PROJECT DEVELOPMENT PHASE

SPRINT 4

TEAM ID	PNT2022TMID14113
TITLE	IOT BASED SMART CROP PROTECTION FOR AGRICULTURE

USING PYTHON CODE TO DISPLAY THE RESULT IN NODE RED DASHBOARD

CODE

```
import cv2
 import numpy as np
 Import wiotp.sdk.device
 import playsound
import randon
import time Expert 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 clarifaigrpc.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","Keybc85e516574f43f42f6f6a2e9eb87'),)
COS ENDPOINT = "https://s3.jp-tok.cloud-object-storage.appdomain.cloud"
COS_API_KEY_ID = "rep-ct18m07990117XFAE7170cmFLLOQA25"
```

COS AUTH ENDPOINT = https://iam.cloud.ihm.com/identity/token

COS RESOURCE_CRN "ern:vi:bluemia:public:cloud-object-storage:global:/b64a3da97440b00c23ef23d6:199ab165-0d9d-420-842-98d86804368::”

clientdb Cloudant ("apikey-v2-163cpaghhfdi kvpasohverju5v5y3ubs", "bab1191453255bb78e7e2f0e1", url="https://apikey-v2-16aterpkohhaefikvpsschwerp5fvgube:bab115 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 (0) to bucket: (1)\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 (0) Complete!\n".format(item_name))

except clienterror as be:

```
print(“CLIENT ERROR:(0)\n”.format(be))
except Exception as be:
 print(“unable to complete multi-part upload:(0)”.format(0))
def myCommandCallback(cmd):
print("Command received: " cmd.data) command cnd.data('command')
 print (command)
 if(command==’Lighton’):
 print (lighton")
 elif(command==’lightoff'):
 print (lightoff")
elif(commande=='motoron’):
 print(‘motoren’)
 elif(command==’motoroff'):
print('motoroff’)
 myConfigI={ "identity":{
“orgid:”hj5fmy”,
"typeid": "NodeMCU",
"deviceId": "12345"
},
"auth": {
"token": "12345678"
}
client =wiotp.sdk.device.DeviceClient (config-myConfig, logHandler=none)
 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(‘garden.mp4’)
If(cap.isopened()==true):
Print(‘file opened’) Else:
Print(‘file not opened’)
While(cap.isopened());
```

```
Ret,frame = cap.read()
Gray=cv2.cvtcolor(frame,cv2.colour_BGR2GRAY)
Ims=cv2.resize(frame,(960,540))
 Cv2.imwrite('ex.jpg',ims) with
 open('ex.jpg","rb") as f:
File_bytes= f.read()
Request = service_pb2.postmodeloutputrequest
(
Model_id='aaa03c23b3724a56b629203edc62c',
Inputs={resoursces_pb2.input(data=resources_pb2.data(image=resources_pb2.imag e(base64=file_bytes)) )})
Response=stub.postmode1outputs(request,metadata=metadata)
If response.ststus.code !=status_code_pb2.success;
Raise Exception("request failed, status code:"+str(response.status.code))
Detect=false
For concept in response.outputs[0].data.concepts:
#print('%12s:%,2f'%(concepts.name,concept.value)) If(concept.value>0.98):
If(concepts.name=="animal"):
Print("Alert!Alert!animal detected")
Playsound.playsound('alert.mp3')
Picname+datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
Cv2.imwrite(picname+'.jng',frame)
Multi_part_upload('gnaneshwar',picname+'.jpg",picname+'.jpg')
Json_document=("link";cos_ENDPOINT+'/'+"gnaneshwar'+'/'+picname+'.jpg)
New_document=my_database.create_document(json_document) If
 New_document.exists():
Print(f"document successfully created.")
Time.sleep(5)
Detect=true
Moist=random.randint(0,100)
Humidity=random,.randint(0,100)
Mydata={'animal':detect''moisture':moist,'humidity':humidity}
Print(mydata)
If(humidity!=none):
```

Client.publishevent(evenid=”status”,msgformat=”json”,data=mydata,qos=0,onpublis h=none)

Print(“publish ok..”)

Client.commandcallback = mycommandcallback

Cv2.imshow(‘frame’,ims)

If cv2.waitkey(1) & 0xFF == ord(‘q’):

