Pemrograman Jaringan A

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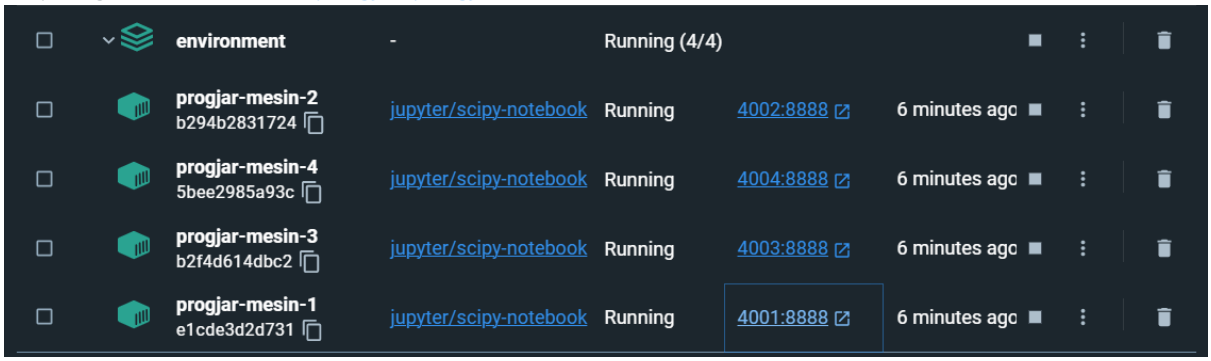
Naufal Adli Purnama

Tugas 1

1. jalankan lab sesuai panduan, dan gunakan contoh program di https://github.com/rm77/progjar/progjar1



2. jalankan socket_info.py di mesin-1 dan mesin-2, capturelah hasilnya

```
timeout : None
timeout : 10.0

[(<AddressFamily.AF_INET: 2>, <SocketKind.SOCK_STREAM: 1>, 6, '',
('103.94.189.5', 80)),
(<AddressFamily.AF_INET6: 10>, <SocketKind.SOCK_STREAM: 1>, 6, '',
('::ffff:103.94.189.5', 80, 0, 0))]
```

3. jalankan server.py di mesin-1 dan client.py di mesin-2, sesuaikan isi program, pastikan komunikasi dapat dilakukan, capturelah hasilnya

server.py

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py

INFO:root:starting up on ('0.0.0.0', 10000)
INFO:root:waiting for a connection
INFO:root:connection from ('127.0.0.1', 63292)
INFO:root:received b'INI ADALAH DATA YANG DIKIRIM ABC'
INFO:root:sending back data
INFO:root:received b'DEFGHIJKLMNOPQ'
INFO:root:sending back data
INFO:root:received b''
INFO:root:waiting for a connection
```

client.py

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python client.py

INFO:root:connecting to ('localhost', 10000)
INFO:root:sending INI ADALAH DATA YANG DIKIRIM ABCDEFGHIJKLMNOPQ
```

```
INFO:root:b'INI ADALAH DATA '
INFO:root:b'YANG DIKIRIM ABC'
INFO:root:b'DEFGHIJKLMNOPQ'
INFO:root:closing
```

4. jalankan kembali soal nomor 3, namun kali ini rubahlah komunikasi agar berjalan di port 32444, kirimkan isi sebuah file, dan capturelahh hasilnya

Client membaca dari file bernama testing.txt dengan perubahan kode seperti berikut:

```
# Send data
    f = open("testing.txt", "r")
    message = f.read()
    # message = 'INI ADALAH DATA YANG DIKIRIM ABCDEFGHIJKLMNOPQ'
```

Berikut output terminal server.py:

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:starting up on ('0.0.0.0', 32444)
INFO:root:waiting for a connection
INFO:root:connection from ('127.0.0.1', 63937)
INFO:root:received b'This is the test data.'
INFO:root:sending back data
INFO:root:received b''
INFO:root:waiting for a connection
INFO:root:ERROR: timed out
INFO:root:closing
```

Berikut output client.py:

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:connecting to ('localhost', 32444)
INFO:root:sending This is the test data.
INFO:root:b'This is the test'
INFO:root:b' data.'
INFO:root:closing
```

5. jalankan client di mesin-3 dan mesin-4 dengan server berada di mesin-1, jalankan client secara bersamaan, apakah yang terjadi ? capturelah hasilnya

Ditambahkan fungsi sleep() untuk memberi waktu menjalankan beberapa client seperti berikut:

```
while True:
        # Wait for a connection
        logging.info("waiting for a connection")
        connection, client_address = sock.accept()
        logging.info(f"connection from {client_address}")
        import time
```

```
        time.sleep(10)
```

Output dengan satu client:

server.py

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:starting up on ('0.0.0.0', 32444)
INFO:root:waiting for a connection
INFO:root:connection from ('127.0.0.1', 63937)
INFO:root:received b'This is the test data.'
INFO:root:sending back data
INFO:root:received b''
INFO:root:waiting for a connection
INFO:root:ERROR: timed out
INFO:root:closing
```

client.py

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:connecting to ('localhost', 32444)
INFO:root:sending This is the test data.
INFO:root:b'This is the test'
INFO:root:b' data.'
INFO:root:closing
```

Output dengan dua client:

server.py

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:starting up on ('0.0.0.0', 32444)
INFO:root:waiting for a connection
INFO:root:connection from ('127.0.0.1', 63937)
INFO:root:received b'This is the test data.'
INFO:root:sending back data
INFO:root:received b''
INFO:root:waiting for a connection
INFO:root:ERROR: timed out
INFO:root:closing
```

client.py (Client pertama)

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:connecting to ('localhost', 32444)
INFO:root:sending This is the test data.
INFO:root:b'This is the test'
INFO:root:b' data.'
INFO:root:closing
```

client.py (Client kedua)

```
C:\Users\User\Documents\CompSci\UNI\SM-6\Progjar\progjar\progjar1>python server.py


INFO:root:connecting to ('localhost', 32444)
INFO:root:sending This is the test data.
INFO:root:b'This is the test'
INFO:root:b' data.'
INFO:root:closing
```

Karena socket hanya listen untuk 1 koneksi, maka request kedua tidak diterima sampai koneksi client pertama putus. Meskipun kedua client pada akhirnya berhasil mendapatkan data, mereka harus melakukannya secara sekuensial, tidak bisa secara konkuren.