How a Hacker Sees Your Site

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BSides Boston Speaker Chair
(Want to present?? Stay til the end!)

Usually 60 mins, got 45, questions after…please

How You See Your Web Site

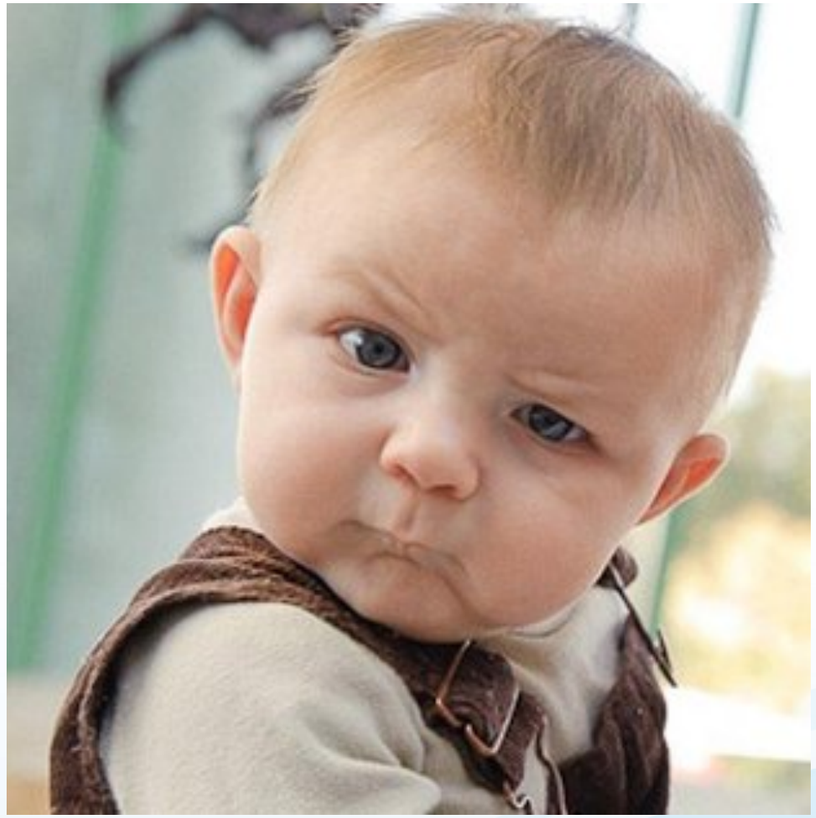
How a Hacker Sees Your Site

Perceived Difficulty To Hack Your Site

How Hard Is It Really?

What Is A Hacker Looking For?

