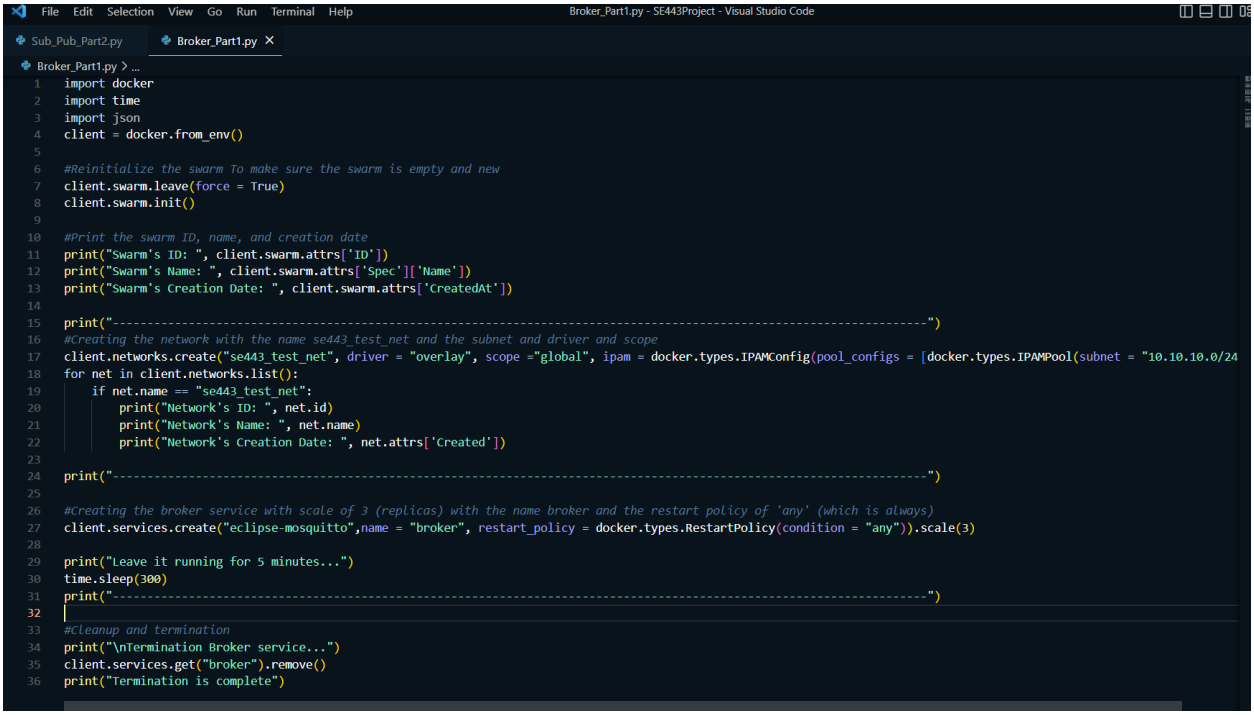
Meteb Almadi

200304

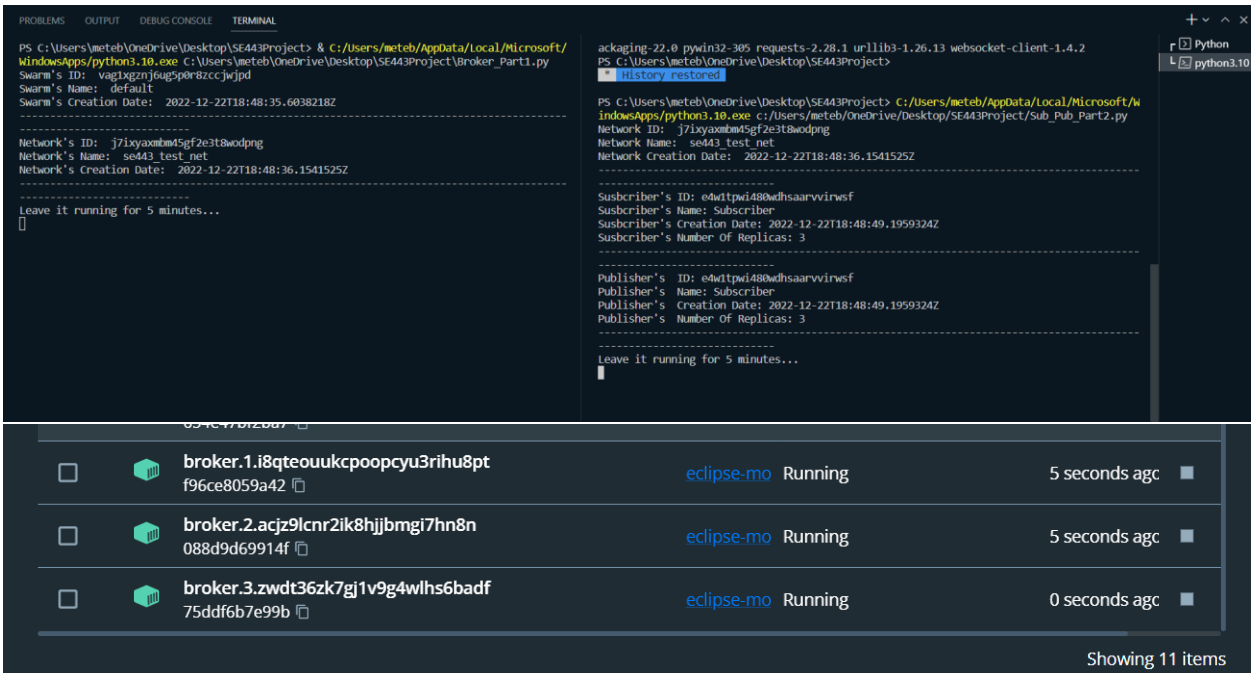
Github link: https://github.com/metebalmadi/SE443Project_meteb_200304.git

Screenshots:

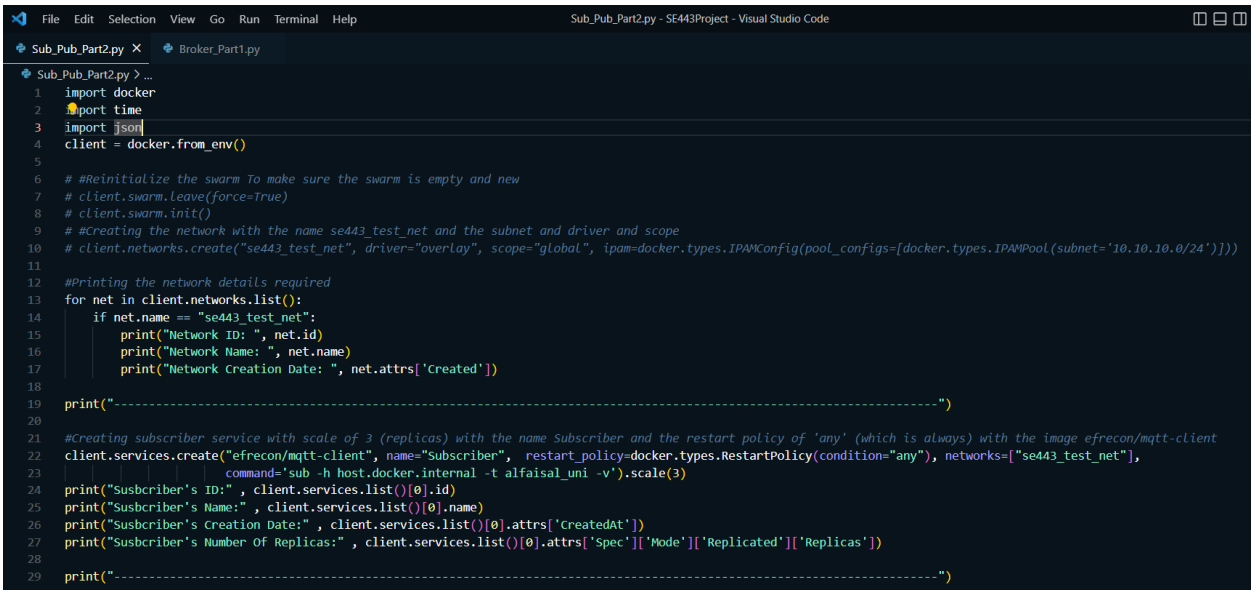
Part 1 Code and output:



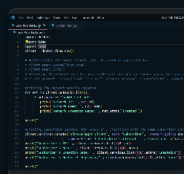
Output:


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PS C:\Users\meteb\OneDrive\Desktop\SE443Project> & C:/Users/meteb/AppData/Local/Microsoft/WindowsApps/python3.10.exe C:\Users\meteb\OneDrive\Desktop\SE443Project\Broker_Part1.py
Swarm's ID: vag1xgznj6ug5p0r8zccjwjpd
Swarm's Name: default
Swarm's Creation Date: 2022-12-22T18:48:35.6038218Z
Network's ID: j7ixyaxmbm45gf2e3t8wodpng
Network's Name: se443_test_net
Network's Creation Date: 2022-12-22T18:48:36.1541525Z
Leave it running for 5 minutes...
ackaging-22.0 pywin32-305 requests-2.28.1 urllib3-1.26.13 websocket-client-1.4.2
PS C:\Users\meteb\OneDrive\Desktop\SE443Project>
History restored
PS C:\Users\meteb\OneDrive\Desktop\SE443Project> C:/Users/meteb/AppData/Local/Microsoft/WindowsApps/python3.10.exe c:/Users/meteb/OneDrive/Desktop/SE443Project/Sub_Pub_Part2.py
Network ID: j7ixyaxmbm45gf2e3t8wodpng
Network Name: se443_test_net
Network Creation Date: 2022-12-22T18:48:36.1541525Z
Susbcriber's ID: e4w1tpwi480wdhsaarvvirwsf
Susbcriber's Name: Subscriber
Susbcriber's Creation Date: 2022-12-22T18:48:49.1959324Z
Susbcriber's Number Of Replicas: 3
Publisher's ID: e4w1tpwi480wdhsaarvvirwsf
Publisher's Name: Subscriber
Publisher's Creation Date: 2022-12-22T18:48:49.1959324Z
Publisher's Number Of Replicas: 3
Leave it running for 5 minutes...
Python
python3.10
broker.1.i8qteouukcpoopcyu3rihu8pt
f96ce8059a42
eclipse-mo
Running
5 seconds ago
broker.2.acjz9lcnr2ik8hjjbmgi7hn8n
088d9d69914f
eclipse-mo
Running
5 seconds ago
broker.3.zwdt36zk7gj1v9g4wlhs6badf
75ddf6b7e99b
eclipse-mo
Running
0 seconds ago
Showing 11 items

Part 2 Code:


File Edit Selection View Go Run Terminal Help
Sub_Pub_Part2.py - SE443Project - Visual Studio Code
Sub_Pub_Part2.py
Broker_Part1.py
Sub_Pub_Part2.py > ...
import docker
import time
import json
client = docker.from_env()
# #Reinitialize the swarm To make sure the swarm is empty and new
# client.swarm.leave(force=True)
# client.swarm.init()
# #Creating the network with the name se443_test_net and the subnet and driver and scope
# client.networks.create("se443_test_net", driver="overlay", scope="global", ipam=docker.types.IPAMConfig(pool_configs=[docker.types.IPAMPool(subnet='10.10.10.0/24')]))
#Printing the network details required
for net in client.networks.list():
if net.name == "se443_test_net":
print("Network ID: ", net.id)
print("Network Name: ", net.name)
print("Network Creation Date: ", net.attrs['Created'])
print("----------")
#Creating subscriber service with scale of 3 (replicas) with the name Subscriber and the restart policy of 'any' (which is always) with the image efrecon/mqtt-client
client.services.create("efrecon/mqtt-client", name="Subscriber", restart_policy=docker.types.RestartPolicy(condition="any"), networks=["se443_test_net"],
command='sub -h host.docker.internal -t alfaisal_uni -v').scale(3)
print("Susbcriber's ID:" , client.services.list()[0].id)
print("Susbcriber's Name:" , client.services.list()[0].name)
print("Susbcriber's Creation Date:" , client.services.list()[0].attrs['CreatedAt'])
print("Susbcriber's Number Of Replicas:" , client.services.list()[0].attrs['Spec']['Mode']['Replicated']['Replicas'])
print("----------")

```python

#Creating publisher service with scale of 3 (replicas) with the name Publisher and the restart policy of 'any' (which is always) with the image efrecon/mqtt-client
client.services.create("efrecon/mqtt-client", name="Publisher",  restart_policy=docker.types.RestartPolicy(condition="any"), networks=["se443_test_net"],
                       command='pub -h host.docker.internal -t alfaisal_uni -m "<200304 - Meteb - Almadi - 0554271113>"').scale(3)
print("Publisher's  ID:" , client.services.list()[0].id)
print("Publisher's  Name:" , client.services.list()[0].name)
print("Publisher's  Creation Date:" , client.services.list()[0].attrs['CreatedAt'])
print("Publisher's  Number Of Replicas:" , client.services.list()[0].attrs['Spec']['Mode']['Replicated']['Replicas'])

print("-----------------------------------------------------------------------------------------------------------------")
print("Leave it running for 5 minutes...")
time.sleep(300)
print("-----------------------------------------------------------------------------------------------------------------\n")

#Cleanup and termination

print("Terminating Publisher, Subscriber, and Network services and finally leaving the swarm")

client.services.get("Publisher").remove()
print("Publisher Terminated....")

client.services.get("Subscriber").remove()
print("Subscriber Terminated....")

client.networks.get("se443_test_net").remove()
print("Network Terminated....")

client.swarm.leave(force=True)
print("Swarm Left Forcefully....")

```



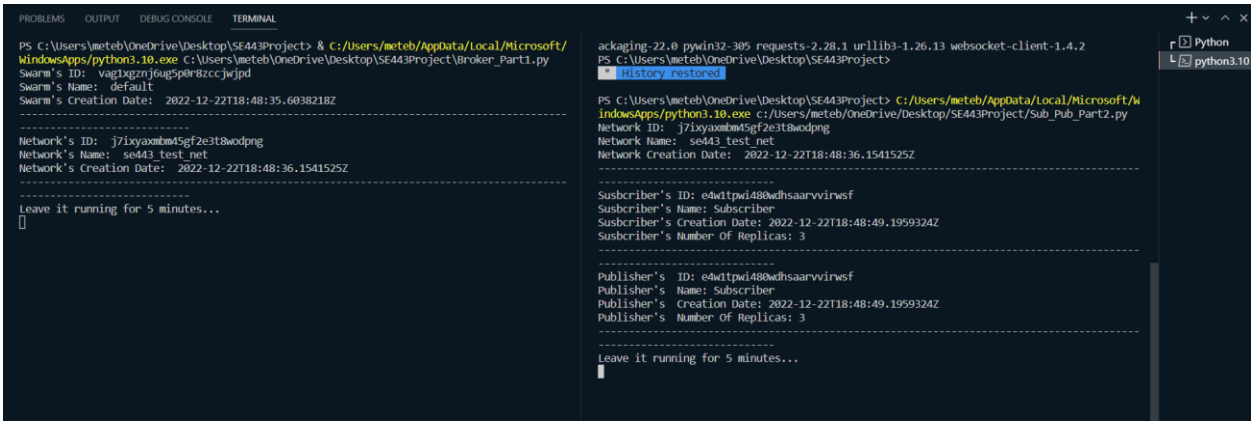
Subscriber.2.ob58li9kqsigjgukehzruxf33 efrecon/mqtt-client:latest

RUNNING

Logs Inspect Terminal Stats

```
2022-12-22 21:49:20 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:21 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:21 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:25 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:29 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:31 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:33 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:39 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:39 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:41 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:48 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:51 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:54 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:54 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:49:56 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:00 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:00 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:03 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:06 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:06 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:09 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:14 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:14 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:17 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:20 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
2022-12-22 21:50:20 alfaisal_uni <200304 - Meteb - Almadi - 0554271113>
```

Output: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Publisher's Number Of Replicas: 3
Leave it running for 5 minutes...
Python
python3.10