

CS5341.501/502, Summer I, 2020
Advanced Network Programming
Assignment 1

Issued: 06/04/2020

Due: Thursday, 06/11/2020

Please upload your solutions (all relevant files such source files/header files together with instructions and possibly “Makefile” file) through class forum’s homework management panel.

Please do not just upload a PDF or Word file that contains the code.

1. (100 pts) Combine the TCP client-server example in Chapter 5 and the `checkopts` program as follows:

- (1) The client makes a TCP connection to the server.
- (2) The client gets each socket option value, including undefined option, send the value to the server. The server prints out the value received.
- (3) For each value received by the server, the server sets socket options as follows:
 - a. For binary option, it sets it with an opposite value. That means, for example, for option `SO_ERROR`, if the client option value is 0 (disabled), then the server will set it as 1 (enable it).
 - b. For other non-binary integer options, the server will set its option value different from the received. For example, for the option `SO_RCVBUF`, if the received option value is 16,124, the server may set it as 32,248.
 - c. For other options, your program can decide on your own what value the server will set the value for each of those options.
- (4) At the end of program, server will print out all of its option values, just like the `checkopts` program.
- (5) Please make sure that the client/server programs can run in different computers.