Lecture 0

Computer Networks

Spring Semester ‘2022

Course Introduction

- Instructor: Hyukjoon Lee
  hlee@kw.ac.kr
  새빛관 707
  Tel: 940-5127
  Office Hours: M,W 3-4 pm
- Class Hour: M 1:30–2:45 pm, W 12:00–1:15 pm
- Class Room: 비대면 실시간 온라인 강의
- Course Homepage: mclab.kw.ac.kr (will use KLAS for HW/project submission)
- Required Text:
  - J.F. Kurose and K.W. Rose, Computer Networking: A Top-Down Approach Featuring the Internet, Addison-Wesley, 8th Ed.
- Recommended References:
  - A.S. Tanenbaum, Computer Networks, 3rd Ed. Prentice Hall
  - W. Richard Stevens, TCP/IP Illustrated, Volume 1: The Protocols
  - W. Richard Stevens, Unix Network Programming: Networking APIs: Sockets and XTI (Volume 1)

Assessment

- Two OFF-LINE exams (Midterm and final): 30% X 2 = **60%**
- Assignments: **30%**
  - Problem solving assignments: 10%
    - May include summary reports on Invited Speeches
  - Design and Implementation Reports (Large size program): 20%
- Attendance: **10%**
  - Below 1/4 of total class hours: Failure
    - Seniors must notify me in advance for waivers of your job interviews, job seminars, etc.
  - 2 Lates = 1 Absence
    - You are not allowed in class 15 minutes after it starts
  - Each cell phone ring: 1 letter grade down
    - To escape this trap you must earn A+/A0
- Grade distribution
  - A+/A0 < 20%, A+ ~ B0 << 70%
  - Raw total score < 20/100: F (even with 100% class and exam attendances)
  - No final grade changes except X→F
  - No exceptions for foreign students

Contents

- Introduction, Network Infrastructure, Delay, Throughput, Bandwidth
- Packet-switching, Circuit-switching, Protocol Stacks, Layering
- Applications (SSL, DNS, Web, HTTP 1.1)
- Sockets (TCP, UDP)
- UDP, TCP (flow control, reliability, congestion control)
- IP addressing, IP forwarding tables, lookup
- IP Packets formats, Routers
- Routing: Distance-Vector (RIP), Link-State (OSPF), Path-Vector (BGP)
- Mobile/Wireless (Link, IP & TCP)
- Multimedia Networking (Streaming, QoS, RTP/RTCP, DiffServ, RSVP)
- Network security: cryptography, authentication, integrity
- Network Management
- Software-Defined Networking