

Spring 2024 14:332:456 Syllabus Network Centric Programming

Text Book:

UNP: Unix Network Programming

CSAPP: Computer Systems - A Programmers Perspective

ALP: Advanced Linux Programming

Advanced Programming in the UNIX environment

Lecture No.	Date	Slides	Notes	Content
1	Jan. 22	lecture 1 introduction	Course introduction.	
2	Jan. 29	lecture 2 client server model	CSAPP: Sec 11-11.2 ALP: Sec 2.1, 2.2 (getopt_long, assert, stremp) UNP: Sec 1.1	Warming Up Assignment Distribute
3	Feb. 5	lecture 3 file IO	CSAPP: Sec10-10.3, 10.8 ALP: Appendix B.1	Makefile, autotools, a small daytime server, OS functions, strace, fork, Key I/O functions, Bash redirection
4	Feb. 12	lecture 4 directories	CSAPP: Section 10.5-10.10 APUE: Section 4	I/O system calls and buffering; efficiency difference between stdio and system calls; error handling, file sharing
5	Feb. 19	lecture 5 server	UNP: Sec 3,4 CSAPP: Sec10.4 + 11.4	Socket server. Bind(); listen(); Accept();TCP three way handshake; read/write socket Warming Up Assignment Due
6	Feb. 26	lecture 6 client+http	CSAPP: Sec 11.5	Client side. IPv4 Socket Address; Parsing the HTTP Protocol; URL; Typical Webbrowser steps; Typical Request Message; Response Example/Header Assignment 2 Distribute
7	Mar. 4	lecture 7 processes part 1	ALP: Sec 3.1, 3.2	Running a different program in the new process; pid, fork; Cleaning up Wait / Waitpid; Zombies;
8	Mar. 11	Spring Recess		
9	Mar. 18	lecture 7 processes part 2	ALP: Sec 3.3, 3.4	Environment variables vs Command Line Arguments; Memory Layout; Race Conditions
10	Mar. 25	Midterm Assignment 2 Due		
11	Apr. 1	lecture 8 thread	CSAPP: Sec 12	Multi-threading Assignment 3 Distribute
12	Apr. 8	lecture 9 bufferoverflow	UNP: Sec 8	Security issue on buffer overflow
13	Apr. 15	lecture 10 udp socket + timeout	UNP: Sec 21	UDP socket and timeout issue
14	Apr. 22	lecture 11 broadmulticast	CSAPP: Sec 3.12 Take Online Survey	Broadcast and multicast Assignment 4 Distribute (final exam) Assignment 3 Due
15	Apr. 29	lecture 12 secureprogram	ALP: Sec 10	Secure Network Transmissions
17	May 6	final exam week		Assignment 4 Due