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Pemrograman Jaringan D – Tugas 4

Mengambil IP dari alpine-1 untuk mengganti isi variable svr pada file_client_cli.py server adress pada server_thread_chat.py karena alpine-1 akan menjadi tempat server dijalankan dan tidak lupa untuk menyamakan port yang digunakan.

```
praktikum x alpine-1 x alpine-2 x alpine-3 x
Not secure | 192.168.161.128/static/web-ui/server/1/project/4c09642b-965a-430c-a82c-8ad39998016d/nodes/f8670367-7a09-4fa3-9
alpine-1 console is now available... Press RETURN to get started.
udhcpd (v1.24.2) started
Sending discover...
Sending discover...
Sending discover...
Sending discover...
Sending select for 192.168.122.33...
Sending select for 192.168.122.33...
Sending select for 192.168.122.33...
Sending select for 192.168.122.33...
Sending select for 192.168.122.33...
udhcpd failed to get a DHCP lease
No lease, forking to background
ok
/ # ifconfig
eth0      Link encap:Ethernet  HWaddr 52:E1:77:62:00:30
          inet addr:192.168.122.33  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:188 errors:0 dropped:0 overruns:0 frame:0
          TX packets:14 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:24598 (24.0 KiB)  TX bytes:3984 (3.8 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)

/ #
```

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file_client_cli.py x file_server.py x tugas_file.py x file_protocol.py x file_interface.py x
0 results 1/3
1 import socket
2 import json
3 import base64
4 import logging
5
6 server_address=('192.168.122.33',6666)
7
8 def send_command(command_str=""):
9     global server_address
10    sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
11    sock.connect(server_address)
12    logging.warning(f"connecting to {server_address}")
13    try:
14        logging.warning(f"sending message ")
15        sock.sendall(command_str.encode())
16        # Look for the response, waiting until socket is done (no
17        data_received="" #empty_string
18        while True:
19            #socket does not receive all data at once, data comes
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Pemrograman Jaringan D – Tugas 4

Menggunakan fungsi `send_command` yang ada di `file_client_cli.py`

```
file_client_cli.py
8 def send_command(command_str=""):
9     global server_address
10    sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
11    sock.connect(server_address)
12    logging.warning(f"connecting to {server_address}")
13    try:
14        logging.warning(f"sending message ")
15        sock.sendall(command_str.encode())
16        # Look for the response, waiting until socket is done (no more data)
17        data_received="" #empty string
18        while True:
19            #socket does not receive all data at once, data comes in part, need to be concatenated at the end of process
20            data = sock.recv(16)
21            if data:
22                #data is not empty, concat with previous content
23                data_received += data.decode()
24                if "\n\n\r\n" in data_received:
25                    break
26            else:
27                # no more data, stop the process by break
28                break
29        # at this point, data_received (string) will contain all data coming from the socket
30        # to be able to use the data_received as a dict, need to load it using json.loads()
31        hasil = json.loads(data_received)
32        logging.warning("data received from server:")
33        return hasil
34    except:
35        logging.warning("error during data receiving")
36        return False
```

Kita akan membuat threading yang menjalankan fungsi ini dengan parameter `GET pokijan.jpg` sebanyak 100 kali, tidak lupa untuk menangkap waktu sesaat sebelum dan sesudah threading dimulai dan diselesaikan. Untuk melihat apakah loop ini berjalan 100 kali diberikan print untuk setiap loop.

```
file_server.py x tugas_file.py x file_protocol.py x file_interface.py x
1 from file_client_cli import send_command
2 import datetime
3 import threading
4
5
6 def get100kali(j):
7     texec = dict()
8     init = datetime.datetime.now()
9     for i in range(0, j):
10        print(f"GET pokijan.jpg ke {i}")
11        # Threading dengan fungsi send_command
12        texec[f"{i}"] = threading.Thread(target=send_command, args=("GET pokijan.jpg",))
13        texec[f"{i}"].start()
14        # join setelah thread selesai
15    for i in range(0, j):
16        texec[f"{i}"].join()
17
18    end = datetime.datetime.now()
19    total = end - init
20    print(f"Waktu TOTAL yang dibutuhkan {total} detik {init} s/d {end}")
21
22
23 if __name__ == '__main__':
24     get100kali(100)
25
```

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Pemrograman Jaringan D – Tugas 4

