

crop_protect.py - C:/Users/HP/Desktop/crop/crop_protect.py (3.8.8)

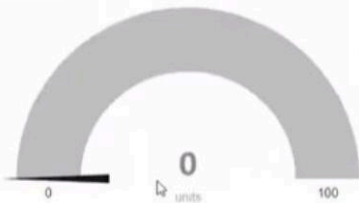
File Edit Format Run Options Window Help

```
import cv2
import numpy as np
import wiotp.sdk.device
import playsound
import random
import time
import datetime
import ibm_boto3
from ibm_botocore.client import Config, ClientError
#CloudantDB
from cloudant.client import Cloudant
from cloudant.error import CloudantException
from cloudant.result import Result, ResultByKey
from clarifai_grpc.channel.clarifai_channel import ClarifaiChannel
from clarifai_grpc.grpc.api import service_pb2_grpc
stub = service_pb2_grpc.V2Stub(ClarifaiChannel.get_grpc_channel())
from clarifai_grpc.grpc.api import service_pb2, resources_pb2
from clarifai_grpc.grpc.api.status import status_code_pb2
# This is how you authenticate.
metadata = (('authorization', 'Key bc885e5165d74ef48f42f6f6a2c9eb87'),)
COS_ENDPOINT = "https://s3.jp-tok.cloud-object-storage.appdomain.cloud" # Current list available at https://control.cloud-object-storage.cloud.ibm.com/v2/endpoints
COS_API_KEY_ID = "f6Ap-ct18m07S9UzL7XpBAF7170omePLLUQOzgmAzb5" # eg "W00YiRnLW4a3fTjMB-odB-2y8fTrFBIQQWanc--P3byk"
COS_AUTH_ENDPOINT = "https://iam.cloud.ibm.com/identity/token"
COS_RESOURCE_CRN = "crn:vi:bluemix:public:cloud-object-storage:global:a/6b644a3fda97440b888c23eeef263ed6:199able5-0d9d-420f-8e4a-98d88c04368:" # eg "crn:vi:bluemix:public:cloud-object-stc
clientdb = Cloudant("apikey-v2-16u3crmdpkghxhxfdikvpssoh5fwzrmuup5fv5g3ubz", "b0ab119f45d3e6255eabb978e7e2f0e1", url="https://apikey-v2-16u3crmdpkghxhxfdikvpssoh5fwzrmuup5fv5g3ubz:b0ab11f
clientdb.connect()
# Create resource
cos = ibm_boto3.resource("s3",
    ibm_api_key_id=COS_API_KEY_ID,
    ibm_service_instance_id=COS_RESOURCE_CRN,
    ibm_auth_endpoint=COS_AUTH_ENDPOINT,
    config=Config(signature_version="oauth"),
    endpoint_url=COS_ENDPOINT
)
def multi_part_upload(bucket_name, item_name, file_path):
    try:
        print("Starting file transfer for {} to bucket: {}".format(item_name, bucket_name))
        # set 5 MB chunks
        part_size = 1024 * 1024 * 5
        # set threshold to 15 MB
        file_threshold = 1024 * 1024 * 15
        # set the transfer threshold and chunk size
        transfer_config = ibm_boto3.s3.transfer.TransferConfig(
            multipart_threshold=file_threshold,
            multipart_chunksize=part_size
```

Activate Windows

Crop_Web

Humidity



Moisture Status in Soil

LIGHT OFF

LIGHT ON

MOTOR ON

MOTOR OFF

CLICK ON BUTTON TO GET IMAGE

☐ Click on the button to get image..

crop_protect.py - C:/Users/HP/Desktop/crop/crop_protect.py (3.8.8)

```
File Edit Format Run Options Window Help
Fileobj=file data,
Config=transfer_config
)
print("Transfer for {0} Complete!\n".format(cmd))
except ClientError as be:
print("CLIENT ERROR: {0}\n".format(be))
except Exception as e:
print("Unable to complete multi-part upload")
def myCommandCallback(cmd):
print("Command received: %s" % cmd.data)
command=cmd.data['command']
print(command)
if (command=='lighton'):
print('lighton')
elif (command=='lightoff'):
print('lightoff')
elif (command=='motoron'):
print('motoron')
elif (command=='motoroff'):
print('motoroff')
myConfig = {
"identity": {
"orgId": "hj5fmy",
"typeId": "NodeMCU",
"deviceId": "12345"
},
"auth": {
"token": "12345678"
}
}
client = wiotp.sdk.device.DeviceClient(config=myConfig)
client.connect()
database_name = "sample"
my_database = clientdb.create_database(database_name)
if my_database.exists():
print(f'{database_name} successfully created.')
cap=cv2.VideoCapture('harden.mp4')
if (cap.isOpened()==True):
print('File opened')
else:
print('File not found')
while (cap.isOpened()):
```

