**Homework 7**

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**Video:**

<https://youtu.be/mAbTzPoJgWs>

**First Part Writing:**

- Telnet – A text based network access remote computer over the Internet.

- FTP – Used to transfer computer files between a client and server on a computer

network

- SSH – Used to login to a remote computer and execute commands securely.

- SFTP – Able to transfer files between a client and server securely.

- SMTP - Used when email is delivered from an email client to a server, or from

email server to another email server.

- HTTP – It is how messages are formatted and transferred; tells web servers what

actions to take in response to commands.

- SSL/TLS – SSL allows for sensitive data to be transmitted securely; TLS ensure

privacy between applications and their users.

- HTTPS – Browser and website communication is encrypted.

- DNS – Used to turn domain names into computer readable IP addresses.

- TCP – Establishes a connection and allows communication for apps to exchange

data.

- UDP – Sends data without a connection; could be lost along the way, as there is no

way to ensure it arrives.

- XMPP – It provides a way to send small pieces of XML, or extensible markup

language, data in almost real time

- ARP – Allows for machines to find an IP address in the ARP cache; used to allow

multi-access networks.

- ICMP – Allows network devices to send messages, such as an error message, to a

machine

- VNC – It is a sharing system that allows remote control of another computer.

2. Use “ping” to check if a server is alive and accessible. It uses ICMP, or Internet

Control Message Protocol.

3. Ubuntu is a program that controls a computer graphically, and it uses the VNC

protocol. Mac OS X users can use the xterm program to control a computer from the

command line, and it uses the SSH protocol.

4. You would not want to use Telnet to remotely control a computer, because it is

not secure. Use SSH, or secure shell, for secure remote control of another computer.

5. FTP is not a secure communication between a client and its server. SFTP is a

secure file transfer protocol, and it should be used instead.

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6. TCP uses a connection for communication, while UDP does not have a connection.

You would use TCP if you want to make sure that all of your data arrives. UDP would

be used to transfer data faster, but you cannot make sure all data has arrive; used

for things like audio or video streaming.

7. DNS translates a domain name like www.google.com to an IP address. This is

needed, because computers cannot read human domain names, so DNS is required

so that we do not have to memorize the IP addresses of every website.

**Second Part Analysis:**

1. The application layer protocol being used is Telnet

2. The transportation layer protocol being used is TCP, or Transmission Control

Protocol

3. username is “cssaaww”

4. password is “welcome to 1969”

5. The application layer protocol is insecure, because Telnet is not a secure,

because it sends information in plain text, as it is not encrypted.

6. The user should have used SSH, or Secure Shell, instead, because it has a

similar function to Telnet, except it is encrypted.