Not all that much…

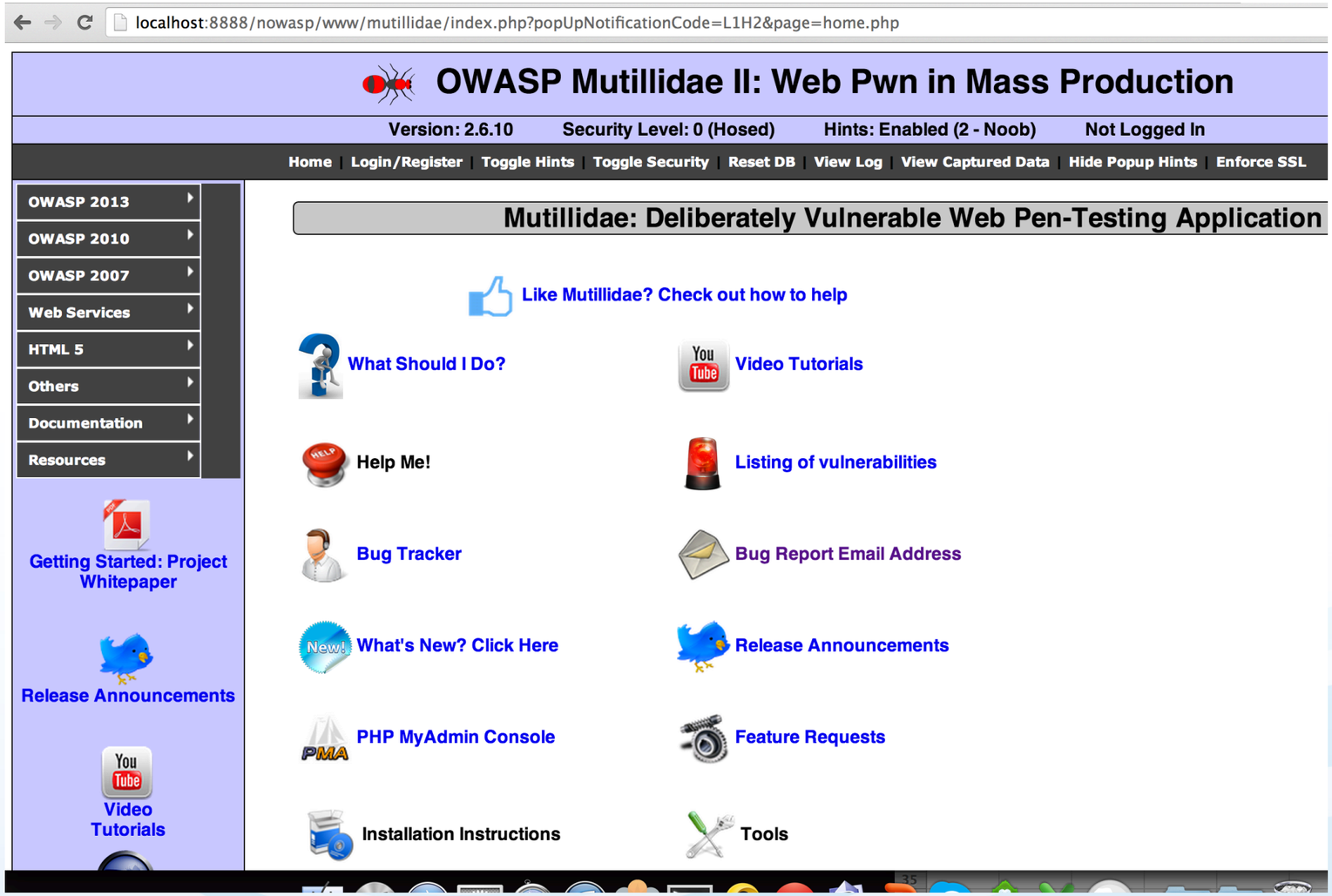


What Is A Hacker Looking For?

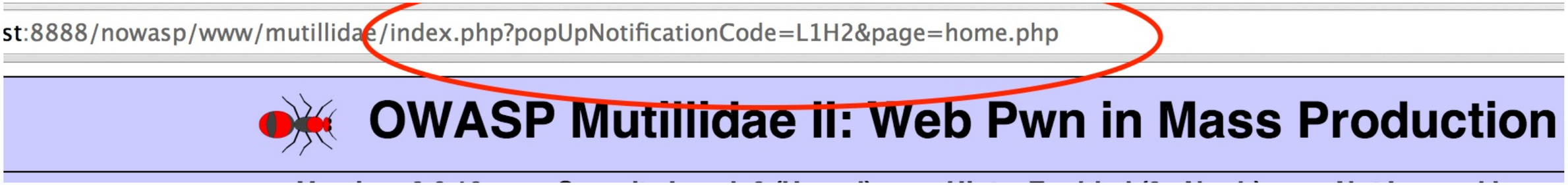
- URL Parameters
- Data Inputs
- 3rd Party Content
- Robots.txt
- Redirects
- Cookies
- Session Data
- Administrator Area/CSRF
- HTML Source Comments
- Weak Passwords
- Weak/Broken SSL
- Old Versions of Site
- Lack of Data Sanitization
- File Uploads
- Business Logic Flaws
- CMS Frameworks
- Company Phone Book
- Company Org Chart
- OSINT
- Outdated Operating System
- Unlocked/Open DNS
- Unnecessary Services

Let’s look at ’em!