IDLE Shell 3.8.8

File Edit Shell Debug Options Window Help

```
Python 3.8.8 (tags/v3.8.8:024d805, Feb 19 2021, 13:18:16) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/HP/Desktop/crop/crop_protect.py =====
2021-04-06 12:52:19.640 wiotp.sdk.device.client.DeviceClient INFO Connecte
d successfully: d:hj5fmy:NodeMCU:12345
'sample' successfully created.
File opened
{'Animal': False, 'moisture': 17, 'humidity': 41}
Publish Ok..
{'Animal': False, 'moisture': 84, 'humidity': 16}
Publish Ok..
{'Animal': False, 'moisture': 48, 'humidity': 43}
Publish Ok..
{'Animal': False, 'moisture': 0, 'humidity': 3}
Publish Ok..
{'Animal': False, 'moisture': 73, 'humidity': 68}
Publish Ok..
{'Animal': False, 'moisture': 26, 'humidity': 26}
Publish Ok..
```

Activate Windows

```

crop_protect.py - C:/Users/HP/Desktop/crop/crop_protect.py (0.00)
File Edit Format Run Options Window Help

import cv2
import numpy as np
import wiotp.sdk.device
import playsound
import random
import time
import datetime
import ibm_boto3
from ibm_botocore.client import Config, ClientError

# CloudantDB
from cloudant.client import Cloudant
from cloudant.error import CloudantException
from cloudant.result import Result, ResultByKey
from clarifai_grpc.channel.clarifai_channel import
from clarifai_grpc.grpc.api import service_pb2_grpc
stub = service_pb2_grpc.V2Stub(ClarifaiChannel.get
from clarifai_grpc.grpc.api import service_pb2, re
from clarifai_grpc.grpc.api.status import status_c
# This is how you authenticate.
metadata = (('authorization', 'Key bc885e5165d74ef
COS_ENDPOINT = "https://s3.jp-tok.cloud-object-sto
COS_API_KEY_ID = "f6Ap-ct18m0789UzL7XpBAF7l70omePL
COS_AUTH_ENDPOINT = "https://iam.cloud.ibm.com/ide
COS_RESOURCE_CRN = "crn:vl:bluemix:public:cloud-ob
clientdb = Cloudant("apikey-v2-16u3crmdpkghhxfdk
clientdb.connect()
# Create resource
cos = ibm_boto3.resource("s3",
    ibm_api_key_id=COS_API_KEY_ID,
    ibm_service_instance_id=COS_RESOURCE_CRN,
    ibm_auth_endpoint=COS_AUTH_ENDPOINT,
    config=Config(signature_version="oauth"),
    endpoint_url=COS_ENDPOINT
)
def multi_part_upload(bucket_name, item_name, file
    try:
        print("Starting file transfer for [0] to b
        # set 5 MB chunks
        part_size = 1024 * 1024 * 5
        # set threshold to 15 MB
        file_threshold = 1024 * 1024 * 15
        # set the transfer threshold and chunk siz
        transfer_config = ibm_boto3.s3.transfer.Tr
            multipart_threshold=file_threshold,
            multipart_chunksize=part_size

