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Data Communication CS601 Lecture No 6

Lecture Prepared By

Muhammad Abid Ali

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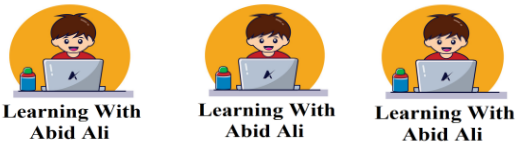
Start Now CS601 Lecture No 6 Topic 22 to 26

TCP/IP Protocol Suite

TCP/IP stands for Transmission Control Protocol/Internet Protocol and is **a suite of communication protocols used to interconnect network devices on the internet**. TCP/IP is also used as a communications protocol in a private computer network (an intranet or extranet).

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TCP/IP Protocol Suite

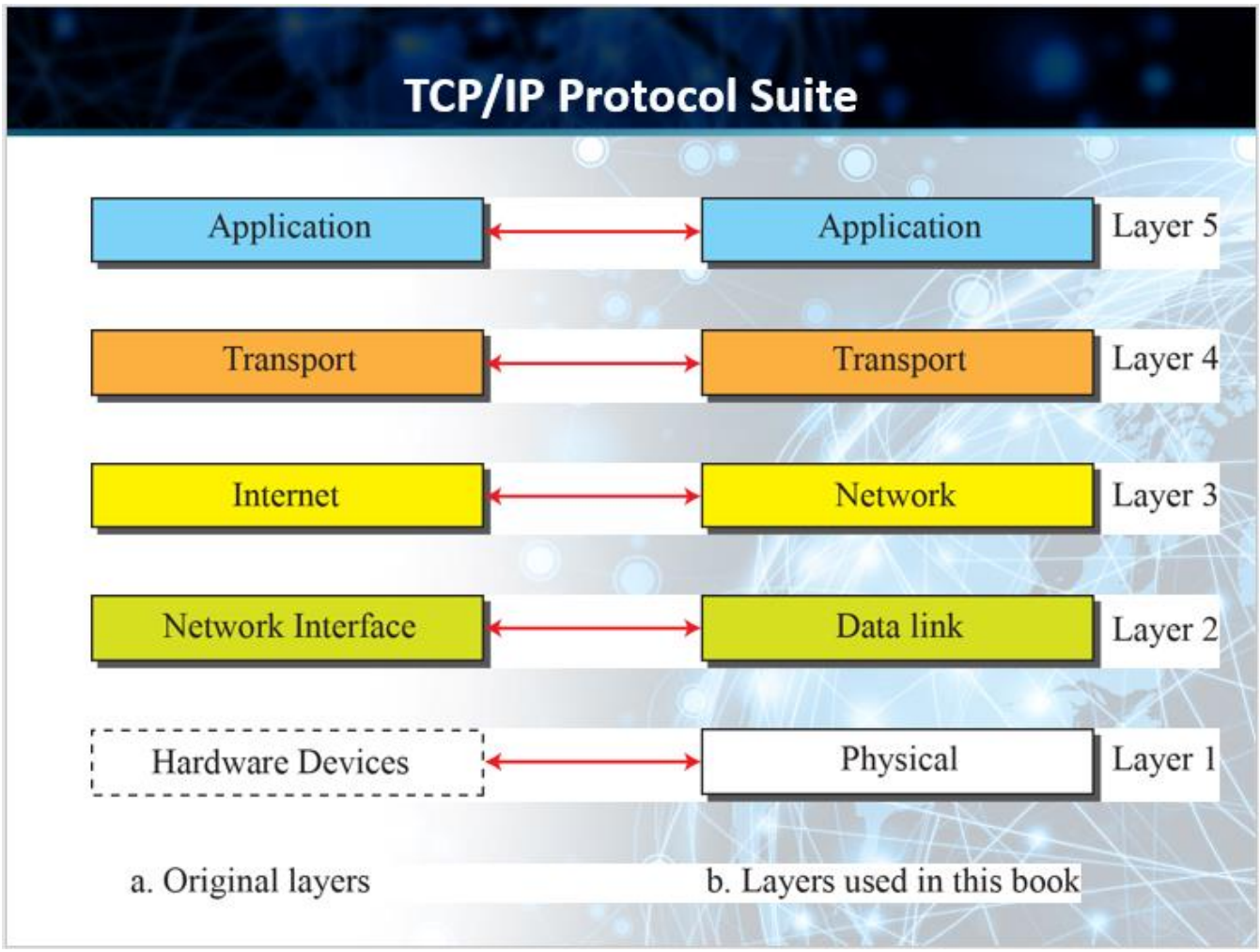
History

- The Internet Protocol Suite (commonly known as TCP/IP Suite or the TCP/IP Model) is the set of computer network communications protocols and a description framework used for the Internet and other similar networks.
