

What is the OSI (**Open Systems Interconnection**) Model?

OSI Model				
	Layer	Data unit	Function ^[3]	Examples
Host layers	7. Application	Data	High-level APIs, including resource sharing, remote file access, directory services and virtual terminals	HTTP, FTP, SMTP
	6. Presentation		Translation of data between a networking service and an application; including character encoding, data compression and encryption/decryption	ASCII, EBCDIC, JPEG
	5. Session		Managing communication sessions, i.e. continuous exchange of information in the form of multiple back-and-forth transmissions between two nodes	RPC, PAP
	4. Transport	Segments	Reliable transmission of data segments between points on a network, including segmentation, acknowledgement and multiplexing	TCP, UDP
Media layers	3. Network	Packet/Datagram	Structuring and managing a multi-node network, including addressing, routing and traffic control	IPv4, IPv6, IPsec, AppleTalk
	2. Data link	Bit/Frame	Reliable transmission of data frames between two nodes connected by a physical layer	PPP, IEEE 802.2, L2TP
	1. Physical	Bit	Transmission and reception of raw bit streams over a physical medium	DSL, USB

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What is "U.D.P." and what are its main characteristics?

What is T.C.P. and what are its main characteristics?

Which one uses handshaking?

Which one requires more system resources?

Which one can be used with read and write system calls?

Which one encrypts the data payload?

If your application preferred to handle missing packets over late packets, which one would you use?

What is HTTP? Does it run over TCP or UDP?

Is HTTP version 1.0 and version 1.1 a text or binary protocol?

How do you make a TCP connection to a server?

What is the purpose of

`getaddrinfo`

`struct addrinfo`

Why `memset`

`AF_INET`

`SOCK_STREAM`

```
struct addrinfo {
    int      ai_flags;
    int      ai_family;
    int      ai_socktype;
    int      ai_protocol;
    socklen_t ai_addrlen;
    struct sockaddr *ai_addr;
    char      *ai_canonname;
    struct addrinfo *ai_next;
};
```

```
int getaddrinfo(char*host,char *service, addrinfo* hints, addrinfo **res);

int socket(int domain, int type, int protocol);

int connect(int socket, struct sockaddr *address, socklen_t address_len);
```

```
01 int main() {
02     struct addrinfo _____, _____;

03     memset(&hints, 0, sizeof(_____,) );

04     hints.ai_family = _____;

05     hints.ai_socktype = _____;

06     int s = getaddrinfo("illinois.edu", _____, _____, _____);
07     if (s != 0) {
08         fprintf(stderr, "getaddrinfo: %s\n", gai_strerror(s));
09         exit(1);
10     }

11     int sock_fd = socket(_____, _____, 0);
12     if(sock == -1) { perror("socket"); exit(1);}

13
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19     int ok = connect(sock_fd, _____, _____);
20     if( ok ==-1) {perror("connect"); exit(1);}
```