Computer Networks

COSC 6377
Lecture 1

Fall 2012

August 27, 2011
Course Goals

• Overview of the basics
• Principles and Philosophies
• Read research papers
• Hands-on experience with networked systems
Prerequisites

• Undergraduate level networking course
• Some systems programming
• Familiar with Linux environment
• Access to a Linux environment
  – Use department server
  – Use your own machine
Structure

- Lectures
- Paper discussions
- Homeworks
- Projects
- Exams
- Class participation
Homeworks

• 3-4 homeworks
• Concepts
• Calculations
• Some hands-on work
• Allowed to discuss with other students, but you should turn in your own writeup
• Submit through Blackboard
Projects

• Two projects
• Build a networked system

• Possible to propose your own project
  – Talk to the instructor before P2 is out
Exams

• No final exam!
• The second exam will cover topics not covered by the first exam
• You can bring one sheet of notes
• In-class scheduling
  – Conflicts should be reported by this week
Grades

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<td>Exams</td>
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<td>Homeworks</td>
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<td>Projects</td>
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<td>Class Participation</td>
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- It is possible to get a C or lower grades
- No incompletes
Readings

• No required textbook

• Recommended texts
  – Computer Networks: A Systems Approach
  – UNIX Network Programming

• Research papers

• Standards

• Wikipedia
Academic Honesty

• The work you turn in should be yours

• Acknowledge
  – Group discussions
  – Internet sources

• Plagarism results in an F
Course Staff

• Instructor: Omprakash Gnawali
• Office Hours: TBA

• TA: Anirup Dutta
• Office Hours: TBA
Communication

• Send questions and answers to Piazza
• Contact TA before contacting the instructor
• Emails MUST have COSC6377 in the subject
• Check course website and Piazza regularly

http://www2.cs.uh.edu/~gnawali/courses/cosc6377-f12/
Some Questions

• How difficult is this course?
• What is the workload?
• Will I learn anything useful?
• Any other questions?
Internet

• What is Internet?
• How did it start?
• How do we use it?
• Where is it going?
Inter-net

• Network of Networks
• Covers the whole world

http://www.chrisharrison.net

From: http://www.telepresenceoptions.com/2008/04/att_first_service_provider_to/
Connecting the Networks

• Cables
• Even under the sea

http://www.cablemap.info/
A Brief History

• Packet switching technology
• ARPANET and other research projects
• Commercial Internet by the early 90’s
• Core networks still owned by a handful of companies
• Reference
How do we use it?

- Emails/Facebook
- Phone calls
- Government services
- Connect systems and services
Where is it going?

- More inter-connection
- Internet of Things / Web of things
- More mobile and wireless
- More networked applications
Internet and Us

http://earthobservatory.nasa.gov/Features/Lights/

http://www.chrisharrison.net

http://www.chrisharrison.net

Power struggle: Texas woman uses gun to stop utility worker

by Vicente Arenas / KHOU.com

Posted on July 19, 2012 at 1:54 PM

HOUSTON – Theima Taormina didn’t want a new electric meter, and she went to great lengths to keep her old one.

When a worker showed up at her northwest Harris County home to install a smart meter, she grabbed her gun.

Plan for next four weeks

• Review of undergraduate material
• Watch lectures/read slides from COSC4377
  – Cover approx. 5 lectures per week
• Discuss the material in the class
• Grab lectures from:
  http://www2.cs.uh.edu/~gnawali/courses/cosc4377-s12/
HW0

• Work out the HW submission logistics
• Due next Monday
• Should not take more than an hour of work

• Goal: understand the concept of protocols
HW0

• Program1 ( C )
  – Ask the user the courses and credit hours she is taking this semester

• Program2 ( Python )
  – Tells the administrator the name of the student and her courses and credit hours for this semester

• We should be able to mix and match Program1 and Program2 written by different students
  – How can we achieve this?