P26.

Suppose Bob joins a BitTorrent torrent, but he does not want to upload any data to any other peers (so called free-riding).

a. Bob claims that he can receive a complete copy of the file that is shared by the swarm. Is Bob’s claim possible? Why or why not?

b. Bob further claims that he can further make his “free-riding” more efficient by using a collection of multiple computers (with distinct IP addresses) in the computer lab in his department. How can he do that?

A:

a. Yes. Due to the dredging process of BitTorrent, Bob may be selected by a node during dredging to obtain its data.

b. Yes. He can let each host request different file blocks and organize these file blocks into a complete file.

P28. Install and compile the Python programs TCPClient and UDPClient on one host and TCPServer and UDPServer on another host.

a. Suppose you run TCPClient before you run TCPServer. What happens? Why?

b. Suppose you run UDPClient before you run UDPServer. What happens? Why?

c. What happens if you use different port numbers for the client and server sides?

A:

a. Unable to establish connection. When the client starts, it will try to establish a TCP connection. If the server does not start, the connection establishment fails.

b. No problem. There is no need to establish any connection between the client and the server.

c. TCP: the client will try to establish a connection with the wrong process (or a process that doesn't exist at all), which will lead to an error.

UDP: unable to send information to the correct process.