

# **TUGAS INDIVIDU MENJALANKAN PROGRAM CHAT DI EMULATOR PEMROGRAMAN JARINGAN**



**Nama : Rida Adila**  
**NRP : 05111840000002**  
**Kelas : PROGJAR D**

**Dosen : Royyana Muslim Ijtihadie, S.Kom., M.Kom., Ph.D.**

**Departemen Infomatika**  
**Fakultas Teknologi Elektro dan Informatika Cerdas**  
**Institut Teknologi Sepuluh Nopember (ITS) Surabaya**  
**2021**

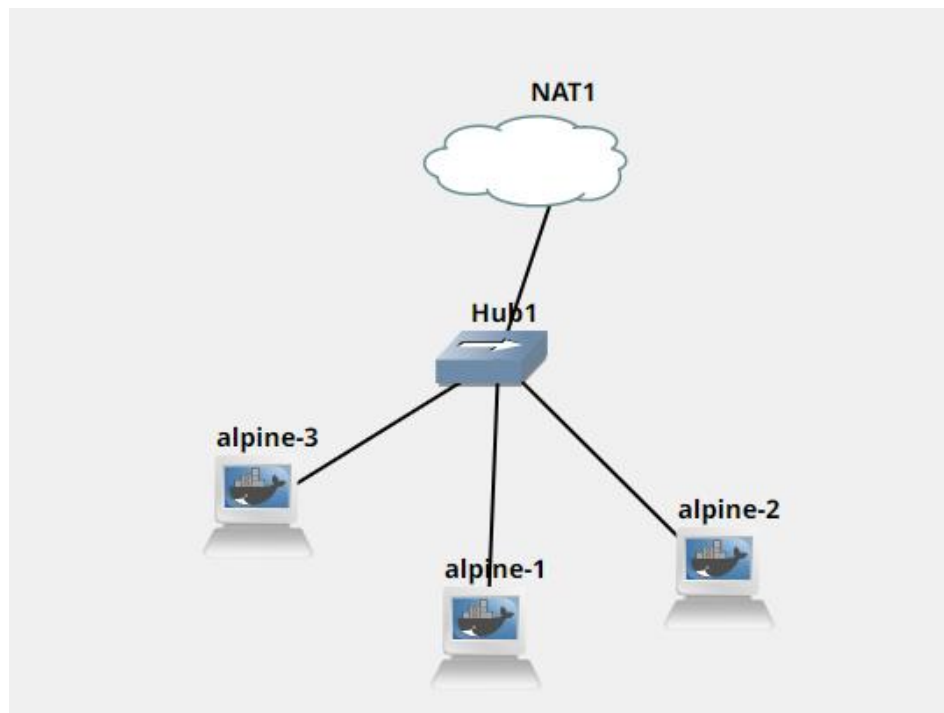
## **PRAKTIKUM PEMROGRAMAN JARINGAN MENJALANKAN PROGRAM CHAT DI EMULATOR**

- Jalankan program chat tersebut di EMULATOR. lakukan menggunakan konfigurasi :
  - 1 mesin berfungsi sebagai chat server
  - 2 mesin berfungsi sebagai chat client
- buatlah interaksi antara 2 mesin client dengan server. lakukan aktifitas-aktifitas berikut ini:
  - authentication
  - berkirim pesan antar user

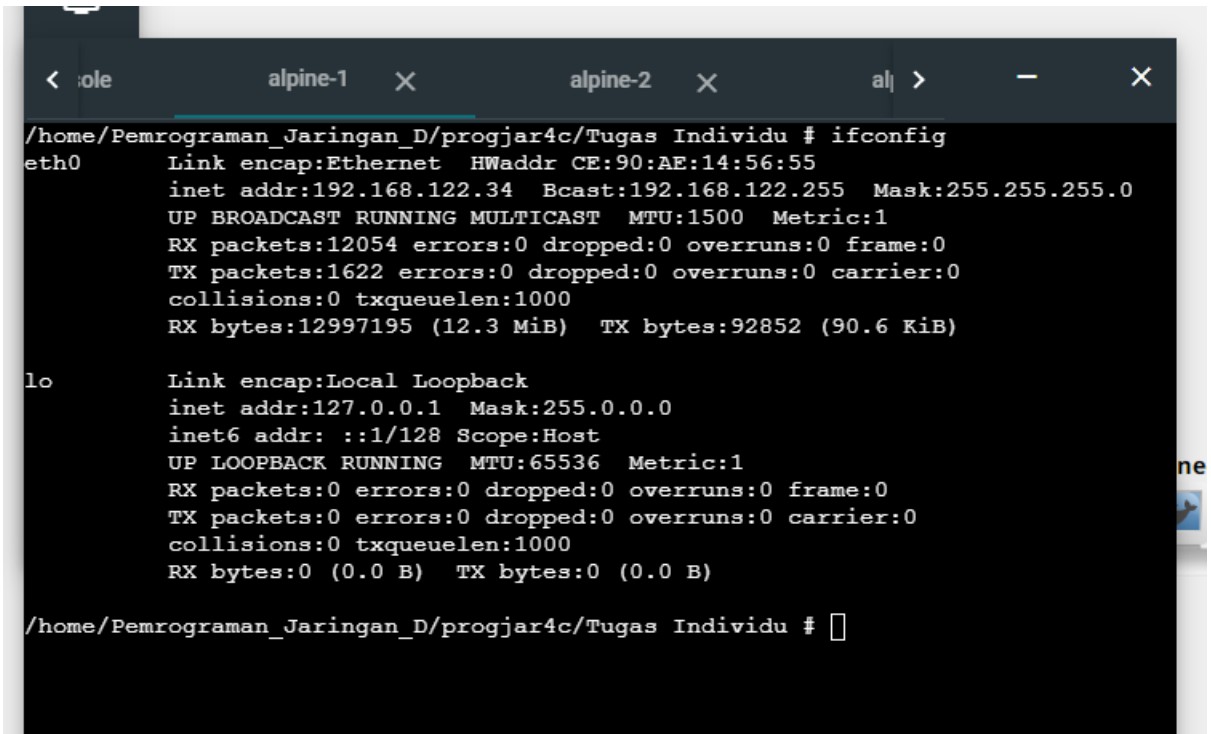
dan capturelah ke dalam gambar, dan submitlah dalam bentuk 1 dokumen PDF. berikan PENJELASAN SINGKAT dari hasil capture anda PRAKTIKUM

