CSC358 - Introduction to Computer Networks

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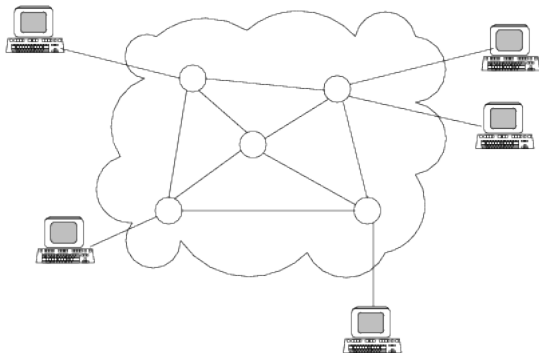
Introdcution to Computer Networks

- Overview
- Scope of the Course
- Important Issues
- Course Organization

Overview

- Computer Networks
  - Different Network Architectures
  - Different Applications
  - Applications Share Resources (Transmission Capacity)
  - New Network Architectures/Applications
- Implications
  - Computer Networks are Hard to Understand/Design
  - Computer Networks keep Evolving

Scope

- How to Use Computer Networks?
  - Applications
  - CSC 309 Programming on the Web
- How do Today's Computer Networks Work?
  - Existing Protocols
- Why do Computer Networks Work the Way they Work?
  - Fundamental Concepts

Switch / Router

Terminal / Host / End−System

- Routing
- Addressing
- Reliable Data Transfer
- Congestion Control

How to Address these Questions?

- Not only One Solution
- Cook-book Knowledge isn't Very Useful
- Conceptual Understanding is Important
  - Mathematical Modeling

"Language" for Asking Questions About Computer Networks

Probability Theory

- Industry (New Products/Technology)
- Graduate Studies (Research)

Outline

- Introduction
  - Layered Network Architecture
- Reliable Data Transfer
  - TCP
- Queueing Theory
  - Case study: Internet Telephony
- Multiple-Access Protocols
  - Ethernet, Wave LAN
- Routing
  - IP
- Congestion Control
  - TCP

Organization

- Lectures
    - Concepts
- Tutorials
    - Examples
- Assignments
    - Study and Practice

How to be Successful

Do and Understand

- Assignments
- Tutorials

Course Material

- Text Book:
  - "Computer Networking: A Top-Down Approach Featuring the Internet", J. F. Kurose and K. W. Ross.
- Lecture Notes

- 5 Assignments
- 2 weeks to complete
- Due Mondays 10AM in Tutorial (NO EXCEPTIONS!)
- Your own work

BE ORGANIZED !

- Assignments: 25%
- Midterm: 25%
- Final: 50%

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- Tutorials
  - First Tutorial on Monday!
- Assignments
- Lecture Slides
- Lecture Notes
- Reading Assignments
- News
  - Course Organization