

# CSE571

# Project Selection

Raj Jain

Washington University in Saint Louis

Saint Louis, MO 63130

[Jain@cse.wustl.edu](mailto:Jain@cse.wustl.edu)

These slides are available on-line at:

<http://www.cse.wustl.edu/~jain/cse571-09/>



- ❑ Sample Projects
- ❑ Last Year's Project
- ❑ Project Schedule
- ❑ HTML Intro

# 1. Review Projects

## Review of:

- ❑ Network Attack tools
- ❑ Network Protection tools
- ❑ Wireless network attack tools
- ❑ Wireless network protection tools
- ❑ Digital Forensic Tools
- ❑ Bot nets
- ❑ Cross-site scripting
- ❑ Anti-DNS Pinning
- ❑ Hacker organizations, sites, ...
- ❑ War driving techniques and tools

## 2. Hands-on Projects

- ❑ A tool to collect passwords in wireless
- ❑ A tool to monitor network traffic in open ports
- ❑ Using one the wireless attack tools to monitor the traffic and
- ❑ Develop a web site to collect passwords and
- ❑ Firewall bypass using port 80
- ❑ A honey pot to catch crackers
- ❑ Multi-Pot (multiple base stations to lure victims)
- ❑ WEP crackdown using passive monitoring and plain text attacks
- ❑ A tool to fool routers
- ❑ Identity Stealing Tool using web sites
- ❑ Identity Stealing Tool using phishing
- ❑ SPAM without detection
- ❑ Hardware to locate/pinpoint wireless access points

## 3. Programming Projects

- ❑ Compilation of Security Algorithms in C
- ❑ Compilation of Security Algorithms in Excel
- ❑ Efficient algorithm to find the private key from a given public key
- ❑ Develop a root kit for Windows/Linux/MAC

## 3. Survey Projects

### Recent Security Issues in Internet Engineering Task Force (IETF)

- ❑ btns Better-Than-Nothing Security
- ❑ dkim Domain Keys Identified Mail
- ❑ emu EAP Method Update
- ❑ hokey Handover Keying
- ❑ ipsecme IP Security Maintenance and Extensions
- ❑ isms Integrated Security Model for SNMP
- ❑ keyprov Provisioning of Symmetric Keys
- ❑ kitten Kitten (GSS-API Next Generation)
- ❑ krb-wg Kerberos
- ❑ ltans Long-Term Archive and Notary Services

## Survey Projects (Cont)

- ❑ msec      Multicast Security
- ❑ nea      Network Endpoint Assessment
- ❑ pkix      Public-Key Infrastructure (X.509)
- ❑ sasl Simple Authentication and Security Layer
- ❑ smime      S/MIME Mail Security
- ❑ syslog      Security Issues in Network Event Logging
- ❑ tls      Transport Layer Security

# Survey Projects (Cont)

## Recent Issues in Internet Research Task Force (IRTF)

- ❑ Anti-Spam Research Group (ASRG)
- ❑ Crypto Forum Research Group

## Recent Security Issues in IEEE

- ❑ IEEE
- ❑ 802.3ah EPON Security
- ❑ 802.21 Regional Area Networks Security
- ❑ 802.15.3 Personal Area/Sensor Networks Security
- ❑ 802.11i Security
- ❑ 802.16e WiMAX Security
- ❑ 802.20 Mobile Broadband Security



# Survey Projects (Cont)

## Current Security Issues in ITU

- ❑ SG17 Security Study group
- ❑ ICT Security Roadmap

## Current Security Topics in Leading Conferences

- ❑ DEFCON

# Last Year's Project

## □ Hands-on Projects:

- Cafe Cracks: Attacks on Unsecured Wireless Networks
- Net Vigilant: Network Monitor
- Secure Data Exchange System : Minimizing Security Attacks Risks while Preserving Bandwidth
- PHP Vulnerabilities in Web Servers
- Type 2 Cross-site Scripting: An Attack Demonstration

# Last Year's Projects (Cont)

## □ Survey Papers:

- A Summary of Hacking Organizations, Conferences, Publications, and Effects on Society
- Web Single Sign-On Systems
- Wireless Hacking Tools
- Survey of Current Network Intrusion Detection Techniques
- A Survey of the Prominent Quantum Key Distribution Protocols
- Secure Ballots Using Quantum Cryptography
- A Survey of Peer-to-Peer Network Security Issues
- Overview of Recent Developments on Generic Security Services Application Programming Interface

# Project Schedule

<del>Mon 02/09/09</del>	Topic Selection/Proposal
Wed 02/18/09	
Mon 02/23/09	References Due
Mon 03/02/09	Outline Due
Mon 03/30/09	Final Report/Demo Due
Mon 04/06/09	Reviews/comments Returned
Mon 04/13/09	Revised Report Due

# HTML – An Intro

<HTML>

<HEAD>

...

