENSOR	sense blood sugar > 120 mg/dL	RPI	0
Edit Copy Delete	SW4	SENSOR	sense blood sugar < 50 mg/dL	RPI	0

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Console sults operations

ENG 23:14 28/06/2020

The updated code of welcome.php (includes the link to the chart)

```
<?php
require_once __DIR__ . '/../required/db_connect.php';
?>
<html>
   <header>
      <title>Welcome</title>
      <meta charset="UTF-8"/>
   </header>
   <body>
      <div id="header">
         <h1>Welcome</h1>
      </div>
      <div id="body">
         <div id="status"></div>
         <script type="text/javascript" src="jquery.js"></script>
         <script src="https://cdn.jsdelivr.net/npm/chart.js@2.8.0"></script>
         <script type="text/javascript">
            $(document).ready(function() {
               setInterval(function() {
                  $('#status').load('DBdevice.php')
               }, 3000);
            });
         </script>
         <form id="form1" method="post" action="">
            <input type="hidden" id="out" value="1">
            <button type="submit">Logout</button>
         </form>
         <div id=check>
            <?php
               if(isset($_POST['out'])){
               $uname='ben';
               $id='10';
               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('Logging Out')</script>";
                echo "<script> window.location.assign('index.php');</script>";
                }
            ?>
        </div>
        <div id="chartLink"><a href="Chart.php">The link to the Timestamp
chart</div>
    </div>
  </body>
</html>
```

The code of data.php (to fetch the data for the chart)

```
<?php
require_once __DIR__ . '/../required/db_connect.php';

$stmt = "SELECT MessageID, TimestampInfo FROM TransactionalLogs ORDER BY
TimestampInfo";
$result = mysqli_query($mysqli,$stmt);
$data = array();
foreach ($result as $row){
  $data[] = $row;
}
mysqli_close($mysqli);
echo json_encode($data);
?>
```

The code of Chart.php (The chart code)

```
<html>
  <!--https://phppot.com/php/creating-dynamic-data-graph-using-php-and-chart-js/-->
  <div id="charts">
    <canvas id="chart1"></canvas>
  </div>
  <script src='https://cdn.jsdelivr.net/npm/chart.js@2.8.0'></script>
  <script src='jquery.js'></script>
  <script>
    $(document).ready(function (){
      showGraph();
    });
```

```
function showGraph(){
   {
      $.post('data.php',
      function(data){
         console.log(data);
         data=JSON.parse(data);
         var time=[];
         var mid=[];

         for (var i in data){
            time.push(data[i].TimestampInfo);
            mid.push(data[i].MessageID);
         }

         var chartdata={
            labels: time,
            datasets:[{
               label: 'LED Monitoring',
               borderColor: '#F778A1',
               data: mid
            }]
         };
         var graphTarget = $("#chart1");

         var linegraph = new Chart (graphTarget,{
            type: 'bar',
            data: chartdata,
            options:{
               scales:{
                  xAxes:[{
                     scaleLabel:{
                        display: true,
                        fontColor:'#6C2DC7',
                        labelString: 'Time Stamp'
                     },
                     ticks: {
                        fontColor:'#6C2DC7'
                     }
                  }],
                  yAxes:[{
                     scaleLabel:{
                        display: true,
```

```
                        fontColor:'#6C2DC7',
                        labelString: 'MessageID'
                    },
                    ticks: {
                        fontColor:'#6C2DC7',
                        suggestedMin:12,
                        suggestedMax:15
                    }
                }]
            }
        }
    });
});

    }
  }
  </script>
</html>
```

The code of Projectv4.py, which is launched from an Android Phone to test.

```
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="Diastolic BP < 60mmHg:")
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="Diastolic BP > 120mmHg:")
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="Administering Norepinephrine:")
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="Administering Nitroglycerin:")
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("https://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()
```