```

Picture in picture

```

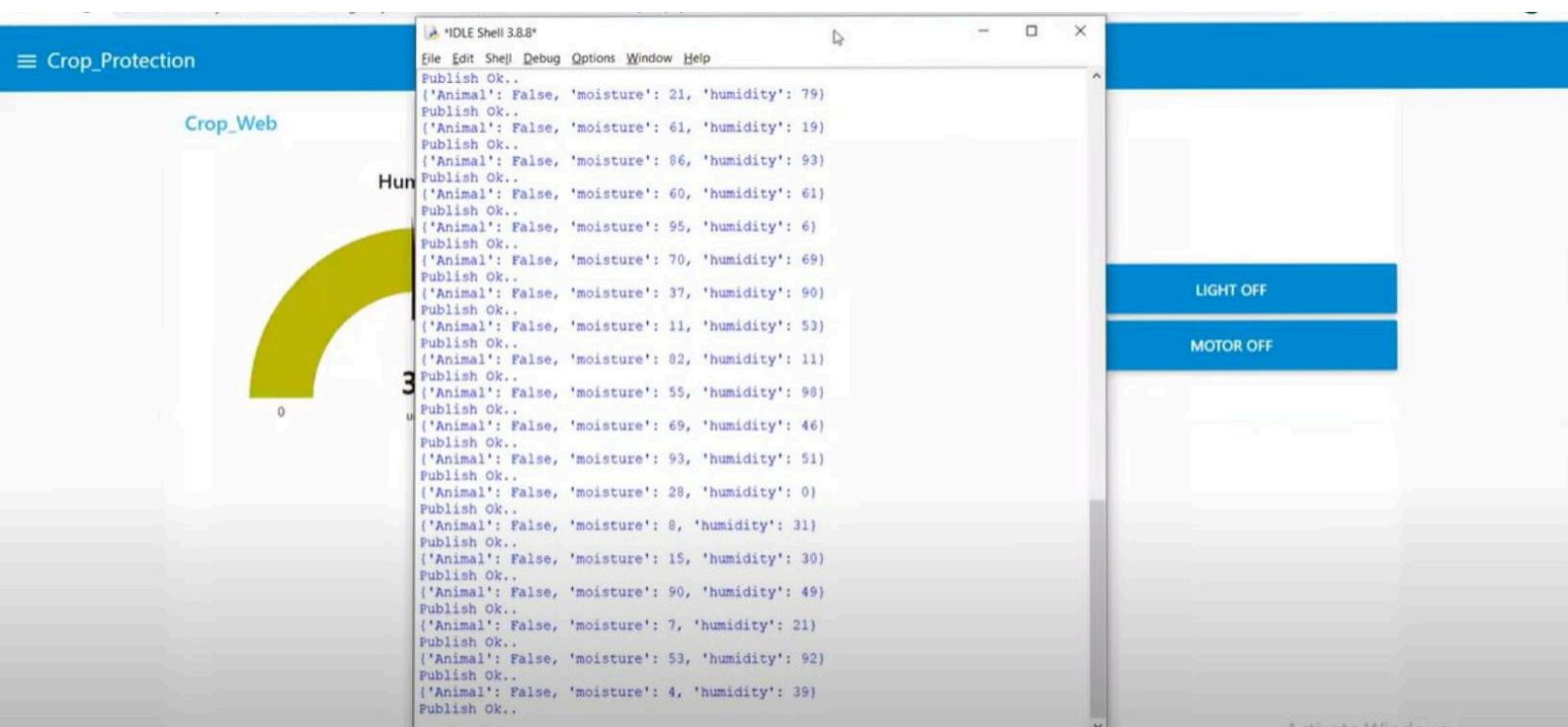
IDLE Shell 3.8.8
File Edit Shell Debug Options Window Help
Python 3.8.8 (tags/v3.8.8:024d805, Feb 19 2021, 13:18:16) [MSC v.1928 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/HP/Desktop/crop/crop_protect.py =====

```

re.cloud.ibm.com/v2/endpoints

8c04368::" # eg "crn:vl:bluemix:public:cloud-object-stc
v2-16u3crmdpkghhxfdkvpssoh5fwzrmuup5fv5g3ubz:b0ab115

Activate Windows



Crop_Web



Moisture Status in Soil
Water is available

LIGHT ON	LIGHT OFF
MOTOR ON	MOTOR OFF

CLICK ON BUTTON TO GET IMAGE

Click on the button to get image..



LIGHT ON

LIGHT OFF

MOTOR ON

MOTOR OFF

CLICK ON BUTTON TO GET IMAGE



crop_protect.py - C:/Users/HP/Desktop/crop/crop_protect.py (3.8.6)

