Sprint-2

Date	30 October 2022
Team ID	PNT2022TMID50111
Project Name	IOT BASED CROP PROTECTION SYSTEM FOR AGRICULTURE

```
import cv2 import numpy as np import
wiot.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_c
hannel()) from clarifai_grpc.grpc.api import
```

service_pb2, resource_pb2 from

clarifai_grpc.grpc.api.status import status_code_pb2

#This is how you authenticate metadata = (('authorization',

'key 0620e202302b4508b90eab7efe7475e4'),)

COS_ENDPOINT = "https://s3.jp-tok.cloud-object-storage.appdomain.cloud"

COS_API_KEY_ID = "g5d4qO8EIgv4TWUCJj4hfEzgalqEjrDbE82AJDWlAOHo"

COS_AUTH_ENDPOINT = "https://iam.cloud.ibm.com/identity/token"

COS_RESOURCE_CRN = "crn:v1:bluemix:public:cloud-objectstorage:global:a/c2fa2836eaf3434bbc8b5b58fefff3f0:62e450fd-4c82-4153-ba41-ccb53adb8111::"

clientdb = cloudant("apikey-W2njldnwtjO16V53LAVUCqPwc2aHTLmlj1xXvtdGKJBn", "88cc5f47c1a28afbfb8ad16161583f5a", url="https://d6c89f97-cf91-48b7-b14b-c99b2fe27c2fbluemix.cloudantnosqldb.appdomain.cloud")
clientdb.connect()

#Create resource cos = ibm_boto3.resource("s3",

ibm_api_key_id=COS_API_KEY_ID,

ibm_service_instance_id=COS_RESOURCE_C

RN,

ibm_auth_endpoint=COS_AUTH_ENDPOINT,

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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 size
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 e:
        print("Unable to complete multi-part upload: {0}".format(e))

defmyCommandCallback(cmd):
print("Command received: %s" %
cmd.data)
command=cmd.data['command']
print(command)

    if(commamd=="lighton"):
        print('lighton')
elif(command=="lightoff"):
        print('lightoff')
elif(command=="motoron"):
```

```
        print('motoron')
elif(command=="motoroff"):
        print('motoroff')
myConfig = {
    "identity": {
        "orgId": "chytun",
        "typeId": "NodeMCU",
        "deviceId": "12345"
        },
    "auth": {
        "token": "12345678"
        }
    }
client = wiot.sdk.device.DeviceClient(config=myConfig,
logHandlers=None) client.connect()

database_name = "sample" my_database =
clientdb.create_database(database_name) if
my_dtabase.exists():
    print(f"'(database_name)' successfully created.")
cap=cv2.VideoCapture("garden.mp4") if(cap.isOpened()==True):
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    print('File
opened') else:
    print('File not found')

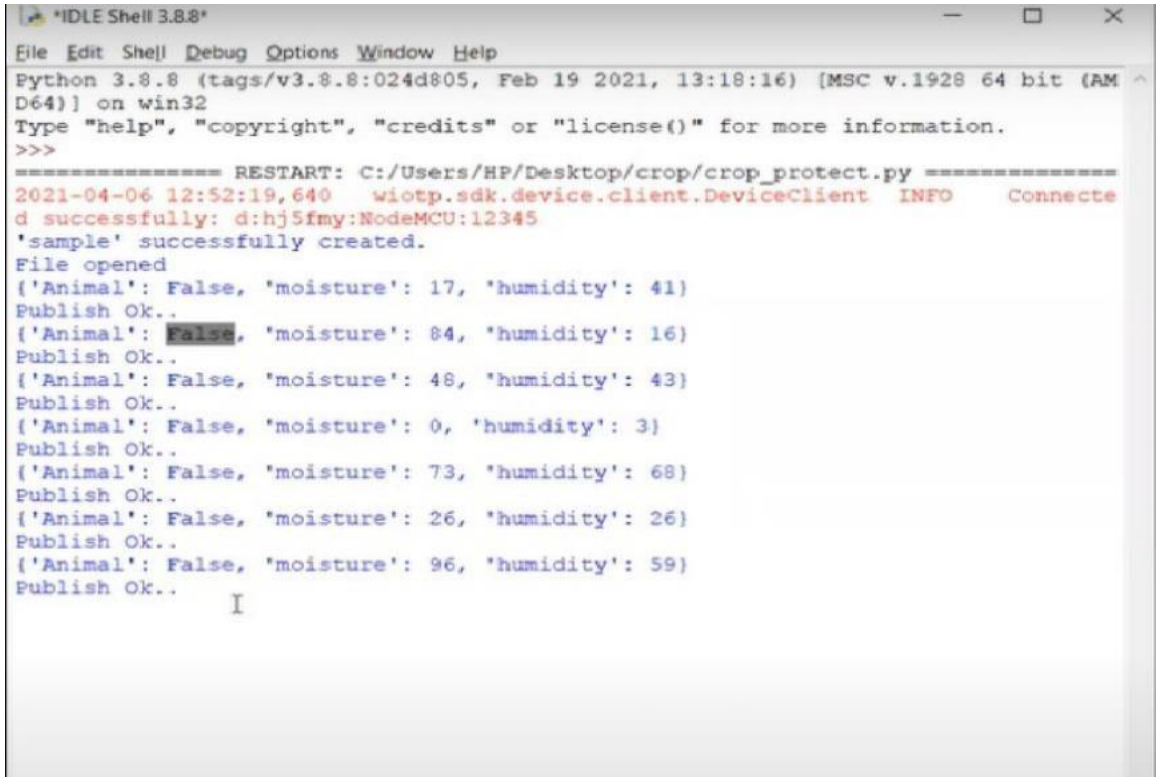
while(cap.isOpened()):     ret, frame =
cap.read()     gray = cv3.cvtColor(frame,
cv2.COLOR_BGR@GRAY)     imS=
cv2.resize(frame, (960,540))
cv2.inwrite('ex.jpg',imS)     with
open("ex.jpg", "rb") as f:         file_bytes =
f.read()
    #This is the model ID of a publicly available General model. You may use any
other public or custom model ID.
    request = service_pb2.PostModeloutputsRequest(
model_id='e9359dbe6ee44dbc8842ebe97247b201',

inputs=[resources_pb2.Input(data=resources_pb2.Data(image=resources_pb2.Ima
ge(base64=file_bytes
))
                                )])
    response = stub.PostModelOutputs(request,
metadata=metadata)     if response.status.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: %.f' % (concept.name, concept.value))
        if(concept.value>0.98):
#print(concept.name)
if(concept.name=="animal"):
                print("Alert! Alert! animal detected")
playsound.playsound('alert.mp3')
picname=datetime.datetime.now().strftime("%y-%m-%d-%H-
%M")                cv2.inwrite(picname+'.jpg',frame)
multi_part_upload('Dhakshesh', picname+'.jpg', picname+'.jpg')
json_document={"link":COS_ENDPOINT+'/'+'Dhakshesh'+'/'+pic
name+'.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(eventId="status",msgFormat="json", daya=myData, qos=0,
onPublish=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(
)
```

OUTPUT:


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 Connected 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..
{'Animal': False, 'moisture': 96, 'humidity': 59}
Publish Ok..