- The TCP/IP Model was created in the 1970s by DARPA, an agency of the United States Department of Defense (DOD). It evolved from ARPANET, which was the world's first wide area network and a predecessor of the Internet.

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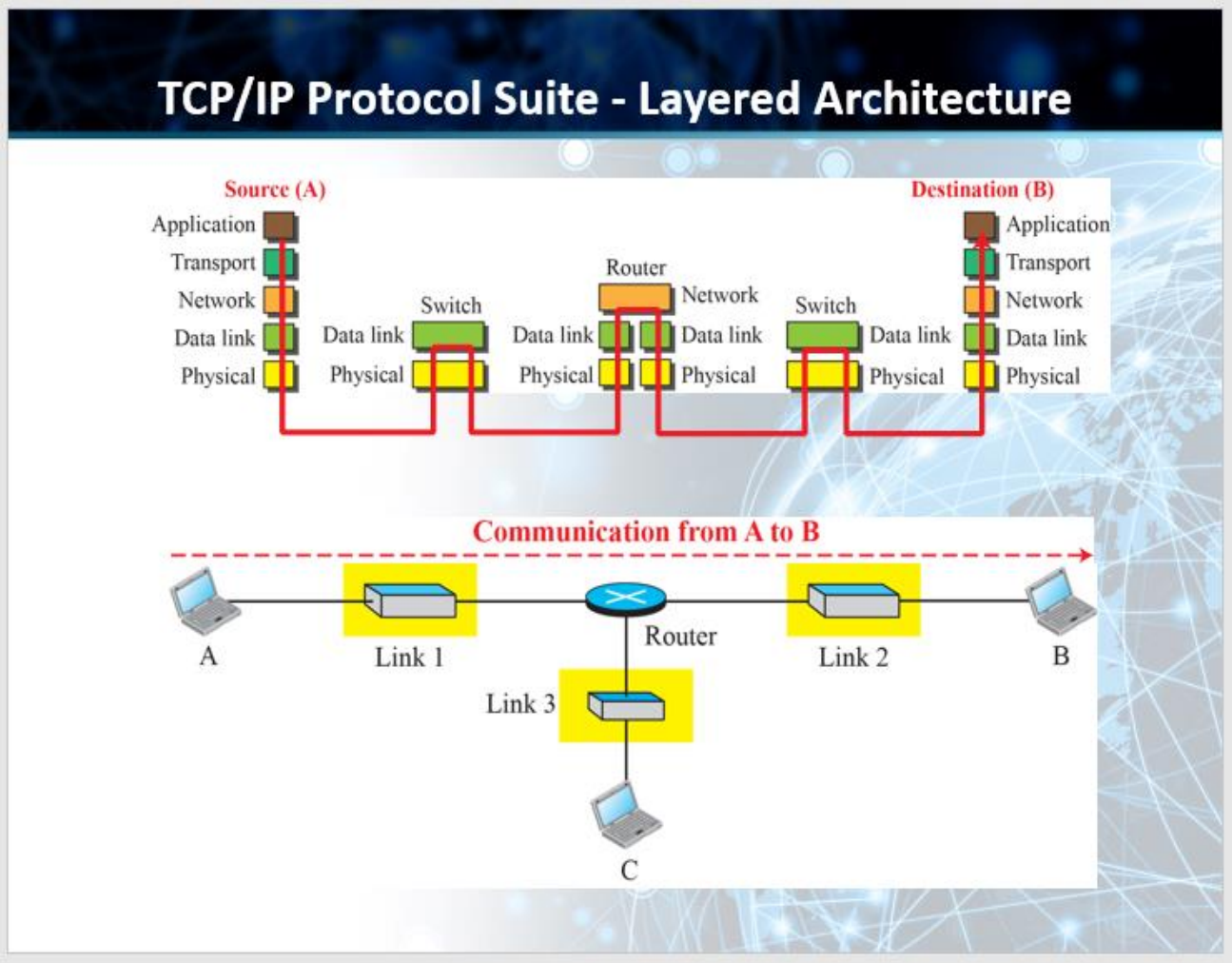
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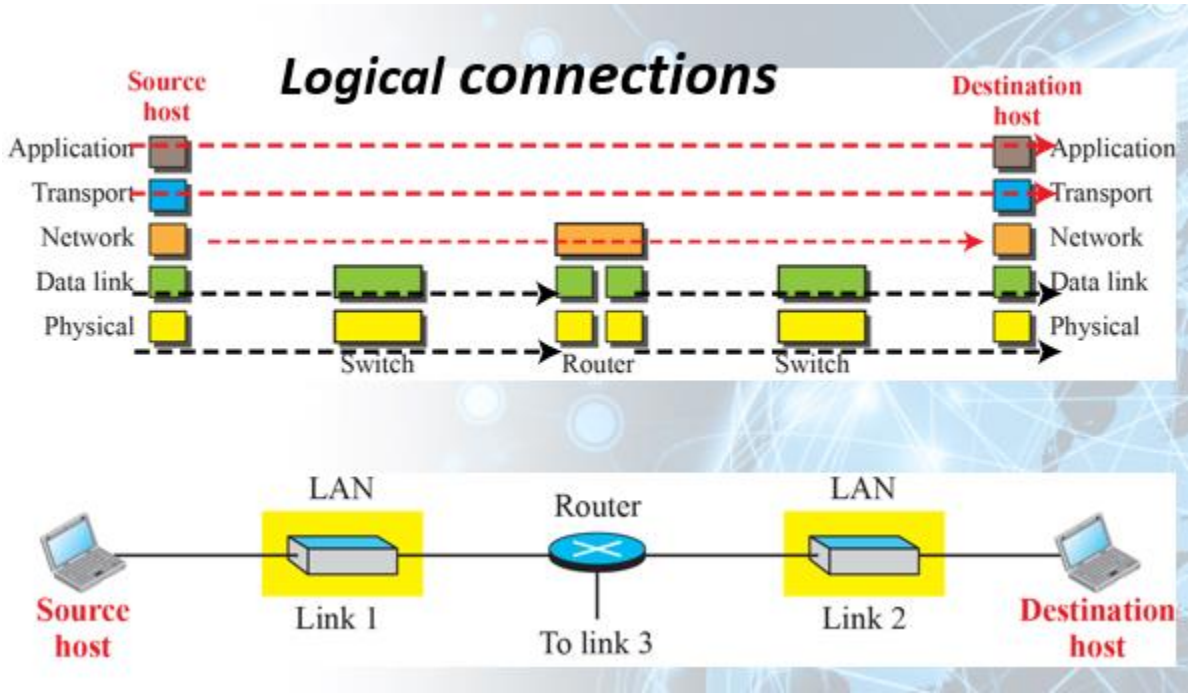


