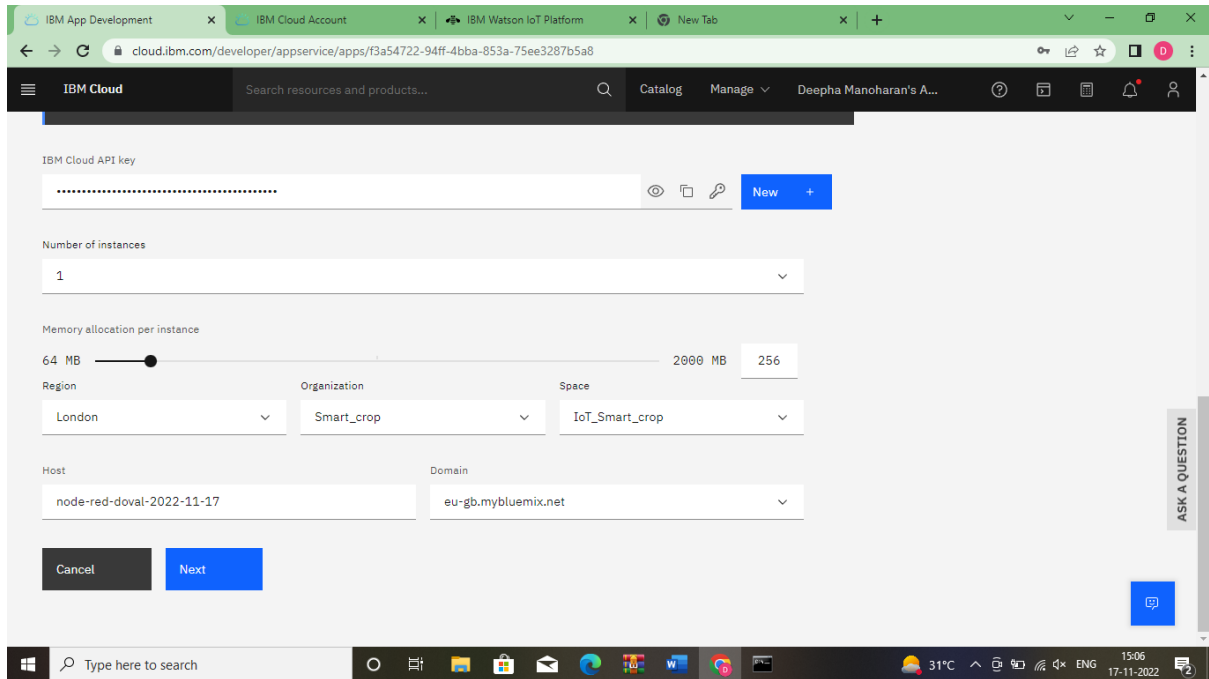


TEAM ID	PNT2022TMID23804
TEAM MEMBERS	DEVA DHARSHINI E, BOOMIKA M, DEEPA M, JYOTHINAGARAM SHALINI

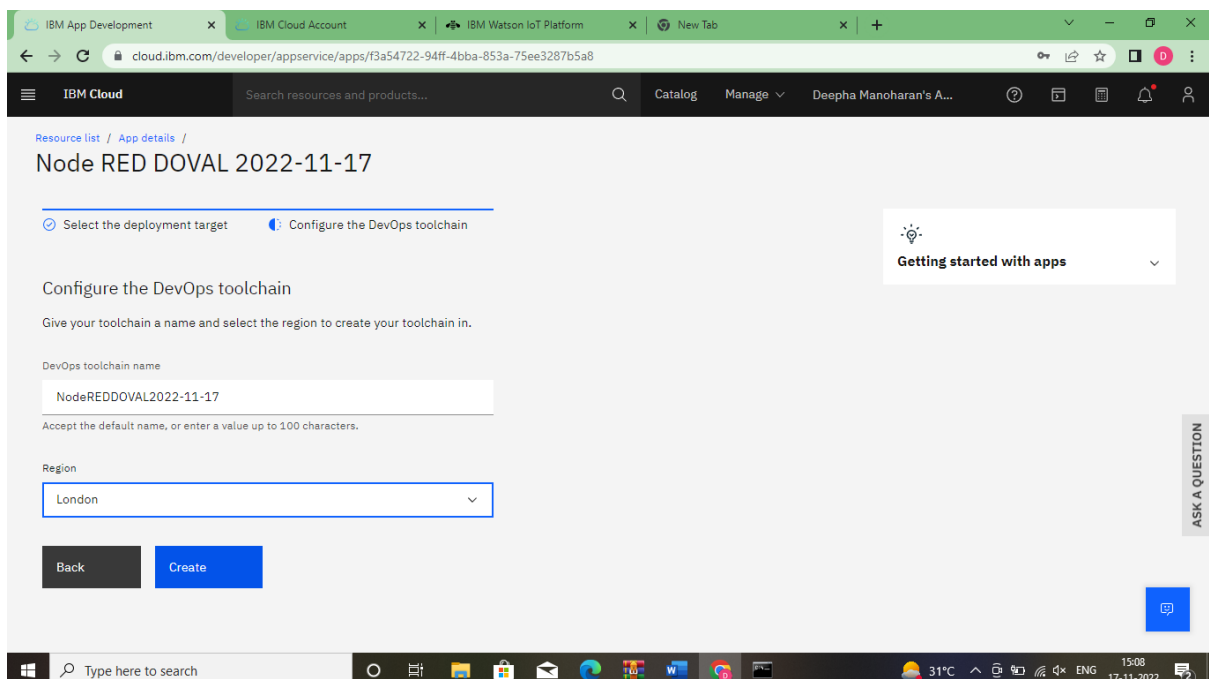
CREATING DEVICE IN IBM WATSON IOT PLATFORM & INSTALLING NODE-RED



The screenshot shows the IBM Cloud Developer console interface. The top navigation bar includes links for IBM App Development, IBM Cloud Account, IBM Watson IoT Platform, and a New Tab. The main content area displays the configuration for a new instance of the Node-RED application. The configuration includes:

- IBM Cloud API key:** A field with a masked key and a 'New' button.
- Number of instances:** A dropdown menu set to '1'.
- Memory allocation per instance:** A slider ranging from 64 MB to 256 MB, currently set at 2000 MB.
- Region:** A dropdown menu set to 'London'.
- Organization:** A dropdown menu set to 'Smart_crop'.
- Space:** A dropdown menu set to 'IoT_Smart_crop'.
- Host:** A text field containing 'node-red-doval-2022-11-17'.
- Domain:** A dropdown menu set to 'eu-gb.mybluemix.net'.

At the bottom of the configuration form are 'Cancel' and 'Next' buttons. The right sidebar contains an 'ASK A QUESTION' button. The bottom status bar shows the Windows taskbar with various application icons and system information.



The screenshot shows the IBM Cloud Developer console interface. The top navigation bar includes links for IBM App Development, IBM Cloud Account, IBM Watson IoT Platform, and a New Tab. The main content area displays the configuration for a new instance of the Node-RED application. The configuration includes:

- Resource list / App details /** A breadcrumb trail.
- Node RED DOVAL 2022-11-17** The title of the resource.
- Select the deployment target** and **Configure the DevOps toolchain** tabs.
- Configure the DevOps toolchain** The active tab, showing instructions to give the toolchain a name and select the region to create the toolchain in.
- DevOps toolchain name** A text field containing 'NodeREDDOVAL2022-11-17'.
- Region** A dropdown menu set to 'London'.

At the bottom of the configuration form are 'Back' and 'Create' buttons. The right sidebar contains an 'ASK A QUESTION' button. The bottom status bar shows the Windows taskbar with various application icons and system information.

IBM App Developer x Node-RED on IBM Cl... x Deepha Manoharan / x IBM Cloud Account x IBM Watson IoT Plat... x New Tab x

cloud.ibm.com/developer/appservice/apps/f3a54722-94ff-4bba-853a-75ee3287b5a8

IBM Cloud Search resources and products... Catalog Manage Deepha Manoharan's A...

