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**BIT 2204: Network Systems and Administration**

**Assignment 1**

The OSI model and the TCP/IP model are two frameworks that describe how data is transmitted over network.

They are two different ways of describing how network communication works.

They are divided in layers which perform specific functions and communicates with the adjacent layers.

Both models have similarities and differences in their design and implementation but they aim to facilitate data communication between different systems and devices.

The differences between these two models are:

* The OSI model has 7 layers while the TCP/IP model has four layers.
* The OSI model is more abstract and comprehensive, while the TCP/IP model is more practical and specific.
* The OSI model is only used for reference, while the TCP/IP model is widely implemented in the internet.
* The OSI model follows a vertical approach, in which each layer communicates only with its adjacent layers, while the TCP/IP model follows a horizontal approach, in which each layer can access any lower layer.
* The OSI model supports both connection-oriented and connectionless services at the transport layer, while then TCP/IP model supports both connection-oriented (TCP)and connectionless (UDP) protocols at the transport layer.
* The OSI model is less reliable than the TCP/IP model, as it does not guarantee delivery of packets or error detection and correction, while the TCP/IP model provides reliable and end-to-end data transmission.

Some of the similarities between the OSI model and the TCP/IP model include:

* They both describe how information is transmitted between two devices across a network.
* They both define a set of layers, each with a specific function and responsibility.
* They both use the concept of encapsulation, in which data is packaged into series of headers and trailers that contain information about the data being transmitted and how it should be handled.