

Soal

Jalankan program chat tersebut di EMULATOR. lakukan menggunakan konfigurasi

- 1 mesin berfungsi sebagai chat server
- 2 mesin berfungsi sebagai chat client

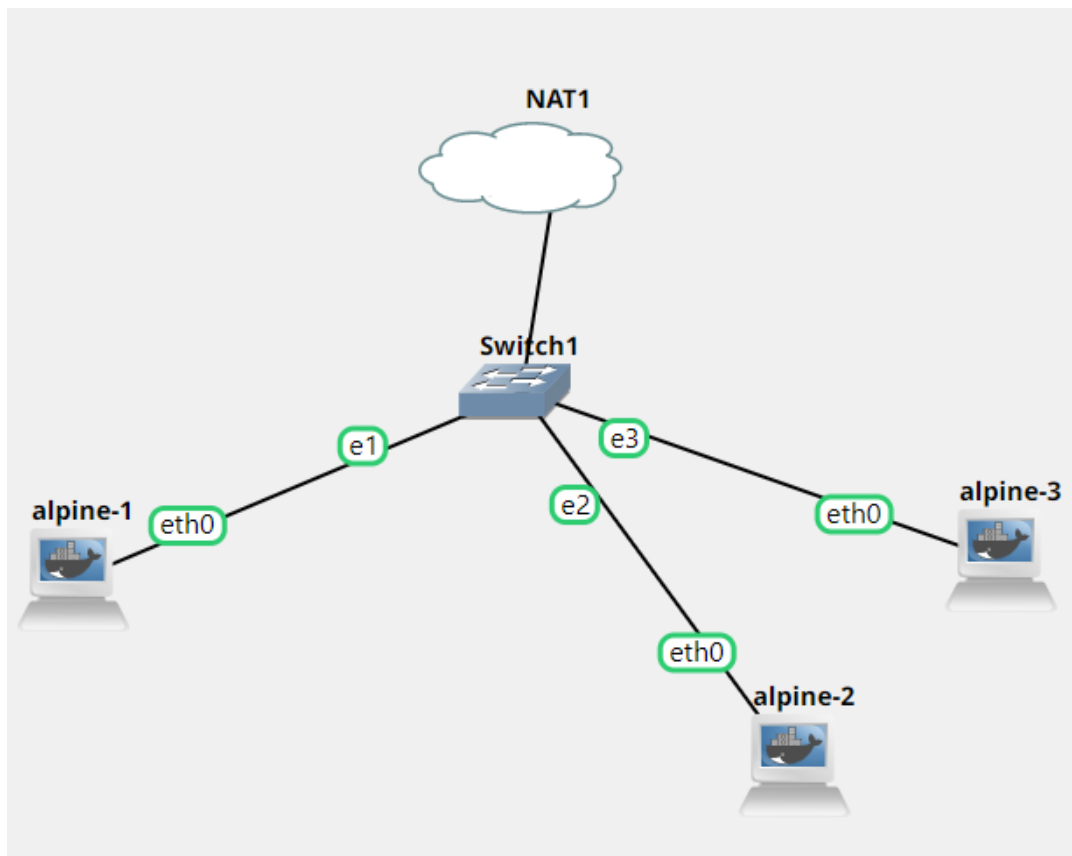
buatlah interaksi antara 2 mesin client dengan server. lakukan aktifitas-aktifitas berikut ini

- authentication
- berkirim pesan antar user

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

Jawab

1. Topologi yang digunakan. Alpine-1 untuk server, dan alpine-2 dan alpine-3 untuk client.



2. Cek ip alphine-1

```
alpine-1 x alpine-2 x alpine-3 x
/home # ifconfig
eth0      Link encap:Ethernet  HWaddr 02:C3:83:0B:9F:98
          inet addr:192.168.122.171  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3565 errors:0 dropped:4 overruns:0 frame:0
          TX packets:2075 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:4273124 (4.0 MiB)  TX bytes:116520 (113.7 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 #
```

