

جامعة الإسكندرية
ALEXANDRIA
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Echo sever

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The Code

Client Server and Server

client.py - C:\Engineering\Term 8\Networks lab\lab1 sniffing\client.py (3.11.0)

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```
import socket
import sys
client=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
server_address=("127.0.0.1",50000)

client.connect(server_address)

while True :
    msg=input("Enter The Message wanted to be sent: ")
    print("The message which is sent: ",msg)
    client.sendall(msg.encode("utf-8"))

    data=client.recv(1000).decode("utf-8")
    print("The echo:" ,data)
    if data=="quit":
        break
client.close()
```

server.py - C:\Engineering\Term 8\Networks lab\lab1 sniffing\server.py (3.11.0)

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```
import socket
import sys
server=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
server_address=("127.0.0.1",50000)
server.bind(server_address)
server.listen(1)
print('Ready for any connection')
connection, client_address=server.accept()
print('connection established with: ',client_address)
while True :
    data=connection.recv(1000).decode("utf-8")
    print('The messsage recieved ',data)

    # print("type: ",type(data))
    # data= str(data)

    if data[0] == 'A' :
        print("type: ",data[0])
        data=data[1:]
        data=sorted(data)
        data= str(data)

        connection.sendall(data.encode("utf-8"))
    elif data[0] == 'C' :
        print("type: ",data[0])
        data=data[1:]
        data= str(data)
        data=data.upper()
        print(data)
        connection.sendall(data.encode("utf-8"))
    elif data[0] == 'D' :
        print("type: ",data[0])
        data=data[1:]
        data=sorted(data,reverse=True)
        data= str(data)
        connection.sendall(data.encode("utf-8"))
    else:
        print("No type ")
        connection.sendall(data.encode("utf-8"))
        if data=="quit" :
            break

connection.close()
server.close()
```

Output

```
IDLE Shell 3.11.0
File Edit Shell Debug Options Window Help
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Engineering\Term 8\Networks lab\lab1 sniffing\client.py =====
Enter The Message wanted to be sent: Abejdfgjdfjifvj
The message which is sent: Abejdfgjdfjifvj
The echo: ['b', 'd', 'd', 'e', 'f', 'f', 'f', 'g', 'i', 'j', 'j', 'j', 'j', 'v']
]
Enter The Message wanted to be sent: Cijbkfkodbkokfob
The message which is sent: Cijbkfkodbkokfob
The echo: IJBKFKODBKOKFOB
Enter The Message wanted to be sent: Dketjgiejbiv
The message which is sent: Dketjgiejbiv
The echo: ['t', 'k', 'j', 'j', 'i', 'i', 'g', 'e', 'e', 'b', 'v']
Enter The Message wanted to be sent: quit
The message which is sent: quit
The echo: quit
>>>
```

```
IDLE Shell 3.11.0
File Edit Shell Debug Options Window Help
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Engineering\Term 8\Networks lab\lab1 sniffing\server.py =====
Ready for any connection
connection established with: ('127.0.0.1', 57323)
The message recieved Abejdfgjdfjifvj
type: A
The message recieved Cijbkfkodbkokfob
type: C
IJBKFKODBKOKFOB
The message recieved Dketjgiejbiv
type: D
The message recieved quit
No type
>>>
```

WireShark OUTPUT

*Adapter for loopback traffic capture

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ip.addr == 127.0.0.1 && tcp.port == 57323

No.	Time	Source	Destination	Protocol	Length	Info
854	244.510...	127.0.0.1	127.0.0.1	TCP	56	57323 → 50000 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM
855	244.510...	127.0.0.1	127.0.0.1	TCP	56	50000 → 57323 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM
856	244.510...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
2341	281.259...	127.0.0.1	127.0.0.1	TCP	59	57323 → 50000 [PSH, ACK] Seq=1 Ack=1 Win=2619648 Len=15
2342	281.259...	127.0.0.1	127.0.0.1	TCP	44	50000 → 57323 [ACK] Seq=1 Ack=16 Win=2619648 Len=0
2375	281.347...	127.0.0.1	127.0.0.1	TCP	114	50000 → 57323 [PSH, ACK] Seq=1 Ack=16 Win=2619648 Len=70
2376	281.347...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [ACK] Seq=16 Ack=71 Win=2619648 Len=0
2857	294.934...	127.0.0.1	127.0.0.1	TCP	60	57323 → 50000 [PSH, ACK] Seq=16 Ack=71 Win=2619648 Len=16
2858	294.934...	127.0.0.1	127.0.0.1	TCP	44	50000 → 57323 [ACK] Seq=71 Ack=32 Win=2619648 Len=0
2899	294.988...	127.0.0.1	127.0.0.1	TCP	59	50000 → 57323 [PSH, ACK] Seq=71 Ack=32 Win=2619648 Len=15
2900	294.988...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [ACK] Seq=32 Ack=86 Win=2619648 Len=0
3395	337.041...	127.0.0.1	127.0.0.1	TCP	56	57323 → 50000 [PSH, ACK] Seq=32 Ack=86 Win=2619648 Len=12
3396	337.041...	127.0.0.1	127.0.0.1	TCP	44	50000 → 57323 [ACK] Seq=86 Ack=44 Win=2619648 Len=0
3429	337.125...	127.0.0.1	127.0.0.1	TCP	99	50000 → 57323 [PSH, ACK] Seq=86 Ack=44 Win=2619648 Len=55
3430	337.125...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [ACK] Seq=44 Ack=141 Win=2619648 Len=0
4974	352.778...	127.0.0.1	127.0.0.1	TCP	48	57323 → 50000 [PSH, ACK] Seq=44 Ack=141 Win=2619648 Len=4
4975	352.778...	127.0.0.1	127.0.0.1	TCP	44	50000 → 57323 [ACK] Seq=141 Ack=48 Win=2619648 Len=0
5000	352.806...	127.0.0.1	127.0.0.1	TCP	48	50000 → 57323 [PSH, ACK] Seq=141 Ack=48 Win=2619648 Len=4
5001	352.806...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [ACK] Seq=48 Ack=145 Win=2619648 Len=0
5002	352.806...	127.0.0.1	127.0.0.1	TCP	44	50000 → 57323 [FIN, ACK] Seq=145 Ack=48 Win=2619648 Len=0
5003	352.806...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [ACK] Seq=48 Ack=146 Win=2619648 Len=0
5020	352.823...	127.0.0.1	127.0.0.1	TCP	44	57323 → 50000 [FIN, ACK] Seq=48 Ack=146 Win=2619648 Len=0
5021	352.823...	127.0.0.1	127.0.0.1	TCP	44	50000 → 57323 [ACK] Seq=146 Ack=49 Win=2619648 Len=0

<

> Frame 854: 56 bytes on wire (448 bits), 56 bytes captured (448 bits) on interface \Device\NPF_{Loopback},
> Null/Loopback
> Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1
> Transmission Control Protocol, Src Port: 57323, Dst Port: 50000, Seq: 0, Len: 0

0000 02 00 00 00 45 00 00 34 60 0d 40 00 80 06 00 00E..4`.@.....
0010 7f 00 00 01 7f 00 00 01 df eb c3 50 c8 99 25 beP..%..
0020 00 00 00 00 80 02 ff ff e5 55 00 00 02 04 ff d7U.....
0030 01 03 03 08 01 01 04 02

<

wireshark_NPF_Loopback83JK11.pcapng

Packets: 15234 · Displayed: 23 (0.2%)