

1. Buatlah sebuah program time server dengan port 45000 yang dapat melayani request concurrent
  - a. Screenshot terminal dan Wireshark Mesin 1

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```
(base) jovyan@33a15d755abc:~/work$ python3 server_2.py
INFO:root:Time Server starting up on port 45000
█
```

Setelah menjalankan mesin 2 ( client 1 )

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```
(base) jovyan@33a15d755abc:~/work$ python3 server_2.py
INFO:root:Time Server started on port 45000
INFO:root:Connection from ('172.18.0.3', 34280)
INFO:root:Processing client from ('172.18.0.3', 34280)
INFO:root:received: TIME
INFO:root:sending: JAM 15:18:27
INFO:root:received: TIME
INFO:root:sending: JAM 15:18:27
INFO:root:received: QUIT
INFO:root:Client requested to quit
INFO:root:Connection from ('172.18.0.3', 34280) closed
█
```

Kemudian jalankan mesin 3 ( client 2 )

```
INFO:root:Connection from ('172.18.0.4', 37150)
INFO:root:Processing client from ('172.18.0.4', 37150)
INFO:root:received: TIME
INFO:root:sending: JAM 15:19:59
INFO:root:received: TIME
INFO:root:sending: JAM 15:19:59
INFO:root:received: TIME
INFO:root:sending: JAM 15:19:59
INFO:root:received: QUIT
INFO:root:Client requested to quit
INFO:root:Connection from ('172.18.0.4', 37150) closed
█
```

Wireshark

- b. Screenshot Terminal dan Wireshark Mesin 2

```
(base) jovyan@be5acea38922:~/work$ python3 client_2.py
INFO:root:Connecting to ('172.18.0.2', 45000)
INFO:root:Requesting time with: TIME
INFO:root:Received time: JAM 15:18:27
INFO:root:Requesting time with: TIME
INFO:root:Received time: JAM 15:18:27
INFO:root:Sending: QUIT
INFO:root:Closing connection
(base) jovyan@be5acea38922:~/work$
```

c. Screenshot Terminal dan Wireshark Mesin 3

```
(base) jovyan@d0a1760e2937:~/work$ python3 client.py
INFO:root:Connecting to ('172.18.0.2', 45000)
INFO:root:Requesting time with: TIME
INFO:root:Received time: JAM 15:19:59
INFO:root:Time request 1 completed
INFO:root:Requesting time with: TIME
INFO:root:Received time: JAM 15:19:59
INFO:root:Time request 2 completed
INFO:root:Requesting time with: TIME
INFO:root:Received time: JAM 15:19:59
INFO:root:Time request 3 completed
INFO:root:Sending: QUIT
INFO:root:Closing connection
(base) jovyan@d0a1760e2937:~/work$
```

d. Penjelasan

Server akan dimodifikasi agar dapat menangani request concurrent time dari client mesin 2 dan client mesin 3. Dimana dalam multi thread ini, tiap client akan dilayani oleh thread nya masing masing, sehingga client tidak harus menunggu client sebelumnya selesai. Jika client mengirimkan TIME ke server, server akan mengembalikan/response waktu saat ini dengan format "JAM HH:MM:SS\r\n".

Untuk wiresharknya, dapat dilihat bahwa kedua client mesin 2 dan mesin 3 mengirim request "TIME" dengan selisih 1.5 detik, kemudian server menerima dan memproses request dari dua Alamat ip client yang berbeda tersebut

e. Link Github

<https://github.com/Papavero30/Progar-Activity/tree/dbd2b6a5b65fbb5371a40d1d2a0ca71b42cdff58/Tugas%202>