3. Ganti ip *server_thread_chat.py* sesuai dengan ip server

```
GNU nano 4.6 server_thread_chat.py Modified
def __init__(self):
    self.the_clients = []
    self.my_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    self.my_socket.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
    threading.Thread.__init__(self)

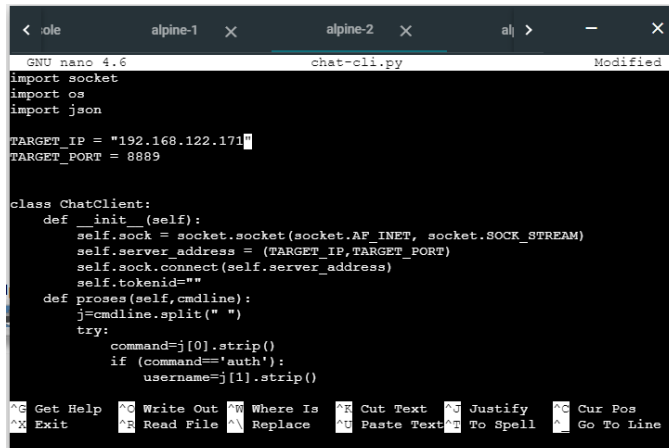
def run(self):
    self.my_socket.bind(('192.168.122.171', 8889))
    self.my_socket.listen(1)
    while True:
        self.connection, self.client_address = self.my_socket.accept()
        logging.warning("connection from {}".format(self.client_address))

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

def main():
    svr = Server()
```

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

