

<b>Subject :</b>	<b>SEHH2238 : Computer Networking</b>
<b>Lab/Tutorial :</b>	<b>Session 12 : Application Protocols</b>

1. Consider a connection between a web browser (client) and web server. The client is requesting a file with the following parameters:

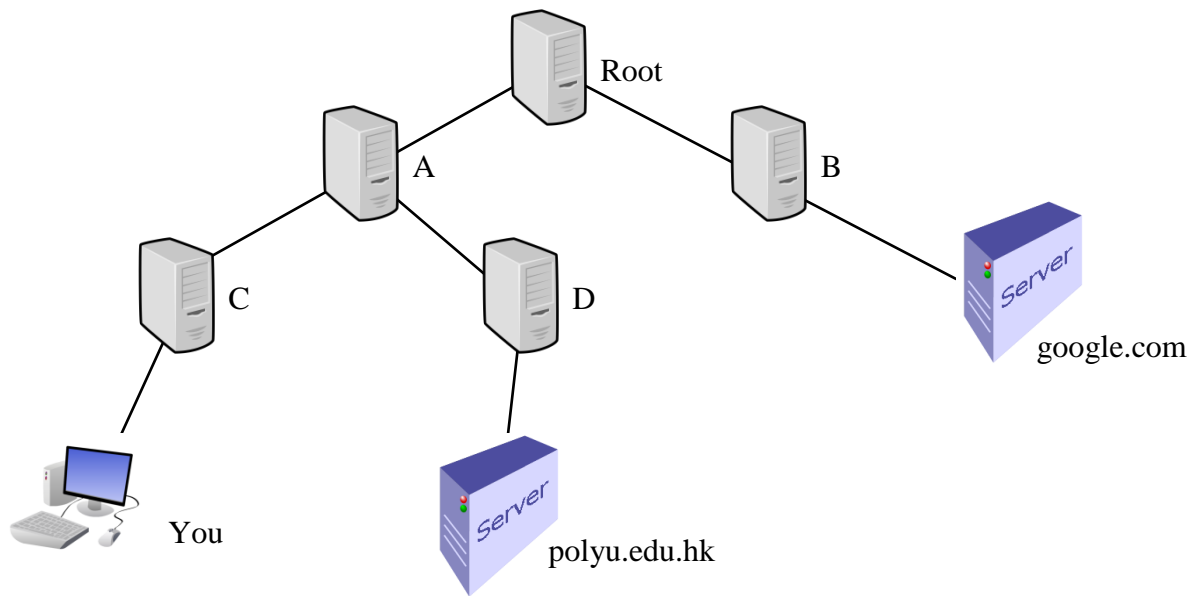
```

HTTP version: 1.1
Client accepts images of types jpeg and tiff
Document location: usr/users/abc.jpg
Date/time of request: 31-Jan-2019 10:10:10 GMT
Length of document: 4096 bytes
Content Encoding: MIME-version 1.0
Server name: HKCC01

```

- a) Draw the possible Request and Response sequence of the HTTP Get request.
  - b) With reference to your answer in Part (a),
    - (i) Does HTTP have any session layer features? Explain.
    - (ii) Does HTTP have any presentation layer features? Explain.
2. Consider the File Transfer Protocol (FTP).
    - a) FTP uses two separate port numbers for control and data connection. If the control connection was interrupted before the end of the FTP session, what would happen?
    - b) FTP uses the services of TCP for exchanging control information and data transfer. Could FTP use the services of UDP for these two connections? Explain.
    - c) Can there be a pure data-transfer connection without a control connection in FTP? Explain.
  3. Domain Name Service (DNS) resolves a name to an address so that applications such as web access or email can resolve to the correct hosts and retrieve the correct web pages or deliver the emails to the correct destinations. What could be the consequences if the following happens? How could such attacks be prevented?
    - a) The response of the DNS server is intercepted and a new bogus response is created for the user.
    - b) One of the DNS servers is compromised and contains incorrect records for a particular domain.

4. Consider the DNS hierarchy below:



Suppose you are making DNS requests to resolve the IP addresses of polyu.edu.hk and google.com. Assume there is no caching in the DNS servers. Describe the resolution steps when using:

- Recursive resolution
- Iterative resolution