Practice 2

**P7.**

The total amount of time to get the IP address from the DNSs is

RTT1 + RTT2 + … + RTTn

After getting the IP address, two RTT0 are needed to receive the file since one RTT0 is used to set up the TCP connection and another RTT0 is used to request and receive the file. Therefore, the total response time is 2RTT0 + RTT1 + RTT2 + … + RTTn

**P8.**

a. Non‐persistent HTTP with no parallel TCP connections?

Query the DNS once + Setup connection once + Request 3 files

RTT1 + RTT2 + … + RTTn + 2RTT0 + 3\*2RTT0

= 8RTT0 + RTT1 + RTT2 + … + RTTn

b. Non‐persistent HTTP with parallel connections?

Query the DNS once + Setup connection once + request 3 files concurrently

RTT1 + RTT2 + … + RTTn + 2RTT0 + 2\*2RTT0

= 6RTT0 + RTT1 + RTT2 + … + RTTn

c. Persistent HTTP?

Query the DNS once+ Setup connection once + receive 3 files without additional requests

RTT1 + RTT2 + … + RTTn + 2RTT0 + RTT0

= 3RTT0 + RTT1 + RTT2 + … + RTTn