OSI

The TCP/IP model differs slightly from the seven-layer **Open Systems Interconnection (OSI) networking model** designed after it, which defines how applications can communicate over a network.

How does TCP/IP works?

Protocols for internet traffic. For traveling, online data has to know where it's going, and the protocols is conceptualized as layers made out of computer codes. You can even understand it as a sandwich.

Application layer:
Your browser directly interact with it. It has http protocol for visiting websites and smtp for checking emails.

Transport layer:

- It has tcp lives along with UDP (which is faster and useful for low latency application like online games).
- After application layer getting codes from program you are using, it talks to transport layer through Port, that help the TCP to know where's the data is coming from.
- For example, most activities in your web browser will go through port80, http will always use it.

- When TCP gets the data, it chops them up into chunks called packets, they will be disposed stuff in a nearby lake so they can individually take the quickest routed all over the internet to get wherever they are going.
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- To make sure that they receiving computer can put the packets pack together properly into driving directions, TCP slaps a header on to each packet that contains instructions on what order to reassemble the packets into as well as error checking information so that receiving computers know whether the packets arrived without any mishaps.

Internet layers:
Packets then are pushed onto the internet layer.
It uses IP to attach both the origin and destination IP addresses so the packet knows where it came from and where it is going.

Network layer:
Then the data is sent through the final network layer that handles things like Mac addressing so the packets go to the right physical machine as well as converting the data into electrical impulses that will actually pass through the proverbial series of tubes.

Every single packet of data has to go through all of these layers, packet switching makes the internet faster since it allows each packet to individually avoid congestion that would occur if all the data had to travel along the same route during each session. TCP/IP also streamlines things further because it can deal with packets from all your computers applications so that your browser or game doesn't have to do that by itself