MQTT-PROJECT
Group-T

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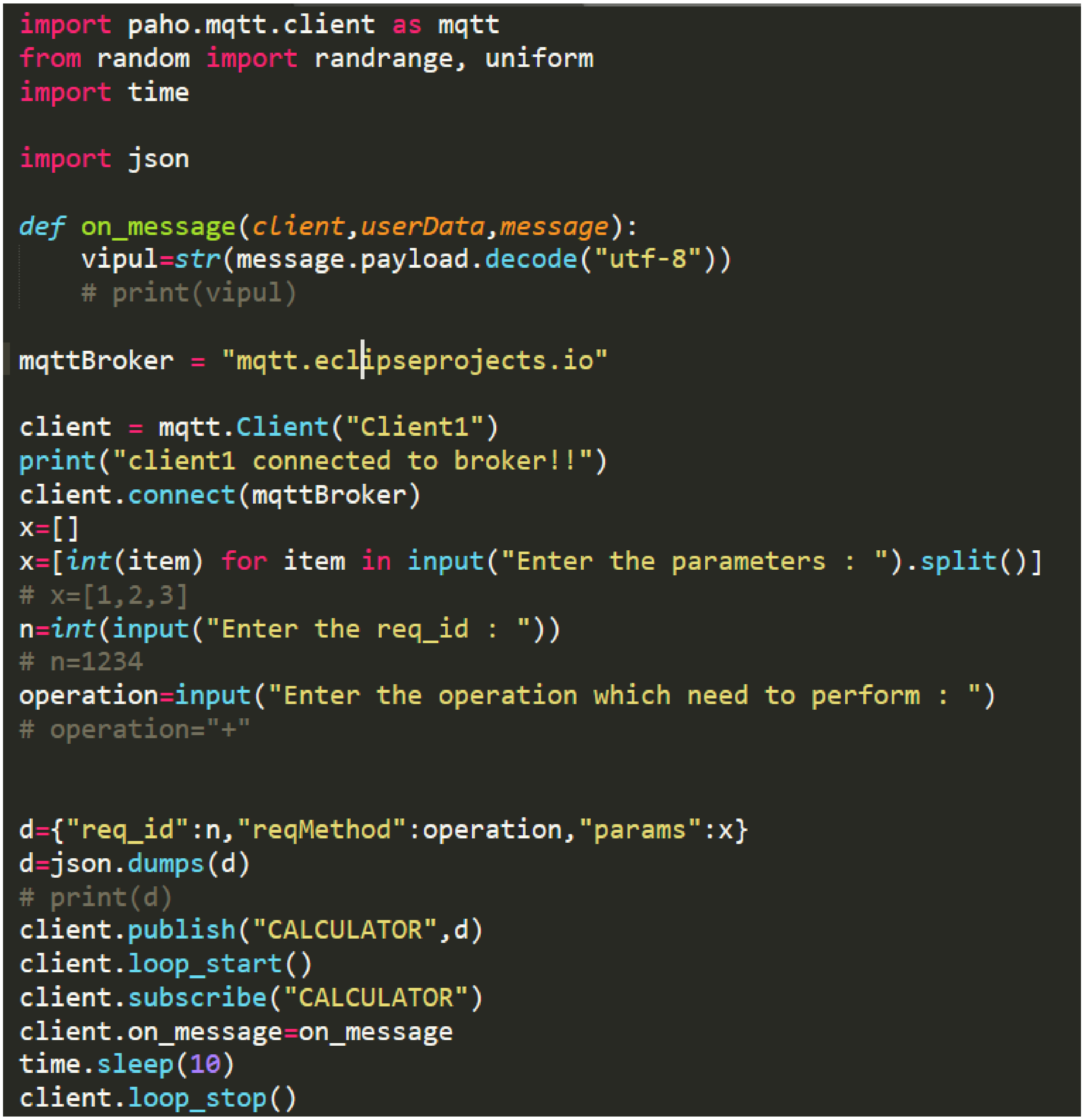
- I made two clients named client1 and client 2.
- For running the script we first need to run the publish_2.py file and then we need to run the publish_1.py file.
- Here I am taking the input from the terminal for the parameters, request_id and for the operation which we need to perform.