Resource list / App details /

Node RED DOVAL 2022-11-17 Add tags

Actions...

Details

App URL <https://node-red-doval-2022-11-17.eu-gb.mybluemix.net>

Source <https://eu-gb.git.cloud.ibm.com/deepa070502/NodeREDDOVAL20...>

Resource group Default

Deployment target Node RED DOVAL 2022-11-17

Created 11/17/2022

Services

Cloudant

[Open dashboard](#) [Documentation](#) [API reference](#)

Credentials

Connect existing services + Create service +

Deployment Automation

Name NodeREDDOVAL2022-11-17

Location London

Tool integrations

Delivery Pipelines

Name pr-pipeline

Status No stages detected

Name ci-pipeline

Status Success

ASK A QUESTION

Windows Type here to search 31°C 15:25 17-11-2022

IBM App Developer x Node-RED on IBM Cl... x Deepha Manoharan / x IBM Cloud Account x IBM Watson IoT Plat... x New Tab x

node-red-doval-2022-11-17.eu-gb.mybluemix.net

Finish the install

You have made the following selections:

- Secure your editor so only authorised users can access it

You can change these settings at any time by setting the following environment variables via the IBM Cloud console:

- NODE_RED_USERNAME - the username
- NODE_RED_PASSWORD - the password
- NODE_RED_GUEST_ACCESS - if set to 'true', allows anyone read-only access to the editor

Previous Finish

Windows Type here to search 31°C 15:26 17-11-2022

DEVICE CREDENTIALS

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes the IBM logo and the text "IBM Watson IoT Platform". The user's profile is visible in the top right corner, showing the email "deepha070502@gmail.com" and the ID "e87gzu". The main heading is "Device Drilldown - 19103024". On the left, there is a sidebar with a "Device Credentials" section. The main content area is titled "Device Credentials" and contains the following information:

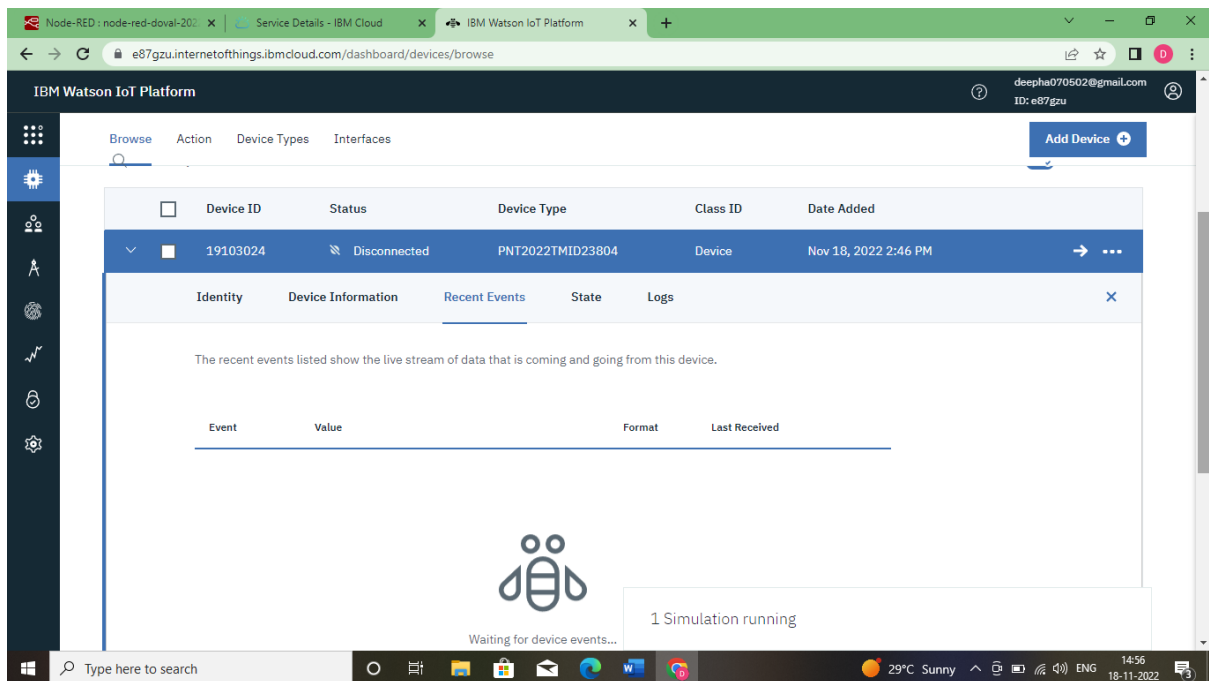
Organization ID	e87gzu
Device Type	PNT2022TMID23804
Device ID	19103024
Authentication Method	use-token-auth
Authentication Token	*tP_&ZTLi9bktOQwp