File Edit Format Run Options Window Help

```
Fileobj=file_data,
Config=transfer_config
)
print("Transfer for {} Complete!\n".format(item_name))
except ClientError as be:
print("CLIENT ERROR: {} \n".format(be))
except Exception as e:
print("Unable to complete multi-part upload: {} \n".format(e))

def myCommandCallback(cmd):
print("Command received: {} {}".format(cmd.data))
command=cmd.data['command']
print(command)
if (command=='lighton'):
print('lighton')
elif (command=='lightoff'):
print('lightoff')
elif (command=='motoron'):
print('motoron')
elif (command=='motoroff'):
print('motoroff')

myConfig = {
"identity": {
"orgId": "hj5fmy",
"typeId": "NodeMCU",
"deviceId": "12345"
},
"auth": {
"token": "12345678"
}
}

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

database_name = "sample"
my_database = client.db.create_database(database_name)
my_database.exists():
print("{} (database_name) successfully created.")
cap=cv2.VideoCapture('monkey.mp4')
if (cap.isOpened() == True):
print('File opened')
else:
print('File not found')

while(cap.isOpened()):
ret, frame = cap.read()
gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
```

IDLE Shell 3.8.6

File Edit Shell Debug Options Window Help

```
Command received: {'command': 'motoroff'}
motoroff{'Animal': False, 'moisture': 38, 'humidity': 24}

motoroffPublish Ok..

{'Animal': False, 'moisture': 4, 'humidity': 53}
Publish Ok..
{'Animal': False, 'moisture': 73, 'humidity': 15}
Publish Ok..
{'Animal': False, 'moisture': 29, 'humidity': 17}
Publish Ok..
{'Animal': False, 'moisture': 38, 'humidity': 87}
Publish Ok..
{'Animal': False, 'moisture': 88, 'humidity': 2}
Publish Ok..
{'Animal': False, 'moisture': 78, 'humidity': 71}
Publish Ok..
{'Animal': False, 'moisture': 85, 'humidity': 27}
Publish Ok..
{'Animal': False, 'moisture': 42, 'humidity': 97}
Publish Ok..
{'Animal': False, 'moisture': 71, 'humidity': 60}
Publish Ok..
{'Animal': False, 'moisture': 29, 'humidity': 32}
Traceback (most recent call last):
File "C:/Users/HP/Desktop/crop/crop_protect.py", line 130, in <module>
print(myData)
KeyboardInterrupt
>>>
===== RESTART: C:/Users/HP/Desktop/crop/crop_protect.py =====
2021-04-06 12:54:08,425 wiotp.sdk.device.client.DeviceClient INFO Connected successful
ly: d:hj5fmy:NodeMCU:12345
'sample' successfully created.
File opened
{'Animal': False, 'moisture': 73, 'humidity': 12}
Publish Ok..
Alert! Alert! animal detected
Starting file transfer for 21-04-06-12-54.jpg to bucket: gnaneshwar

Transfer for 21-04-06-12-54.jpg Complete!

Document successfully created.
{'Animal': True, 'moisture': 14, 'humidity': 61}
Publish Ok..
Alert! Alert! animal detected
Starting file transfer for 21-04-06-12-54.jpg to bucket: gnaneshwar
```

Activate Windows
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Node-RED

Filter nodes

common

- inject
- debug
- complete
- catch
- status
- link in
- link out
- comment

function

- function
- switch
- change
- range

Flow 2

Flow 3

msg.payload

function

switch

Humidity

switch

http request

Click on button to Get Image

LIGHT ON

LIGHT OFF

MOTOR ON

MOTOR OFF

Edit switch node

Delete

Cancel

Done

Properties

Name

Property

msg.payload

10

0

1

2

add

checking all rules

recreate message sequences

debug

all nodes

4/6/2021, 12:53:26 PM node: bc837c9d.84ce1
msg.payload: Object
{ command: "lighton" }

4/6/2021, 12:55:37 PM node: bc837c9d.84ce1
msg.payload: Object
{ command: "lightoff" }

4/6/2021, 12:55:37 PM node: bc837c9d.84ce1
msg.payload: Object
{ command: "motoron" }

4/6/2021, 12:55:37 PM node: bc837c9d.84ce1
msg.payload: Object
{ command: "motoroff" }

4/6/2021, 12:55:37 PM node: 3f807df.1af2d2
msg.payload: string[54]
"https://s3.jp-tok.cloud-object-storage.appdomain.cloud/gnaneshwar/21-04-06-12-54.jpg"

4/6/2021, 12:55:37 PM node: 2b592454.2002fc
msg: string[18]
"No response object"

