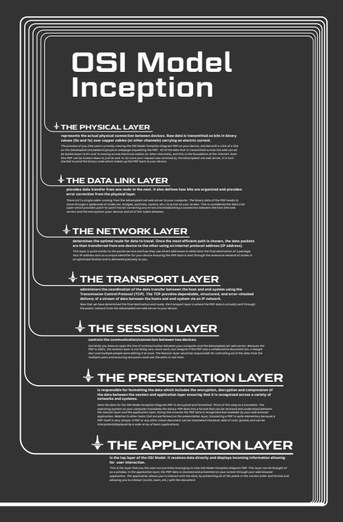
OSI Model Inception



THE PHYSICAL LAYER

represents the actual physical connection between devices. Raw data is transmitted as bits in binary values (0s and 1s) over copper cables (or other channels) carrying an electric current.

The process of you (the user) currently viewing the OSI Model Inception Diagram PDF on your device, started with a click of a link on the bdcampbell.net/webarch/projects webpage requesting the PDF. All of the data that is transmitted across the web can all be boiled down to 0's and 1s moving across electrical cables (or other channels), and this is the foundation of the internet. Even this PDF can be broken down to just 0s and 1s. So once your request was received by the bdcampbell.net web server, it in turn started to send the binary code which makes up the PDF back to your device.

THE DATA LINK LAYER

provides data transfer from one node to the next. It also defines how bits are organized and provides error correction from the physical layer.

There isn't a single cable running from the bdcampbell.net web server to your computer. The binary data of the PDF needs to move through a spiderweb of nodes (ex. bridges, switches, routers, etc.) to arrive on your screen. This is considered the Data Link Layer which provides point-to-point transit correcting any errors and establishing a connection between the host (the web server) and the end system (your device) and all of the nodes between.

THE NETWORK LAYER

determines the optimal route for data to travel. Once the most efficient path is chosen, the data packets are then transferred from one device to the other using an internet protocol address (IP address).

This layer is quite similar to the postal service and how they use street addresses to determine the final destination of a package. Your IP address acts as a unique identifier for your device ensuring the PDF data is sent through the extensive network of nodes in an optimized fashion and is delivered precisely to you.

THE TRANSPORT LAYER

administers the coordination of the data transfer between the host and end system using the Transmission Control Protocol (TCP). The TCP provides dependable, structured, and error-checked delivery of a stream of data between the hosts and end system via an IP network.

Now that we have determined the final destination and route, the transport layer is where the PDF data is actually sent through the public network from the bdcampbell.net web server to your device.

THE SESSION LAYER

controls the communication/connection between two devices.

Currently you have an open the line of communication between your computer and the bdcampbell.net web server. Because the PDF is static, the session layer is not doing very much work, but imagine if the PDF was a collaborative document (ex. a Google doc) and multiple people were editing it at once. The Session layer would be responsible for controlling all of the data from the multiple users and ensuring everyone could see the edits in real time.

THE PRESENTATION LAYER

is responsible for formatting the data which includes the encryption, decryption and compression of the data between the session and application layer ensuring that it is recognized across a variety of networks and systems.

Here the data for the OSI Model Inception Diagram PDF is decrypted and formatted. Think of this step as a translator. The operating system on your computer translates the binary PDF data into a format that can be received and understood between the session layer and the application layer. Doing this ensures the PDF data is recognized and readable by your web browser application. Relative to other tasks that are performed on the presentation layer, translating a PDF is quite elementary because a PDF itself is very simple. A PDF or any other visual document can be translated into basic dots of color (pixels) and can be interpreted/displayed by a wide array of basic applications.

THE APPLICATION LAYER

is the top layer of the OSI Model. It receives data directly and displays incoming information allowing for user interaction.

This is the layer that you the user are currently leveraging to view OSI Model Inception Diagram PDF. This layer can be thought of as a window. In the application layer, the PDF data is received and presented on your screen through your web browser application. The application allows you to interact with the data, by presenting all of the pixels in the correct order and format and allowing you to interact (scroll, zoom, etc.) with the document.