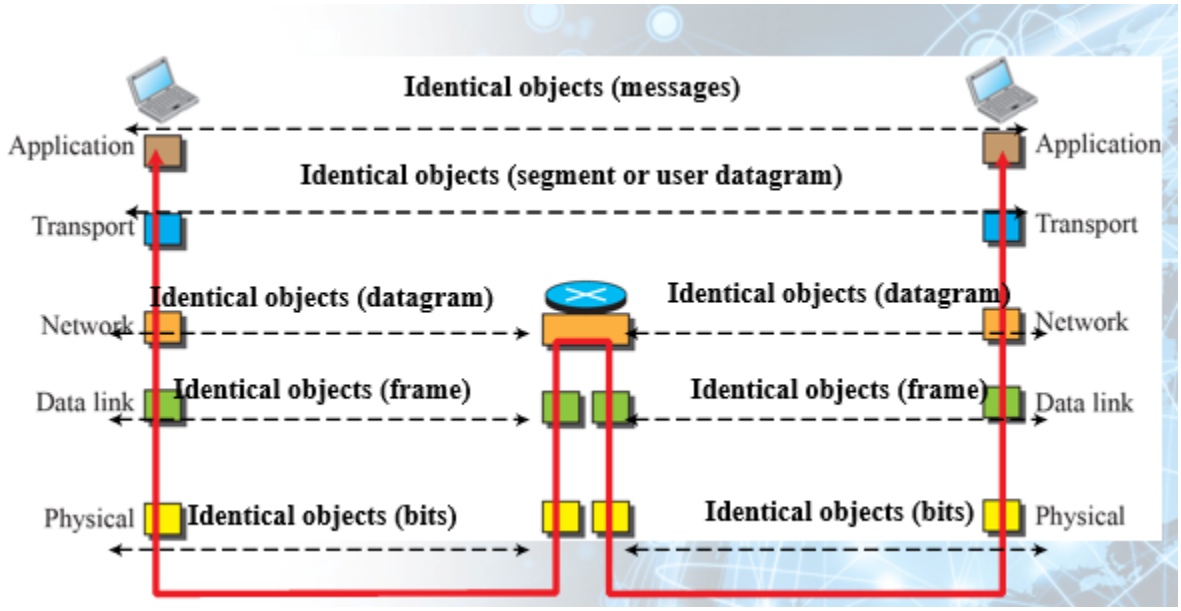
- **Logical Connections between TCP/IP Layers**

