

CPE 400/600: Computer Communication Networks

Instructor: Shamik Sengupta, Office: SEM 204

Project 2 (Total 50 points)

Assigned on: Nov 3, 2014, Due back on: Dec 3, 2014

Demo time: 15 min (Dec 3, 9am - 2pm)

In this group project (no more than 3 persons in a team), you will choose any topic related to computer networking and will investigate that topic further in detail. For the investigation purpose, you must simulate a network environment and will design at least 3 layers of network protocol stack that are required for the topic chosen. More than 1 CPE600 student is not allowed in a team.

The deliverables for this project are:

Source Code with necessary comments to understand the code (40% of this project)

Screenshots of outputs (10% of this project)

Explanations of the 3 layers of design (40% of this project)

A small demo of the working of the topic scenario (10% of this project)

The project will have extra credit/bonus component (10%) for visual illustration of the live simulation run.

What to turn in: A folder (containing source code and pdf with screenshots of outputs, answers and explanations) to be emailed by the due date Dec 3, 2014, 5pm. Include all the team members' name in the pdf.

Name the file <lastname>_proj2.pdf

Name the folder <lastname>_proj2

Some sample project topics

(Note that the project topics are to help you choosing or understanding the challenge. You still have to design at least three layers of network protocol stack to carry out the application functionality)

- Teleconferencing multicasting
 - Any streaming media broadcasting and multicasting depending on requirements
 - BGP routing
 - New York City taxi network design
 - o P2P design
 - o Mobile network design
 - Using a relay network cluster to transmit disaster area information to command and control center
 - Traffic management to/from a web server from/to an Ethernet network
 - o Wi-Fi network
 - DNS
 - Mobile IP
 - Network management – capacity planning, load balancing
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- Optional component: Build a network traffic visualizer