Scripts

Web Camera Device

```
import paho.mqtt.client as mqtt
import cv2
import base64

BROKER_IP = "192.168.0.158"
CAPTURE_TOPIC = "capture/request"
IMAGE_TOPIC = "camera/image"
IMAGE_PATH = "captured_image.jpg"

cap = cv2.VideoCapture(0)
# MQTT callback for incoming messages
def on_message(client, userdata, message):
    if message.topic == CAPTURE_TOPIC:
        print("Received capture request. Taking picture...")

        # Capture image using OpenCV
        ret, frame = cap.read()

        if ret:
            cv2.imwrite(IMAGE_PATH, frame)
            print(f"Image saved as {IMAGE_PATH}")

            # Encode and publish image
            with open(IMAGE_PATH, "rb") as img_file:
                image_data = base64.b64encode(img_file.read()).decode("utf-8")
```

```
                client.publish(IMAGE_TOPIC, image_data)
                print("Image published successfully")
        else:
            print("Failed to capture image")

# MQTT setup
client = mqtt.Client()
client.on_message = on_message
client.connect(BROKER_IP, 1883)

client.subscribe(CAPTURE_TOPIC)
print("Edge Device is running. Waiting for requests...")
client.loop_forever()
```

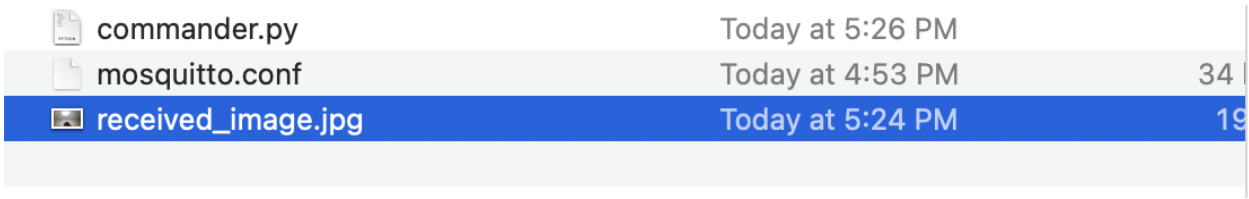
Laptop Device

```
import paho.mqtt.client as mqtt
import base64

BROKER_IP = "192.168.0.158"
CAPTURE_TOPIC = "capture/request"
IMAGE_TOPIC = "camera/image"
SAVE_PATH = "received_image.jpg"

# MQTT callback to receive the image
def on_message(client, userdata, message):
    if message.topic == IMAGE_TOPIC:
        print("Received image. Saving...")

        # Decode and save image
        image_data = base64.b64decode(message.payload)
        with open(SAVE_PATH, "wb") as img_file:
            img_file.write(image_data)

        print(f"Image saved as {SAVE_PATH}")

# Send capture request
client = mqtt.Client()
client.on_message = on_message
client.connect(BROKER_IP, 1883)

# Subscribe to receive the image
client.subscribe(IMAGE_TOPIC)
print("Laptop waiting for image...")

#client.loop_forever()
```

```
client.loop_start()
while True:
   a = input("Press enter to snap some spicy pics:")
   if a == 'q':
       client.loop_stop()
       break
   # Publish capture request
   client.publish(CAPTURE_TOPIC, "Capture now")
   print("Capture request sent.")
```

Images

Laptop received image



received_image.jpg

Sample console output

Just press enter to send capture request

```
Press enter to snap some spicy pics:
Capture request sent.
Press enter to snap some spicy pics:Received image. Saving...
Image saved as received_image.jpg
```