IIG University of Freiburg

Web Security, Summer Term 2012

Presentation

Dr. E. Benoist

Sommer Semester

- ▶ Emmanuel Benoist
    - email: emmanuel.benoist(at)bfh.ch
- ▶ PhD at the University of Caen (France)
- ▶ Professor at the Berner Fachhochschule (Switzerland)
    - Teach Computer Science in Biel since 1999
    - Specialties: Algorithmic, Web Programming and Web Security
- ▶ Web Security and Privacy protection on the Web
    - Member of the Research Institute on Security in the Information Society (RISIS)
        - ▶ Web Security
        - ▶ Privacy Protection on the Web
        - ▶ e-Health
    - Member of the board : Certified Secure Web - CSW GmbH
    - Member of the OWASP (Open Web Application Security Platform) Swiss Chapter
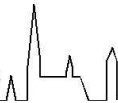
- ▶ **Goals of the course**
  - The students know the most important dangers for Internet Web sites and their users.
  - The students have an overview of the measures to take for programming safe web sites.
  - They can tell which are the basic-principles of Web security.
- ▶ **Module for Bachelor or Master**
  - 6 ECTS
  - Room SR 00-007, Geb. 106
  - from 10:00 to 12:00 (Course) and 12:00 to 14:00 (Exercises)
  - 2 lessons course / 2 lessons exercises
- ▶ **Contact**
  - Chair: Arnt Syring (arnt.syring (at) uni-freiburg.de)

- ▶ **Exam : 80% of the mark**
  - Written exam[1]
  - Two hours (120mn)
- ▶ **Project : 20% of the final note**
  - Blind attack of a given web site

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[1]For students, where an oral exam is **mandatory**, we will organize such an exam.

▶ **Basics of Protocols**
  • What is a web application?
  • HTTP and HTTPS

▶ **Top Vulnerabilities in Web Sites**
  • XSS, CSRF

▶ **How to force an interpreter to execute malicious code**
  • SQL Injection
  • XML or Shell script Injection

▶ **Failures in the management of credentials**
  • Malicious File Execution
  • Broken Authentication and Session Management

▶ **Project**
  • Blind attack : search and find some nuggets in a given web site.

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[2]Details are given on http://www.benoist.ch/WebSecurity/

- ▶ **Web site of the course:**
  http://www.benoist.ch/WebSecurity/
  - Slides
  - Examples
  - Exercises
  - Resources (bibliography and Internet)

- **OWASP Top 10 - 2010**
  http://www.owasp.org/index.php/Category:
  OWASP_Top_Ten_Project
- **OWASP Developers Guide**
  http://www.owasp.org/index.php/Category:
  OWASP_Guide_Project
- **Web Security Testing Cookbook** *Paco Hope and Ben
  Walther*, O'Reilly
- **The Web Application Hacker's Handbook** *Dafydd
  Stuttard and Marcus Pinto*, Wiley
- **How to Break Web Software** *Mike Andrews and James A.
  Whittaker*, Addison Wesley

- ▶ Proficiency in Web Programming?
- ▶ Bachelor / Master / Diploma ?
- ▶ Computer Science / Mathematics / other fields ?
- ▶ German speaking / English speaking ?

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