



# Introduction to IOT Cloud Platform

***Cognifront\****

# Introduction

## What is IoT Cloud?

IoT cloud is an online platform that stores, processes, and analyzes data from IoT devices. It enables remote access, control, and integration with apps and services.

# Introduction

**IoT Cloud is a platform that:**

- Connects smart devices to the internet
- Allows data collection and processing
- Enables remote control and monitoring
- Acts as the "brain" of an IoT ecosystem

# Purpose of IoT Cloud

- **Data Storage:** Logs data for analytics
- **Real-time Monitoring:** View current values/status
- **Remote Control:** Send commands (ON/OFF, etc.)
- **Automation:** Trigger actions (alerts, conditions)
- **Security:** Secure access to devices and data

# Architecture of IoT System

## APPLICATION LAYER

Dashboards, apps, APIs



## CLOUD LAYER

Your IoT cloud platform

## NETWORK LAYER

Wi-Fi, MQTT, HTTP, etc.



## DEVICE LAYER

Sensors, actuators,  
microcontrollers



# Real-World Applications

- Smart home automation
- Industrial monitoring
- Agriculture (soil moisture, weather)
- Healthcare devices
- Fleet and vehicle tracking

# Cognifront IoT Cloud

www.cognifront.com

 [About](#) [Books](#)

[IoT Kits](#) [Teaching Tools](#) [Industrial Solutions](#) [Contact](#) [IN](#) [EN](#) [CART](#) [IoT Cloud](#)



**IoT Kits:  
From ideas to  
innovation**

Designed and manufactured in Bharat to empower students, young innovators and educational institutions

[Know more](#) [Buy Now](#)

**Cognifront**

# Cognifront IoT Cloud

- Custom dashboard interface
- Secure HTTP API
- Real-time control & monitoring
- Easy device management
- Scalable for enterprise solutions

# Cognifront IoT Cloud



**IoT Cloud**

कॉग्निफ्रंट  
**Cognifront**

Please sign in

Email address

Samrat277

Password

.....

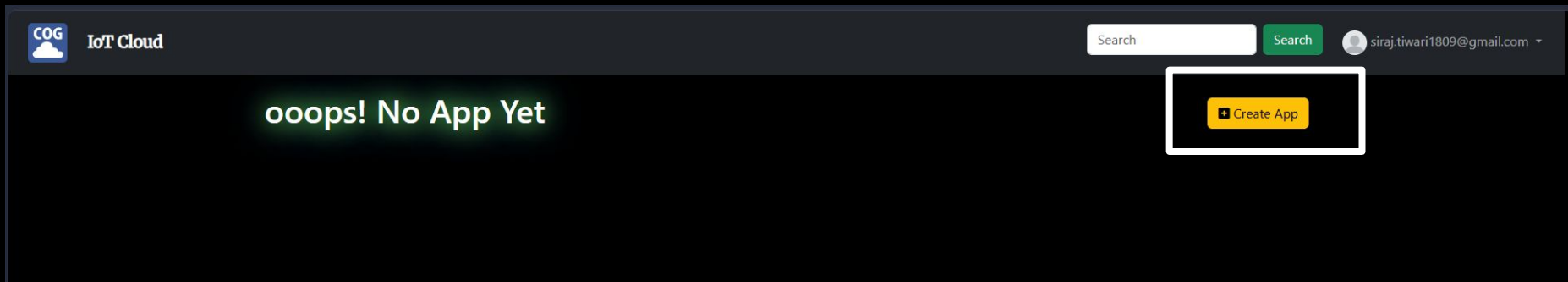


☐ Remember me

Submit

Not Registered? [Create an Account](#)

# Cognifront IoT Cloud



# Cognifront IoT Cloud



IoT Cloud

ooops! No App Yet

⚙️ Creating App...