### **JAWAB**

- Gambar topologi, dimana alpine 1 sebagai server dan alpine 2,alpine 3 sebagai client semua



- Ifconfig untuk melihat ip address pada alpine1 sebagai server :



```

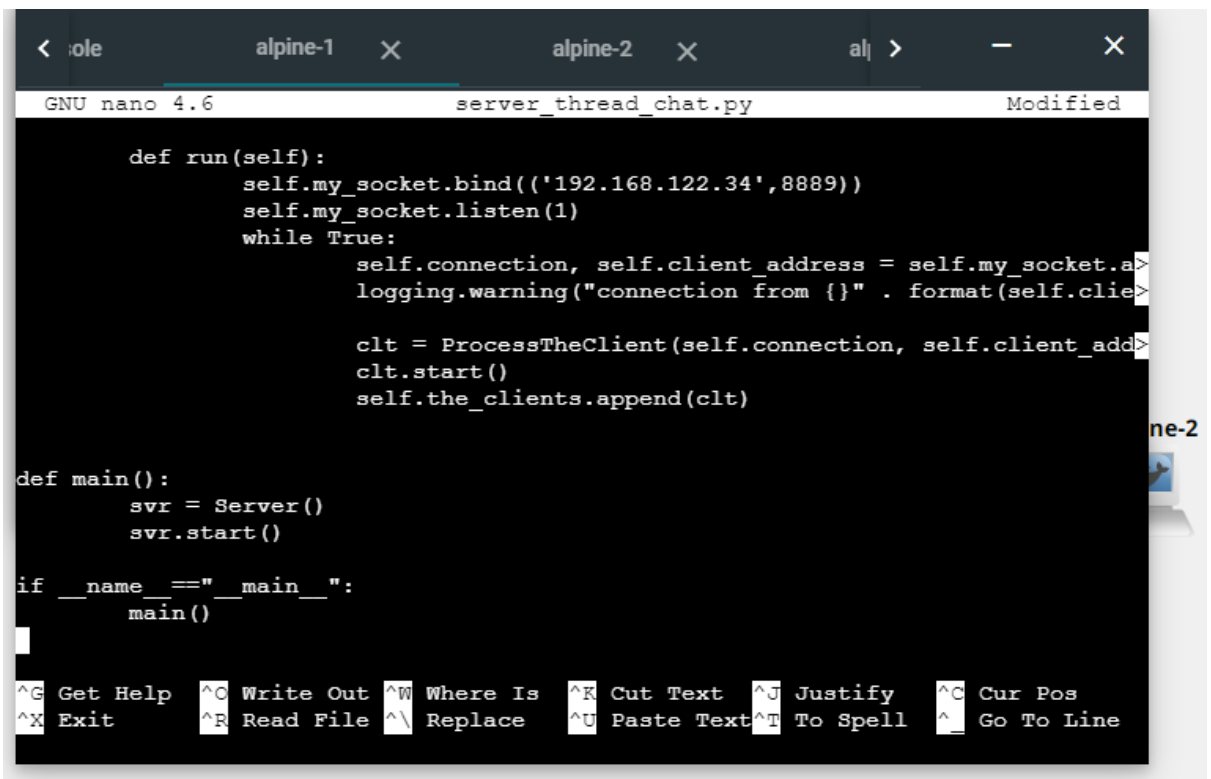
/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # ifconfig
eth0      Link encap:Ethernet  HWaddr CE:90:AE:14:56:55
          inet addr:192.168.122.34  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:12054 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1622 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:12997195 (12.3 MiB)  TX bytes:92852 (90.6 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # 

```

- Mengubah ipserver pada file server\_thread\_chat.py di alpine1 :



```

GNU nano 4.6      server_thread_chat.py      Modified

def run(self):
    self.my_socket.bind(('192.168.122.34',8889))
    self.my_socket.listen(1)
    while True:
        self.connection, self.client_address = self.my_socket.accept()
        logging.warning("connection from {}".format(self.client_address))

        clt = ProcessTheClient(self.connection, self.client_address)
        clt.start()
        self.the_clients.append(clt)

def main():
    svr = Server()
    svr.start()

if __name__=="__main__":
    main()

```

^G Get Help    ^C Write Out    ^W Where Is    ^K Cut Text    ^J Justify    ^C Cur Pos  
 ^X Exit        ^R Read File    ^\ Replace    ^U Paste Text    ^T To Spell    ^\_ Go To Line

- Mengubah ip target pada file chat-cli.py di alpine 2 dan alpine 3 sesuai ip address di alpine 1 :

```
GNU nano 4.6 chat-cli.py Modified
import socket
import os
import json

TARGET_IP = "192.168.122.34"
TARGET_PORT = 8889

class ChatClient:
    def __init__(self):
        self.sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        self.server_address = (TARGET_IP, TARGET_PORT)
        self.sock.connect(self.server_address)
        self.tokenid=""
    def proses(self,cmdline):
        j=cmdline.split(" ")
        try:
            command=j[0].strip()
            if (command=='auth'):
                username=j[1].strip()
```