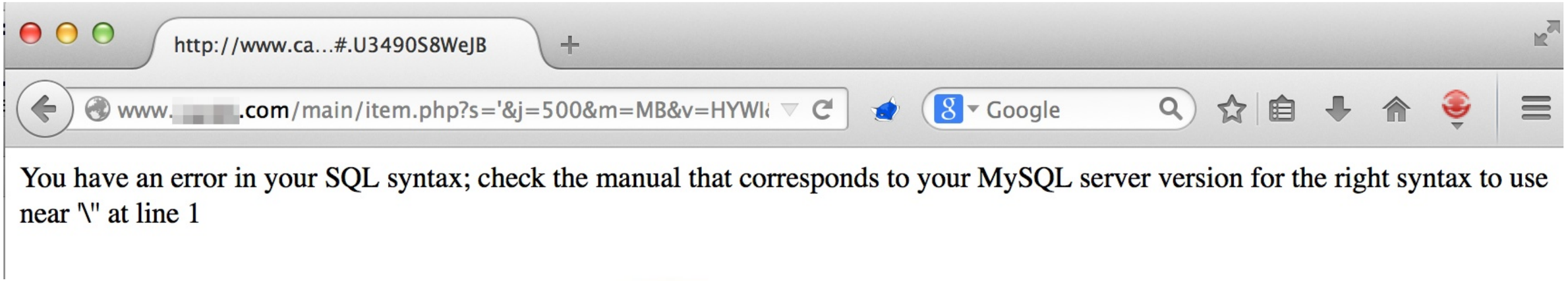
Look At A Web Site

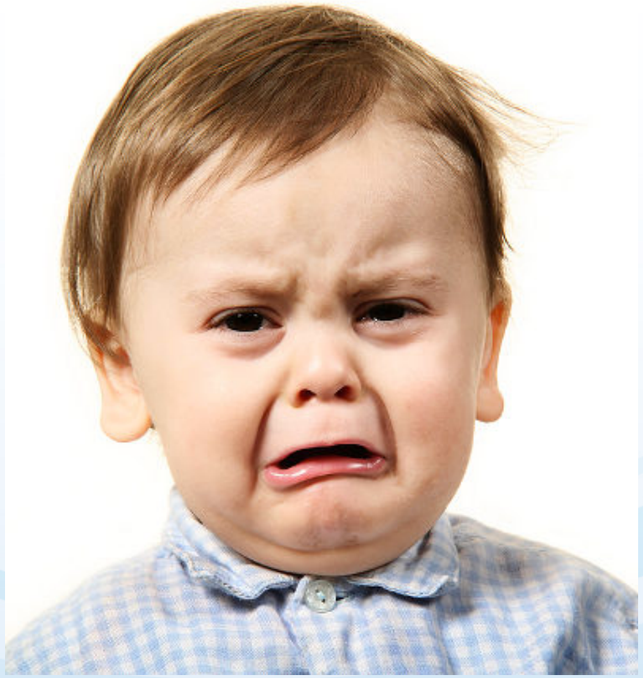


URL Query Parameters



Data Inputs – SQL Injection





