

LAPORAN TUGAS INDIVIDU 4C

Menjalankan Program Chat di Emulator



Mata Kuliah:

Pemrograman Jaringan

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1. Deskripsi Tugas

Jalankan program chat di emulator menggunakan konfigurasi:

- 1 Mesin sebagai chat server
- 2 Mesin sebagai chat klien

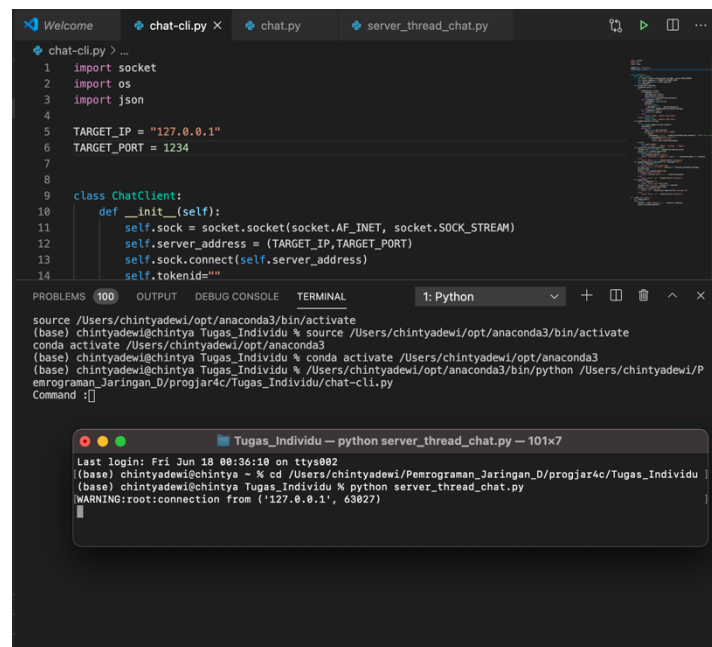
Buatlah interaksi antara 2 mesin klien dan server melakukan aktivitas berikut

- Autentikasi
- Pertukaran pesan

2. Hasil Pengerjaan

- a. Menjalankan chat server dan memastikan server berhasil terkoneksi

Pada chat client target IP yang dituju adalah '127.0.0.1', ketika menjalankan klien, server berhasil terhubung, ditandai dengan pesan "connection from (127.0.0.1)"



```
chat-cli.py > ...
1 import socket
2 import os
3 import json
4
5 TARGET_IP = "127.0.0.1"
6 TARGET_PORT = 1234
7
8
9 class ChatClient:
10     def __init__(self):
11         self.sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
12         self.server_address = (TARGET_IP, TARGET_PORT)
13         self.sock.connect(self.server_address)
14         self.tokenid=""
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```

```
source /Users/chintyadewi/opt/anaconda3/bin/activate
(base) chintyadewi@chintya Tugas_Individu % source /Users/chintyadewi/opt/anaconda3/bin/activate
conda activate /Users/chintyadewi/opt/anaconda3
(base) chintyadewi@chintya Tugas_Individu % conda activate /Users/chintyadewi/opt/anaconda3
(base) chintyadewi@chintya Tugas_Individu % /Users/chintyadewi/opt/anaconda3/bin/python /Users/chintyadewi/P
emrograman_Jaringan_D/progjar4c/Tugas_Individu/chat-cli.py
Command :[]
```

```
Last login: Fri Jun 18 00:36:10 on ttys002
(base) chintyadewi@chintya ~ % cd /Users/chintyadewi/Pemrograman_Jaringan_D/progjar4c/Tugas_Individu
(base) chintyadewi@chintya Tugas_Individu % python server_thread_chat.py
WARNING:root:connection from ('127.0.0.1', 68827)
```

- b. Melakukan autentikasi

Ketika melakukan autentikasi, terdapat 2 kemungkinan pesan yang akan muncul yaitu, pesan error akibat kesalahan yang bisa terjadi karena kesalahan username atau password dan pesan sukses terautentikasi. Cara autentikasi adalah dengan memanggil command auth, contoh disini adalah:

Auth messi Surabaya -> berhasil

Auth messi Jakarta -> error, password salah

Auth chintya Surabaya -> error, user tidak ada