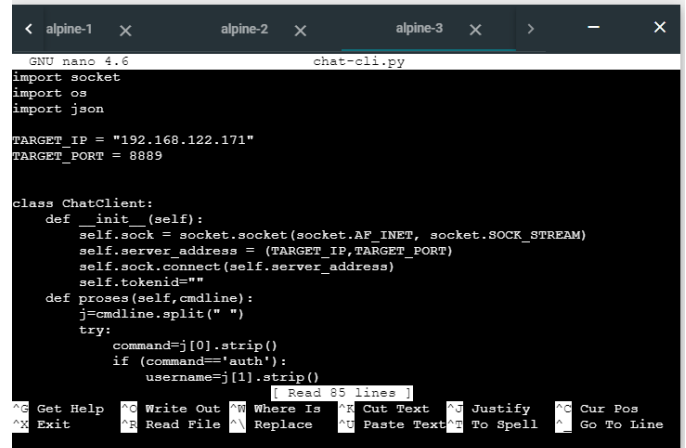
4. Ganti ip *chat-cli.py* pada alpine-2 dan alpine-3 sesuai dengan ip server



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

TARGET_IP = "192.168.122.171"
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()
```

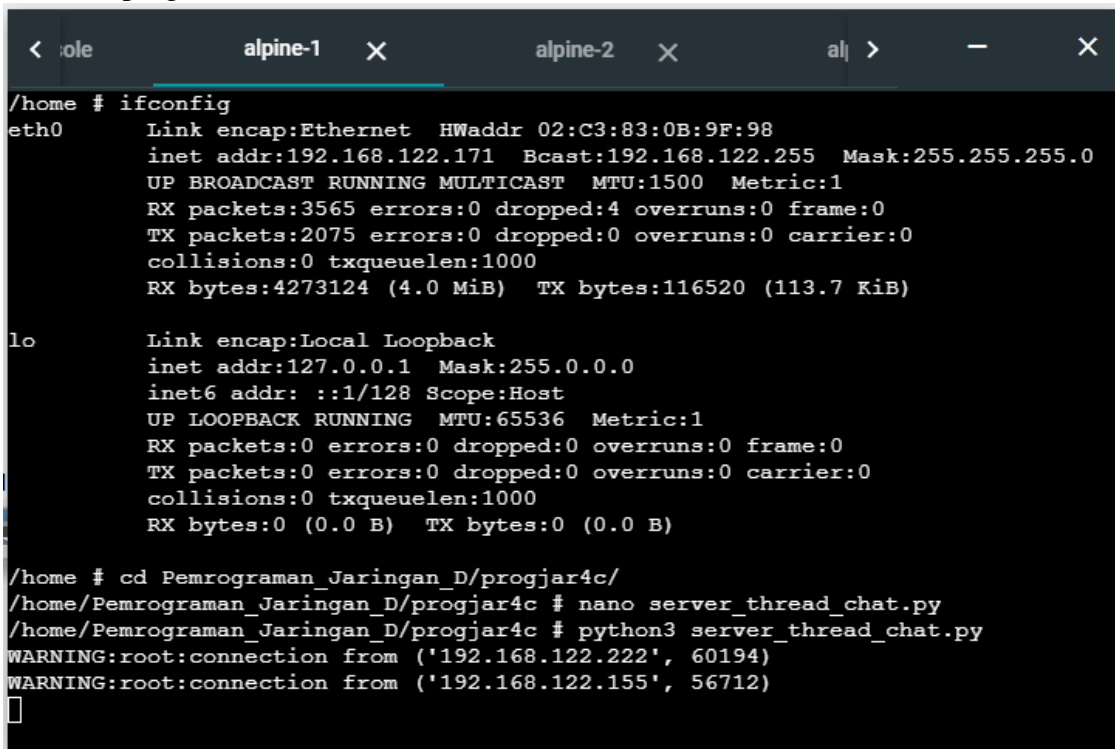


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    def __init__(self):
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        self.server_address = (TARGET_IP, TARGET_PORT)
        self.sock.connect(self.server_address)
        self.tokenid=""
    def proses(self,cmdline):
        j=cmdline.split("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

5. Jalankan program

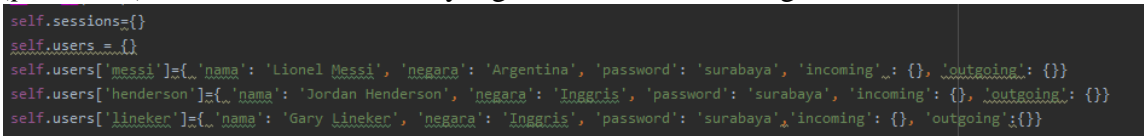