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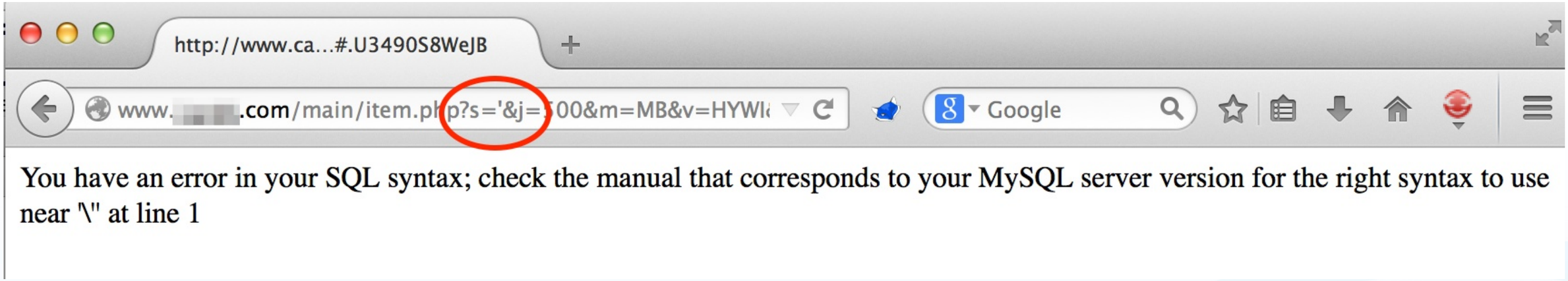

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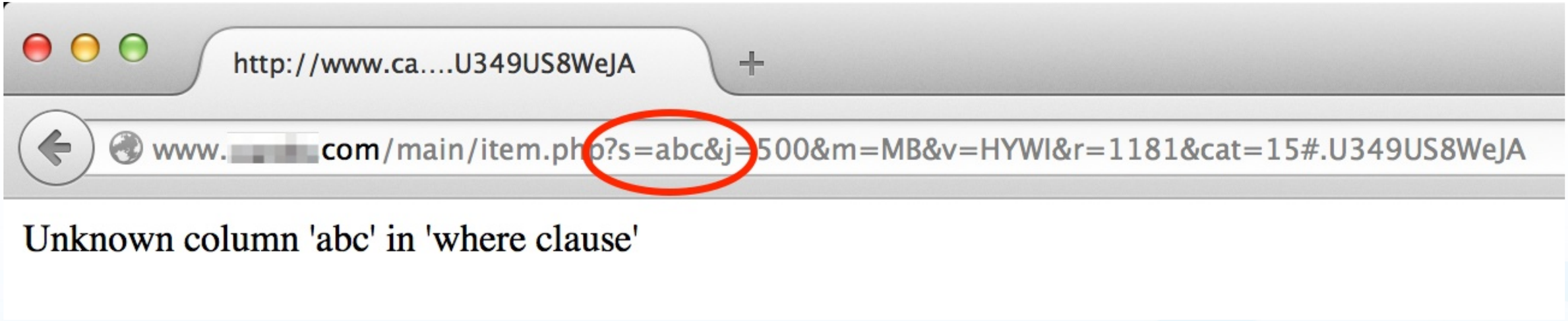


