FACULDADE INDEPENDENTE DO NORDESTE

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Programa de Estágio

Casa da Robótica

Codigos fonte do arduino e Unity.

- Arduino:

Projeto §

```
#include <FirebaseArduino.h>
#include <ESP8266WiFi.h>
#include <Hash.h>
#include <Adafruit_Sensor.h>
#include <DHT.h>
#include <Wire.h>
#include <Adafruit_BMP085.h>

Adafruit_BMP085 bmp;

#define FIREBASE_HOST "testedaniuni-default-rtdb.firebaseio.com"
#define FIREBASE_AUTH "1YvvAXTDNHLinYdpSEYCzqddcUG5aId4FFOwnzo6"
#define WIFI_SSID "wifi-Alternativa!"
#define WIFI_PASSWORD "A4536095"

#define DHTPIN 5
#define DHTTYPE    DHT11     // DHT 11

DHT dht(DHTPIN, DHTTYPE);


float t = 0.0;
float h = 0.0;
int p = 0.0;
float pp = 0.0;
```

Projeto §

```
float pr = 0.0;
float a = 0.0;
float ar = 0.0;
float gas = 0.0;
String chuva;

int pino_d = D0;
int pino_a = A0;
int val_d = 0;
int val_a = 0;

unsigned long previousMillis = 0;
const long interval = 10000;

void setup()
{

  Serial.begin(9600);
  dht.begin();

  WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
  Serial.print("Connecting to Wi-Fi");
  while (WiFi.status() != WL_CONNECTED)
  {
```

Projeto §

```
    Serial.print(".");
    delay(300);
  }
  Serial.println();
  Serial.print("Connected with IP: ");
  Serial.println(WiFi.localIP());
  Serial.println();

  Firebase.begin(FIREBASE_HOST, FIREBASE_AUTH);
  //Firebase.reconnectWiFi(true);

  pinMode(pino_d, INPUT);
  pinMode(pino_a, INPUT);
}

void loop()
{
  t = dht.readTemperature();
  h = dht.readHumidity();
  Serial.print("temperatura:");
  Serial.println(t);
  Serial.print("humidade");
  Serial.println(h);
  Firebase.setFloat("/app/temp", t);
```

Projeto §

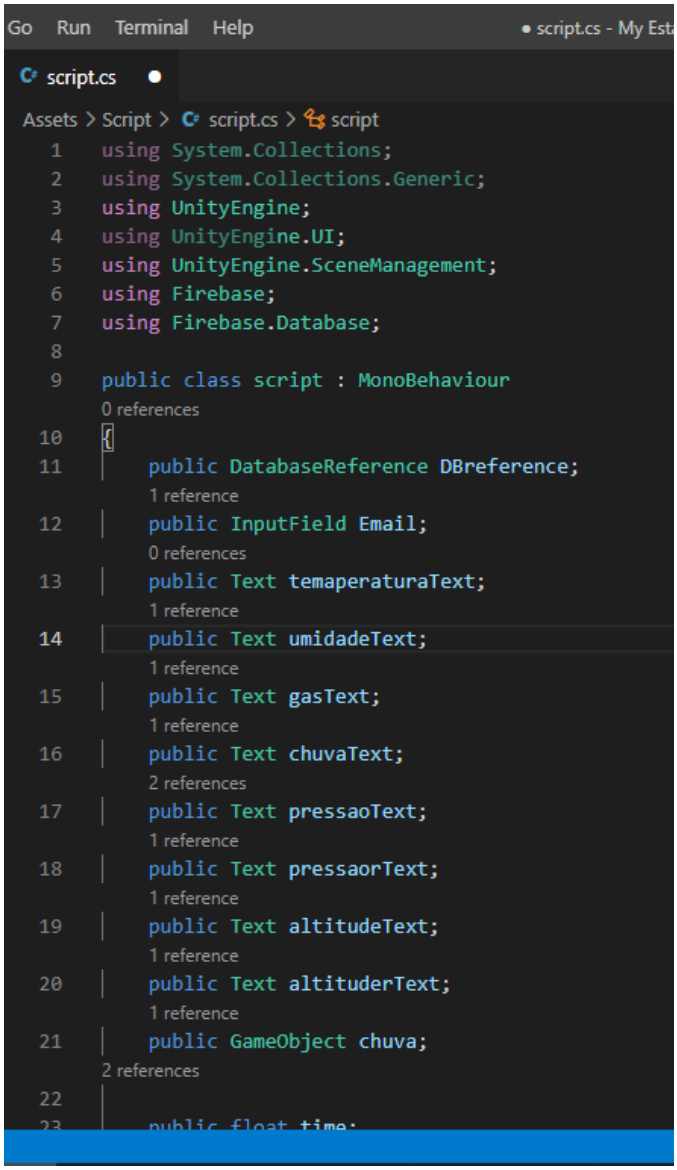
```
  Firebase.setFloat("/app/umid", h);
  Serial.println("0");

  p = bmp.readPressure();
  Serial.print("pressao:");
  Serial.println(p);
  pr = bmp.readSealevelPressure();
  Serial.print("Pressao Relativa:");
  Serial.println(pr);
  a = bmp.readAltitude();
  Serial.print("Altitude: ");
  Serial.println(a);
  ar = bmp.readAltitude(102000);
  Serial.println("Altitude Rela:");
  Serial.println(ar);
  Firebase.setInt("/app/pres", p);
  Firebase.setFloat("/app/presR", pr);
  Firebase.setFloat("/app/alti", a);
  Firebase.setFloat("/app/altiR", ar);

  float x = analogRead(A0);
  gas = h / 1023 * 100;
  Firebase.setFloat("/app/gas", gas);

  val_d = digitalRead(pino_d);
  val_a = analogRead(pino_a);
  if ( val_a < 300) {       // Chuva intensa
    chuva = "Chuva Intensa";
    Firebase.setString("/app/chuva", chuva);
  }
  if (val_a <= 500 && val_a >= 300) { // Chuva moderada
    chuva = "Chuva Moderada";
    Firebase.setString("/app/chuva", chuva);
  }
  // Se a leitura analógica for maior que 500
  if ( val_a > 500) {        // Sem previsão de Chuva
    chuva = "Sem Chuva";
    Firebase.setString("/app/chuva", chuva);
  }
  Serial.println(chuva);
  delay(200);
}
```

