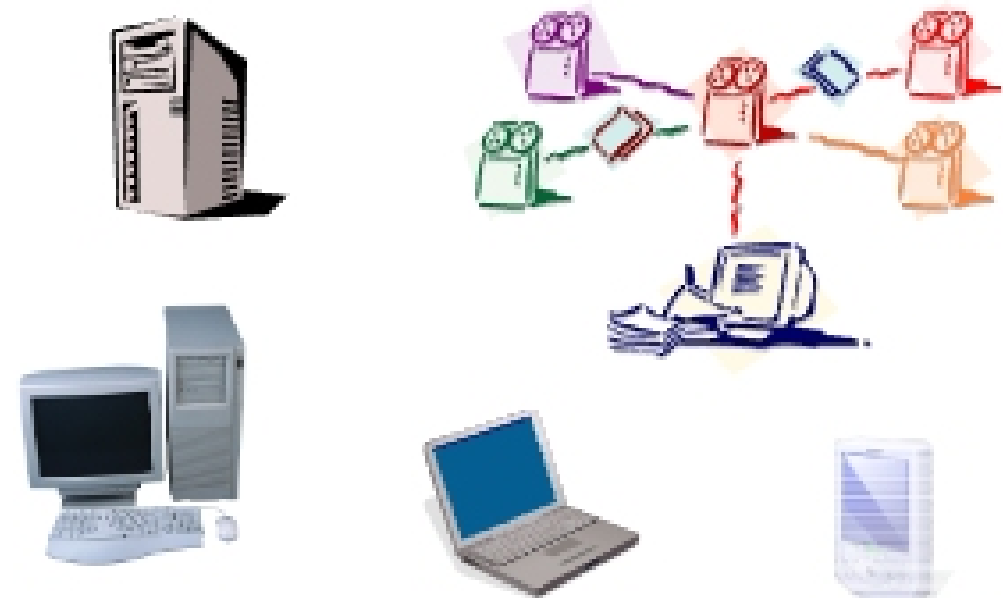


CS118: Computer Network Fundamentals

Spring 2011

Instructor: Lixia Zhang
TA: Pei-chun (Payne) Cheng

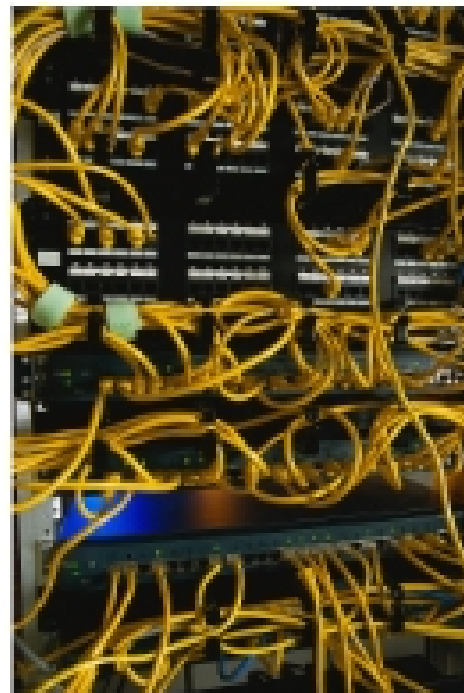
What is a computer ?



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What is a network ?



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What is "fundamentals" ?

- Fundamental: n.
 - a basic and necessary component of something,
 - especially an underlying rule or principle
- How computer networks actually work
- Why do they NOT work????



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How do we study the fundamentals?

- ◆ Divide-and-conquer
 - Internet: a very large and complex system
 - First: Figure out how many major parts
 - Then: Learn one part at a time
 - Top-down approach
- ◆ More specifically:
 - Read the textbook
 - Come to class: Ask questions!
 - Learn from doing your homeworks and projects
- ◆ Prepare for exams

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Course Workload

- ◆ Weekly Reading Assignments (starting today)
- ◆ Weekly Homework Assignments
 - Available from courseweb every Thursday starting this week, due on the following Thursday
- ◆ Midterm: Thursday 4/28 (5th week, in class)
- ◆ Final: 3:00pm-6:00pm Saturday, June 4
- ◆ Two programming Projects:
 - Work in a team up to 3 people
 - Project 1: Due Friday May 6th (6th week)
 - Project 2: Due Tuesday June 7th (tentative)

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Course Grading and Policies

- ◆ Course Grading Will Be Based On
 - 24% Weekly Homework Assignments (8 total)
 - 26% for 2 Programming Projects
 - 1st : 12%, 2nd : 14%
 - 25% Midterm Exam
 - 25% Final Exam
- ◆ Strict Grading Policy
 - No credit for late homeworks. No exceptions
 - No credit for late projects. No extensions.
 - No make-up exams.

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Home My CourseWeb Course Homepage Fall Spring 2011

Spring 2011 | **CS 118, Sec 1** | Computer Networks | Prerequisites | Syllabus/Info

Use the search box to find class and related resources.