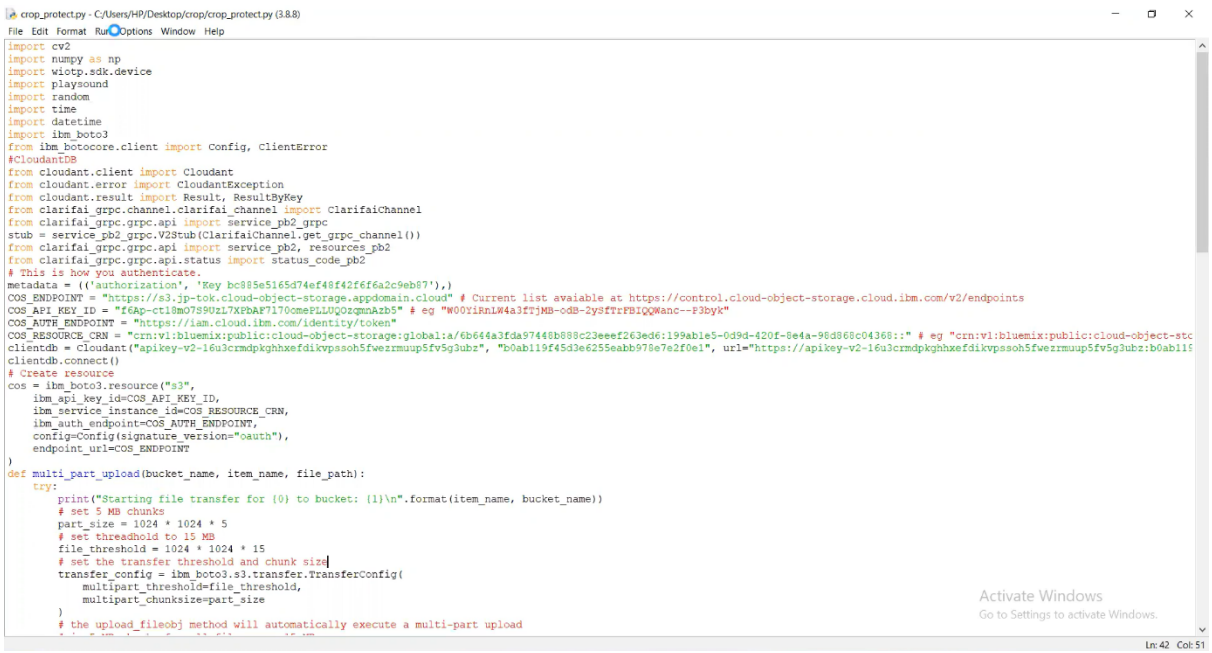
Break

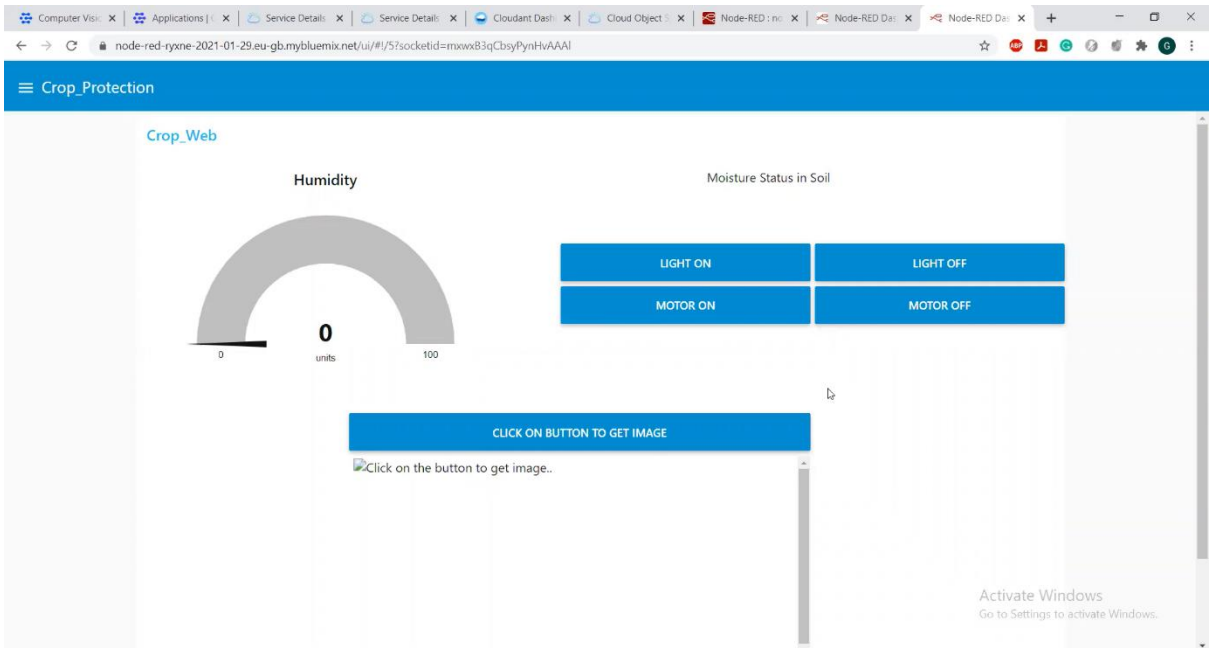
Client.disconnect()

Cap.release()