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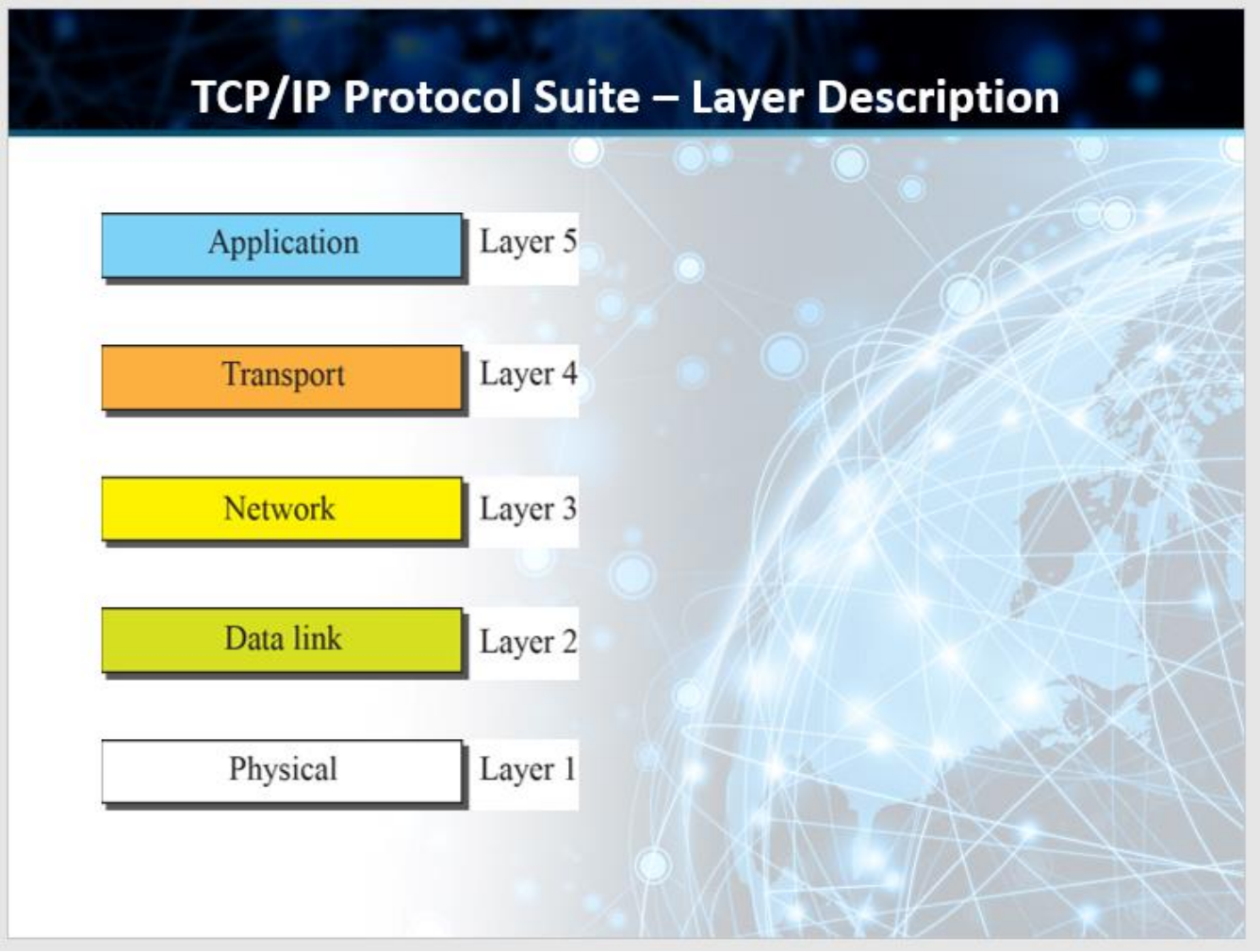