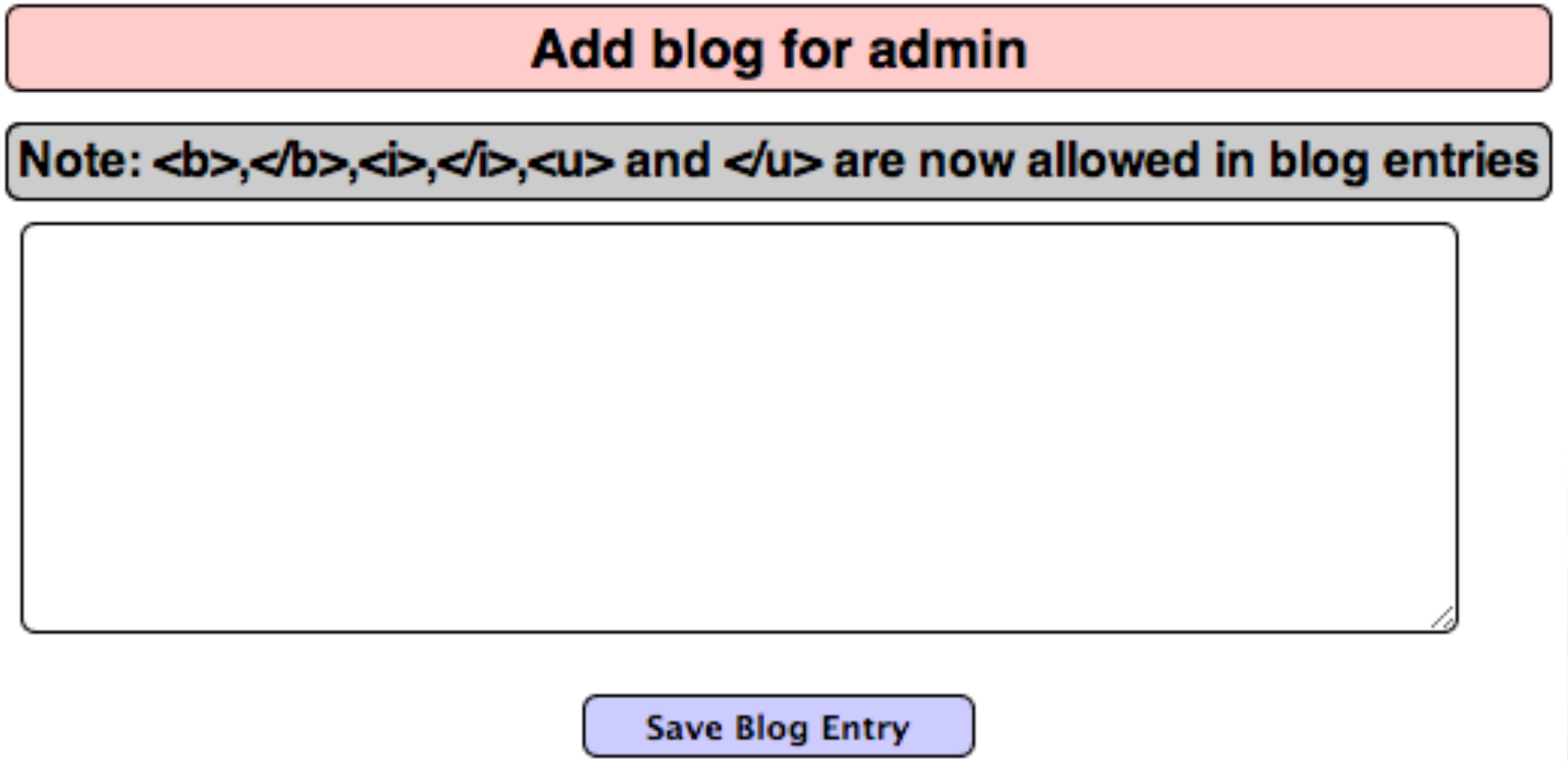
Data Inputs – SQL Injection

Data Inputs – SQL Injection

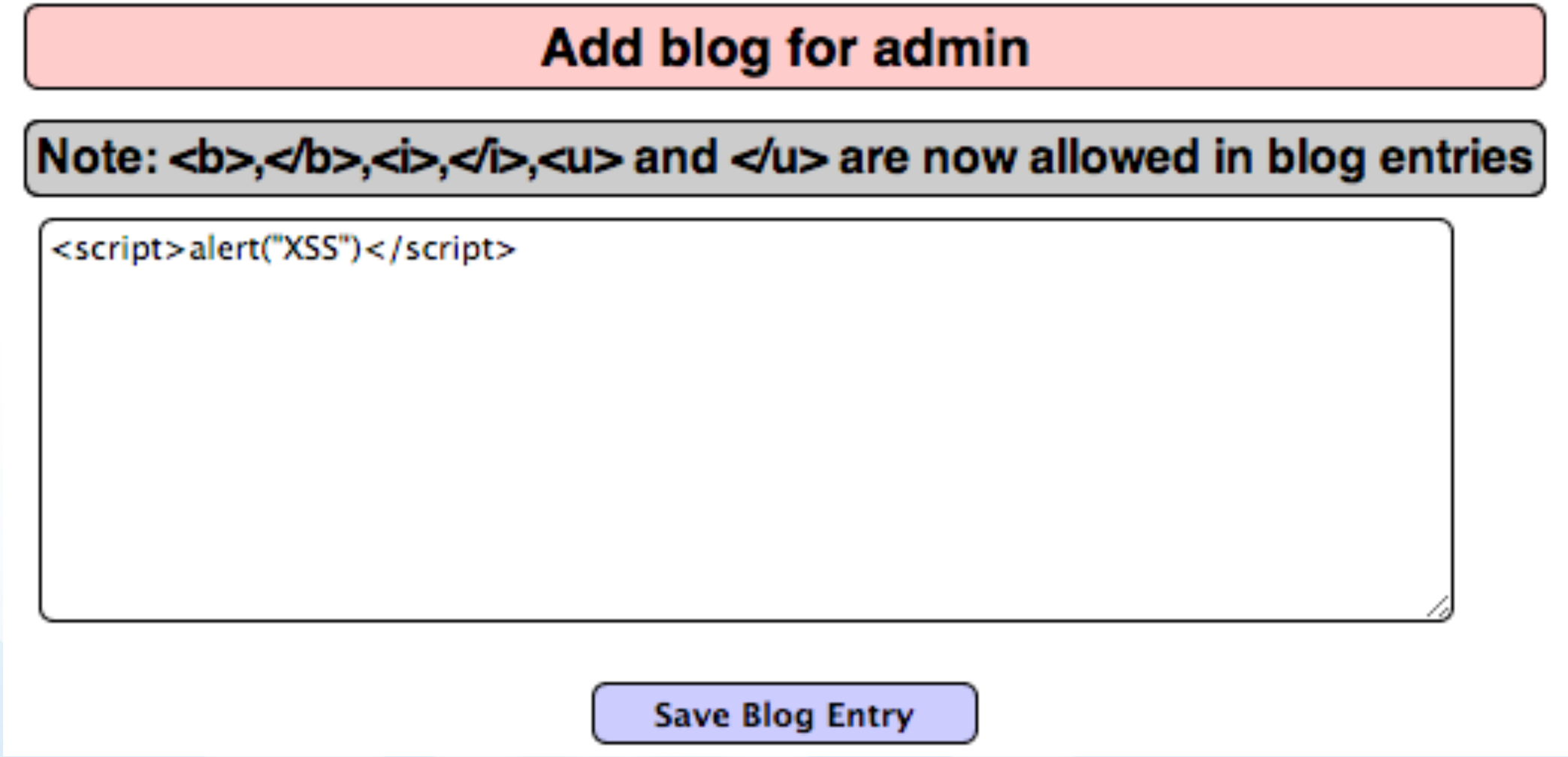
```
sqlmap identified the following injection points with a total of 548 HTTP(s) requests:
---
Place: POST
Parameter: username
    Type: boolean-based blind
    Title: OR boolean-based blind - WHERE or HAVING clause (MySQL comment)
    Payload: username=-1388' OR (3072=3072)#&password=foobar&login-php-submit-button=Login

    Type: error-based
    Title: MySQL >= 5.0 AND error-based - WHERE or HAVING clause
    Payload: username=hacker' AND (SELECT 5358 FROM(SELECT COUNT(*),CONCAT(0x7179796e71,(SELECT (CASE
WHEN (5358=5358) THEN 1 ELSE 0 END)),0x7171796d71,FLOOR(RAND(0)*2))x FROM INFORMATION_SCHEMA.CHARACTER
_SETS GROUP BY x)a) AND 'jPpV'='jPpV&password=foobar&login-php-submit-button=Login
---
[15:43:12] [INFO] the back-end DBMS is MySQL
web application technology: PHP 5.5.10, Apache 2.2.26
back-end DBMS: MySQL 5.0
```