Jalankan server di alpine-1 dan tugas-file.py di alpine-2

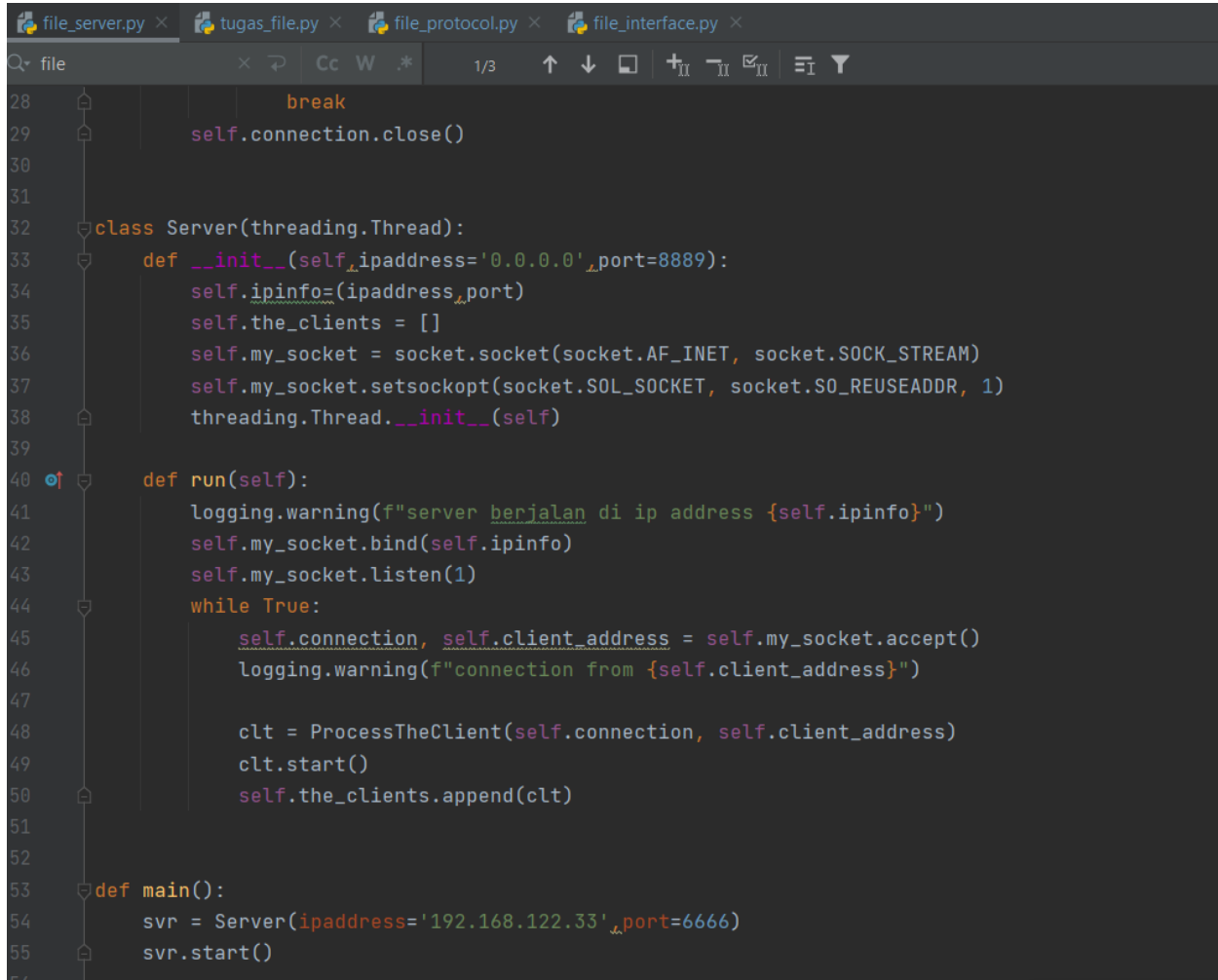
Alpine-1 (server log)

```
praktikum x alpine-1 x alpine-2 x +
< > C Not secure | 192.168.161.128/static/web-ui/server/1/project/4c09642b-965a-430c-a82c-8ad39998016d/nodes/f8670367-7a09-4...
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46302)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:connection from ('192.168.122.28', 46284)
WARNING:root:memproses request: GET
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:connection from ('192.168.122.28', 46286)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46238)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46266)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46278)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46304)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46272)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46276)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46280)
WARNING:root:connection from ('192.168.122.28', 46274)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
WARNING:root:connection from ('192.168.122.28', 46282)
WARNING:root:string diproses: GET pokijan.jpg
WARNING:root:memproses request: GET
```

Alpine-2(client yang melakukan get 100 kali)

```
praktikum x alpine-1 x alpine-2 x +
< > C Not secure | 192.168.161.128/static/web-ui/server/1/project/4c09642b-965a-430c-a82c-8ad39998016d/nodes/c6f2c698-fa5d-4108-90b4-2df4...
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:data received from server:
GET pokijan.jpg ke 96
WARNING:root:data received from server:
WARNING:root:data received from server:
WARNING:root:connecting to ('192.168.122.33', 6666)
WARNING:root:data received from server:
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.33', 6666)
WARNING:root:sending message
GET pokijan.jpg ke 97
GET pokijan.jpg ke 98
WARNING:root:connecting to ('192.168.122.33', 6666)
WARNING:root:sending message
GET pokijan.jpg ke 99
WARNING:root:data received from server:
WARNING:root:connecting to ('192.168.122.33', 6666)
WARNING:root:sending message
WARNING:root:connecting to ('192.168.122.33', 6666)
WARNING:root:sending message
WARNING:root:data received from server:
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WARNING:root:data received from server:
Waktu TOTAL yang dibutuhkan 0:00:01.851378 detik 2021-06-16 17:27:34.389680 s/d 2021-06-16 17:27:36.241058
/home/work/progjar4a/tugas4 #
```

Seperti yang dapat dilihat pada ujicoba ini baik server maupun tugas_file.py melakukan threading sehingga setiap pekerjaan dapat dilakukan oleh masing-masing thread sehingga pemanggilan get 100 kali pokijan.jpg cukup cepat.



```
file_server.py x tugas_file.py x file_protocol.py x file_interface.py x
file
x Cc W .* 1/3
28         break
29         self.connection.close()
30
31
32 class Server(threading.Thread):
33     def __init__(self, ipaddress='0.0.0.0', port=8889):
34         self.ipinfo=(ipaddress, port)
35         self.the_clients = []
36         self.my_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
37         self.my_socket.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
38         threading.Thread.__init__(self)
39
40     def run(self):
41         logging.warning(f"server berjalan di ip address {self.ipinfo}")
42         self.my_socket.bind(self.ipinfo)
43         self.my_socket.listen(1)
44         while True:
45             self.connection, self.client_address = self.my_socket.accept()
46             logging.warning(f"connection from {self.client_address}")
47
48             clt = ProcessTheClient(self.connection, self.client_address)
49             clt.start()
50             self.the_clients.append(clt)
51
52
53 def main():
54     svr = Server(ipaddress='192.168.122.33', port=6666)
55     svr.start()
56
```