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^\_ Go To Line

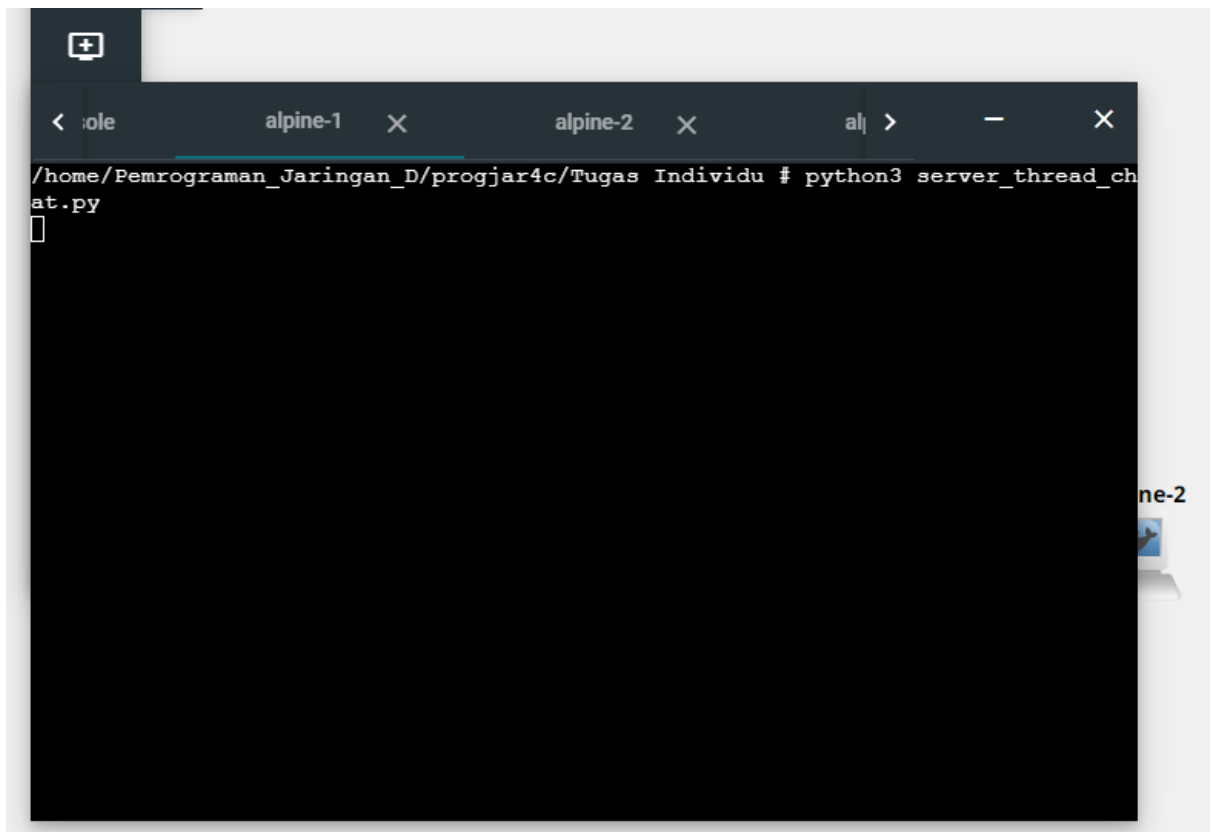
```
GNU nano 4.6 chat-cli.py Modified
import socket
import os
import json

TARGET_IP = "192.168.122.34"
TARGET_PORT = 8889

class ChatClient:
    def __init__(self):
        self.sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        self.server_address = (TARGET_IP, TARGET_PORT)
        self.sock.connect(self.server_address)
        self.tokenid=""
    def proses(self,cmdline):
        j=cmdline.split(" ")
        try:
            command=j[0].strip()
            if (command=='auth'):
                username=j[1].strip()
```

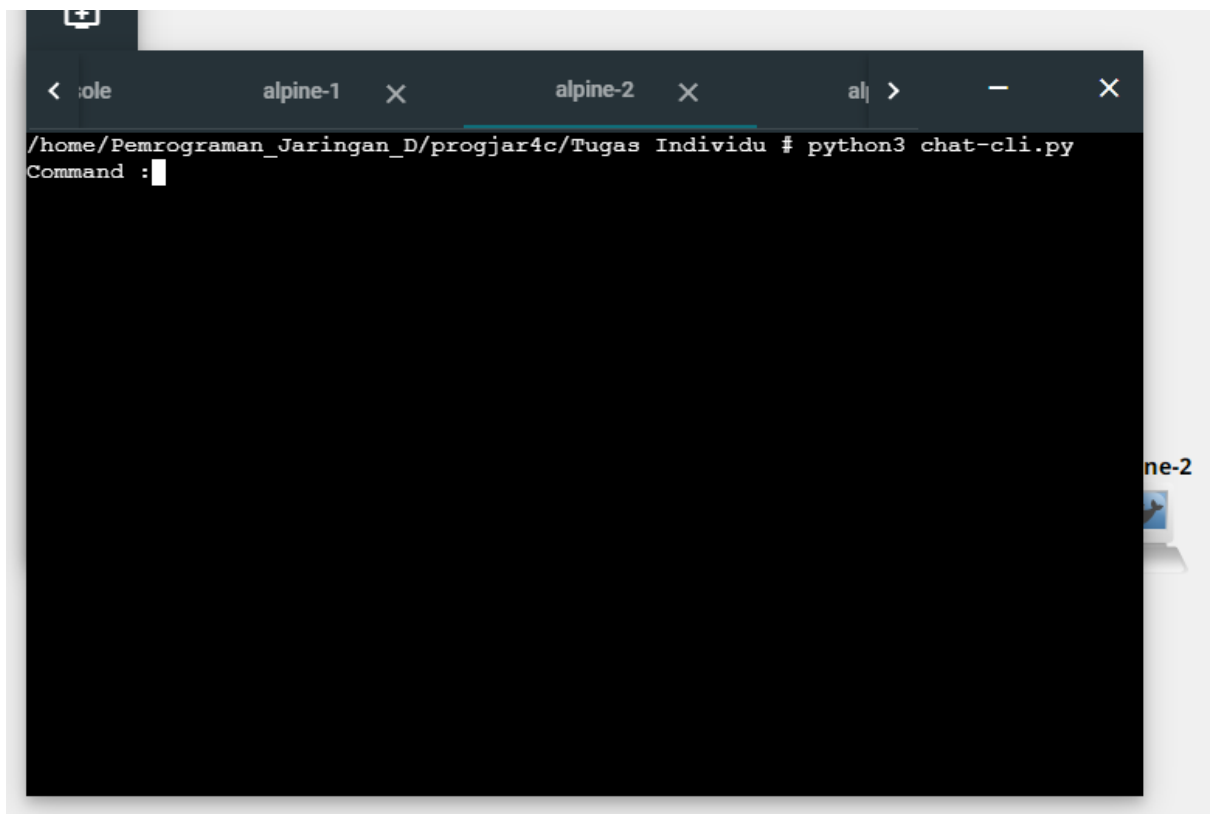
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^\_ Go To Line