Name of App

TEST

Cancel

Save 

**Cognifront**

# Cognifront IoT Cloud



IoT Cloud

Search

## My Apps

+ Create App

TEST

30 Jun 2026, 06:47 pm  
*created just now*

API key for your IoT code (Arduino, NodeMCU, ESP32 etc) you can use following  
61A83D2500D5CCCE6D6C55446043E3E4



View App



Copyright © 2026 Cognifront All Rights Reserved

Made with ❤️ in Nashik

**Cognifront**

# Cognifront IoT Cloud



IoT Cloud

Search



siraj.tiwari1809@gmail.com ▾

## TEST

Created on 30 Jun 2026, 06:47 pm, 46 seconds ago

+ Create Variable

+ Create Alert

No Variable Found



Copyright © 2026 Cognifront All Rights Reserved

Made with ❤️ in Nashik

**Cognifront**

# Cognifront IoT Cloud

The screenshot displays a web interface for the Cognifront IoT Cloud. A modal dialog box is open, allowing the user to configure a new variable. The dialog has a close button (X) in the top right corner. It contains two main fields: 'Variable Name' and 'Variable Type'. The 'Variable Name' field is a text input containing the word 'Buzzer'. The 'Variable Type' field is a dropdown menu currently showing 'Choose...'. The dropdown menu is open, revealing three options: 'Choose...' (highlighted in blue), 'ON/OFF Switch', and 'Continuous Value'. In the background, a search bar with the text 'Sea' is visible, and a timestamp '25 ago' is partially visible on the left side of the interface.

