HOMEWORK 6 (UDP AND TCP)

Please complete following questions in the space provided. Submit a modified version to Connex in the submission box. Consult the files **Wireshark_UDP_v7.0.pdf** if needed.

CONCEPTS

- Connectionless vs Connection-oriented communication
- What is inside a UDP datagram?
- What is TCP?
- How TCP connection is set up and taken down?

UDP

- Make a copy of your solution to the online solutions of UDP Socket Programming in Python (HTML) the two files, `udpclient.py` and `udpserver.py` , here in this folder.
- If you are running the Python code on your laptop using `localhost` , then start Wireshark with a capture filter `host 127.0.0.1` . Just capture the packets going between the `udpclient.py` and `udpserver.py` .
- Stop Wireshark when the Python scripts terminated.

Answer the following questions in the space provided:

Q1. Examine the first UDP packet, how many fields in the UDP datagram?

Q2. How many bytes are in the UDP **payload**? Check it against your `udpclient.py` code.

Q3. What is the **protocol number** of UDP?

Q4. Examine two UDP packets, one from the client and one from the server. What are the port numbers used in the client and in the server packets?

TCP

- Make a copy of your solution to TCP Socket Programming in Python (HTML) the two files, `tcpclient.py` and `tcpserver.py` , here in this folder.
- If you are running the Python code on your laptop using `localhost` , then start Wireshark with a capture filter `host 127.0.0.1` . Just capture the packets going between the `tcpclient.py` and `tcpserver.py` .

Answer the following questions in the space provided:

Q5. What are the packet numbers correspond to `connect` request?

Q6. What are being exchanged between the client and server after a TCP connection is established?

Q7. What is the **source** port number of the client when the **client** is sending?

Q8. What is the **source** port number of the server when the **server** is responding?

Q9. What is the total number of bytes are received by the server when the connection is closed?

Q10. What is the total number of bytes are received by the client when the connection is closed?

Q11. How many packets are exchanged when the connection is closed? What are being exchanged?