OSI Model

https://github.com/DelfinoRT

LAYER 7 Application

End user Layer, Human-Computer interaction, provides a user interface.
Serves as the window for users and application processes to access the network services.
Resource sharing, remote file access, directory services, network management.
IMAP, SMTP, POP3, HTTP/S, IRC, SSH, DNS, SOAP, DHCP, API's

LAYER 6 Presentation

Formats the data from lower layers to be presented to the application layer and vice versa. It can be viewed as the translator for the network.
Syntax layer, character code translation, data conversion, data compression.
Handles encryption and decryption.
SSL/TLS, SSH, FTP, MPEG, JPEG

LAYER 5 Session

Allows session establishment between processes running on different stations.
Session establishment, maintenance and termination, session support, performs security, name recognition, logging, responsible for controlling ports and sessions, connects applications to applications..
Synch & send to ports, dialog control between hosts.
Logical ports RPC/SQL/NFS, NetBIOS, API's, Sockets, WinSock

LAYER 4 Transport

Provides reliable or unreliable data delivery.
Message segmentation and reassembly, message acknowledgment, message traffic control, session multiplexing.
Chops data into segments (TCP) or datagrams(UDP).
Host-to-host, end-to-end connections, flow control.
ESP, TCP, SPX, UDP

LAYER 3 Network

Controls the operations of the subnet, deciding which physical path the data takes, logical addressing.
The PDU (Protocol Data Unit) in this layer are: Packets and Datagrams, it contains IP addresses .
Routing using IP addresses, subnet traffic control, frame fragmentation.
IP, IPX, ICMP, IPSec, RIP, OSPF

LAYER 2 Data Link

Provides error-free transfer of data frames from one node to another over the physical layer via a NIC (Network Interface Card).
The PDU (Protocol Data Unit) in this layer is: Frame, it contains mac addresses.
Establishes & terminates the logical link between nodes, frame traffic control, frame sequencing, frame acknowledgment, frame delimiting, frame error checking, media access control, switching using MAC addresses.
ARP, ATM, IEEE 802.11, L2F, L2TP, WAP, PPP, SLIP, STP, VLAN, Ethernet

LAYER 1 Physical

Concerned with the transmission and reception of the unstructured raw bit stream (ones and zeros) over the physical medium, process performed by the NIC.
Converts digital data so that it can be sent over physical medium.
Physical structure (coax cables, fiber optic, wireless, hubs, repeaters, DSL, USB, etc.).
Data encoding, physical medium attachment, transmission technique, baseband or broadband, physical medium transmission (Bits & Volts).