Activate Windows

Node-RED

Deploy

filter nodes

Flow 2Flow 3Home AssistantCrop protectionChild TrackerMedicine Remind

common

inject

debug

complete

catch

status

link in

link out

comment

function

function

switch

change

range

IBM IoT

connected

msg.payload

function

switch

function

Humidity

function

switch

function

Moisture Status in Soil

rbe

http request

msg.payload

Click on button to Get Image

http request

function

http

msg.payload

template

LIGHT ON

LIGHT OFF

MOTOR ON

MOTOR OFF

msg.payload

IBM IoT

connected

debug

all nodes

4/6/2021, 12:55:26 PM node: bc837c9d 84ce1
msg.payload: Object
{ command: "lighton" }

4/6/2021, 12:55:37 PM node: bc837c9d 84ce1
msg.payload: Object
{ command: "lightoff" }

4/6/2021, 12:55:37 PM node: bc837c9d 84ce1
msg.payload: Object
{ command: "motoron" }

4/6/2021, 12:55:37 PM node: bc837c9d 84ce1
msg.payload: Object
{ command: "motoroff" }

4/6/2021, 12:55:37 PM node: 3f807df 1a2d2
msg.payload: string[84]
"https://s3.jp-tok.cloud-object-storage.appdomain.cloud/gneshwar/21-04-06-12-54.jpg"

4/6/2021, 12:55:37 PM node: 2b092454 20b2fc
msg: string[16]
"No response object"

Crop_Web



Moisture Status in Soil
Water is available

LIGHT ON	LIGHT OFF
MOTOR ON	MOTOR OFF

CLICK ON BUTTON TO GET IMAGE

Click on the button to get image..

```

C:\Users\HP\Desktop/crop/crop_protect.py (3.8)
File Edit Format Run Options Window Help

ibm_auth_endpoint=COS_AUTH_ENDPOINT,
config=Config(signature_version="oauth"),
endpoint_url=COS_ENDPOINT
)

def multi_part_upload(bucket_name, item_name, file_path):
    try:
        print("Starting file transfer for {} to bucket: {} \n".format(item_name, bucket_name))
        # set 5 MB chunks
        part_size = 1024 * 1024 * 5
        # set threadhold to 15 MB
        file_threshold = 1024 * 1024 * 15
        # set the transfer threshold and chunk size
        transfer_config = ibm_boto3.s3.transfer.TransferConfig(
            multipart_threshold=file_threshold,
            multipart_chunksize=part_size
        )
        # the upload_fileobj method will automatically execute a multi-part upload
        # in 5 MB chunks for all files over 15 MB
        with open(file_path, "rb") as file_data:
            cos.Object(bucket_name, item_name).upload_fileobj(
                Fileobj=file_data,
                Config=transfer_config
            )
        print("Transfer for {} Complete!\n".format(item_name))
    except ClientError as be:
        print("CLIENT ERROR: {} \n".format(be))
    except Exception as e:
        print("Unable to complete multi-part upload: {} \n".format(e))

def myCommandCallback(cmd):
    print("Command received: {} \n".format(cmd.data))
    command=cmd.data['command']
    print(command)
    if(command=='lighton'):
        print('lighton')
    elif(command=='lightoff'):
        print('lightoff')
    elif(command=='motoron'):
        print('motoron')
    elif(command=='motoroff'):
        print('motoroff')

myConfig = {
    "identity": {
        "orgId": "hj5fmy",
        "typeId": "NodeMCU",
    }
}