```
/home # ifconfig
eth0      Link encap:Ethernet  HWaddr 02:C3:83:0B:9F:98
          inet addr:192.168.122.171  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
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          UP LOOPBACK RUNNING  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)

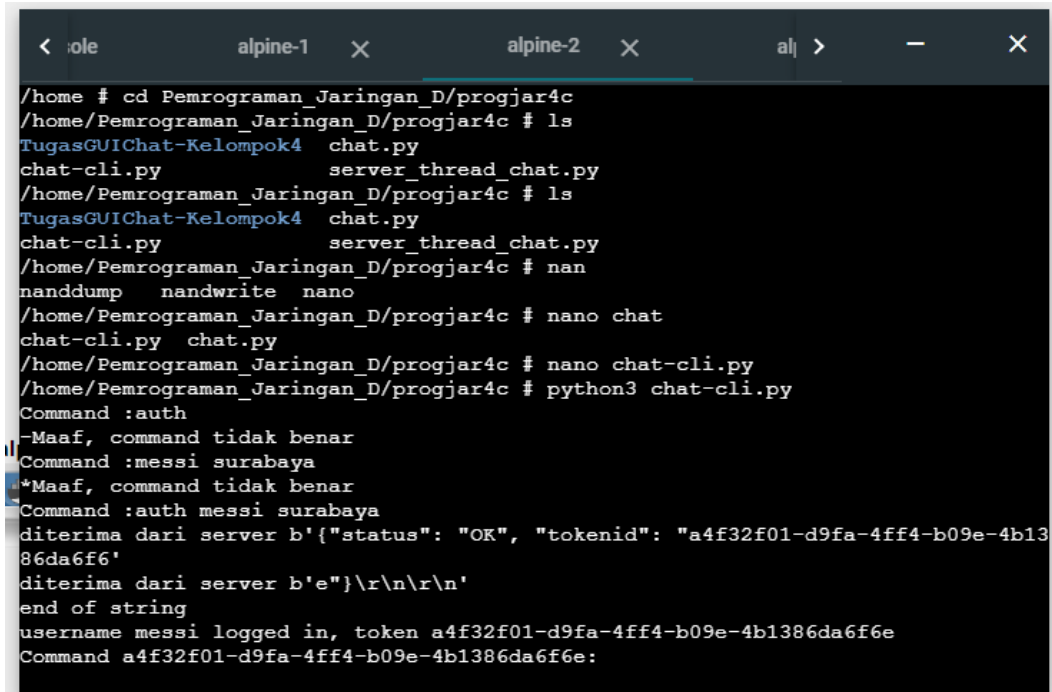
/home # cd Pemrograman_Jaringan_D/progjar4c/
/home/Pemrograman_Jaringan_D/progjar4c # nano server_thread_chat.py
/home/Pemrograman_Jaringan_D/progjar4c # python3 server_thread_chat.py
WARNING:root:connection from ('192.168.122.222', 60194)
WARNING:root:connection from ('192.168.122.155', 56712)
```

6. Untuk melakukan authentication, dengan cara memasukkan command “*auth (username) (password)*”. Dan untuk user user yang terdaftar adalah sebagai berikut

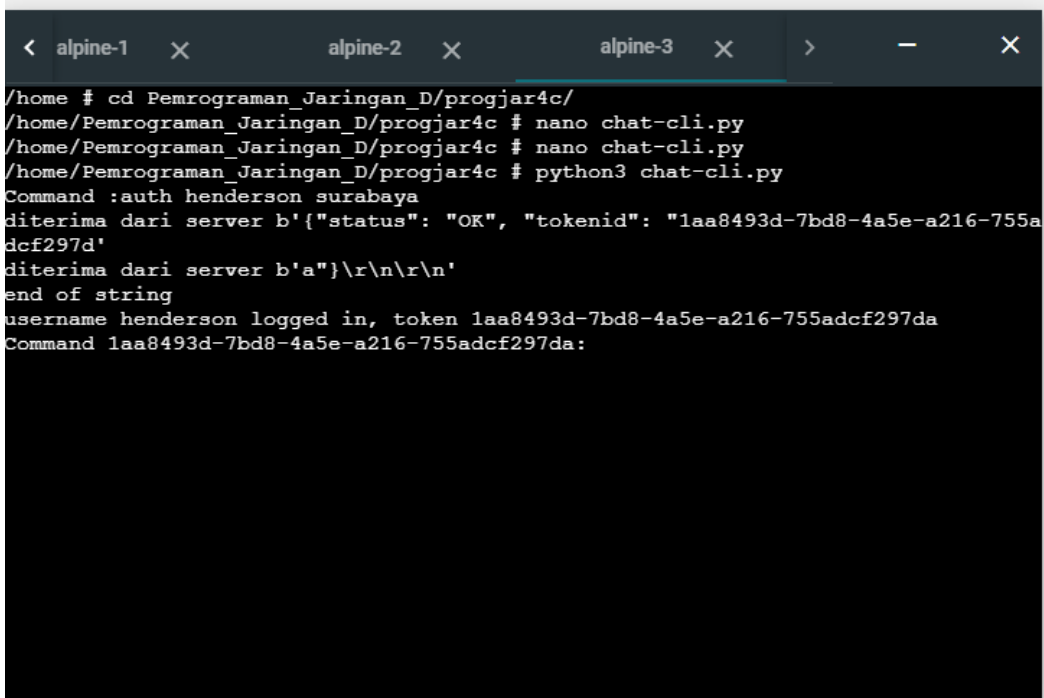


```
self.sessions={}
self.users={}
self.users['messi']={'nama': 'Lionel Messi', 'negara': 'Argentina', 'password': 'surabaya', 'incoming': {}, 'outgoing': {}}
self.users['henderson']={'nama': 'Jordan Henderson', 'negara': 'Inggris', 'password': 'surabaya', 'incoming': {}, 'outgoing': {}}
self.users['lineker']={'nama': 'Gary Lineker', 'negara': 'Inggris', 'password': 'surabaya', 'incoming': {}, 'outgoing': {}}
```

7. Lakukan auth



