

Data Communication and Computer Networks

Assignment No.02

Assignment Date: 16-5-2023

Due Date Till 22-05-2023 11 AM (Room No 5)

Note: *The assignment must be handover to the instructor in the class only. Late assignments will not be graded. A video link (<https://youtu.be/GYNVlvrGAUI>) has been provided. The instructions are provided in the video. Please follow the instructions and complete the following tasks.*

<https://tryhackme.com/room/introtonetworking>

TASK 1:

The OSI Model: An Overview

For the "Which Layer" in the Questions below, answer using the layer number (1-7)

Answer the questions below.

- i. **Which layer** would choose to send data over TCP or UDP?
- ii. **Which layer** checks received information to make sure that it hasn't been corrupted?
- iii. **In which** layer would data be formatted in preparation for transmission?
- iv. **Which layer** transmits and receives data?
- v. **Which layer** encrypts, compresses, or otherwise transforms the initial data to give it a standardized format?
- vi. **Which layer** tracks communications between the host and receiving computers?
- vii. **Which layer** accepts communication requests from applications?
- viii. **Which layer** handles logical addressing?
- ix. When sending data over TCP, what would you call the "bite-sized" pieces of data?
- x. **Which layer** would the FTP protocol communicate with?
- xi. Which transport layer protocol would be best suited to transmit a live video?

TASK 2:

ENCAPSULATION

Answer the questions below

- i. How would you refer to data at layer 2 of the encapsulation process (with the OSI model)?

- ii. How would you refer to data at layer 4 of the encapsulation process (with the OSI model), if the UDP protocol has been selected?
- iii. What process would a computer perform on a received message?
- iv. Which is the only layer of the OSI model to add a trailer during encapsulation?
- v. Does encapsulation provide an extra layer of security (Aye/Nay)?

TASK 3:

The TCP/IP Model

Answer the questions below

- i. Which model was introduced first, OSI or TCP/IP?
- ii. Which layer of the TCP/IP model covers the functionality of the Transport layer of the OSI model (Full Name)?
- iii. Which layer of the TCP/IP model covers the functionality of the Session layer of the OSI model (Full Name)?
- iv. The Network Interface layer of the TCP/IP model covers the functionality of two layers in the OSI model. These layers are Data Link, and?.. (Full Name)?
- v. Which layer of the TCP/IP model handles the functionality of the OSI network layer?
- vi. What kind of protocol is TCP?
- vii. What is SYN short for?
- viii. What is the second step of the three way handshake?
- ix. What is the short name for the "Acknowledgement" segment in the three-way handshake?