Variable Name

Variable Type

- Choose...
- ON/OFF Switch
- Continuous Value

# Cognifront IoT Cloud

**Variable Name**

**1. Buzzer(switch)**

13 Jun 2025, 03:41 pm  
*just now*



**2. LED(switch)**

13 Jun 2025, 03:41 pm  
*8 seconds ago*



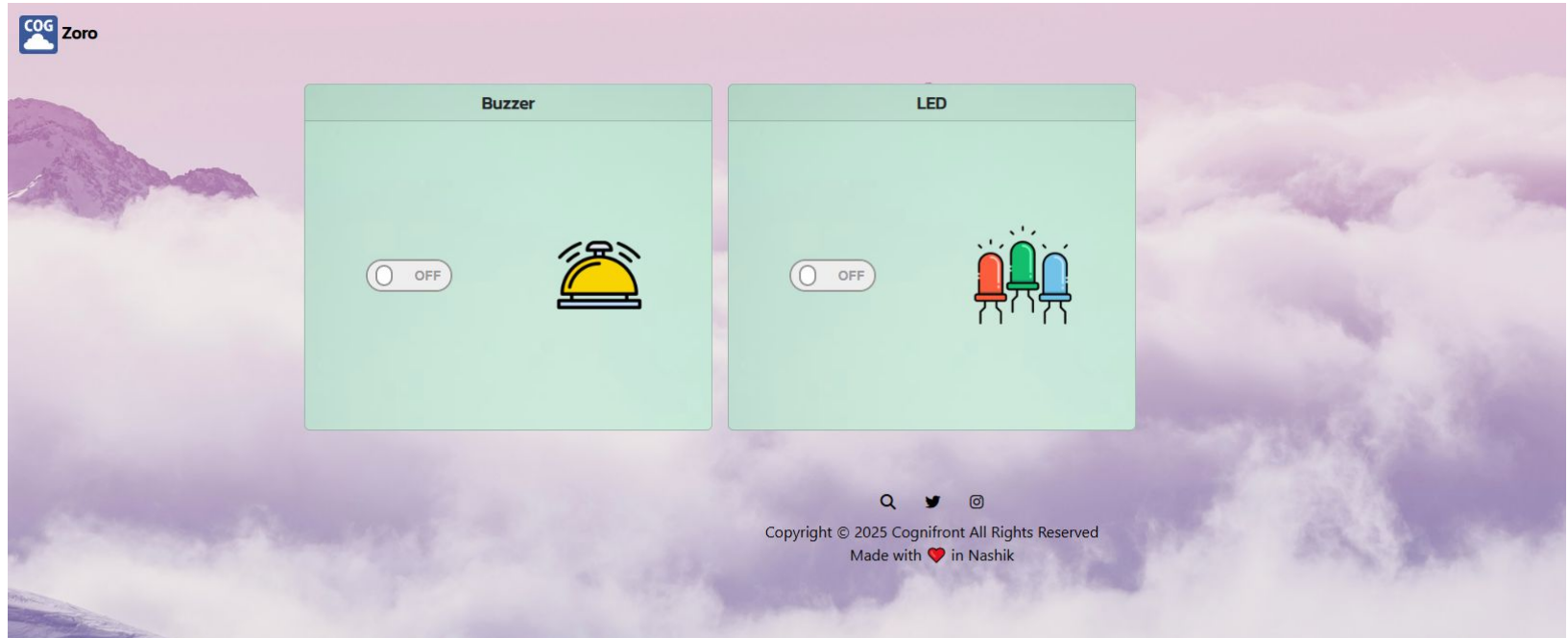


Copyright © 2025 Cognifront All Rights Reserved

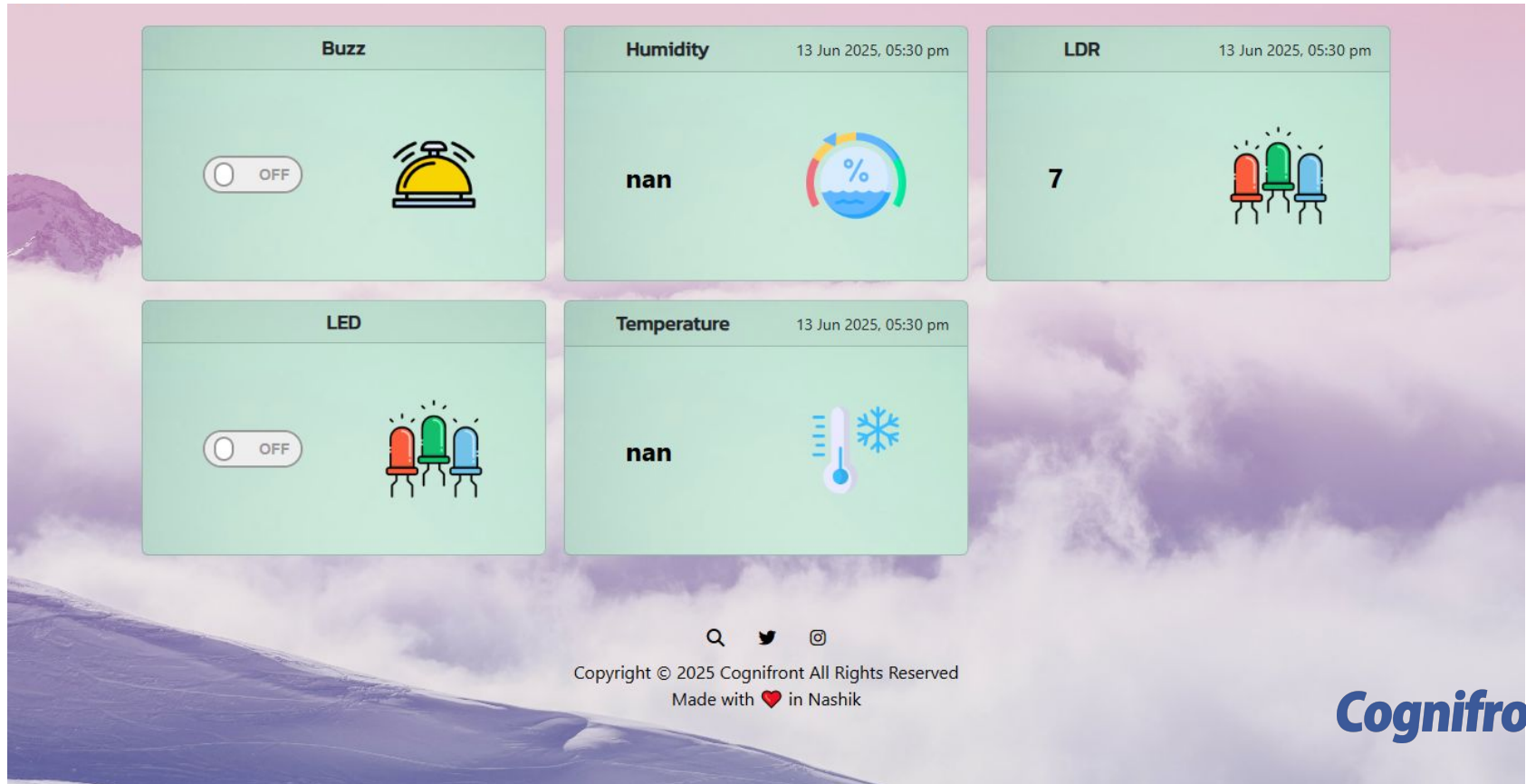
Made with ❤️ in Nashik

**Cognifront**

# Cognifront IoT Cloud



# Cognifront IoT Cloud



# Introduction

Receiving data from IOT Cloud Platform and remotely control the actuators using internet.

**Objective: Learn how to control a device (e.g., LED, buzzer) from the cloud**

# Components Required

- ESP8266
- LED and Buzzer module
- Internet connection
- Cognifront IoT Cloud dashboard access

# How It Works

- Cloud sends a command (e.g., "ON" or "OFF")
- Device receives it via HTTP
- Microcontroller processes the command
- Output device is triggered accordingly

# Task 1 – Control LED

www.cognifront.com

[About](#) [Books](#)

[IoT Kits](#) [Teaching Tools](#) [Industrial Solutions](#) [Contact](#)  IN  EN [CART](#)  IoT Cloud



**IoT Kits:  
From ideas to  
innovation**

Designed and manufactured in Bharat to empower students, young innovators and educational institutions

[Know more](#) [Buy Now](#)

**Cognifront\***

# Cognifront IoT Cloud

Cognifront

Home

IoT Kits

Industrial Solutions

Teaching Tools

Books

About

Contact



IN

EN



To exit full screen, move mouse to top of screen or press and hold F11

connect to the device and configure it. This

example contains such embedded web server that users can connect from any browser and turn ON or OFF the onboard LED for ESP8266 (NodeMCU)

Download

Download

## IoT Cloud Example for ESP8266 (NodeMCU)

Building cloud applications for IoT is super easy. This example shows how to control built-in LED on NodeMCU from your mobile phone at any location in the world. Download this code and use it along with your account on Cognifront IoT Cloud here

<https://www.cognifront.com/apps/iotcloud>

Download

## Fluid Flows Visualization (Windows only)

Graphical demonstrations of various fluid flows - laminar, vortex, sink, line source. These are interactive simulations that **solve differential equations**. Developed for inspiring students and teachers to translate mathematical concepts into software code so that they can visualize for themselves. Unzip after download and run a file named "setup-cognifront-ffsim.exe" so that you can see all fluid flows.

Download

## Industrial Training for Faculty

It has been experienced that teaching-learning process in majority of engineering colleges/polytechnics is highly theoretical/bookish. This is mainly due to the fact that most the faculty in these institutions do not have much of industrial/field experience. Realizing this, **7th Central Pay Commission** recommended a Mandatory Industrial Training for the faculty of all engineering colleges/polytechnics, particularly new inductees to bridge this gap.