Data Inputs



Data Inputs - XSS



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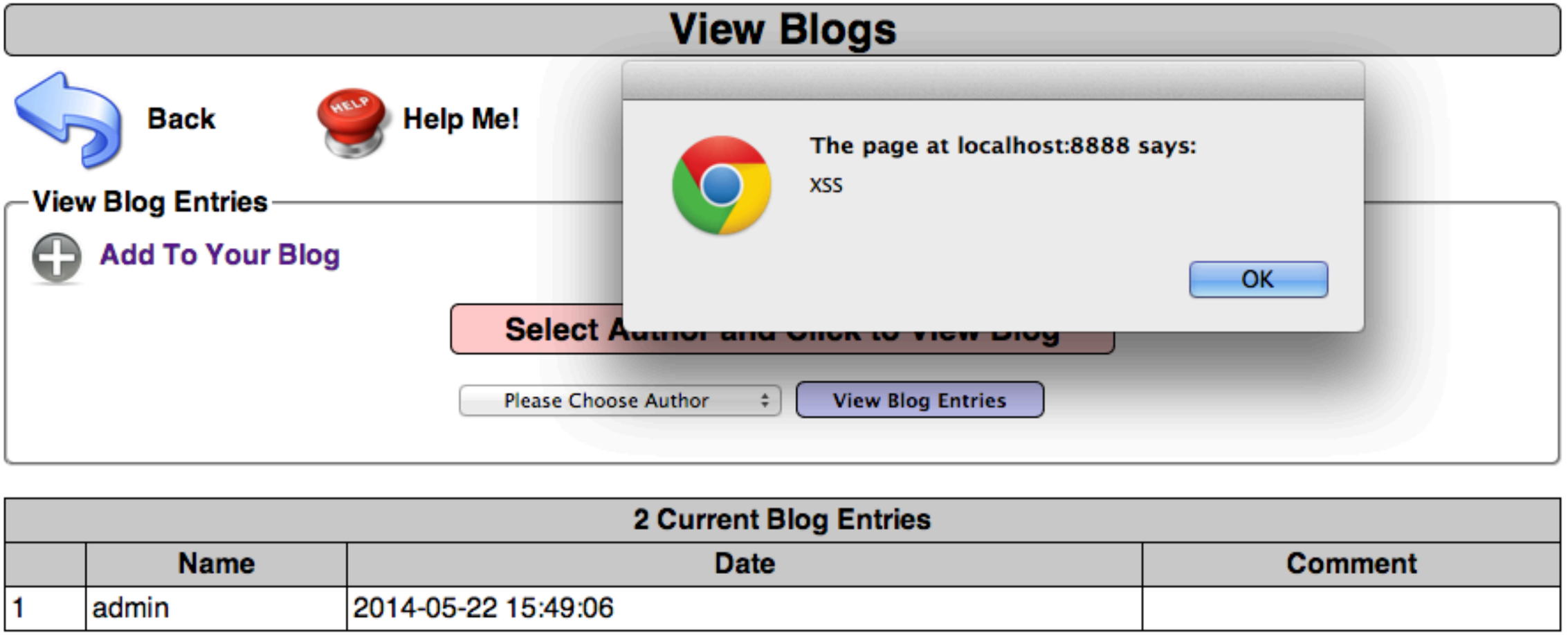

Data Inputs - XSS

http://securitypadawan.blogspot.com/2012/08/xss-what-your-momma-didnt-tell-you.html

“As a result, metasploit has sent the payload, received a shell back and successfully migrated to a new process so that when the user closes the browser, the shell will not be lost.”

