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**COMPUTER TECHNOLOGY**

**NETWORK SYSTEMS AND ADMINISTRATION**

**ASSIGNMENT 1**

**DIFFERENCES BETWEEN THE OSI MODEL AND THE TCP/IP MODEL**

The models are conceptual frameworks used to understand and describe how network protocols work. The OSI model consists of 7 layers that work independently.The TCP/IP model consists of 4 layers and can also be used as a communication protocol in a private computer network.

Some of their similarities include:

* They both describe how information is transmitted between two devices across a network.
* They both use the concept of encapsulation, data is packaged into a series of headers and trailers that contain information about data being transmitted and how it should be handled by the network.

There differences include:

1. **Layer Nomenclature:**

* The OSI model employs numbers and names for each layer, making it easier to grasp each layer's specialized role.
* The TCP/IP paradigm sometimes utilizes different terminologies or does not provide explicit nomenclature for each layer, which might be confusing.

1. **Layer numbers:**

* The OSI model is more detailed and thorough. In the TCP/IP paradigm, the Application layer includes functionalities that are dispersed across both the Application and Transport layers.
* The TCP/IP model is more closely matched with real-world internet implementation and is more useful for understanding networking in practice.

1. **Popularity and application:**

* The OSI model is a theoretical paradigm that is rarely used for real network design and troubleshooting**.**
* The TCP/IP model is widely utilized and serves as the foundation for the internet as we know it. It is the model that the majority of networking professionals employ in practice**.**

1. **Algorithms and Encapsulation:**

* The OSI model provides a larger framework but does not specify specific protocols for each layer.
* The TCP/IP paradigm defines the use of specific protocols at each tier, such as HTTP at the Application layer, TCP and UDP at the Transport layer, and IP at the Internet layer.

1. **Delivery**

* The OSI Model guarantees package delivery.
* The TCP/IP Model does not guarantee package delivery.

1. **Equivalents for Layers:**

* The OSI model is more detailed and thorough. In the TCP/IP paradigm, the Application layer includes functionalities that are dispersed across both the Application and Transport layers. Similarly, the OSI Transport layer relates to the TCP/IP Transport layer.
* The TCP/IP model is more closely matched with real-world internet implementation and is more useful for understanding networking in practice.