```

CancelDone

humidity
gauge

moisture status in soil
text

LIGHT ON
button

LIGHT OFF
button

MOTOR ON
button

MOTOR OFF
button

Click on button to Get Image
button

template
template

dashboard

> Values

> Crop_Protection

> Crop_Web

> Medicine_Reminder

> Medicine_UI

> IoT-based-Wave-Energy-Con

> Select Device to View Devi

> Wave-Energy-Converters

> Main Device

> Wave-Energy-Converters

> Login

> Device 1

> Wave-Energy-Converters

> Device 2

> New-dashboard

> IoT UI

> Child-Tracker

> Map

Activate Windows
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Node-RED

Filter nodes

common

- inject
- debug
- complete
- catch
- status
- link in
- link out
- comment

function

- function
- switch
- change
- range
- template

Flow 2

Flow 3

msg.payload

function

switch

Humidity

Temperature

http req

Click on button to Get Image

LIGHT ON

LIGHT OFF

MOTOR ON

MOTOR OFF

Connected

Debug

Done

Cancel

Delete

Properties

Name

Setup

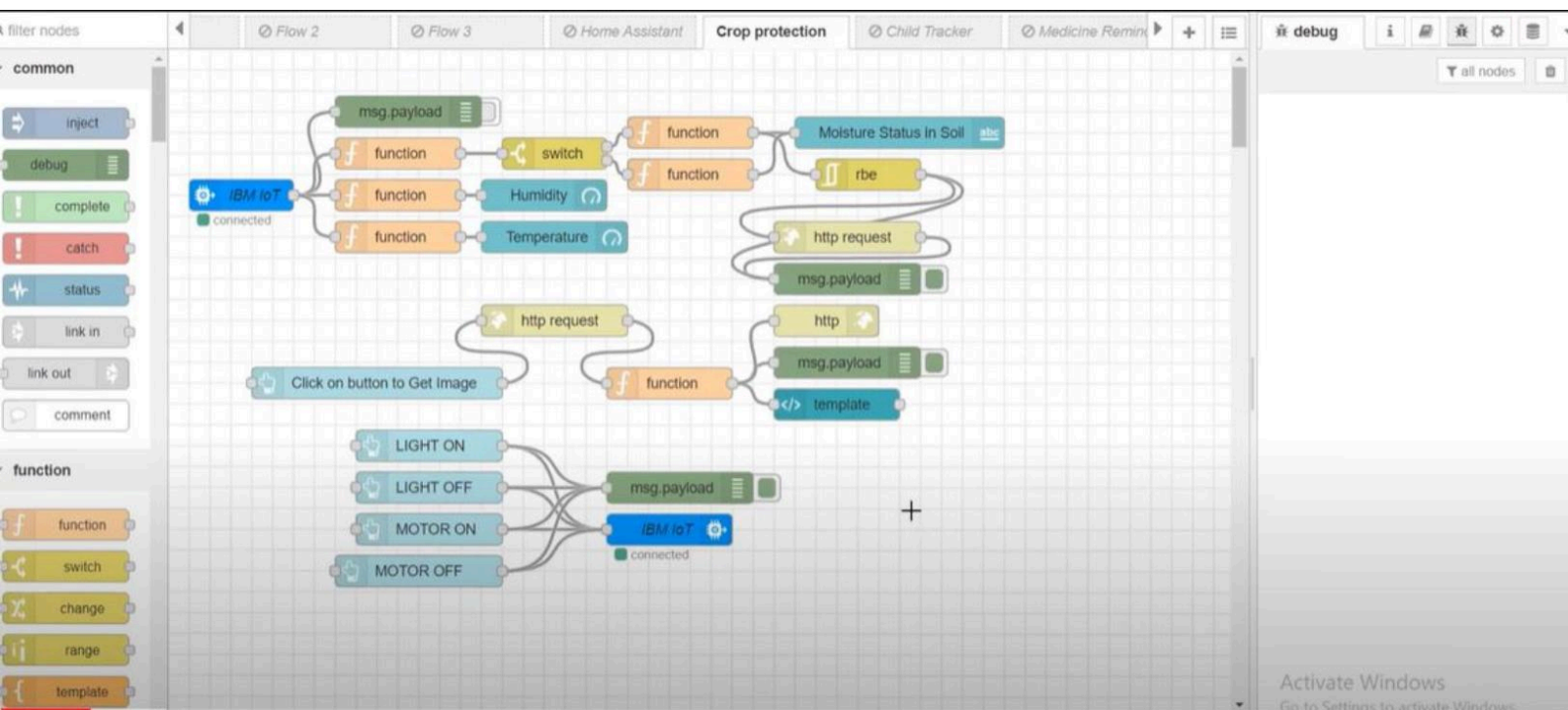
Function

Close

```
1 var m=msg.payload.moisture
2 global.set('m',m)
3 msg.payload=m
4 return msg;
```

Outputs 1

Activate Windows
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Node-RED

Filter nodes

Flow 2 Flow 3 Home Assistant

common

- inject
- debug
- complete
- catch
- status
- link in
- link out
- comment

function

- function
- switch
- change
- range
- template

msg.payload

function

switch

Humidity

function

function

function

http request

Click on button to Get Image

function

LIGHT ON

LIGHT OFF

MOTOR ON

MOTOR OFF

msg.payload

IBM IoT

connected

IBM IoT

connected

Properties

Authentication API Key

API Key newapi

Output Type Device Command

Device Type NodeMCU

Device Id 12345

Command Type cmd

Format json

Data data

QoS 0

Name IBM IoT

Service registered

Activate Windows

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Note: If there is a property in the message that corresponds to any of