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Assignment 4

Instruction on How to use the program

Open command prompt

Enter into the folder where you saved server and client files (Example - (cd Downloads))

Then run server file first,

Server file takes exactly five arguments (<transport protocol type> <acknowledgement type> <port> <host name> <message size>)

<Transport protocol type> - String (tcp or udp)

<Acknowledgement type> - String (stop-and-wait or pure-streaming)

<Port> -int

<Host name> - string(only takes hostname)

(Note: To find hostname of your computer, open command prompt and type

hostname) <Message size> - int

```
C:\Users\Bhavin>cd Music
C:\Users\Bhavin\Music>TCP_server.py tcp stop-and-wait 9999 becool 65536
```

Leave that running and open another command prompt

Enter into the folder where you saved server and client files (Example - (cd Downloads))

now run client file

Client file also takes five argument (<transport protocol type> <acknowledgement type> <port> <host name> <message size>)

```
C:\Users\Bhavin>cd Music
C:\Users\Bhavin\Music>TCP_client.py udp pure-streaming 9999 becool 65536
```

You can run this in ILAB as well.

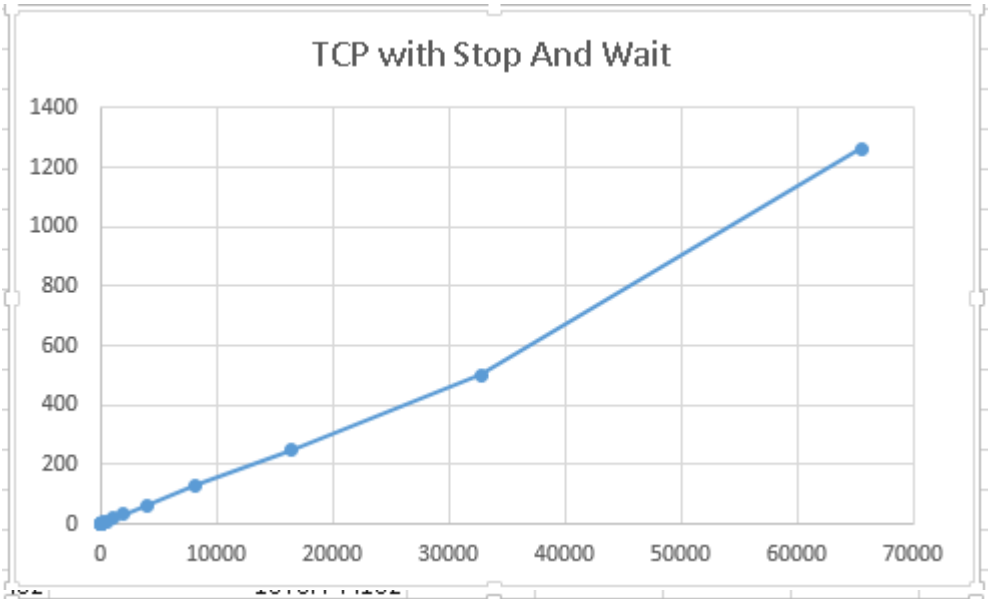
(Python TCP_server.py tcp stop-and-wait 6999 basic.cs.rutgers.edu 32)