```
< alpine-1 x alpine-2 x alpine-3 > - x
/home # cd Pemrograman_Jaringan_D/progjar4c
/home/Pemrograman_Jaringan_D/progjar4c # ls
TugasGUIChat-Kelompok4 chat.py
chat-cli.py server_thread_chat.py
/home/Pemrograman_Jaringan_D/progjar4c # ls
TugasGUIChat-Kelompok4 chat.py
chat-cli.py server_thread_chat.py
/home/Pemrograman_Jaringan_D/progjar4c # nano
nanndump nandwrite nano
/home/Pemrograman_Jaringan_D/progjar4c # nano chat
chat-cli.py chat.py
/home/Pemrograman_Jaringan_D/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_D/progjar4c # python3 chat-cli.py
Command :auth
-Maaf, command tidak benar
Command :messi surabaya
-Maaf, command tidak benar
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e"}\r\n\r\n'
end of string
username messi logged in, token a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e
Command a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e:
```

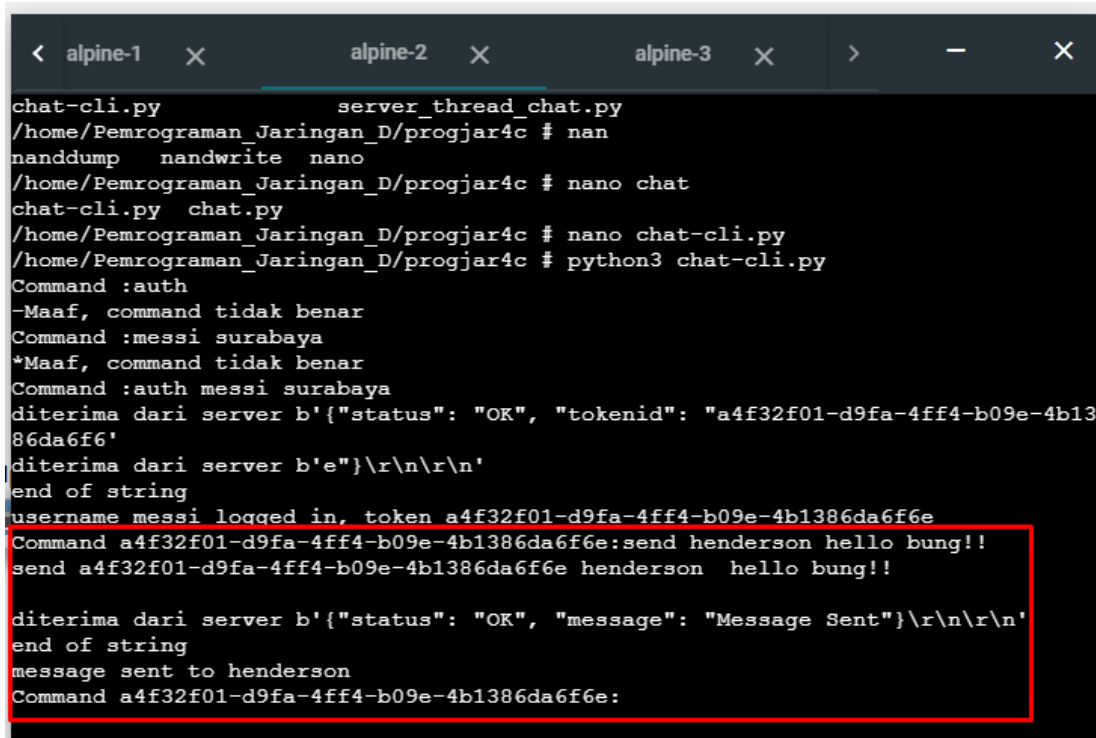