Below the table, there is a warning icon and a message: "Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token." A link "Find out how to add these credentials to your device" is also present.

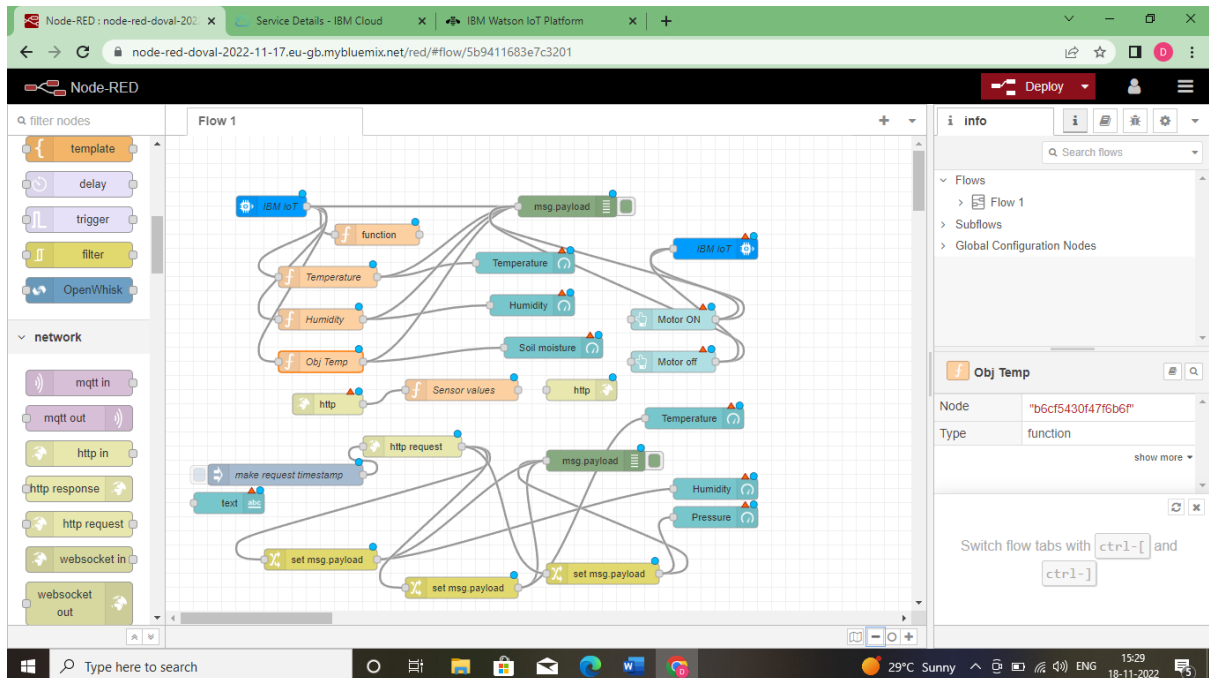
The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes the IBM logo and the text "IBM Watson IoT Platform". The user's profile is visible in the top right corner, showing the email "deepha070502@gmail.com" and the ID "e87gzu". The main heading is "Device Drilldown - 19103024". On the left, there is a sidebar with a "Device Credentials" section. The main content area is titled "Device Credentials" and contains the following information:

Organization ID	e87gzu
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FLOWCHART IN NODE-RED



Node-RED: node-red-doval-2022-11-17-eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

Node-RED

Flow 1

filter nodes

- template
- delay
- trigger
- filter
- OpenWhisk

network

- mqtt in
- mqtt out
- http in
- http response
- http request
- websocket in
- websocket out

IBM IoT

function

Temperature

Humidity

Obj Temp

http

Sensor va

make request timestamp

http request

text

set msg payload

set msg p

Edit gauge node

Delete Cancel Done

Properties

Group [IoT based crop protection system for]

Size auto

Type Gauge

Label Temperature

Value format {{value}}

Units c

Range min 0 max 70

Colour gradient

Sectors 0 optional optional 70

Class Optional CSS class name(s) for widget

Enabled

info

Search flows

Flows

- Flow 1

Subflows

Global Configuration Nodes

Temperature

Node "679f8f307386f27f"

Type ui_gauge

show more

Hold down **ctrl** when you **click** on a node port to enable quick-wiring

Node-RED: node-red-doval-2022-11-17-eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

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IBM IoT

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http

Sensor va

make request timestamp

http request

text

set msg payload

set msg p

Edit function node

Delete Cancel Done

Properties

Name Temperature

Setup On Start On Message On Stop

```
1 var temp=global.get('temperature')
2 return {payload:msg.payload.d.temperature}
```

Enabled

info

Search flows

Flows

- Flow 1

Subflows

Global Configuration Nodes

Temperature

Node "c172b31e3db05f40"

Type function

show more

Dragging a node onto a wire will splice it into the link

Node-RED : node-red-doal-2022-11-17.eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

Node-RED

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IBM IoT

Temperature

Humidity

Obj Temp

http

make request timestamp

text

set msg.payload

Edit function node

Delete Cancel Done

Properties

Name Humidity

Setup On Start On Message On Stop

```
1 var temp=global.get('humidity')
2 return {payload:msg.payload.d.humidity}
```

Enabled

info

Search flows

- Flows
- Flow 1
- Subflows
- Global Configuration Nodes

Humidity

Node "fb9b05d8b95d734e"

Type function

show more

Hold down **ctrl** when you **click** on a node to add or remove it from the current selection

Node-RED : node-red-doal-2022-11-17.eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

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- websocket out

IBM IoT

Temperature

Humidity

Obj Temp

http

make request timestamp

text

set msg.payload

Edit function node

Delete Cancel Done

Properties

Name Obj Temp

Setup On Start On Message On Stop

```
1 var temp=global.get('objtemp')
2 return {payload:msg.payload.d.objtemp}
```

Enabled

info

Search flows

- Flows
- Flow 1
- Subflows
- Global Configuration Nodes

Obj Temp

Node "b6cf5430f47f6b6f"

Type function

show more

Move the selected nodes using the **↑** **↓** and **→** keys. Hold **⇧** to nudge them further

Node-RED: node-red-doval-2022-11-17-eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

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IBM IoT

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Edit gauge node

Delete Cancel Done

Properties

Group [IOT based crop protection system for]

Size auto

Type Gauge

Label Humidity

Value format {{value}}

Units units

Range min 0 max 100

Colour gradient

Sectors 0 optional optional 10

Class Optional CSS class name(s) for widget

Enabled

info

Search flows

Flows

- Flow 1

Subflows

Global Configuration Nodes

Humidity

Node "88b4f88928222a03"

Type ui_gauge

show more

Click and drag on a node port to move all of the attached wires or just the selected one

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Delete Cancel Done

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Group [IOT based crop protection system for]

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Type Gauge

Label Soil moisture

Value format {{value}}

Units units

Range min 0 max 150

Colour gradient

Sectors 0 optional optional 10

Class Optional CSS class name(s) for widget

Enabled

info

Search flows

Flows

- Flow 1

Subflows

Global Configuration Nodes

Soil moisture

Node "a5e94f699573a9e3"