- Menjalankan file server\_thread\_chat.py di alpine 1 :

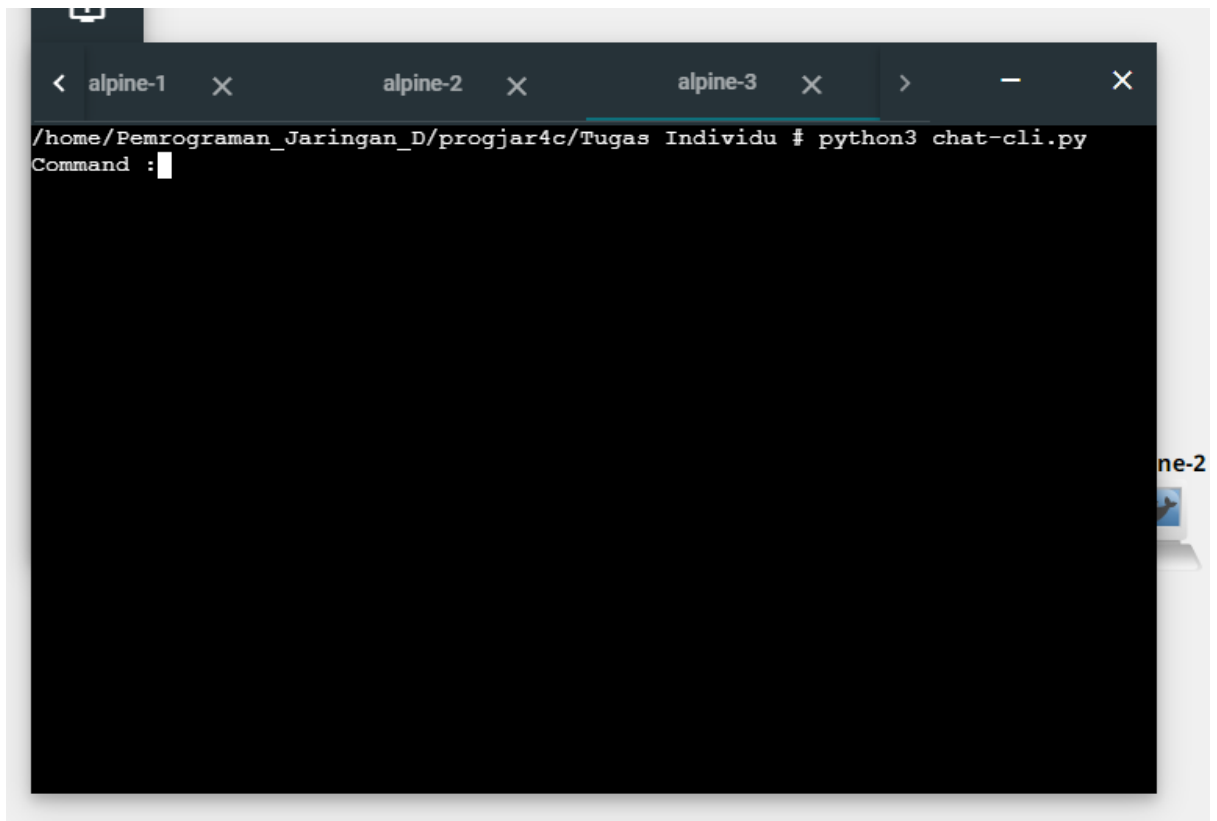


A terminal window titled 'alpine-1' is shown. The command prompt is `/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu #`. The command `python3 server_thread_chat.py` has been entered, and the cursor is at the end of the line. The terminal output is empty.

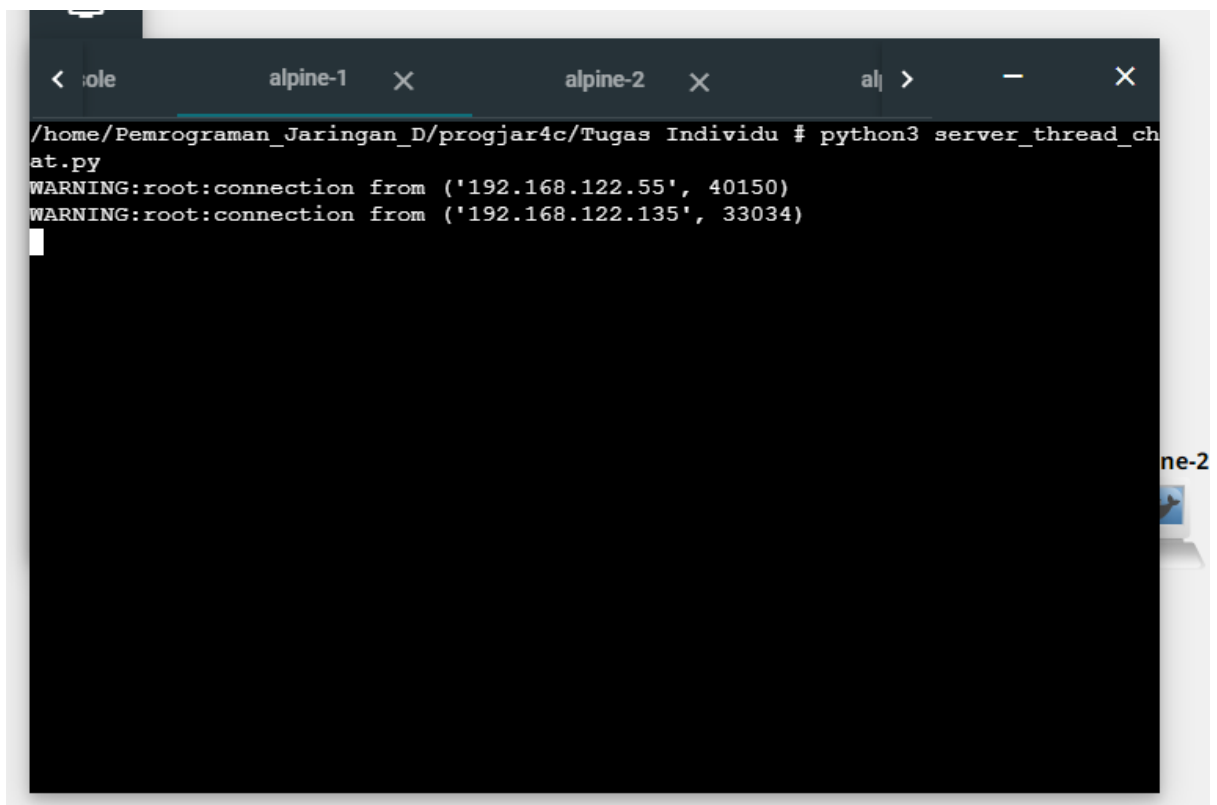
- Menjalankan file chat-cli.py di alpine 2 dan alpine 3 :



