Arab Academy for Science, Technology, and Maritime Transport

College of Computing and Information Technology

CS422

Network Protocols

Spring 2014
3 Credit Hours

Instructor: Dr. Ayman Abdel-Hamid
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Course home page: soon
Office hours: by appointment

Text

W. Richard Stevens, Bill Fenner, and Andrew Rudoff, *Unix Network Programming, The Sockets Networking API*, Volume 1, 3rd Edition, Addison-Wesley, 2004

Prerequisites

- Introduction to Computer Networks
- Practical experience with C and/or Java.

Course Objective

The course is an introduction to network programming using the application programming interface known as sockets. In addition, several design alternatives for client/server applications will be presented along with tradeoffs. Upon successful completion of the course, the student should be able to develop network-aware applications from the ground up. Hands-on experience will be gained through several programming assignments, which require C and/or Java knowledge.

Course Workload

Course material will be introduced in lectures. Exams, which test your acquired knowledge, will be scheduled during lecture time unless otherwise stated. Furthermore, exercises/questions will be assigned as homework in tutorial sessions. Several programming assignments are planned as part of the practical aspect of the course

Topics

Tentatively, the topics that will be covered include:

- Introduction to TCP/IP
- The Transport layer: TCP, UDP, and SCTP
- Elementary Sockets
- Elementary TCP Sockets
- TCP Client/Server Example
- I/O Multiplexing
- Socket Options
- Elementary UDP Sockets
- Elementary SCTP Sockets
- Name and Address Conversions
- IPv4 and IPv6 Interoperability
- Multicasting
- Threads
- Client/Server Design Alternatives

Grading

7^{th} week exam + 1 or 2 quizzes	30%
12^{th} week exam + 1 or 2 quizzes	20%
Tutorial (attendance, assigned homework, programming assignments, etc.)	10%
Comprehensive final exam	40%

The instructor reserves the right to change the grading scheme or add assignments/projects/exams.

Policies

- Attendance is crucial to your success in this course. You have the responsibility to cover any missed material.
- Missed exams cannot be made up, without proper documentation.

Academic Honesty

The honor code applies to all homework/assignments and examinations. The instructor's academic honesty policy is very strict; instances of academic dishonesty will be severely penalized. *All work submitted must be the student's own work!* It is unprofessional and dishonest to submit someone else's work as your own.