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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, resource_pb2
from clarifai_grpc.grpc.api.status import status_code_pb2
#This is how you authenticate
metadata = (('authorization', 'key 5797d941-433e-436a-a480-680d9080a990'),)
COS_ENDPOINT = "https://s3.tok.ap.cloud-object-storage.appdomain.cloud"
COS_API_KEY_ID = "v9n8Zn4r5VpcMVz_HyRY0DrS13jSzph2IEFioVj4-vmT"
COS_AUTH_ENDPOINT = "https://iam.cloud.ibm.com/identity/token"
COS_RESOURCE_CRN = "crn:v1:bluemix:public:cloud-
object   storage:global:a/3f060ee770d94e20a88f49f3da641d6d:f301cab2-2e94-48a1-
a8a05b4968527c54::"
clientdb = cloudant("apikey-_pIeLXPoaPpnOZ7SMoVKd6tZdsjf54X9LwkFEWB1a0T6",
```

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"0165dca6-1176-4aa5-b0fe-81473e50e35d", url="https://47643860-3553-4211-
ba2a    d8e26dd17c08-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 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))



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": "ebf2oy",
            "typeId": "Humidity",
            "deviceId": "123456"
        },
        "auth": {
             "token": "12345678"
        }
}
client = wiot.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

database_name = "sample"
my_database = clientdb.create_database(database_name)
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```
if my_dtabase.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.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='82eaf1c767a74869964531e4d9de5237', 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")
```

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                playsound.playsound('alert.mp3')
                picname=datetime.datetime.now().strftime("%y-%m-%d-%H-%M")
                cv2.inwrite(picname+'.jpg',frame)
                multi_part_upload('Umamaheswari', picname+'.jpg', picname+'.jpg')

json_document={"link":COS_ENDPOINT+'/'+'Umamaheswari'+'/'+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()
cv2.destroyAllWindows()
```