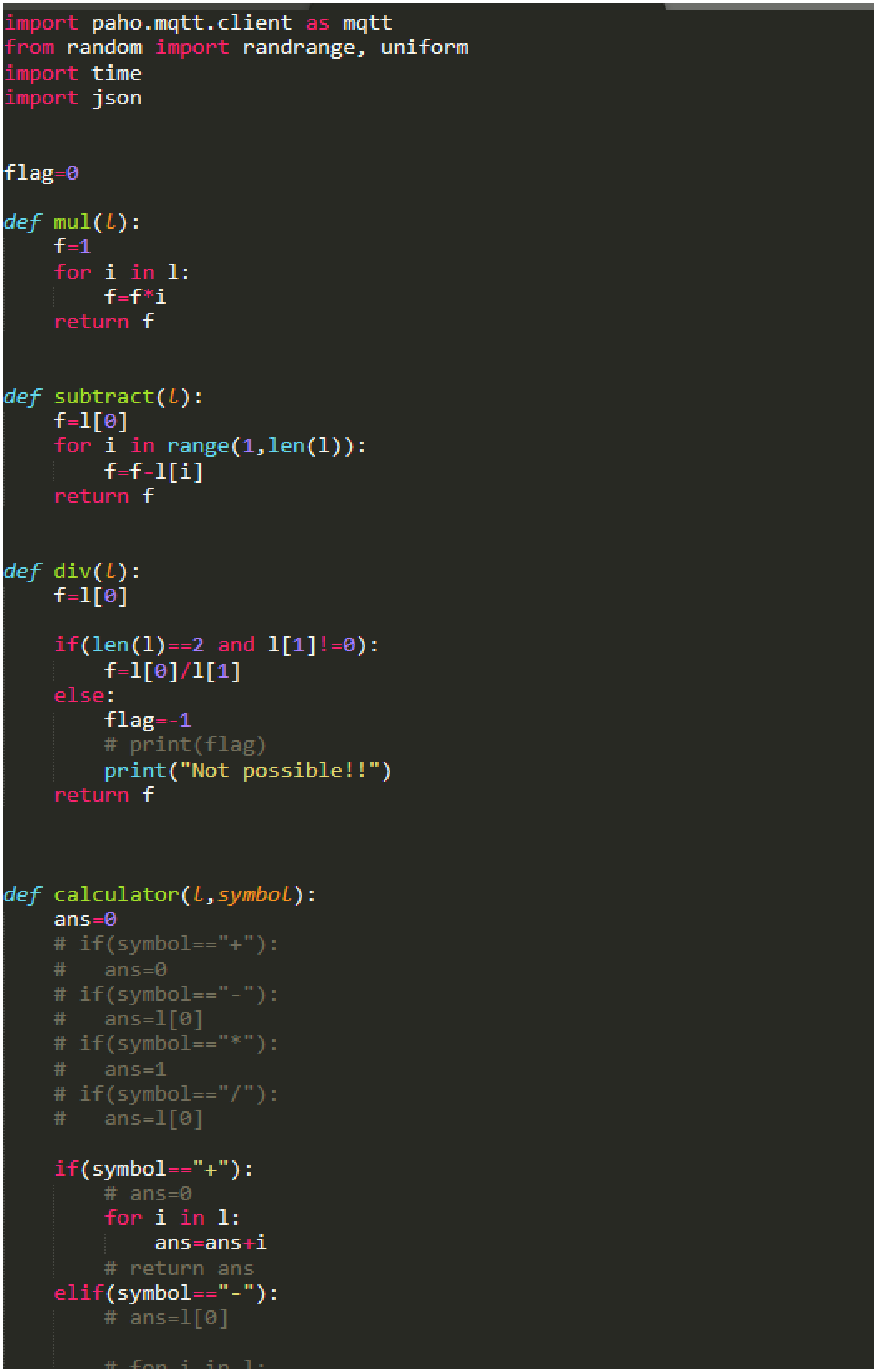
codes:

For client1

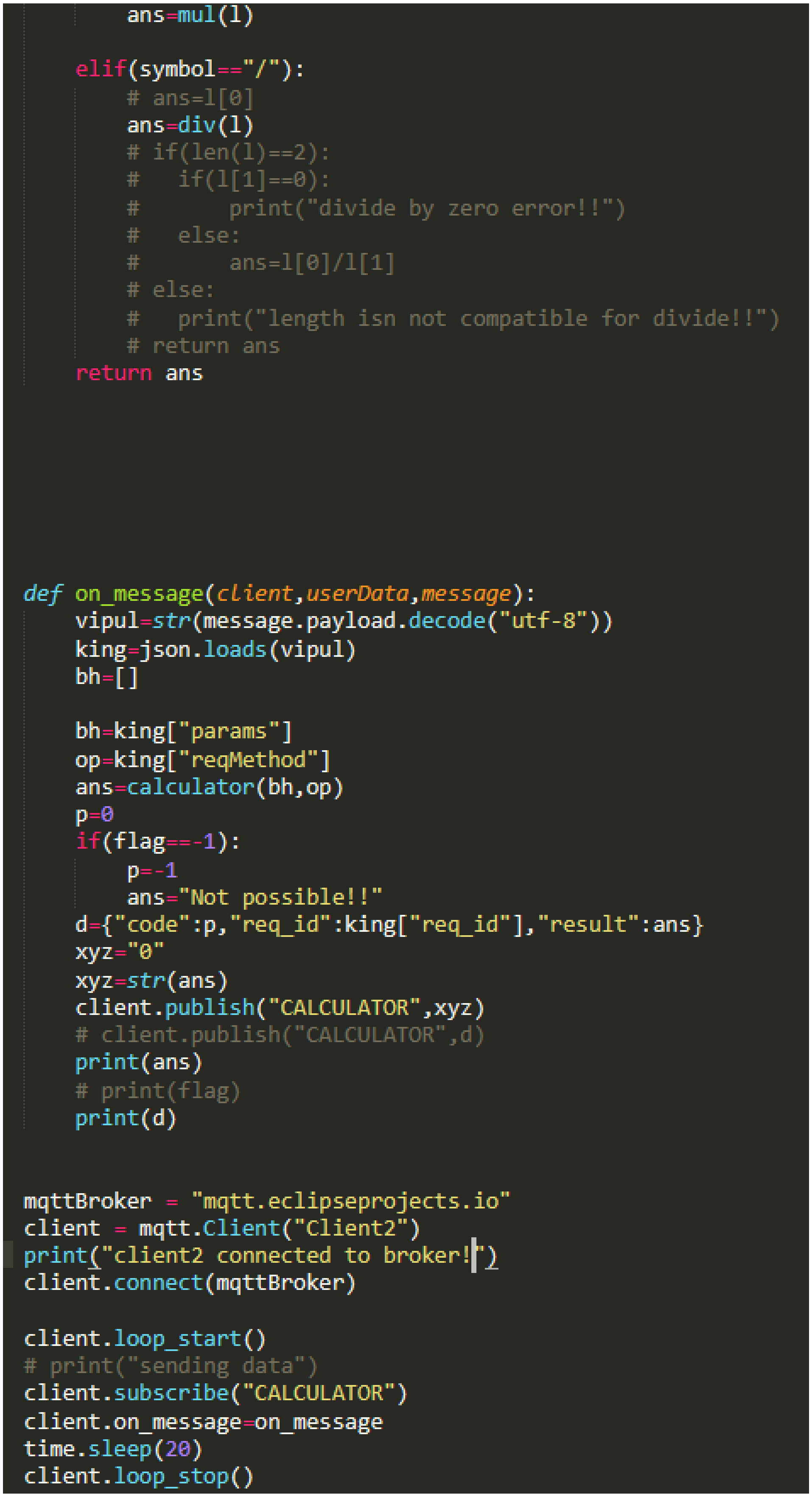


```
import paho.mqtt.client as mqtt
from random import randrange, uniform
import time

import json

def on_message(client,userData,message):
    vipul=str(message.payload.decode("utf-8"))
    # print(vipul)

mqttBroker = "mqtt.eclipseprojects.io"

client = mqtt.Client("Client1")
print("client1 connected to broker!!")
client.connect(mqttBroker)
x=[]
x=[int(item) for item in input("Enter the parameters : ").split()]
# x=[1,2,3]
n=int(input("Enter the req_id : "))
# n=1234
operation=input("Enter the operation which need to perform : ")
# operation="+"


d={"req_id":n,"reqMethod":operation,"params":x}
d=json.dumps(d)
# print(d)
client.publish("CALCULATOR",d)
client.loop_start()
client.subscribe("CALCULATOR")
client.on_message=on_message
time.sleep(10)
client.loop_stop()
```

For client2:



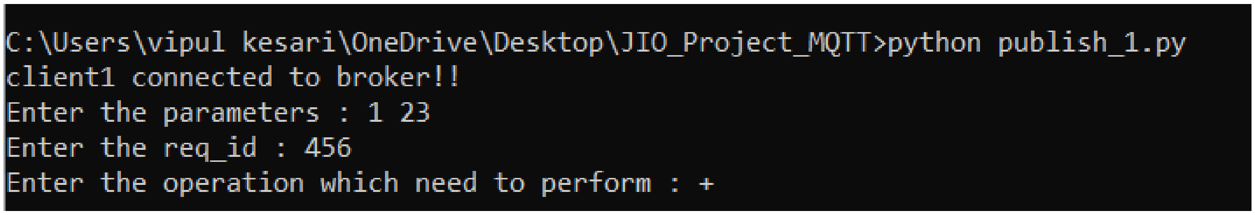
```python
import paho.mqtt.client as mqtt
from random import randrange, uniform
import time
import json


flag=0

def mul(l):
    f=1
    for i in l:
        f=f*i
    return f


def subtract(l):
    f=l[0]
    for i in range(1,len(l)):
        f=f-l[i]
    return f


def div(l):
    f=l[0]

    if(len(l)==2 and l[1]!=0):
        f=l[0]/l[1]
    else:
        flag=-1
        # print(flag)
        print("Not possible!!")
    return f



def calculator(l,symbol):
    ans=0
    # if(symbol=="+"):
    #   ans=0
    # if(symbol=="-"):
    #   ans=l[0]
    # if(symbol=="*"):
    #   ans=1
    # if(symbol=="/"):
    #   ans=l[0]

    if(symbol=="+"):
        # ans=0
        for i in l:
            ans=ans+i
        # return ans
    elif(symbol=="-"):
        # ans=l[0]

        # for i in l:
```



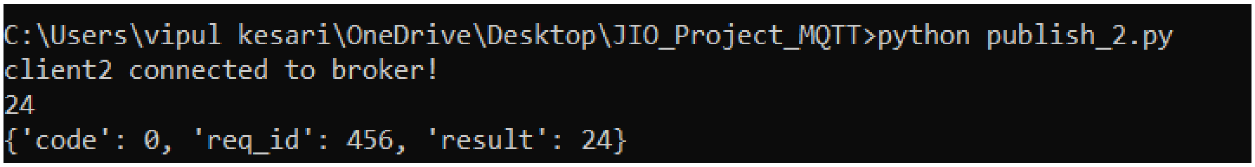
```
        ans=mul(l)

    elif(symbol=="/"):
        # ans=l[0]
        ans=div(l)
        # if(len(l)==2):
        #   if(l[1]==0):
        #       print("divide by zero error!!")
        #   else:
        #       ans=l[0]/l[1]
        # else:
        #   print("length isn not compatible for divide!!")
        # return ans
    return ans





def on_message(client,userData,message):
    vipul=str(message.payload.decode("utf-8"))
    king=json.loads(vipul)
    bh=[]

    bh=king["params"]
    op=king["reqMethod"]
    ans=calculator(bh,op)
    p=0
    if(flag==-1):
        p=-1
        ans="Not possible!!"
    d={"code":p,"req_id":king["req_id"],"result":ans}
    xyz="0"
    xyz=str(ans)
    client.publish("CALCULATOR",xyz)
    # client.publish("CALCULATOR",d)
    print(ans)
    # print(flag)
    print(d)


mqttBroker = "mqtt.eclipseprojects.io"
client = mqtt.Client("Client2")
print("client2 connected to broker!")
client.connect(mqttBroker)

client.loop_start()
# print("sending data")
client.subscribe("CALCULATOR")
client.on_message=on_message
time.sleep(20)
client.loop_stop()
```

Output:

For addition

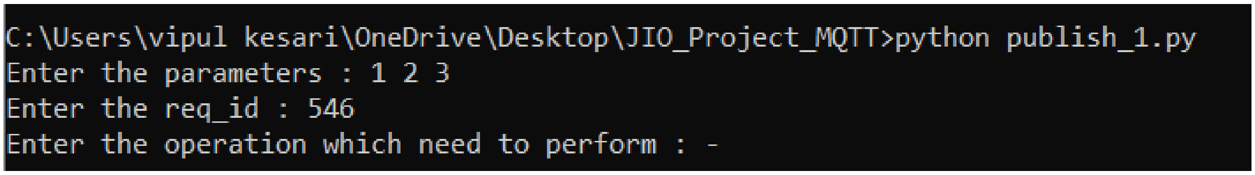


```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_1.py
client1 connected to broker!!
Enter the parameters : 1 23
Enter the req_id : 456
Enter the operation which need to perform : +
```

