

Question 1

b) What is the purpose of using the “synchronized” keyword in the implementation of the broadcast() method?

From <https://stackoverflow.com/questions/7848471/what-does-synchronized-mean-in-java>:

It is not possible for two invocations of synchronized methods on the same object to interleave. When one thread is executing a synchronized method for an object, all other threads that invoke synchronized methods for the same object block (suspend execution) until the first thread is done with the object.

What this means is that the synchronized keyword makes sure threads don't interleave and cause issues.

Question 1

b) What are the advantages and disadvantages of using IP multicasting?

One of the advantages of multicasting is that no server is required. What this means is that you don't need to implement a multithreading server to establish a connection. A disadvantage is that when you broadcast a message, this is sent to every socket in the group. In the multithreading example, specific sockets could be used as opposed to just the entire group. Additionally, IP multicasting uses UDP and DatagramPackets to communicate, so this inherently carries the pro's and con's of UDP and DatagramPackets.