

CS5453: INTERNET OF THINGS

ASSIGNMENT 2: Implementation of Messenger Application using MQTT

Submitted by

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PROBLEM :

KEY IDEA:

1. It uses MQTT Protocol for messaging and uses HIVE MQ as the public broker.
2. Our customized application can handle upto 25 users .
3. Here, when a user does the registration, his mobile number will act as the unique topic name , and will be saved by the MQTT broker, and the communication will be carried by normal publisher and subscriber formats.
4. For enabling group chat , the group name will be the topic name, and all the people interested to join the group can subscribe to that topic(group name).
5. Also the members of the group will get the notification of any members leaving the group.

CONTRIBUTIONS

1. SRINIVAS NANDI (CS19 MTECH 11016)

Group Chat implementation

2. ABHIJITH GIRIN N V (CS19 MTECH 01001)

One-to One chat Implementation

Combinedly, the group chat feature is done together(WILL MSG) and other debugging .

SCREENSHOT:

ONE - ONE CHAT

```
srinivas@srinivas-SVF15218SNB: ~/Desktop/cs19mtech11016-task1
Press Q<Enter> to quit

Connection lost
cause: (null)
^Z
[1]+  Stopped                  ./sub.out
srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$ g
mqtt3c -o pub.out
srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$ .srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$ gcc pub.c -l paho-
enter CLIENTID
nandi

enter username for registration:
7799261311

enter phone number user want to subscribe:
7799261311
Posting connect semaphore for client nandi rc 0Subscribing to t
for client nandi using QoS1

Press Q<Enter> to quit

WARNING: Illegal reflective access by org.bouncycastle.jcajce.p
onstructor sun.security.provider.Sun()
WARNING: Please consider reporting this to the maintainers of o
WARNING: Use --illegal-access=warn to enable warnings of furthe
WARNING: All illegal access operations will be denied in a futu
2020-02-24 18:05:35,784 INFO - No valid license file found. Us
2020-02-24 18:05:36,993 INFO - This node uses '4' CPU cores.
2020-02-24 18:05:37,005 INFO - Starting HiveMQ extension syste
2020-02-24 18:05:39,341 INFO - ONu2L: no members discovered af
2020-02-24 18:05:39,419 INFO - No user for HiveMQ Control Cent
2020-02-24 18:05:39,419 INFO - Starting HiveMQ Control Center
2020-02-24 18:05:39,980 INFO - Control Center Audit Logging st
2020-02-24 18:05:39,981 INFO - Started HiveMQ Control Center i
2020-02-24 18:05:40,018 INFO - Starting TCP listener on address
2020-02-24 18:05:40,131 INFO - Started TCP Listener on address
2020-02-24 18:05:40,131 INFO - Started HiveMQ in 19263ms

srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$
enter person name who wants to publish
nandi

enter person number you want to send the message to:
8125925282
Posting connect semaphore for client nandi rc 0^Z
[1]+  Stopped                  ./pub.out
srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$ .srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$ gcc pub.c -l paho-
mqtt3c -o pub.out
srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$ ./pub.out
enter the person name who wants to publish
nandisri

enter person number you want to send the message to:
8125925282
Posting connect semaphore for client nandisri rc 0
hiabhi...
Waiting for publication of hiabhi...
on topic 8125925282 for client with ClientID: nandisri
Message with token value 1 delivery confirmed

srinivas@srinivas-SVF15218SNB:~/Desktop/cs19mtech11016-task1$
enter username for registration:
abhi123

enter phone number user want to subscribe:
8125925282
Posting connect semaphore for client abhi rc 0Subscribing to topic 8125925282
for client abhi using QoS1

Press Q<Enter> to quit

Message arrived
topic: 8125925282
message: hiabhi...
```

2) GROUP CHAT

```
hivas-SVF152185NB: ~/Desktop/cs19mtech11016-task2
er you want to send the message to:
semaphore for client nnadi rc 0
re you???
ation of hi
or client with ClientID: nnadi
o value 1 delivery confirmed

SVF152185NB:~/Desktop/cs19mtech11016-task2$ gcc pubgroup.c -l
group.out
SVF152185NB:~/Desktop/cs19mtech11016-task2$ ./pubgroup.outente
wants to publish

er you want to send the message to:
semaphore for client nandi rc 0
you????
ation of hirockes...howareyou????
or client with ClientID: nandi
o value 1 delivery confirmed

SVF152185NB:~/Desktop/cs19mtech11016-task2$ █
Press Q<Enter> to quit

Message arrived
  topic: rockers
  message: SRINIVAS NANDI left
Message arrived
  topic: rockers
  message: hirockes
Message arrived
  topic: rockers
  message: ashok left
Message arrived
  topic: rockers
  message: hi
Message arrived
  topic: rockers
  message: hirockes...howareyou????
█

srinivas@srinivas-SVF152185NB: ~/Desktop/cs19mtech11016-task2
paho-mqtt3c -o subgroup.out
srinivas@srinivas-SVF152185NB:~/Desktop/cs19mtech11016-task2$ ./subgroup.out
enter username: nandi

enter group name: rockers
Posting connect semaphore for client SRINIVASNANDI rc 0Subscribing to topic rock
ers
for client SRINIVASNANDI using QoS2

Press Q<Enter> to quit

Message arrived
  topic: rockers
  message: hirockes
Message arrived
  topic: rockers
  message: ashok left
Message arrived
  topic: rockers
  message: hi
Message arrived
  topic: rockers
  message: hirockes...howareyou????
█

enter phone number: rockers
Posting connect semaphore for client ashok rc 0Subscribing to topic rockers
for client ashok using QoS2

Press Q<Enter> to quit

Message arrived
  topic: rockers
  message: hi
Message arrived
  topic: rockers
  message: hirockes...howareyou????
█
```

3)GROUP CHAT LEFT MSG

hivas-SVF15218SNB: ~/Desktop/cs19mtech11016-task2

r you want to send the message to:

maphore for client nnadi rc 0
re you???
ation of hi
or client with ClientID: nnadi
value 1 delivery confirmed

SVF15218SNB:~/Desktop/cs19mtech11016-task2\$ gcc pubgroup.c -l
group.out

SVF15218SNB:~/Desktop/cs19mtech11016-task2\$./pubgroup.outente
wants to publish

r you want to send the message to:

maphore for client nandi rc 0
you????
ation of hirockers...howareyou????
or client with ClientID: nandi
value 1 delivery confirmed

SVF15218SNB:~/Desktop/cs19mtech11016-task2\$

topic: rockers
message: SRINIVAS NANDI left
Message arrived
topic: rockers
message: hirockers
Message arrived
topic: rockers
message: ashok left
Message arrived
topic: rockers
message: hi
Message arrived
topic: rockers
message: hirockers...howareyou????
Message arrived
topic: rockers
message: SRINIVAS NANDI left