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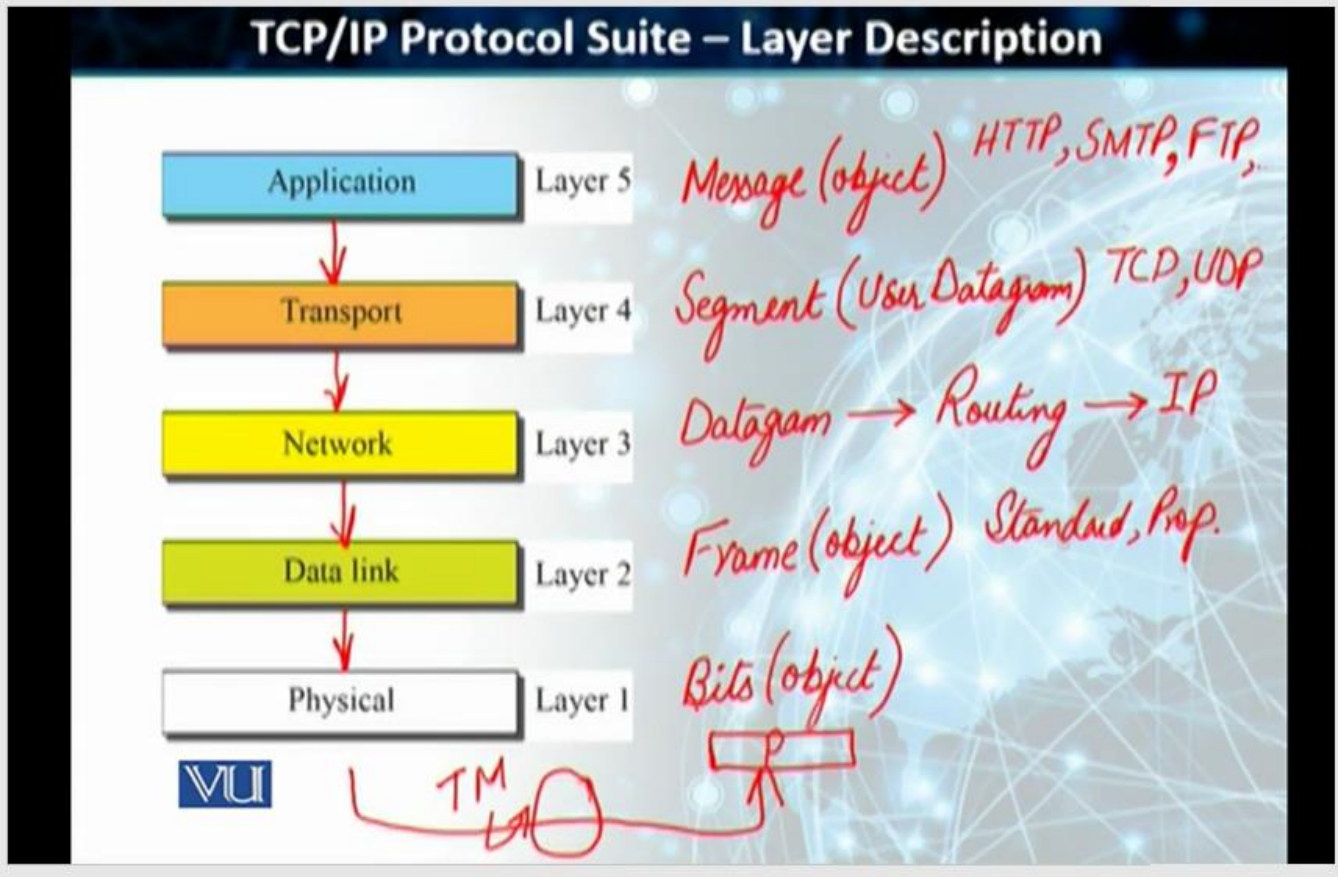
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