Assignment 2

ENE 419 – Computer Networks

Due: Nov. 14

1. Consider an HTTP client that wants to retrieve a Web document at a given URL. The IP address of the HTTP server is initially unknown. What transport and application-layer protocols besides HTTP are needed in this scenario?

2. Write a simple TCP program for a server that accepts lines of input from a client and prints the lines onto the server's standard output. (Please modify the following TCPServer.py program) Compile and execute your program. On any other machine that contains a Web browser, set the proxy server in the browser to the host that is running your server program (localhost); also configure the port number appropriately. Your browser should now send its GET request messages to your server, and your server should display the messages on its standard output. Use this platform to determine whether your browser generates conditional GET messages for objects that are locally cached. Write your server code and the output result from your server in execution.

   TCPServer.py

   ```
   from socket import *
   serverPort = 12000
   serverSocket = socket(AF_INET,SOCK_STREAM)
   serverSocket.bind(('',serverPort))
   serverSocket.listen(1)
   print 'The server is ready to receive'

   while 1:
       connectionSocket, addr = serverSocket.accept()
       sentence = connectionSocket.recv(1024)
       capitalizedSentence = sentence.upper()
       connectionSocket.send(capitalizedSentence)
       connectionSocket.close()
   ```

3. With the SR protocol, it is possible for the sender to receive an ACK for a packet that falls outside of its current window. Is this true of false? Justify your answer briefly.