Assignment 6: March 16 through March 30

For Recitation, Tuesday, March 16:

There is no assigned reading for today, nor is there a one-pager due this week. You should have made significant progress on your design project by now. Recitation will be used to tie up loose ends left by the networking lectures, particularly the end-to-end layer.

For Lecture, Wednesday, March 17:

This lecture will introduce naming. The "Development of the Domain Name System" reading handed out in recitation for the design project is a good starting point for this topic.

For Recitation, Thursday, March 18:

Design Project #1 is due today in recitation.

Read Gifford, Jouvelet, Sheldon, and O'Toole, "Semantic File Systems," (Reading #17). This paper offers a very powerful way of naming files. Is the usefulness of a semantic file system restricted to shell scripts and commands, where the user is available to interactively examine the consequence? Alternately, is there a real use for this feature in writing C programs? How might caching be used to shorten the time needed to generate a virtual directory lookup?

Spring Break, Monday, March 22 - March 26 (Fun)

Have fun during the week of vacation! Get some rest, breathe fresh air, read a good book. Here's what the 6.033-staff recommends for fun reading material:

Hari Balakrishnan:
- "Snow Crash" by Neil Stephenson
- "The Diamond Age" novel by Neil Stephenson

David Karger:
- "A Fire upon the Deep" by Vernor Vinge. The setting includes a wonderful "galactic internet" model, including network congestion, connectivity failures, and other goodies.

Larry Rudolph:
- "The Alexandria Quartet" (4 books) by Lawrence Durall
- "The Unconsoled" by Kazuo Ishiguro

Gerald Sussman:
- "Black Holes and Time Warps: Einstein's Outrageous Legacy" by Kip S. Thorne

Seth Teller:

"Longitude" by Dava Sobel (very germane to the class, too)
Chandra Boyapati:
"The Emperor's New Mind" by Roger Penrose
Jessica Forbess:
"Arcadia" by Tom Stoppard
Kevin Fu:
"Fumbling the Future: How Xerox Invented Then Ignored the First Personal Computer" by Douglas Smith
"Latin for All Occasions" by Henry Beard
Hariharan Rahul:
"The Big Sleep" by Raymond Chandler
"The Hitchhiker's guide to the Galaxy" (5 parts including sequels) by Douglas Adams
"The Cuckoo's Egg: Tracking a Spy through the Maze of Computer Espionage" by Clifford Stoll
Neena Lyall:
"Snow Falling on Cedars" by David Guterson

For Lecture, Monday, March 29:

Naming networks. This is the second and last lecture on naming.

For Recitation, Tuesday, March 30:

Read the paper by Birrell et al., "Grapevine: an exercise in distributed computing", reading #18, and write a one-pager on the following question.

> A good system often provides for a quick common case, while ensuring that a complete algorithm exists for all scenarios. The designers of Grapevine included this feature in name resolution in the registration database. Describe one possible worst case scenario which results in the client performing the full resource location algorithm.
>
> *Clarification:* You should describe the situation that results in the full algorithm being performed, but also focus on describing how the algorithm is used to resolve a name in the registration database. This is a fairly straightforward assignment, so take care to describe it well.

If you like to read more, there was a follow-up paper on experience with Grapevine published two years later in ACM Transactions on Computer Systems, Feb. 1984.

System aphorism of the week

Engineering is the art of modeling materials we do not wholly understand, into shapes we cannot precisely analyse so as to withstand forces we cannot properly assess, in such a way that the public has no reason to suspect the extent of our ignorance. (Dr. A. R. Dykes, British Institution of Structural Engineers, 1976)
