MIS 423: HoA#1: Part 2

In this assignment, you will explore more about layers 3-7 of the OSI Model, as well as the TCP/IP model, and will review the models.

# Layer 3: MAC Addresses, IP Addresses, Router,

1. Overall, describe layer 3 of the OSI model and its general function. What is central to this function?
2. Using the CMD prompt, please identify your MAC Address *and* IP Address. Remember, to do so, type the following into the CMD line and press enter: ipconfig /all

What is your MAC Address:

What is your IP Address:

1. Explain the differences between MAC Addresses and IP Addresses. Also explain how MAC Addresses and IP Addresses work together. Use the layers of the OSI Model to do so.
2. Pretend your parent is asking you to explain a router to them. How would you do so in terms of IP addresses?
3. Explain how data is sent to another computer using terminology from layers 1, 2, and 3 of the OSI Model.

# Layer 4

1. What is the role of Layer 4? Why is layer 4 important?
2. What does the transport protocol do?

# Sessions

1. In your own words, explain sessions, what happens in sessions, and why they are important?
2. Using the CMD prompt, let’s explore connections between computers. To generate some network traffic, launch the www.mis423spring2018.weebly.com website in your browser. Then, type the following into the CMD line and press enter: netstat -a

Take a screenshot of the cmd line. How many connections do you see? What are some of the protocols you see? Explain the role of the TCP protocol.

# OSI to TCP/IP Model

1. Briefly explain the four layers of the TCP/IP Model and how they are related to the OSI model.
2. Visit the following website - <http://hub.totalsem.com/content/2302#path=2302,2307,2310>. Under *2. Network Models*, click “Network Models”



At the top of the page you will now see a green puzzle piece. Click the puzzle piece and complete the challenge. Take a screen shot of the completed challenge and paste it below.

# Review

1. Fill out the following table:

|  |  |
| --- | --- |
| Description | OSI Network Model Layer |
| In this layer, programs access network services using application programming interfaces (APIs) |  |
| This layer enables computers to establish, use, and close connections. |  |
| This layer breaks up data into individual chunks. Depending on the protocol used, sometimes these chunks are called segments. |  |
| This layer determines the data format used for computers to exchange data. |  |
| This layer is the interface between the physical and the data. |  |
| This layer defines the method of moving data between computers. |  |
| This layer encapsulates segments or datagrams into packets. |  |

1. Create a mnemonic phrase to help you remember the OSI model.
2. Explain the overall process data goes through based on the vocabulary of the OSI model.