

Advanced Computer Networks (CSE-435)

Assignment-1 (Deadline-Monday Aug 28, 2059 Hrs)

1 General Instructions

- The code must be written in C or C++ only.
- The code must be well commented.
- External library usage is NOT allowed. Only standard system libraries must be used.

2 Problems

This assignment covers the basic understanding of following topics

1. Server-client and peer to peer models.
2. Unicast and Broadcast traffic.
3. TCP and UDP transport protocols.

2.1 Write a broadcast program.

Write a "Hello" broadcast program and run it on an ephemeral port. Use a standard unix/linux program to receive the data sent by your program (Try with multiple instances of receivers.).

2.2 Write a TCP based peer to peer program.

Write a TCP based peer to peer communication program. It should take user input for sending text and print messages received from other peer. For testing this, start two instances of programs on two different machines. Both the programs should be able to send and receive the messages simultaneously.

2.3 Write a concurrent TCP server.

This TCP server can handle multiple requests coming from single/multiple clients simultaneously. While serving a request, the server should not block the requests coming from other clients. You can choose the server functionality on your own. (For example TCP client sends a string 'Hi!' to server and the server responds with string in reverse order and case '!h'.)

3 How to submit

- Create a directory with your rollNumber_assignment_1(ex. 201612345_assignment_1). Inside that, create a report directory and directories for each question(ex. 1, 2, 3).
- Copy codes and makefiles files into respective question directories.
- Create report.pdf containing the observations and findings. report.pdf and other supporting files such as packet captures etc. should be copied to report directory.
- Add a readme file explaining how to execute the programs in rollNumber_assignment_1 directory.
- Create rollNumber_assignment_1.zip and upload.