```
chat.py - Tugaskindividu
1  # Import modules
2  import socket
3  import threading
4  import json
5  import sys
6  import os
7
8  # Host and port
9  host = '127.0.0.1'
10 port = 63027
11
12 # Create a socket
13 s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
14 s.bind((host, port))
15 s.listen(5)
16 print('Server is running on %s:%s' % (host, port))
17
18 # List of users
19 users = {
20     'messi': 'Messi',
21     'henderson': 'Jordan Henderson',
22     'liedeker': 'Gary Lineker'
23 }
24
25 # Function to handle client connection
26 def handle_client(client_socket):
27     # Send welcome message
28     client_socket.send('Welcome to the chat server!')
29
30     # Receive data from client
31     data = client_socket.recv(1024)
32     if data:
33         # Decode the data
34         data = data.decode('utf-8')
35         # Split the data into command and arguments
36         command, arguments = data.split(' ')
37
38         # Handle the command
39         if command == 'auth':
40             # Authenticate the user
41             username = arguments
42             password = input('Password: ')
43             if username in users and users[username] == password:
44                 # User is authenticated
45                 client_socket.send('Authenticated!')
46             else:
47                 # User is not authenticated
48                 client_socket.send('Invalid username or password!')
49         elif command == 'send':
50             # Send message to other users
51             message = arguments
52             # Broadcast the message to all connected clients
53             for client in clients:
54                 client_socket.send(message)
55         elif command == 'status':
56             # Get status of the server
57             status = 'Server is running'
58             client_socket.send(status)
59         else:
60             # Invalid command
61             client_socket.send('Invalid command!')
62
63     # Close the client socket
64     client_socket.close()
65
66 # Main function
67 def main():
68     # Create a list to store connected clients
69     clients = []
70
71     # Create a thread to handle client connections
72     thread = threading.Thread(target=handle_client, args=(s,))
73     thread.start()
74
75     # Keep the server running
76     while True:
77         # Accept a new connection
78         client_socket, address = s.accept()
79         # Add the client to the list of connected clients
80         clients.append(client_socket)
81         # Print the client's IP and port
82         print('New connection from %s:%s' % (address[0], address[1]))
83
84 # Run the main function
85 if __name__ == '__main__':
86     main()
```

Autentikasi Password Salah & Autentikasi Sukses

```
Tugas_Individu - python server_thread_chat.py - 87x23
(base) chintyadewi@chintya Tugaskindividu % python server_thread_chat.py
WARNING:root:connection from ('127.0.0.1', 63027)
WARNING:root:data dari client: auth messi jakarta

WARNING:root:AUTH: auth messi jakarta
WARNING:root:balas ke client: {"status": "ERROR", "message": "Password Salah"}

WARNING:root:data dari client: auth messi surabaya

WARNING:root:AUTH: auth messi surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenId": "11657fe2-a5bc-44ea-9533-9c778cc8e130"}

WARNING:root:connection from ('127.0.0.1', 63073)
WARNING:root:data dari client: auth chintya surabaya

WARNING:root:AUTH: auth chintya surabaya
WARNING:root:balas ke client: {"status": "ERROR", "message": "User Tidak Ada"}

Tugas_Individu - python chat-cli.py - 87x24
Last login: Fri Jun 18 00:42:51 on ttys003
(base) chintyadewi@chintya ~ % cd /Users/chintyadewi/Pemrograman_Jaringan_D/progjar4c/Tugaskindividu
(base) chintyadewi@chintya Tugaskindividu % python chat-cli.py
Command :auth chintya surabaya
diterima dari server b'{"status": "ERROR", "message": "User Tidak Ada"}\n\n'
Error, User Tidak Ada
Command :
```

Autentikasi User Salah

- c. Melakukan pengiriman pesan
- Pengiriman pesan dilakukan dengan cara mengirim command send sedangkan penerimaan pesan dilakukan dengan cara pengecekan inbox. Contoh disini adalah:

```
Tugas_Individu — python chat-cli.py — 80x22
jar4c/Tugas_Individu
(base) chintyadewi@chintya Tugas_Individu % python chat-cli.py
Command :auth chintya surabaya
diterima dari server b'{"status": "ERROR", "message": "User Tidak Ada"}\n\r\n'
end of string
Error, User Tidak Ada
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenId": "d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500"}\n\r\n'
diterima dari server b'0'\n\r\n'
end of string
username messi logged in, token d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500
Command d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan", "msg_to": "Lionel Messi", "msg": " apa kabar \r\n\r\n"}]}\n\r\n'
diterima dari server b'{"status": "OK", "tokenId": "d1ebc45a-3ce3-45bf-a7ce-3199856d11f8"}\n\r\n'
diterima dari server b'{"status": "OK", "message": "Message Sent"}\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " apa kabar \r\n\r\n"}]}
Command d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500:

Tugas_Individu — python chat-cli.py — 80x24
Last login: Fri Jun 18 00:48:59 on tty804
(base) chintyadewi@chintya ~ % cd /Users/chintyadewi/Pemrograman_Jaringan_D/prog
jar4c/Tugas_Individu
(base) chintyadewi@chintya Tugas_Individu % python client-cli.py
python: can't open file 'client-cli.py': [Errno 2] No such file or directory
(base) chintyadewi@chintya Tugas_Individu % python chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenId": "d1ebc45a-3ce3-45bf-a7ce-3199856d11f8"}\n\r\n'
diterima dari server b'8'\n\r\n'
end of string
username henderson logged in, token d1ebc45a-3ce3-45bf-a7ce-3199856d11f8
Command d1ebc45a-3ce3-45bf-a7ce-3199856d11f8:send messi apa kabar
send d1ebc45a-3ce3-45bf-a7ce-3199856d11f8 messi apa kabar

diterima dari server b'{"status": "OK", "message": "Message Sent"}\n\r\n'
end of string
message sent to messi
Command d1ebc45a-3ce3-45bf-a7ce-3199856d11f8:
```

Pengiriman pesan dari Henderson ke messi
Send messi apa kabar

