Fresno State CSCI 156 Internetworking Systems and Protocols
Practice 2 (Fall 2015)

1. Briefly describe limited scope flooding in Gnutella network.

Gnutella network is a method that avoids duplicating packets from being cycled around the network nodes. Each node keeps a list of *sequence number* and *source address* of the packet that it has already received and duplicated. If the packet it receive is on that list, then the packet will be dropped. Gnutella has a *time-to-live* (TTL) procedure that will limit the amount of hops of how far a packet can go. For each hop performed, TTL will be decremented by 1. So only a limited number of peers connected within the range of TTL will receive the packet.

2. Briefly describe the architectural difference between Gnutella and KaZaA network.

KaZaA is a *peer-to-peer* network that has the peers connected directly to each other. The difference is that KaZaA will create limitless supernodes and ordinary nodes. Each node will communicate with the slower nodes through a TTL.

3. In a TCP connection between two nodes, how many and what types of sockets are created? Is that different from UDP sockets?

TCP will create four sockets: Source IP address, source port number, destination IP address, and destination port number.
UDP doesn't create a connection between the sender and receiver. So the sender and receiver only needs to create 1 socket. A datagram that contains the destination/source IP address and port number is attached to the packet and sent through the socket.