</HEAD>

<BODY>

...

</BODY>

</HTML>

# HTML Intro (2)

<HTML>

<HEAD>

<TITLE>CSE574S: Advanced Topics in Networking </TITLE>

<META NAME="AUTHOR" CONTENT="Raj Jain">

<META NAME="Classification" CONTENT="Technical">

<META NAME="Keywords" CONTENT="Quality of Service,  
Voice over IP">

<META NAME="Description" CONTENT="Lectures and  
reports on recent advances in networking ">

</HEAD>

<BODY>

<H1>CSE571S: Network Security </H1>

<H2>Issue 1: Introduction</H2>

# HTML Intro (3)

```
<H3>1.1 Local Area Networks</H3>
```

```
<UL>
```

```
<LI>Item 1</LI>
```

```
</UL>
```

```
<A HREF="http://www.google.com">Google</A>
```

```
<A HREF="#section2">Section 2</A>
```

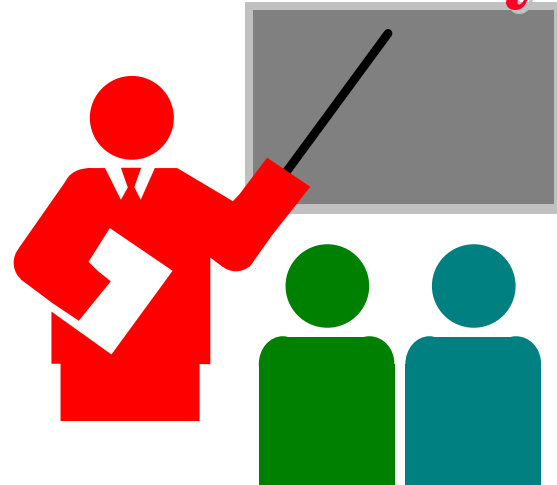
```
<A NAME="section2"><H2>Section 2</H2></A>
```

```
<IMG SRC="photos/ftp/jain5-s.jpg" ALT="[Raj Jain's Photo]"  
HEIGHT=150 WIDTH=102>
```

```
</Body>
```

```
</HTML>
```

# Summary



- Report suitable for web publication
- Strictly follow format, style guidelines
- No copyright violations
- Technical quality



# Homework 1P

- ❑ Search web pages, books, and journal articles from ACM Digital Library, Applied Science, Compendex, ABI/INFORM Complete, and Knovel databases at Olin Library for one of the following topics:
  - Network Security Trends
  - Cryptography Trends
  - Internet Security Trends
  - Hacking TrendsTrends = Recent developments, Recent Advances, ...
- ❑ On the web try the following search points:
  - <http://library.wustl.edu/findart.html>
  - <http://library.wustl.edu/fulltext/>
  - <http://scholar.google.com>
  - <http://books.google.com>
  - <http://a9.com/>

## Homework 1P (Cont)

- <http://www.scirus.com/srsapp/>
- <http://searchnetworking.techtarget.com/bestWebLinks/>
- See also <http://www.searchengineguide.com/pages/Science/>
- ❑ Ignore all entries dated 2004 or before. List others in the following format (up to 5 each):
  - Author, “Title,” publisher, year. (for 5 books)
  - “Title,” URL, One line description (for 5 web pages)
  - Author, “Title,” source (for 5 technical/magazine articles)
- ❑ Serially number the references and submit electronically to [jain@cse.wustl.edu](mailto:jain@cse.wustl.edu). The mail should have a subject field of “CSE 571S Homework 1P” (Please note the subject carefully)
- ❑ Make a list of other interesting search points and share with the class.

# Project Homework 1P2

- ❑ Prepare your personal web page. Must include your photograph
- ❑ Use meta-HTML commands in the header to indicate title, keywords, description, etc
- ❑ Must use at least all the commands listed in “HTML Intro” slides. Use others as appropriate.
- ❑ Use only a text editor
- ❑ Submit a link to the page via email to jain@cse.wustl.edu with a subject field of: CSE 574S Homework 2
- ❑ Validate your page on:
  - W3C Markup Validation Service, <http://validator.w3.org/>
  - HTML code check by Net Mechanic, <http://www.netmechanic.com/toolbox/html-code.htm>
  - CSE HTML Validator , <http://www.htmlvalidator.com/>