```
Tugas_Individu — python chat-cli.py — 80x22
Command :auth messi surabaya
diterima dari server b'{"status": "OK", "tokenId": "d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500"}\n\r\n'
diterima dari server b'0'\n\r\n'
end of string
username messi logged in, token d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500
Command d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500:inbox
diterima dari server b'{"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan", "msg_to": "Lionel Messi", "msg": " apa kabar \r\n\r\n"}]}\n\r\n'
diterima dari server b'{"status": "OK", "tokenId": "d1ebc45a-3ce3-45bf-a7ce-3199856d11f8"}\n\r\n'
diterima dari server b'{"status": "OK", "message": "Message Sent"}\n\r\n'
end of string
{"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " apa kabar \r\n\r\n"}]}
Command d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500:send henderson berisik lu
send d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500 henderson berisik lu

diterima dari server b'{"status": "OK", "message": "Message Sent"}\n\r\n'
end of string
message sent to henderson
Command d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500:

Tugas_Individu — python chat-cli.py — 80x24
python: can't open file 'client-cli.py': [Errno 2] No such file or directory
(base) chintyadewi@chintya Tugas_Individu % python chat-cli.py
Command :auth henderson surabaya
diterima dari server b'{"status": "OK", "tokenId": "d1ebc45a-3ce3-45bf-a7ce-3199856d11f8"}\n\r\n'
diterima dari server b'8'\n\r\n'
end of string
username henderson logged in, token d1ebc45a-3ce3-45bf-a7ce-3199856d11f8
Command d1ebc45a-3ce3-45bf-a7ce-3199856d11f8:send messi apa kabar
send d1ebc45a-3ce3-45bf-a7ce-3199856d11f8 messi apa kabar

diterima dari server b'{"status": "OK", "message": "Message Sent"}\n\r\n'
end of string
message sent to messi
Command d1ebc45a-3ce3-45bf-a7ce-3199856d11f8:inbox
diterima dari server b'{"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " berisik lu \r\n\r\n"}]}\n\r\n'
diterima dari server b'{"status": "OK", "tokenId": "d4ebb4b4-8994-4f6d-aaaa-9d7e7aa32500"}\n\r\n'
diterima dari server b'{"status": "OK", "message": "Message Sent"}\n\r\n'
end of string
{"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " berisik lu \r\n\r\n"}]}
Command d1ebc45a-3ce3-45bf-a7ce-3199856d11f8:
```

Pengiriman pesan dari messi ke Henderson
Send Henderson berisik lu

Pencatatan aktivitas kedua klien akan tercatat pada server

```
Tugas_Individu — python server_thread_chat.py — 87x49
WARNING:root:balas ke client: {"status": "ERROR", "message": "User Tidak Ada"}

WARNING:root:connection from ('127.0.0.1', 63086)
WARNING:root:data dari client: auth messi surabaya

WARNING:root:AUTH: auth messi surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "dbebb4b4-0994-4f6d-aaaa-9d7e7aa32500"}

WARNING:root:data dari client: auth henderson surabaya

WARNING:root:AUTH: auth henderson surabaya
WARNING:root:balas ke client: {"status": "OK", "tokenid": "d1ebc45a-3ce3-45bf-a7ce-3199856d11f8"}

WARNING:root:data dari client: send d1ebc45a-3ce3-45bf-a7ce-3199856d11f8 messi apa kabar
WARNING:root:SEND: session d1ebc45a-3ce3-45bf-a7ce-3199856d11f8 send message from henderson to messi
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}

WARNING:root:data dari client: inbox dbebb4b4-0994-4f6d-aaaa-9d7e7aa32500

WARNING:root:INBOX: dbebb4b4-0994-4f6d-aaaa-9d7e7aa32500
WARNING:root:balas ke client: {"status": "OK", "messages": {"henderson": [{"msg_from": "Jordan Henderson", "msg_to": "Lionel Messi", "msg": " apa kabar \r\n"}]}}

WARNING:root:data dari client: send dbebb4b4-0994-4f6d-aaaa-9d7e7aa32500 henderson berisik lu
WARNING:root:SEND: session dbebb4b4-0994-4f6d-aaaa-9d7e7aa32500 send message from messi to henderson
WARNING:root:balas ke client: {"status": "OK", "message": "Message Sent"}

WARNING:root:data dari client: inbox d1ebc45a-3ce3-45bf-a7ce-3199856d11f8

WARNING:root:INBOX: d1ebc45a-3ce3-45bf-a7ce-3199856d11f8
WARNING:root:balas ke client: {"status": "OK", "messages": {"messi": [{"msg_from": "Lionel Messi", "msg_to": "Jordan Henderson", "msg": " berisik lu \r\n"}]}}
```