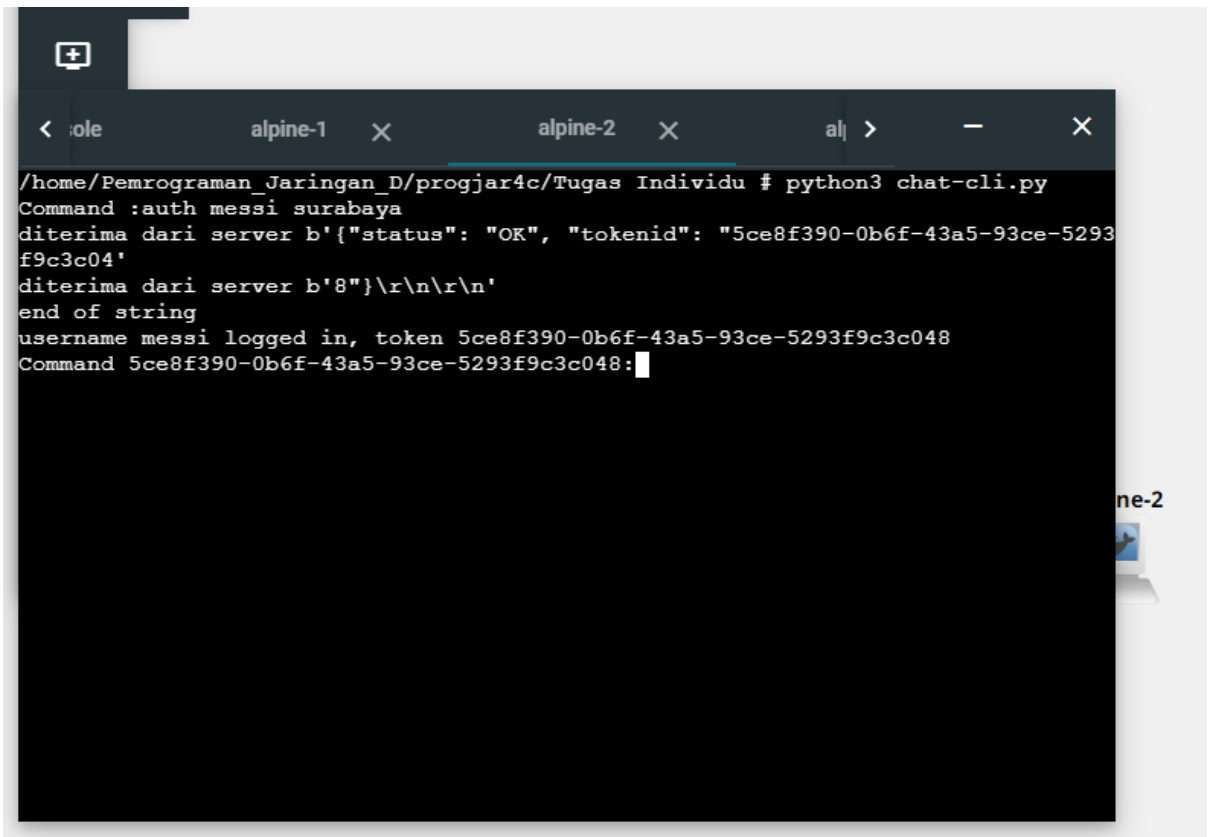
A terminal window titled 'alpine-2' is shown. The command prompt is `/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu #`. The command `python3 chat-cli.py` has been entered, and the prompt has changed to `Command :` with a cursor at the end of the line. The terminal output is empty.



- Pemberitahuan di alpine 1 jika client di alpine 2 dan alpine 3 sudah terhubung :