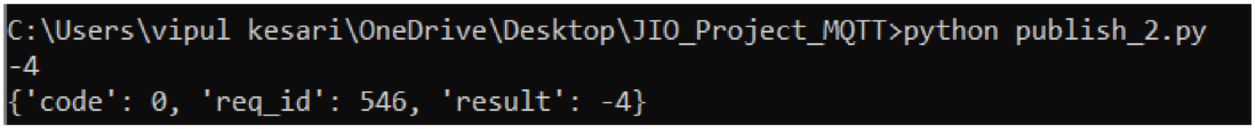


```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_2.py
client2 connected to broker!
24
{'code': 0, 'req_id': 456, 'result': 24}
```

For subtraction:

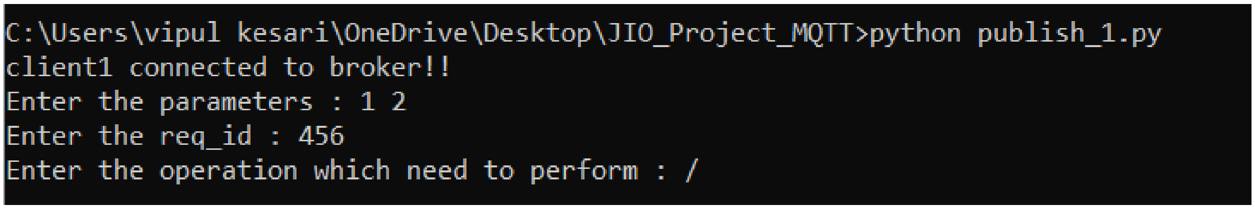


```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_1.py
Enter the parameters : 1 2 3
Enter the req_id : 546
Enter the operation which need to perform : -
```

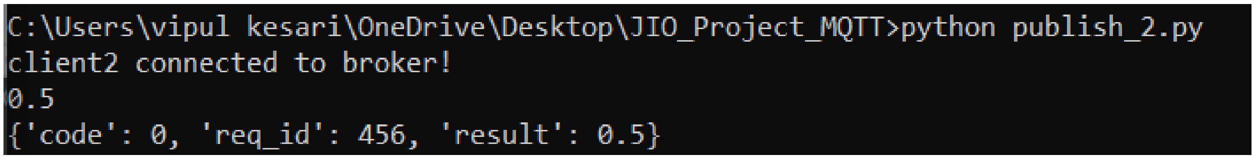


```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_2.py
-4
{'code': 0, 'req_id': 546, 'result': -4}
```

For division:

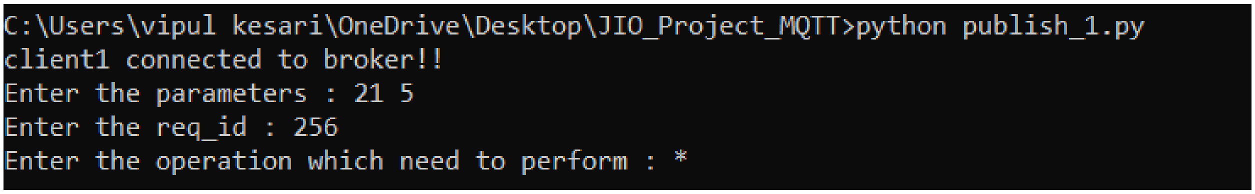


```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_1.py
client1 connected to broker!!
Enter the parameters : 1 2
Enter the req_id : 456
Enter the operation which need to perform : /
```

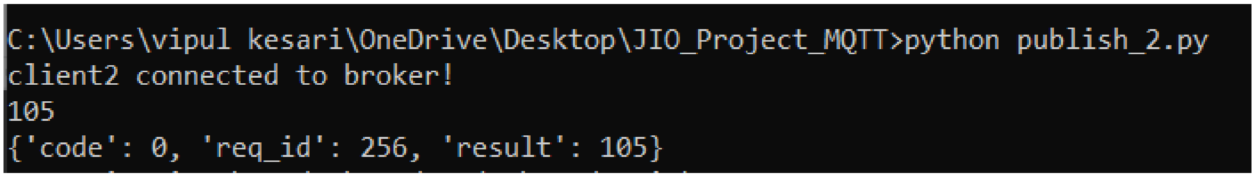


```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_2.py
client2 connected to broker!
0.5
{'code': 0, 'req_id': 456, 'result': 0.5}
```

For Multiplication:



```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_1.py
client1 connected to broker!!
Enter the parameters : 21 5
Enter the req_id : 256
Enter the operation which need to perform : *
```



```
C:\Users\vipul kesari\OneDrive\Desktop\JIO_Project_MQTT>python publish_2.py
client2 connected to broker!
105
{'code': 0, 'req_id': 256, 'result': 105}
```