Download

## Voice of Teachers

We went all across the country to ask a few critical questions to teachers. Every teacher expressed their heart and how they feel we can improve

## Post Covid Action Plan for Engineering Colleges

## Part I : Coping up with Post Covid Educational Challenges

Cognifront

# Cognifront IoT Cloud

Cognifront

Home

IoT Kits

Industrial Solutions

Teaching Tools

Books

About

Contact

IN EN

## IoT Cloud Example for ESP8266 (NodeMCU)

Building cloud applications for IoT is super easy. This example shows how to control built-in LED on NodeMCU from your mobile phone at any location in the world. Download this code and it along with your account on Cognifront IoT Cloud here

<https://www.cognifront.com/apps/iotcloud>

Download

connect to the device and configure it. This

Download

### Download (iotcloudesp8266)



Full Name

Enter your full name

Email

Enter your email

WhatsApp Number

Enter your WhatsApp number like +919730045145

Download

We respect your privacy. Your data is safe with us.

## Industrial Training for Faculty

been experienced that teaching-learning in majority of engineering colleges/polytechnics is highly theoretical/ theoretical. This is mainly due to the fact that most of the institutions do not have much practical/field experience. Realizing this, **7th Pay Commission** recommended a variety of Industrial Training for the faculty of all engineering colleges/polytechnics, particularly to bridge this gap.

Cognifront

Download

```
1 #include "cogcloudesp8266.h"
2
3
4 String ssid = "Airtel_Tapas";
5 String pass = "wifi@CogLab#1";
6
7 String apikey = "f8037483fa981809ce36fdeaedbf5823";
8
```

Use your own  
mobile hotspot  
credentials.

Replace this with your  
api key from cloud.

```
23 void loop ()
24 {
25     cogAppLoop();
26     delay(2000);
27
28 }
29
```

```
9 void setup ()
10 {
11     pinMode (D5,OUTPUT);
12     pinMode (D7,OUTPUT);
13
14     Serial.begin(115200);
15     while (!Serial)
16         delay(100);
17     cogInitCloud (ssid,pass,apikey);
18
19     cogBindPin (D5, "LED");
20     cogBindPin (D7, "Buzz");
21 }
```



Set PinMode First of LED/Buzzer pin



Bind LED/Buzzer pin with variable name in cloud

**Cognifront**

```
23 void loop ()
24 {
25     cogAppLoop();
26     delay(2000);
27
28 }
29
```

# Task 2 – Send Data to Cloud

Sending data to IOT Cloud Platform and remotely monitoring the sensor data using the internet.

**Objective: Read analog data from a sensor (e.g. Idr, temperature and humidity sensor)**

# Components Required

- ESP8266
- DHT11 and LDR module
- Internet connection
- Cognifront IoT Cloud dashboard access

# How It Works

- Microcontroller reads analog value via `analogRead()`
- Value is sent to cloud over HTTP
- Data is stored and/or visualized on a dashboard

```
1 #include "cogcloudesp8266.h"
2
3
4 String ssid = "Airtel_Tapas";
5 String pass = "wifi@CogLab#1";
6
7 String apikey = "f8037483fa981809ce36fdeaedbf5823";
8
```

Use your own  
mobile hotspot  
credentials.

Replace this with your  
api key from cloud.

```
8  #include<DHT.h>
9  #define DHTTYPE DHT11
10 int dhtSensorPin = D3;
11 DHT dht(dhtSensorPin, DHTTYPE);
12
13 int ldrPin = A0;
14
```

```
15 void setup ()
16 {
17     pinMode (D5,OUTPUT);
18     pinMode (D7,OUTPUT);
19
20     pinMode(ldrPin, INPUT);
21
22     Serial.begin(115200);
23     while (!Serial)
24     |     delay(100);
25     cogInitCloud (ssid,pass,apikey);
26
27     cogBindPin (D5, "LED");
28     cogBindPin (D7, "Buzz");
29 }
```

```
31 void loop ()
32 {
33     cogAppLoop();
34     delay(1000);
35
36     float t = dht.readTemperature();
37     cogStoreCloudVariable("Temperature",String(t));
38
39     float h = dht.readHumidity();
40     cogStoreCloudVariable("Humidity",String(h));
41
42     int ldrValue = analogRead(ldrPin);
43     cogStoreCloudVariable("LDR",String(ldrValue));
44 }
```

# Thank You

***Cognifront\****