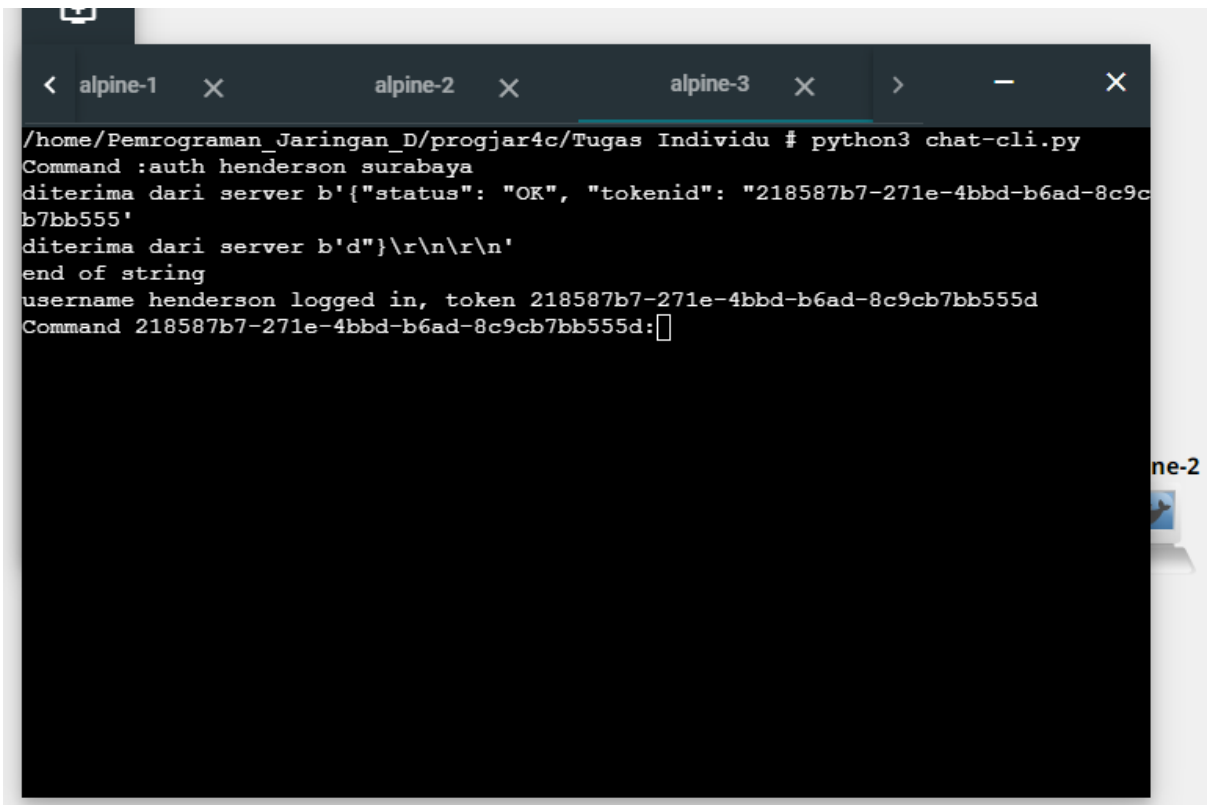
- Melakukan autentikasi di alpine 2 , yakni dengan login sebagai messi dengan password surabaya :



A terminal window titled 'alpine-2' is shown. The prompt is `/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu #`. The user enters `python3 chat-cli.py`. The output shows a successful authentication for user 'messi' with password 'surabaya', displaying a token and a confirmation message. The prompt then changes to the token value.

```
/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 chat-cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "5ce8f390-0b6f-43a5-93ce-5293f9c3c048"}'
diterima dari server b'8"}\r\n\r\n'
end of string
username messi logged in, token 5ce8f390-0b6f-43a5-93ce-5293f9c3c048
Command 5ce8f390-0b6f-43a5-93ce-5293f9c3c048:
```

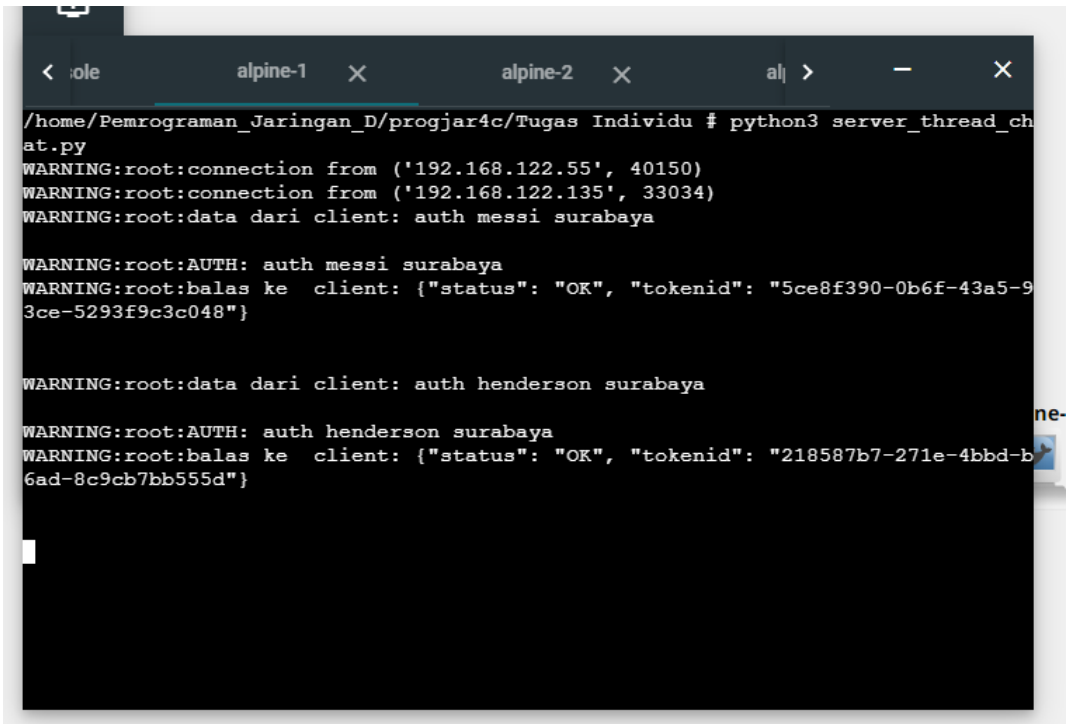
- Melakukan autentikasi di alpine 3 sebagai henderson dengan password surabaya :



A terminal window titled 'alpine-3' is shown. The prompt is `/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu #`. The user enters `python3 chat-cli.py`. The output shows a successful authentication for user 'henderson' with password 'surabaya', displaying a token and a confirmation message. The prompt then changes to the token value.

```
/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "218587b7-271e-4bbd-b6ad-8c9cb7bb555d"}'
diterima dari server b'd"}\r\n\r\n'
end of string
username henderson logged in, token 218587b7-271e-4bbd-b6ad-8c9cb7bb555d
Command 218587b7-271e-4bbd-b6ad-8c9cb7bb555d:
```

