**Programming Assignment**

**Due Date – March 22, 2023, 11:59PM**

**Objectives**

1. Learn to create a network server.
2. Learn how packets can be sent over the network.
3. Familiarize you with the concept of sockets.
4. Use packet capture to visually inspect protocols.

# Client Specifications

$ server -p <PORT> -l LOGFILE

The server takes two arguments:

1.PORT - The port the server listens on.

2.Log file location - Where you will keep a record of packets you received.

For example:

$ ./server -p 6543 -l LOGFILE

1. The server must parse two command line arguments port, and logfile.
2. The server reads a text file (provided with the assignment).
3. Your client from PA2 connects to the server and sends a string. The server looks for the word“network” in the string sent by the client.
4. The server returns a random quote from the text file.
5. Make sure the server does not exit after sending the string.
6. The server should be able to handle multiple client requests.

**8. Turn in the following as a ZIP file:**

* 1. **The server code (60 points)**
  2. **The server’s log (20 points)**
  3. **Use TCPDUMP or Wireshark to capture the interactions, turn in the .pcap file (20 points)**

# Pseudo code

main server class():

##you may create separate modules for each of these

Step 1: #read command line arguments

##sanity check inputs

Step 2: #Create a socket object, use TCP socket(SOCK\_STREAM) for this assignment

##Check for errors

Step 3: #bind and listen

##handle bind failure

Step 4: #receive a message from the client, check for the work “network”

Step 5: pick a random quote and send to the client

Step 6: Make sure to log all interactions