Today's Topic

Unit background and administrivia

Introduction to Internetworking

General Course Information

This course will not teach you how to write HTML or Java code. Nor will it make you a Web Master!

In this course you will learn
• the design principles,
• architecture, protocols and algorithms behind the components of the complex system which is known as Internet.

Class Mechanics

• TO: JAVED@kent.edu

• SUBJECT: “IN2004S”
  – Always need to send email with subject field set to “IN2004S” to obtain reply.

• Use Computer/Email as much as possible:
  – Reports preferably in Computer.

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Javed I. Khan
Email: javed@kent.edu
Phone: 672-9038
Office Hours: TR 2:30 – 4:30 p.m.

• Web Page: http://www.cs.kent.edu/~javed/class-IN04S/
• Books:
What is Expected Out of You?

- At least 12 hours per week (to pass)
- Learning by doing
- questions and exercises
- reading textbook & materials
- asking questions
- taking part in discussions
  - Read/Listen Think Do Ask

Grading

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Frequency</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browser Server</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>End Term Exam</td>
<td>1</td>
<td>20%</td>
</tr>
<tr>
<td>Mid Term Exam</td>
<td>1</td>
<td>20%</td>
</tr>
<tr>
<td>Take Home Assignments</td>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>Router Project</td>
<td>1</td>
<td>10%</td>
</tr>
<tr>
<td>Unannounced Quiz</td>
<td>2-5</td>
<td>10%</td>
</tr>
</tbody>
</table>

What is Internet?

A World Wide Network of Millions of Computers

Internet = Network of Computer Networks

The Internet is a global network of networks enabling computers of all kinds to directly and transparently communicate and share services throughout much of the world. Because the Internet is an enormously valuable, enabling capability for so many people and organizations, it also constitutes a shared global resource of information, knowledge, and means of collaboration, and cooperation among countless diverse communities.

-Internet Society
  June 1998
The Internet is more important in what it enables than what it is; more phenomenon than fact. Yes, the Internet is networks, software, computers and other technologies; but more so, it is a catalyst of change, a new mass medium, a culture, a mind warp, new things never before imagined.

-J. Neil Weintraut
Wall Street Technologist

Structure of Internet

Click Here
Next Generation Internet....

- A network always “one step ahead”
  - HPCC in 1993
  - vBNS launched in 1995.

Next Generation Internet (cont..)

- A network always “one step ahead”
  - HPCC in 1993
  - vBNS launched in 1995.
  - Internet-2 Abilene
  - vBNS+
  - Grid

Demonstration
Route Tracing
vBNS Features

- Low latency (average coast to coast less than 100 ms)
- High throughput (over 490 Mbps of payload)
- Stable (99.95% or greater service availability)
- Uncongested (average utilization less than 50%)
- 622 Mbps 14,000+ route mile backbone network

- Today, the vBNS connects:
  - five supercomputing centers
  - about 100 universities
  - peers about 11 other Networks.

Reminder....

- “JAVED@kent.edu”.
- Don’t forget to send email by tonight.
- Subject must have “IN2004S”.

Next Class

Map of Cyberspace
Who Manages Internet?