University of Colorado at Colorado Springs

CS 509: Project Ideas

Cryptography and Network Security

Here are some project ideas. Your project should show significant amount of work, research as well as implementation. It should be sustained work through the semester. I want a mid-term report and a demo from you the week before Spring Break or earlier. I need a final report and a demo the week before the finals. Grading will be primarily based on completion of the project, the write-up and the amount of research and implementation effort I perceive you expended.

- Secure FTP implementation
- First attempt at SET (Secure Electronic Transaction) implementation
- First attempt at implementing SSH (Secure Shell)
- Write a packet sniffer
- Implementing secure e-mail
- Intrusion detection toolkit: analyze logs, salient files, etc.
- Creating viruses, detecting the viruses you create, and destroying them
- Write a "personal" firewall that works on a single machine
- Sharing music/movies securely over the Internet, protecting copyright laws
- E-publishing and selling of books securely
- Implementing secure chat software
- Electronic money or payment system
- Securing passwords that people have and using them automatically when needed.
- Breaking DES (Data Encryption Standard) using differential and linear cryptanalysis.
- Studying and implementing a digital watermark technique
- Studying the security sandbox model of Java and implementing it for Perl/C
- Investigating into secure electronic elections and implementing some of the ideas
- Secure electronic wallet technology
- Secure check-writing on the Internet
- Writing a sophisticated port scanner, detecting port scanners
- Writing a program that checks a system for vulnerability
- Writing a sophisticated password cracker

If you have other ideas, let me know.