Liting Huang CPS 373, Computer Networking

1. Fetching HTTP Resources

   Transmission time for all files: $(5240 + 1200 + 16000 + 8400)B/(800bits/s) = 308.4s$
   There are four files, so we have four pairs of request/response connections.
   This means that the headers will be transmitted eight times in total: $(26bytes * 8)/(800bits/s) = 2.08s$
   Thus, in total it takes $308.4 + 2.08 = 310.48seconds$

2. Network Stack Shuffle

   Routing is typically believed as part of the functionality of the Network layer, because its job, getting packets from one network to another, corresponds to the Network layer's idea of moving datagrams from one host to another. However, I would argue that routing can also be placed at the link layer. In the link layer, data bits are transported as frames between nodes. Since data in the link layer goes through nodes, it would be possible to find an optimal routing solution along the way. Also, link layer protocols like Ethernet and WIFI are creating an environment for packets to be transferred over link, and routing is sending packets in a system within these environment. Being a network-to-network communication method, routing could be considered to be placed at the link layer.