

SPRINT 2

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Python 3.10.7 (tags/v3.10.7:6cc6b13, Sep 5 2022, 14:08:36) [MSC v.1933 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license()" for more information.

```
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_channel())
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-object-
```

```
storage:global:a/c2fa2836eaf3434bbc8b5b58fefff3f0:62e450fd-4c82-4153-ba41-ccb53adb8111::"
```

```
clientdb = cloudant("apikey-W2njldnwtjO16V53LAVUCqPwc2aHTLmlj1xXvtdGKJBn",  
"88cc5f47c1a28afbfb8ad16161583f5a", url="https://d6c89f97-cf91-48b7-b14b-c99b2fe27c2f-  
bluemix.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_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 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  
)
```

```
#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))

def myCommandCallback(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_database.exists():
    print(f'"{database_name}" successfully created.')
cap=cv2.VideoCapture("garden.mp4")
if(cap.isOpened()==True):
    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.imwrite('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.Image(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.imwrite(picname+'.jpg',frame)
... multi_part_upload('Dhakshesh', picname+'.jpg', picname+'.jpg')
... json_document={"link":COS_ENDPOINT+'/'+ 'Dhakshesh'+'/'+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(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()
```

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 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..
({'Animal': False, 'moisture': 96, 'humidity': 59)
Publish Ok..
I
```