CSE471: DATA COMMUNICATIONS AND COMPUTER NETWORKS

YEDITEPE UNIVERSITY

FALL 2021

ASSIGNMENT 1 – DUE DATE OCTOBER 24TH, 2021

1. HTTP/2 is based on SPDY, an open networking protocol which was implemented by Google. Accordingly, conduct a research on SPDY and answer the following:

   (a) Compare existing and widely used HTTP/1.1 protocol with SPDY and emphasise its differences, advantages and disadvantages (if any).

   (b) Could you please identify and list browsers that already support SPDY

   (c) Discuss and comment on the actions that has to be taken to modify and create SPDY-compatible server-side applications.

2. What are the main differences between HTTP/1.1 and HTTP/2?

3. The HTTP/2 protocol is binary rather than a textual protocol. Could you please elaborate on the advantages of such change in the protocol?

4. The HTTP/2 protocol is designed so that it supports multiplexed streams; what sorts of advantages will this change produce?

5. What is a Server Push in the HTTP/2 context and why it is required?

6. HTTP/3 is the latest version of HyperText Transfer Protocol, which is based on QUIC. Accordingly, please review the QUIC and answer the following questions:

   (a) What is QUIC?
   (b) Explain the drawbacks of current HTTP (1.1 and 2) over TCP and list the advantages to moving QUIC transport protocol

7. What is Zero Round Trip Time Connection Resumption (0-RTT). How does 0-RTT is achieved with the current TLS v1.3 implementation. How does QUIC achieve real 0-RTT?

8. What are the key features of QUIC over the newly proposed TCP+TLS+HTTP/2 combination?

9. What's Google FLoC? And How Does It Affect Your Privacy?

Submit your assignments in a DOCX/ODF/TXT file, which has your student number as name, through the COADSYS (http://coadsysexam.yeditepe.edu.tr/) latest end of Sunday, October 24th 2021.