- Unity:


Go Run Terminal Help
• script.cs - My Est
script.cs
Assets > Script > script.cs > script
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.UI;
using UnityEngine.SceneManagement;
using Firebase;
using Firebase.Database;
public class script : MonoBehaviour
0 references
{
public DatabaseReference DBreference;
1 reference
public InputField Email;
0 references
public Text temaperaturaText;
1 reference
public Text umidadeText;
1 reference
public Text gasText;
1 reference
public Text chuvaText;
2 references
public Text pressaoText;
1 reference
public Text pressaorText;
1 reference
public Text altitudeText;
1 reference
public Text altituderText;
1 reference
public GameObject chuva;
2 references

Go Run Terminal Help • script.cs - My Estagio - Visual Studio Code

script.cs ●

Assets > Script > script.cs > script

```
23      public float time;
        3 references
24      public float up;
    1 reference
25
26      void Start()
27      {
28          DBreference = FirebaseDatabase.DefaultInstance.RootReference;
29      }
    0 references
30
31      void Update()
32      {
33          time += Time.deltaTime;
34          if(time >= up)
35          {
                0 references
36              loadData();
37              time = 0f;
38          }
39      }
40
41      //public void saveData()
42      //{
43      //   DBreference.Child("Users").Child("User 1").Child("Email").SetValueAsync(Email.text.ToString());
44      //}
45
46      public void loadData()
47      {
48          FirebaseDatabase.DefaultInstance.GetReference("app").ValueChanged += Script_ValueChanged;
49
50      }
51      private void Script_ValueChanged(object sender, ValueChangedEventArgs e) {
    1 reference
```

```
53          temaperaturaText.text = e.Snapshot.Child("temp").GetValue(true).ToString();
54          umidadeText.text = e.Snapshot.Child("umid").GetValue(true).ToString();
55          gasText.text = e.Snapshot.Child("gas").GetValue(true).ToString();
56          chuvaText.text = e.Snapshot.Child("chuva").GetValue(true).ToString();
            1 reference
57          pressaoText.text = e.Snapshot.Child("pres").GetValue(true).ToString();
58          pressaorText.text = e.Snapshot.Child("presR").GetValue(true).ToString();
59          altitudeText.text = e.Snapshot.Child("alti").GetValue(true).ToString();
60          altituderText.text = e.Snapshot.Child("altiR").GetValue(true).ToString();
61
62          if(chuvaText.text != "Sem Chuva"){
63              chuva.SetActive(true);
64          }
65          else
66          {
67              chuva.SetActive(false);
68          }
69      }
70
71      public void Next()
72      {
73          SceneManager.LoadScene(SceneManager.GetActiveScene().buildIndex + 1);
74      }
75
76      public void Previous()
77      {
78          SceneManager.LoadScene(SceneManager.GetActiveScene().buildIndex * 0);
            0 references
79      }
80
81      public void Sair()
82      {
83          Application.Quit();
            0 references
84      }
```