```
< alpine-1 x alpine-2 x alpine-3 x > - x
/home # cd Pemrograman_Jaringan_D/progjar4c/
/home/Pemrograman_Jaringan_D/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_D/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_D/progjar4c # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "1aa8493d-7bd8-4a5e-a216-755adcf297da"}\r\n\r\n'
end of string
username henderson logged in, token 1aa8493d-7bd8-4a5e-a216-755adcf297da
Command 1aa8493d-7bd8-4a5e-a216-755adcf297da:
```

Bebarap case,

- Jika kita berhasil memasukkan username dan password dengan benar
- Jika kita salah memasukkan username, maka akan muncul pesan error “User Tidak Ada”
- Jika kita salah memasukkan password, maka akan muncul pesan error “Password Salah”

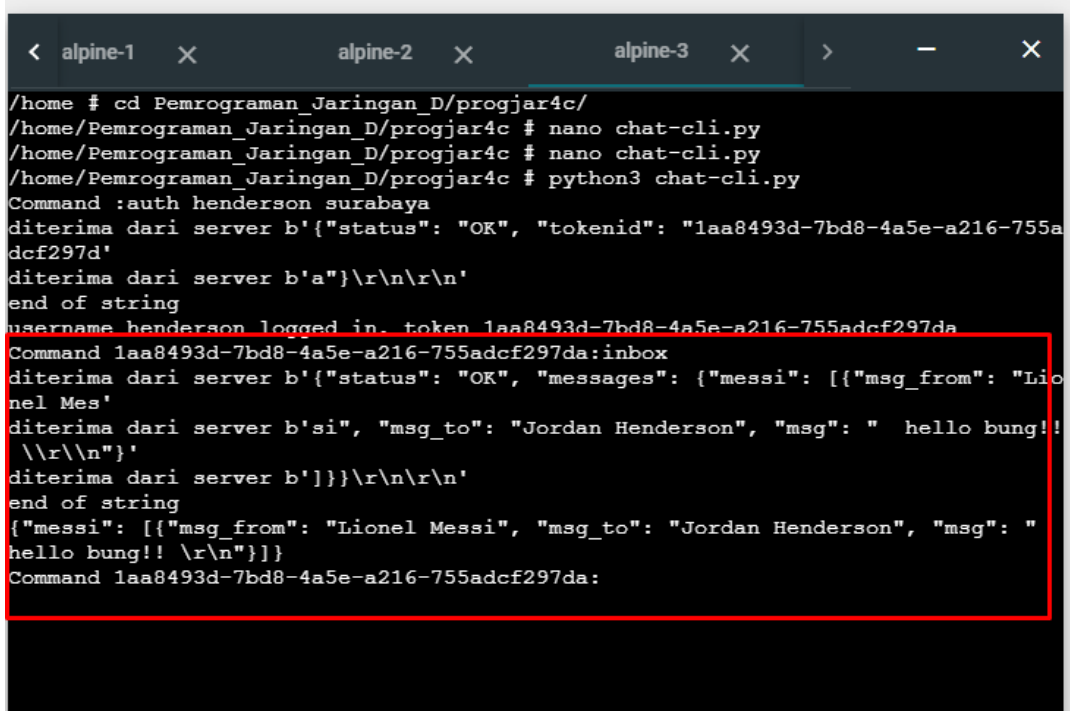
8. Untuk berkirim pesan dapat dengan cara mengisi command “*send (username tujuan) (pesan)*”



```
< alpine-1 x alpine-2 x alpine-3 x > - x
chat-cli.py server_thread_chat.py
/home/Pemrograman_Jaringan_D/progjar4c # nan
nanddump nandwrite nano
/home/Pemrograman_Jaringan_D/progjar4c # nano chat
chat-cli.py chat.py
/home/Pemrograman_Jaringan_D/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_D/progjar4c # python3 chat-cli.py
Command :auth
-Maaf, command tidak benar
Command :messi surabaya
*Maaf, command tidak benar
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenid": "a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e"}\r\n\r\n'
end of string
username messi logged in, token a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e
Command a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e:send henderson hello bung!!
send a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e henderson hello bung!!

diterima dari server b'{"status": "OK", "message": "Message Sent"}\r\n\r\n'
end of string
message sent to henderson
Command a4f32f01-d9fa-4ff4-b09e-4b1386da6f6e:
```

9. Untuk menerima, pihak kedua tinggal mengecek dengan command “*inbox*”



```
< alpine-1 x alpine-2 x alpine-3 x > - x
/home # cd Pemrograman_Jaringan_D/progjar4c/
/home/Pemrograman_Jaringan_D/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_D/progjar4c # nano chat-cli.py
/home/Pemrograman_Jaringan_D/progjar4c # python3 chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenid": "1aa8493d-7bd8-4a5e-a216-755adcf297da"}\r\n\r\n'
end of string
username henderson logged in, token 1aa8493d-7bd8-4a5e-a216-755adcf297da
Command 1aa8493d-7bd8-4a5e-a216-755adcf297da:inbox
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "hello bung!!"}]}\r\n\r\n'
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": "hello bung!!"}]}
Command 1aa8493d-7bd8-4a5e-a216-755adcf297da:
```