Course Syllabus

Instructor Contact: Liza Cheng

Class Information

Location, Day, Time: **Kearney** Wed 4:00 PM - 5:00 PM (2112 Suddarth Hall)

Discussion 1B: F 4:00 PM - 5:00 PM (SUTHER 244)

Class Hours: Tue, Wed, Thurs, Fri, Sat, Sun - 10:00 AM - 12:00 PM

Course description: Lectures, then team discussion, two teams parallel study, six hours. Prerequisites: courses CS 31, 32, 111. Designed for juniors/seniors. Introduction to design and performance evaluation of network scenarios, including such topics as what protocols are, layered network architecture, Internet protocol architecture, network applications, transport protocols, routing algorithms and protocols, interconnecting, congestion control, and link layer protocols including Ethernet and wireless channels. Letter grading.

Instructor Information

Name: Liza Cheng (lizcheng@cs.berkeley.edu)

Office location: 2112 Suddarth Hall

Office hours: Thu 3:45 PM - 4:45 PM

Teaching Assistant

Name: Pa Chiu Ching (pachiu@cs.berkeley.edu)

Put C-118 in the email subject
Do come to office hours

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Hints for getting good grade from this course

- ◆ Read the text before coming to lecture
- ◆ **Ask questions!**
 - Both in class and coming to office hours
- ◆ Join the class mailing list: visit <http://www.cs.ucla.edu/mailman/listinfo/cs118>
- ◆ Make use of the course webpage
 - Lecture slides: uploaded by Sunday night for each week's lectures
 - Homework assignment
 - Project details and hints

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(Tentative) Schedule of the Quarter

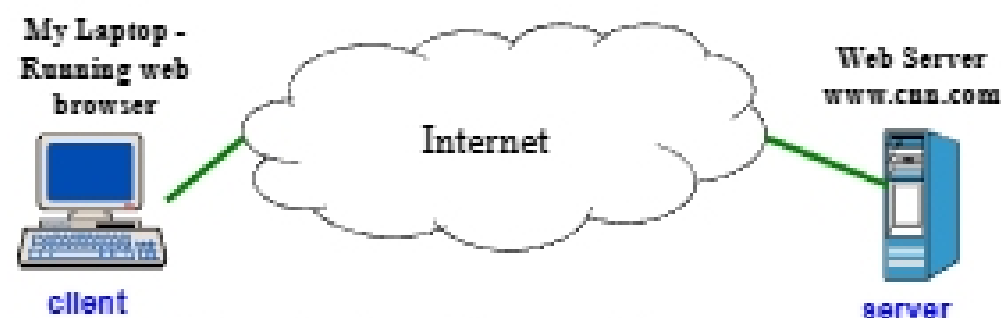
Week:	1	2	3	4	5	
T	3/29* Course intro, Ch 1	4/5 WEB, FTP	4/12 DNS	4/19 reliable data delivery	4/26 congestion control	
Th	3/31* Protocols, BW& delay, web, HTTP	4/7 email, P2P	4/14 transport protocols	4/21 TCP	4/28 Midterms	
	6	7	8	9	10	
T	5/3 Internet Protocol (IP)	5/10 routing algorithms & protocols	5/17 multicast routing	5/24* hubs and switches	5/31 mobile networking	6/4 Final exam
Th	5/5 IP	5/12 Routing in the Internet	5/19 data link layer, Ethernet	5/26* wireless Networking	6/2 Review	

* Lectures given by the TA

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First step: Big Picture & Terminology - Edge and Core



Simple Example: Use web browser to lookup www.cnn.com

My laptop and the web server are both **End Systems = Hosts**

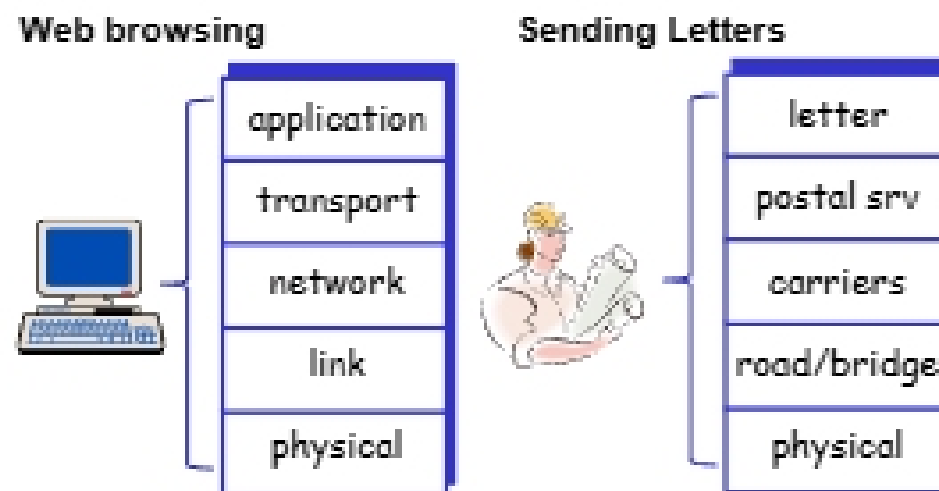
- End systems also include PDAs, sensors, cell phones, and generally any device using the network to *communicate*
- End systems are located at the **network edge** and connected to the network using **communication links**

The **network core** is a packet switch network

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Internet protocol stack – an analogy



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