

The implementation of the Echo Server lab is available at the following GitHub repository:

https://github.com/m7amh/echo_server

All lab requirements have been met.

```

PS C:\Users\M7M7\Desktop\Echo Server> python client.py
Type message starting with A/C/D or anything else to test:
>> Ahello
Server: ollhe
>> Dworld
Server: WORLD
>> Cpython
Server: hnopty
>> 

```

Wireshark packet capture showing the Echo Server lab implementation. The capture shows a series of packets between a client and a server. The first packet is a SYN packet from the client to the server. The server responds with a SYN-ACK. The client then sends a message 'Ahello' and the server responds with 'ollhe'. This process repeats for 'Dworld' and 'Cpython'.

Frame 113: 50 bytes on wire (400 bits), 50 bytes captured (400 bits) on Interface \Device\NPF_{...}, Id 0

Null/Loopback

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 59064, Dst Port: 12345, Seq: 1, Ack: 1, Len: 6

Data (6 bytes)

Data: 0100000000000000

Length: 6

Frame 115: 49 bytes on wire (392 bits), 49 bytes captured (392 bits) on Interface \Device\NPF_{...}, Id 0

Null/Loopback

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 12345, Dst Port: 59064, Seq: 1, Ack: 7, Len: 5

Data (5 bytes)

Data: 0100000000000000

Length: 5