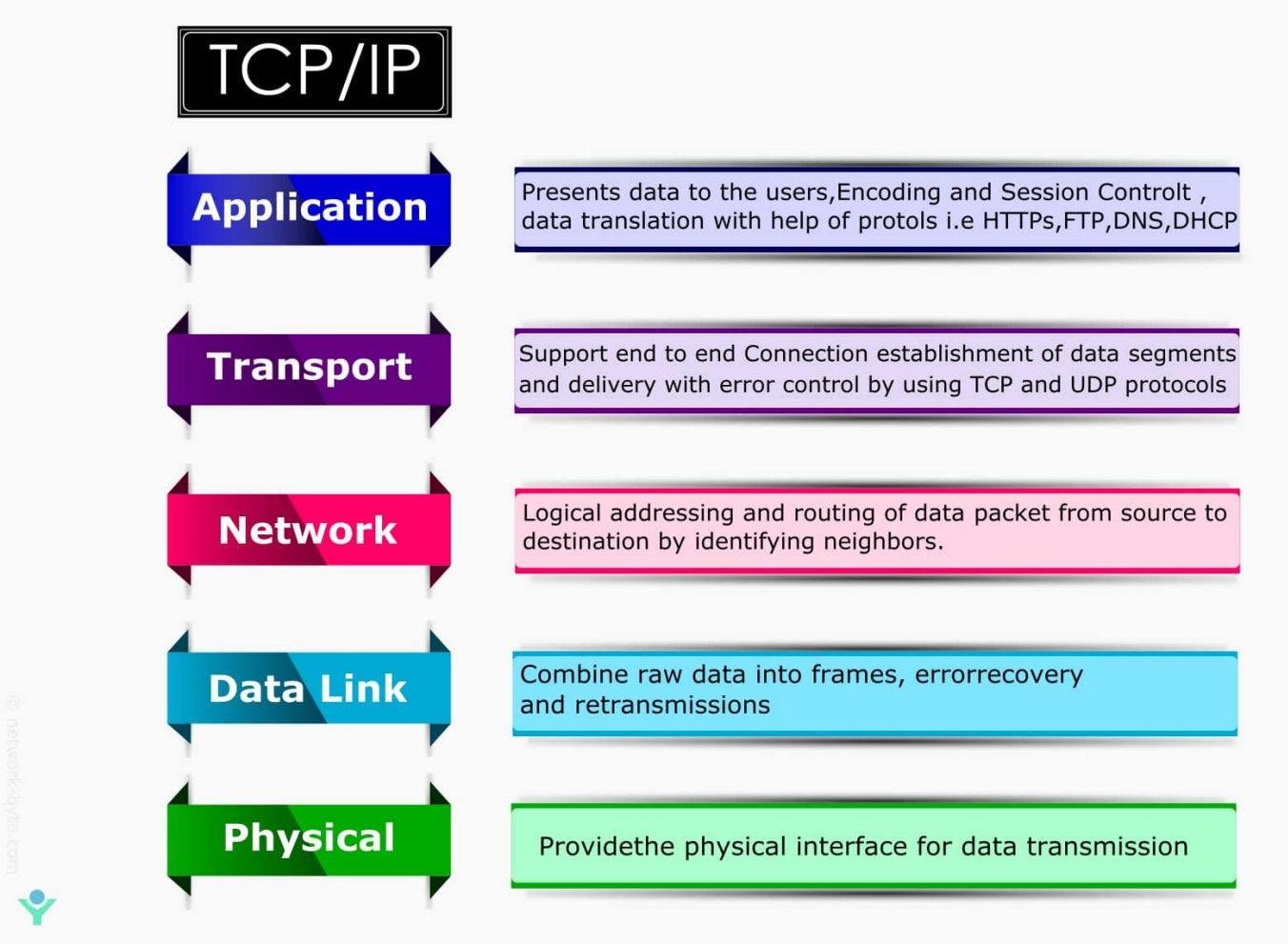
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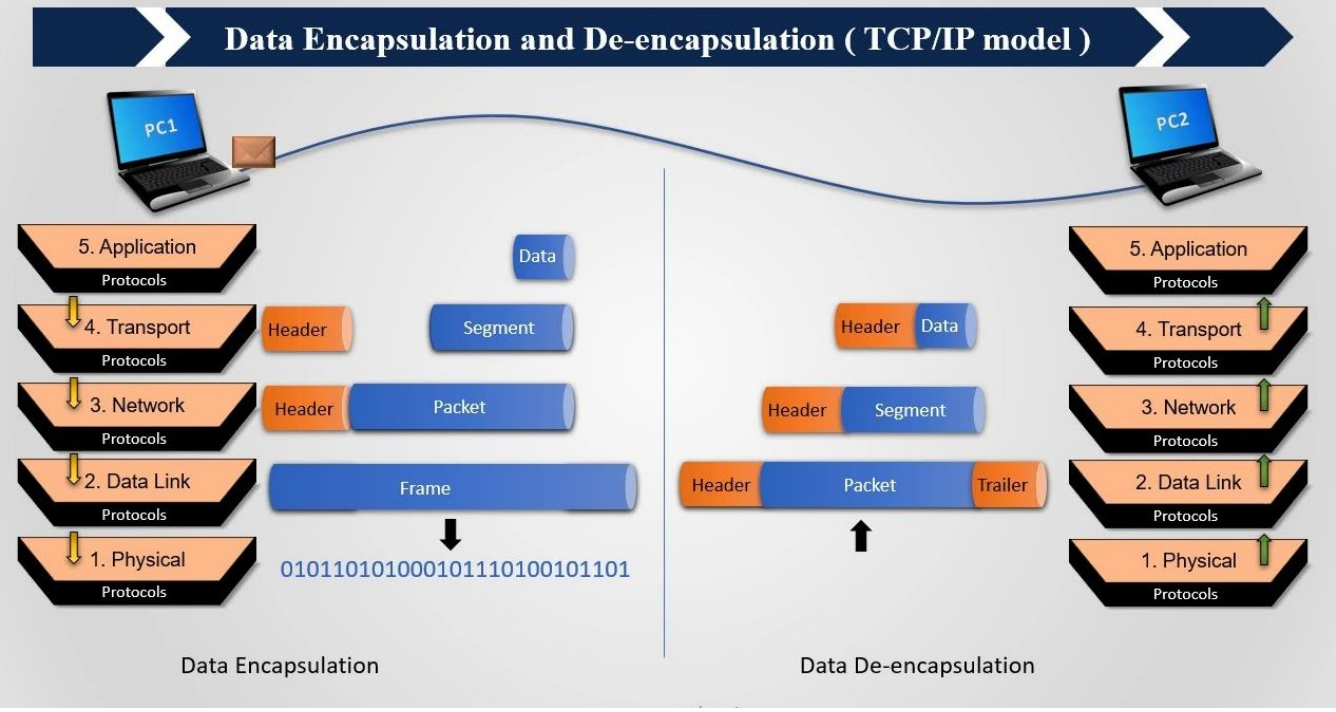
What is encapsulation and Decapsulation?