Type ui_gauge

show more

You can manage your palette of nodes with alt-tp

Node-RED: node-red-doval-2022-11-17-eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

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IBM IoT

function

Temperature

Humidity

Obj Temp

http

make request timestamp

http request

set msg payload

set msg payload

debug

all nodes

all

Edit gauge node

Delete Cancel Done

Properties

Group [IoT based crop protection system for]

Size auto

Type Gauge

Label Humidity

Value format {{value}}

Units %

Range min 0 max 100

Colour gradient

Sectors 0 optional optional 100

Class Optional CSS class name(s) for widget

Enabled

Type here to search

29°C Sunny

15:46

18-11-2022

Node-RED: node-red-doval-2022-11-17-eu-gb.mybluemix.net/red/#flow/5b9411683e7c3201

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set msg payload

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all nodes

all

Edit gauge node

Delete Cancel Done

Properties

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Size auto

Type Gauge

Label Soil moisture

Value format {{value}}

Units c

Range min 0 max 150

Colour gradient

Sectors 0 optional optional 150

Class Optional CSS class name(s) for widget

Enabled

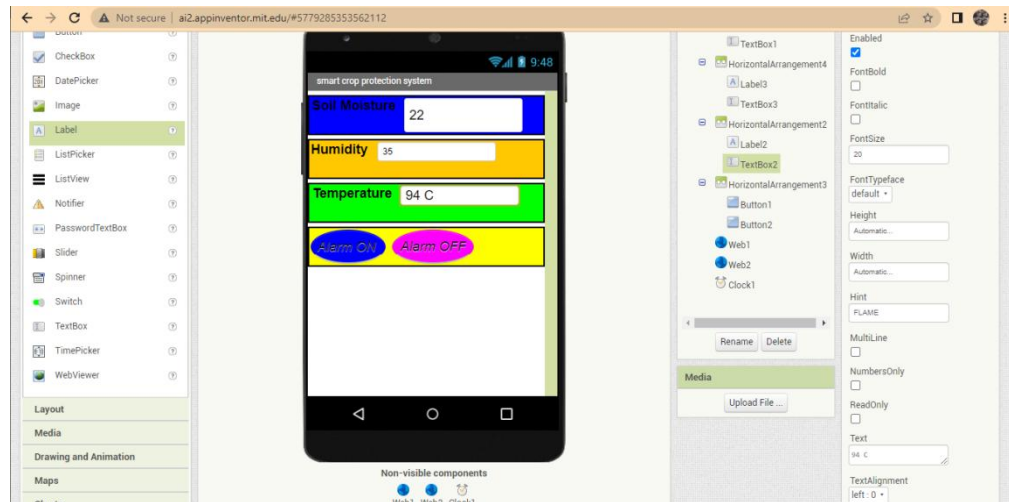
Type here to search

29°C Sunny

15:47

18-11-2022

MIT APP INVENTOR



PYTHON IDLE

```
*untitled*
File Edit Format Run Options Window Help

import ibmiotf
import time
import sys
import ibmiotf.device
organization = "23804"
deviceType = "FRT2022THID23804"
deviceId = "19103024"
authMethod = "token"
authToken = "BVC_rdmvj1Nns27@1a"
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data)
    if cmd.data['command']=='motoron':
        print("MOTOR ON IS RECEIVED")
    elif cmd.data['command']=='motoroff':
        print("MOTOR OFF IS RECEIVED")
    if cmd.command == "setInterval":
        print("Error - command is missing required information: 'interval'")
    else:
        interval = cmd.data['message']
    print(output)
try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-token": authToken}
    deviceCli = ibmiotf.device.Client(deviceOptions)
    except Exception as e:
        print("Caught exception connecting device: %s" % str(e))
        sys.exit()
an event of type "greetings" 10 times
deviceCli.connect()
while True:
    deviceCli.disconnect()
```

OUTPUT

