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1.What does INADDR_ANY mean?
Ans: This is an IP address that is used when we don't want to bind a socket to any specific IP.

2.What's the difference between bind() and listen()?
Ans:
(1)binds a unique local name to the socket with descriptor socket.
(2)indicates a readiness to accept client connection requests, and creates a connection request queue of length backlog to queue incoming connection requests.

3.Usually, we set up the server's port and exclude the client's. Who determines the client's port and what's the benefit?
(1) When a client initiates a connection to a server, it dynamically selects a port number for the source port.
(2) it allows multiple clients to establish connections to a single server simultaneously without interfering with each other.

4.What is little endian and big endian? Why do most network byte order use big endian?
Ans:
(1) In a little-endian system, the least significant byte (LSB) is stored first, while in a big-endian system, the most significant byte (MSB) is stored first.
(2) The telephone network, historically and presently, uses a big-endian order; doing so allows routing while a telephone number is being composed.

5. Why do we need a pseudoheader ?
Ans: The pseudoheader includes information about the source and destination IP addresses, the protocol number (which is 6 for TCP), and the length of the TCP segment. This information is used in conjunction with the TCP header and data to compute the TCP checksum.
The reason for including the pseudoheader in the TCP checksum calculation is to provide an additional layer of error checking and to guard against certain types of attacks.

6.For the code below, what's difference between client_fd and socket_fd ?
client_fd = accept(socket_fd, (struct sockaddr *)&clientAddr, (socklen_t*)&client_len);
Ans:
socket_fd is the file descriptor for the socket that the server is listening on. This socket was created and bound to a local IP address and port using the socket().
When a new client connection request arrives, accept() creates a new socket file descriptor, client_fd, that represents the connection between the server and the client.

7. When using the send() function and recv() function, why do we not need the address?
Ans: When a socket is created and connected, it is bound to a specific IP address and port on the local host and connected to a specific IP address and port on the remote host. The

socket file descriptor keeps track of this information, and the `send()` and `recv()` functions use this information to send and receive data between the two hosts.

8. Write about what you have learned from Lab 2
Ans: Learning how TCP protocol is used in practice is much different from theoretical aspect. There are many detail in the implementation such as the endian issue and type handling. Although it's hard to understand at first, thanks to TA for answering my questions so that I could finish it.