Encapsulation adds information to a packet as it travels to its destination. Decapsulation reverses the process by removing the info, so a destination device can read the original data.

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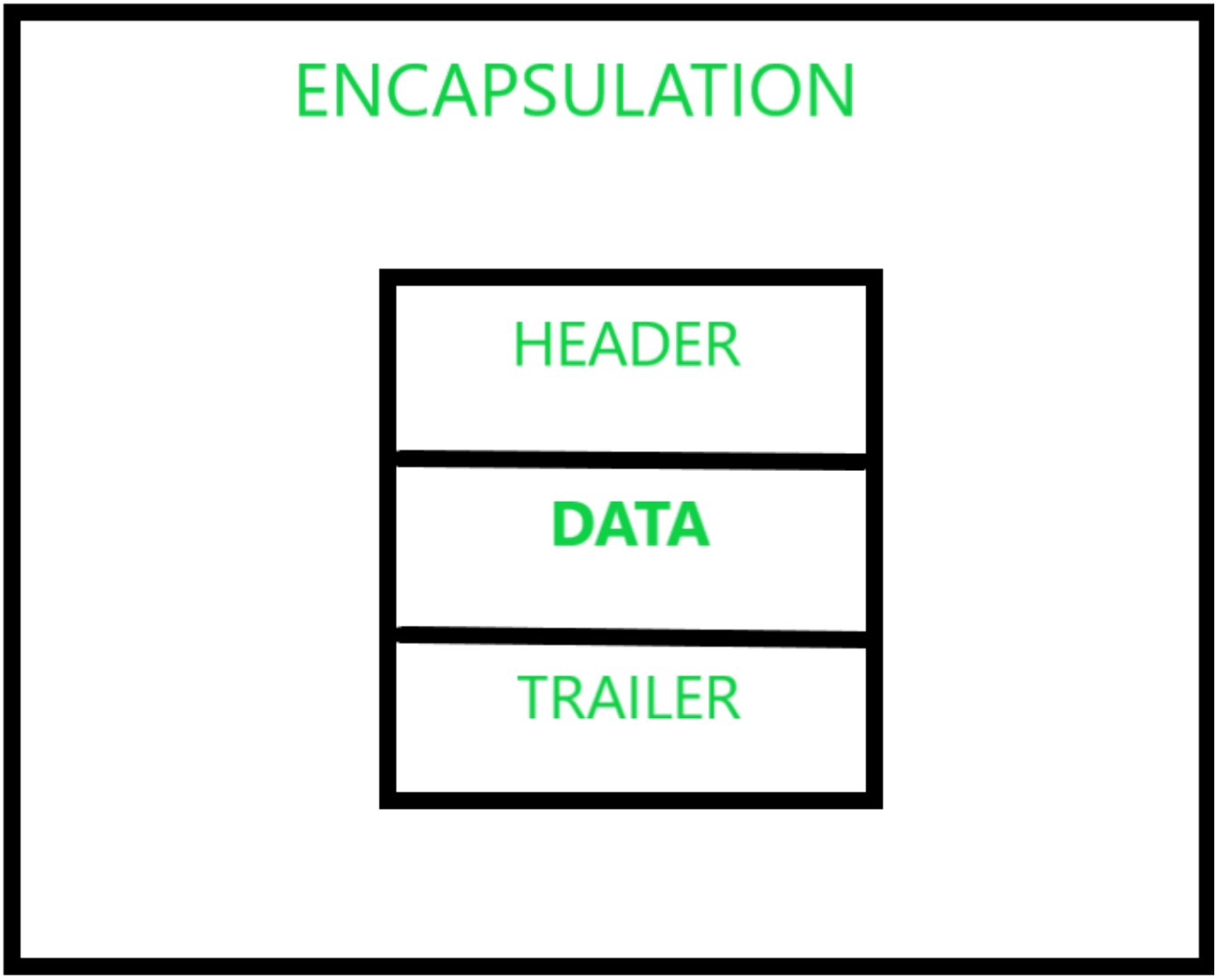
Encapsulation:

Encapsulation refers to attaching new information in the Application Layer data as it is passed onto next layers in the TCP/IP model. This additional information basically divided into two parts, Header and Trailer. These are elements attached in order to make the transmission smoother, on each layer a PDU (Protocol Data Unit) is generated. The concept of Encapsulations can be summarized in the screenshot attached ahead.

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Decapsulation:

Decapsulation refers to the removal of all these additional information and extraction of originally existing data, and this process continues till the last layer i.e., the Application Layer. This process removes, fragments of distinct information in each layer as it approaches that layer. Here is the pictorial representation of the whole process.

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