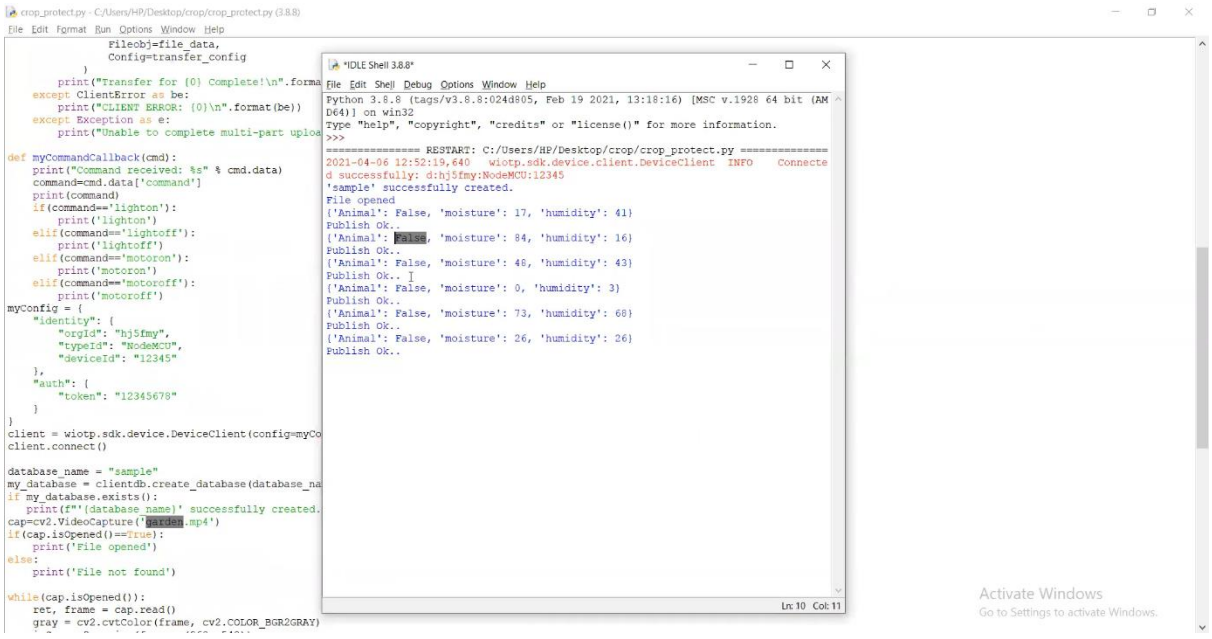
Cv2.destroyAllWindows()

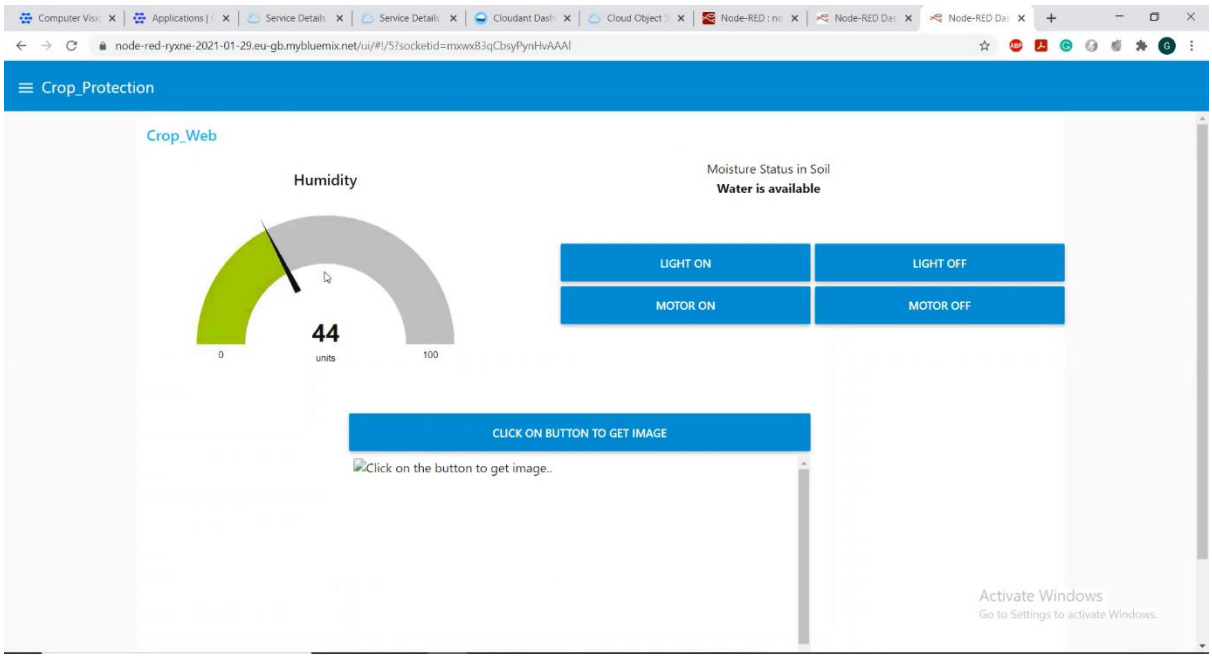
RESULT





RUN THE PYTHON CODE




Crop_Protection
Crop_Web
Humidity
44
units
0
100
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..
Activate Windows
Go to Settings to activate Windows.