- Pemberitahuan yang muncul di server ( alpine 1 ) jika client berhasil melakukan autentikasi :



```

/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 server_thread_ch
at.py
WARNING:root:connection from ('192.168.122.55', 40150)
WARNING:root:connection from ('192.168.122.135', 33034)
WARNING:root:data dari client: auth messi surabaya

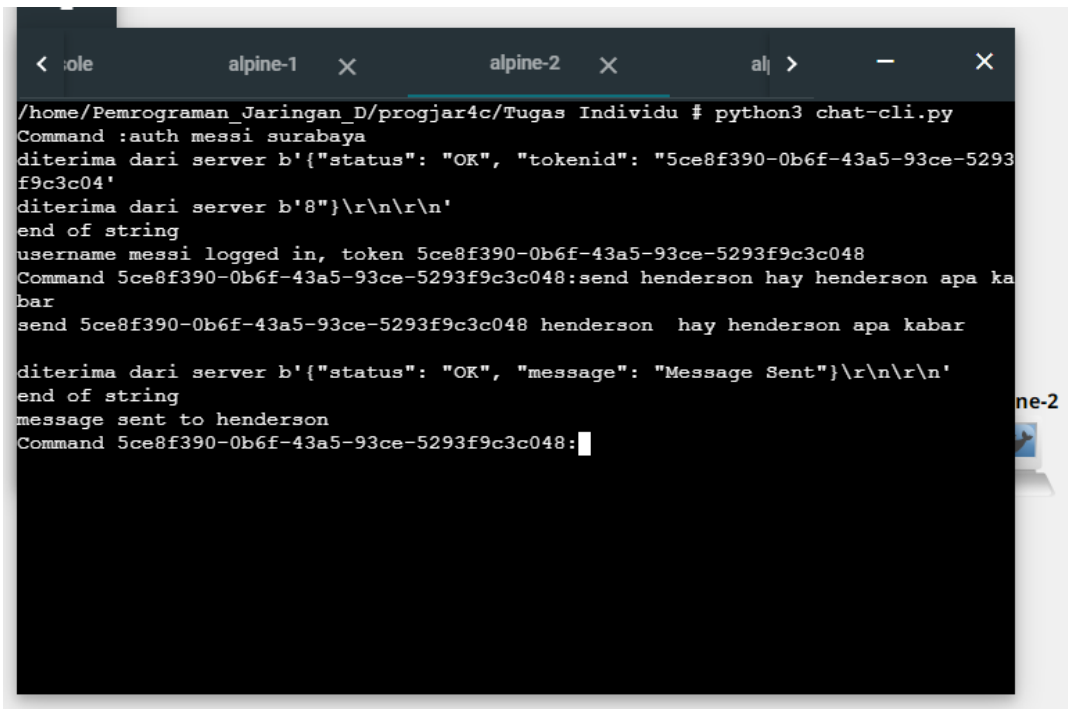
WARNING:root:AUTH: auth messi surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "5ce8f390-0b6f-43a5-9
3ce-5293f9c3c048"}

WARNING:root:data dari client: auth henderson surabaya

WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "218587b7-271e-4bbd-b
6ad-8c9cb7bb555d"}

```

- Melakukan pengiriman pesan dari client messi ke client henderson . Dengan command “send henderson hay henderson apa kabar”. Jika berhasil maka akan muncul status OK :



```

/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 chat-cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "5ce8f390-0b6f-43a5-93ce-5293
f9c3c048"}\r\n\r\n'
end of string
username messi logged in, token 5ce8f390-0b6f-43a5-93ce-5293f9c3c048
Command 5ce8f390-0b6f-43a5-93ce-5293f9c3c048:send henderson hay henderson apa ka
bar
send 5ce8f390-0b6f-43a5-93ce-5293f9c3c048 henderson hay henderson apa kabar

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command 5ce8f390-0b6f-43a5-93ce-5293f9c3c048:

```



```
alpine-1  X  alpine-2  X  alpine-3  X  -  X

WARNING:root:connection from ('192.168.122.135', 33034)
WARNING:root:data dari client: auth messi surabaya

WARNING:root:AUTH: auth messi surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "5ce8f390-0b6f-43a5-93ce-5293f9c3c048"}

WARNING:root:data dari client: auth henderson surabaya

WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "218587b7-271e-4bbd-b6ad-8c9cb7bb555d"}

WARNING:root:data dari client: send 5ce8f390-0b6f-43a5-93ce-5293f9c3c048 henderson hay henderson apa kabar

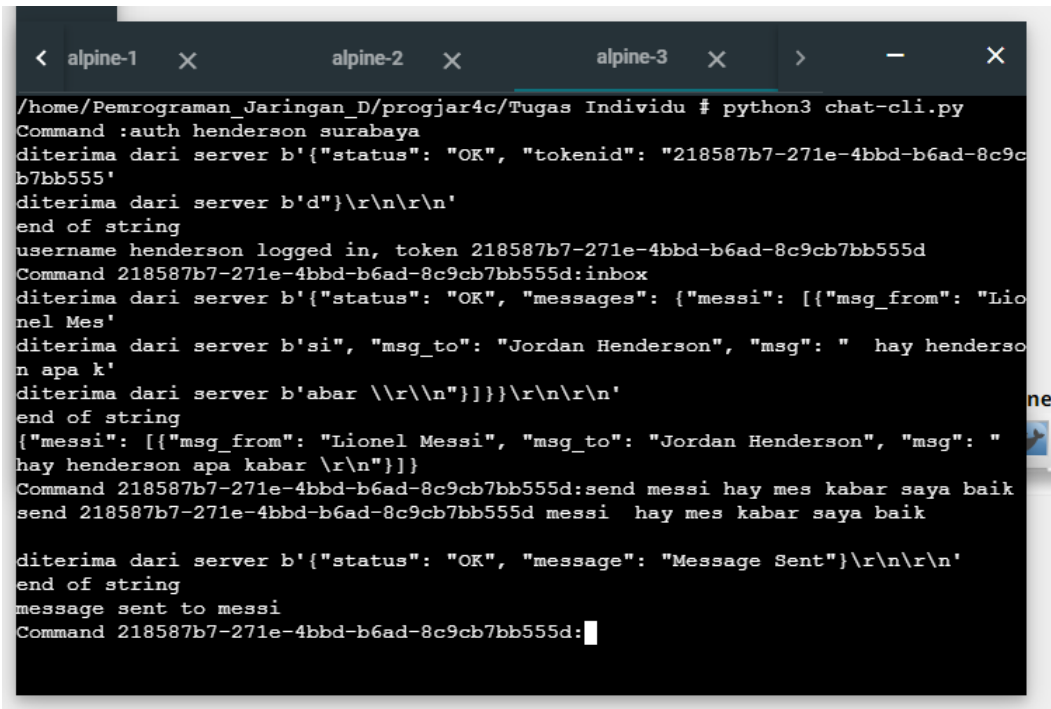
WARNING:root:SEND: session 5ce8f390-0b6f-43a5-93ce-5293f9c3c048 send message from messi to henderson
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}
```

