Explain the differences and similarities between the TCP/IP model and the OSI model.

TCP/IP model

- It is the first layered model for internet work communications created in the early 1970s. It defines four categories of functions that must occur in order for communication to be successful. The suite of this protocol that is used for internet communications follow the structure of this model. It comprises of four layers.

OSI model

- It is the most widely known internetwork reference model. It is used for data network design, operations specifications, and troubleshooting. Moving data across a network can be visualized using the seven layers of the OSI model.

Differences

1. The TCP/IP model is a practical model that addresses specific communication challenges and relies on standardized protocols. On the other hand, the OSI model serves as a comprehensive, protocol independent framework designed to encompass various network communication methods.
2. The TCP/IP model comprises of four layers namely: Network interface, Internet, Transport, and Application layer. The OSI model, on the other hand, comprises of seven layers namely: Physical, Data Link, Network, Transport, Session, Presentation, Application layers.
3. The OSI model segments multiple functions that the TCP/IP model groups into single layers. This is true of both the application and network access layers of the TCP/IP model, which contains multiple layers outlined in the OSI model.
4. The OSI model explains every standard and protocol in finer details while the TCP/IP model provides a summarized version of the standards and protocols.
5. The OSI model uses the Network layer for defining the routing protocols and standards, while the TCP/IP model, on the other hand, uses the internet layer for defining the routing protocols and standards.

Similarities

1. Both models provide logical ways of networking as well as processing of information using a layered system.
2. In both models, each layer has a specific function therefore making it easier to pinpoint where problems are occurring in the event of a failure.
3. In both models, a single layer defines a particular functionality and the layer sets standards for that specific functionality only.

4. Both models allow manufacturer to make devices and network components that can coexist and work with the devices and components made by other manufacturers.
5. Both models provide a clear framework for creating and implementing network standards and devices.