**READ CAREFULLY**

1. **Choose 2 of the below assignments.**
2. **Use any programming language that you like (python, C, C#, C++, Java etc).**
3. **I’ll not accept any submission after NOV/17. Period.**
4. **This assignment is an individual work.**
5. **Make Sure your codes work well before your submission and before you show me your result.**

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**Assignment 1 Mail Client (10points)**

Create a simple mail client that sends email to any recipient. Your client will need to establish a TCP connection with a mail server (e.g., a Google mail server), dialogue with the mail server using the SMTP protocol, send an email message to a recipient (e.g., your friend) via the mail server, and finally close the TCP connection with the mail server.

**Assignment 2: Multi-Threaded Web Proxy(10points)**

In this assignment, you will develop a Web proxy. When your proxy receives an HTTP request for an object from a browser, it generates a new HTTP request for the same object and sends it to the origin server. When the proxy receives the corresponding HTTP response with the object from the origin server, it creates a new HTTP response, including the object, and sends it to the client. This proxy will be multi-threaded, so that it will be able to handle multiple requests at the same time.

**Assignment 3: ICMP Ping(10points)**

Ping is a popular networking application used to test from a remote location whether a particular host is up and reachable. It is also often used to measure latency between the client host and the target host. It works by sending ICMP “echo request” packets (i.e., ping packets) to the target host and listening for ICMP “echo response” replies (i.e., pong packets). Ping measures the RRT, records packet loss, and calculates a statistical summary of multiple ping-pong exchanges (the minimum, mean, max, and standard deviation of the round-trip times).

In this assig, you will write your own Ping application in (Python or any language). Your application will use ICMP. But in order to keep your program simple, you will not exactly follow the official specification in RFC 1739.