- Di client 2 (alpine 3), ketikkan command “inbox” untuk melihat apakah pesan yang dikirimkan oleh messi masuk ke henderson :

```
alpine-1  X  alpine-2  X  alpine-3  X  -  X

/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "218587b7-271e-4bbd-b6ad-8c9cb7bb555d"}\r\n\r\n'
end of string
username henderson logged in, token 218587b7-271e-4bbd-b6ad-8c9cb7bb555d
Command 218587b7-271e-4bbd-b6ad-8c9cb7bb555d:inbox
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "hay henderson apa kabar"}]}\r\n\r\n'
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "hay henderson apa kabar"}]}
Command 218587b7-271e-4bbd-b6ad-8c9cb7bb555d:
```

- Kemudian bergantian, di client 2 (alpine 3), henderson akan membalas pesan messi. Yakni dengan mengetikkan command “ send messi hay mes kabar saya baik” :



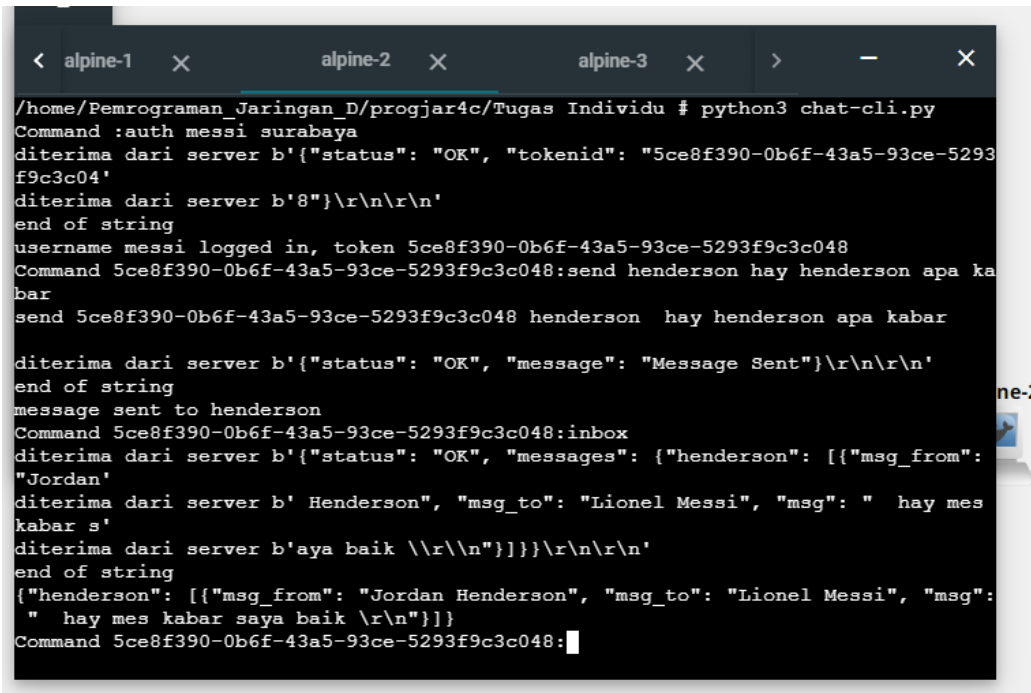
```

< alpine-1 x alpine-2 x alpine-3 x > - x
/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "218587b7-271e-4bbd-b6ad-8c9cb7bb555d"}\r\n\r\n'
end of string
username henderson logged in, token 218587b7-271e-4bbd-b6ad-8c9cb7bb555d
Command 218587b7-271e-4bbd-b6ad-8c9cb7bb555d:inbox
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " hay henderson apa kabar \r\n"}]}\r\n\r\n'
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " hay henderson apa kabar \r\n"}]}
Command 218587b7-271e-4bbd-b6ad-8c9cb7bb555d:send messi hay mes kabar saya baik
send 218587b7-271e-4bbd-b6ad-8c9cb7bb555d messi hay mes kabar saya baik

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to messi
Command 218587b7-271e-4bbd-b6ad-8c9cb7bb555d:

```

- Cek di alpine 2 (client 2) , apakah pesan yang dikirimkan diterima oleh messi. Yakni dengan mengetikkan command “inbox” :



```

< alpine-1 x alpine-2 x alpine-3 x > - x
/home/Pemrograman_Jaringan_D/progjar4c/Tugas Individu # python3 chat-cli.py
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "5ce8f390-0b6f-43a5-93ce-5293f9c3c048"}\r\n\r\n'
end of string
username messi logged in, token 5ce8f390-0b6f-43a5-93ce-5293f9c3c048
Command 5ce8f390-0b6f-43a5-93ce-5293f9c3c048:send henderson hay henderson apa kabar
send 5ce8f390-0b6f-43a5-93ce-5293f9c3c048 henderson hay henderson apa kabar

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command 5ce8f390-0b6f-43a5-93ce-5293f9c3c048:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " hay mes kabar s' \r\n"}]}\r\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " hay mes kabar s' \r\n"}]}
Command 5ce8f390-0b6f-43a5-93ce-5293f9c3c048:

```