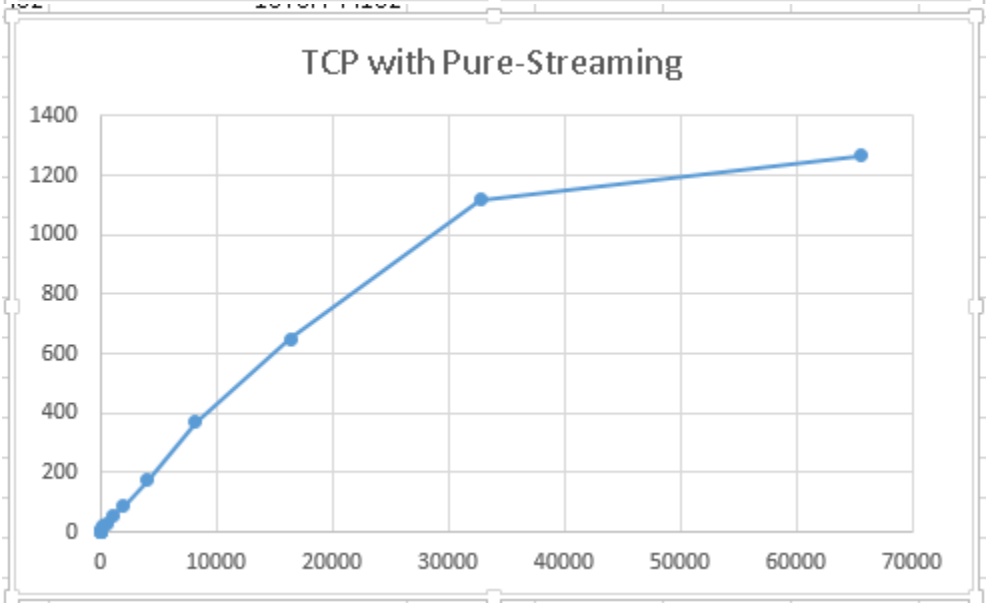
Server Design and implementation

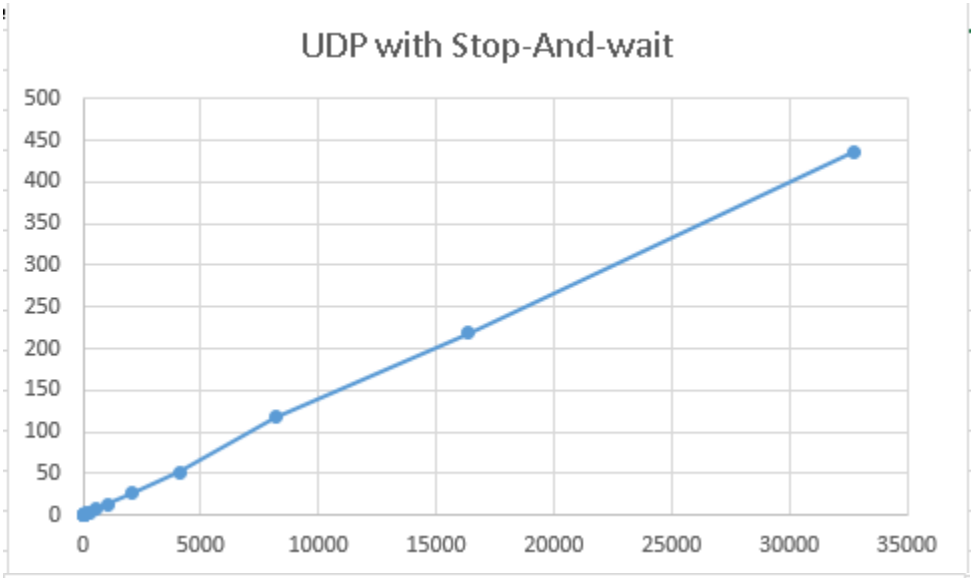
I used python to create server and imported socket, math, time, and sys. I used sys to listen arguments. If transport type is TCP, created socket using socket.SOCK_STREAM, used bind and listen, accepted package from client. If transport type is UDP, created datagram using socket.SOCK_DGRAM, accept the package. It receives byte sent from client and send ack. It counts the number of bytes receives and number of messages as well.

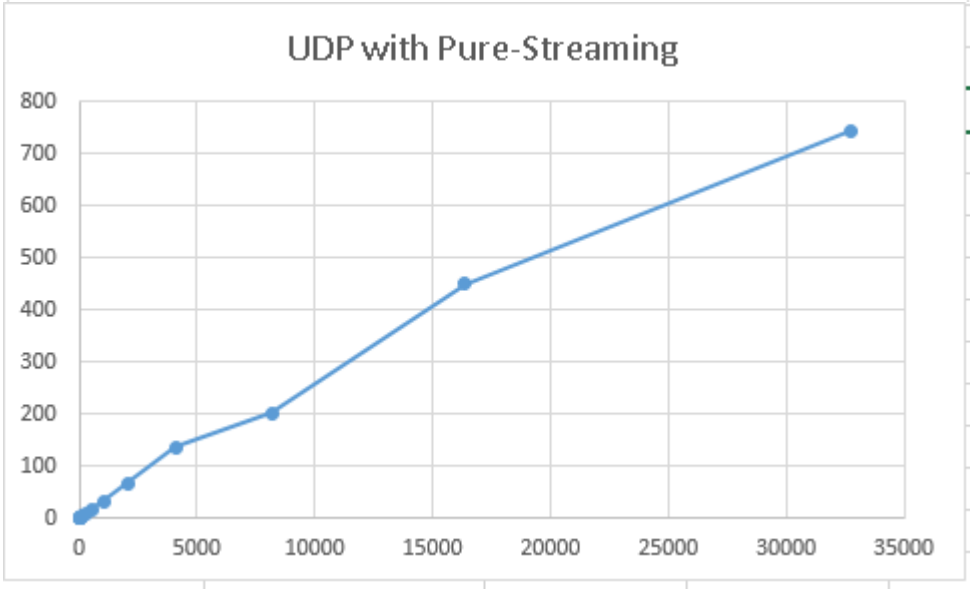
(NOTE: server Receives 5 extra byte than client which “close”. This tell server that all the bytes have been send and its time to end the server.)

When we run send bytes (65536), we were getting an error message saying too big bytes…






UDP with Stop-And-wait
500
450
400
350
300
250
200
150
100
50
0
0
5000
10000
15000
20000
25000
30000
35000


UDP with Pure-Streaming
800
700
600
500
400
300
200
100
0
0
5000
10000
15000
20000
25000
30000
35000