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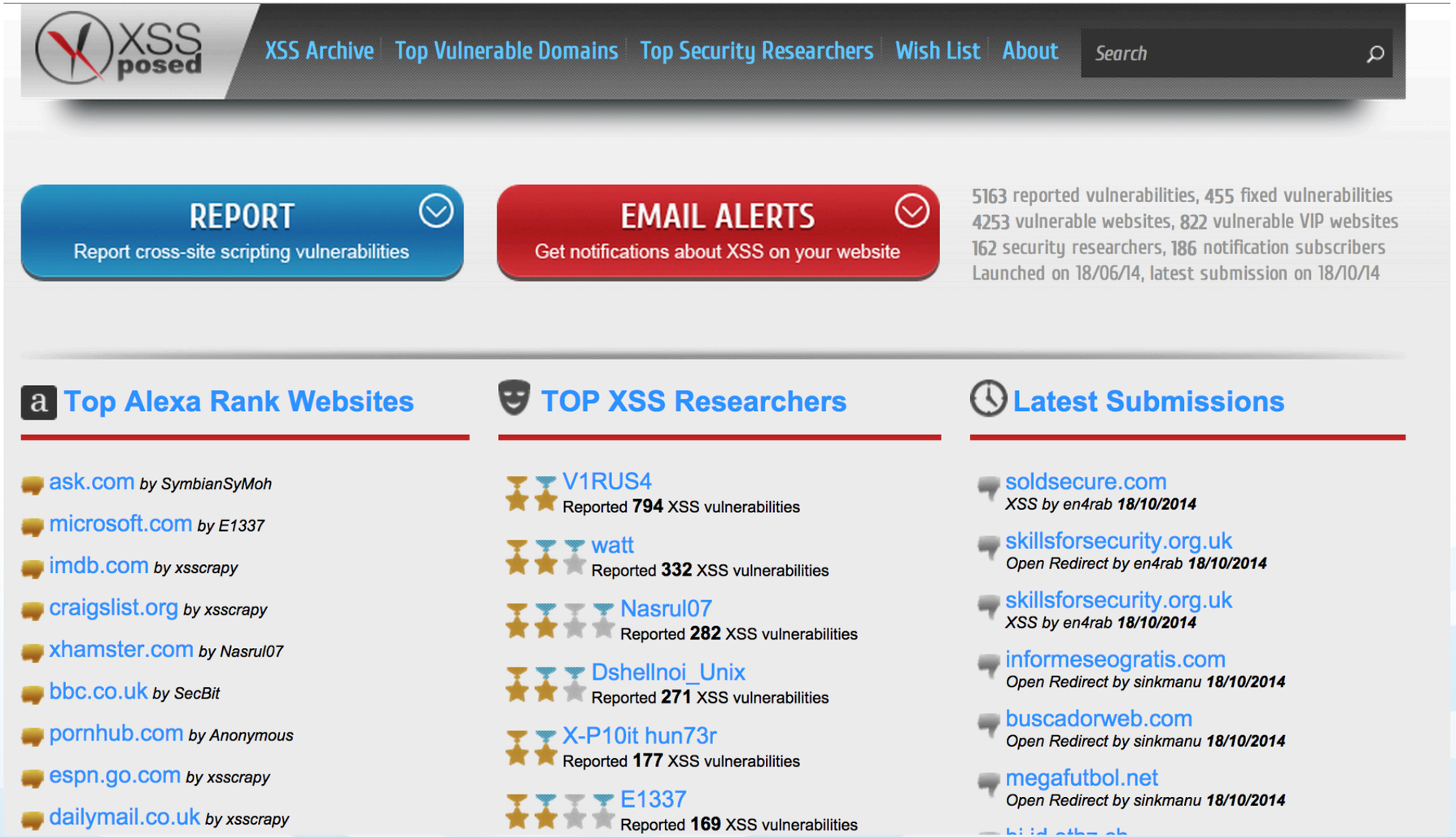
Data Inputs – xssposed.com



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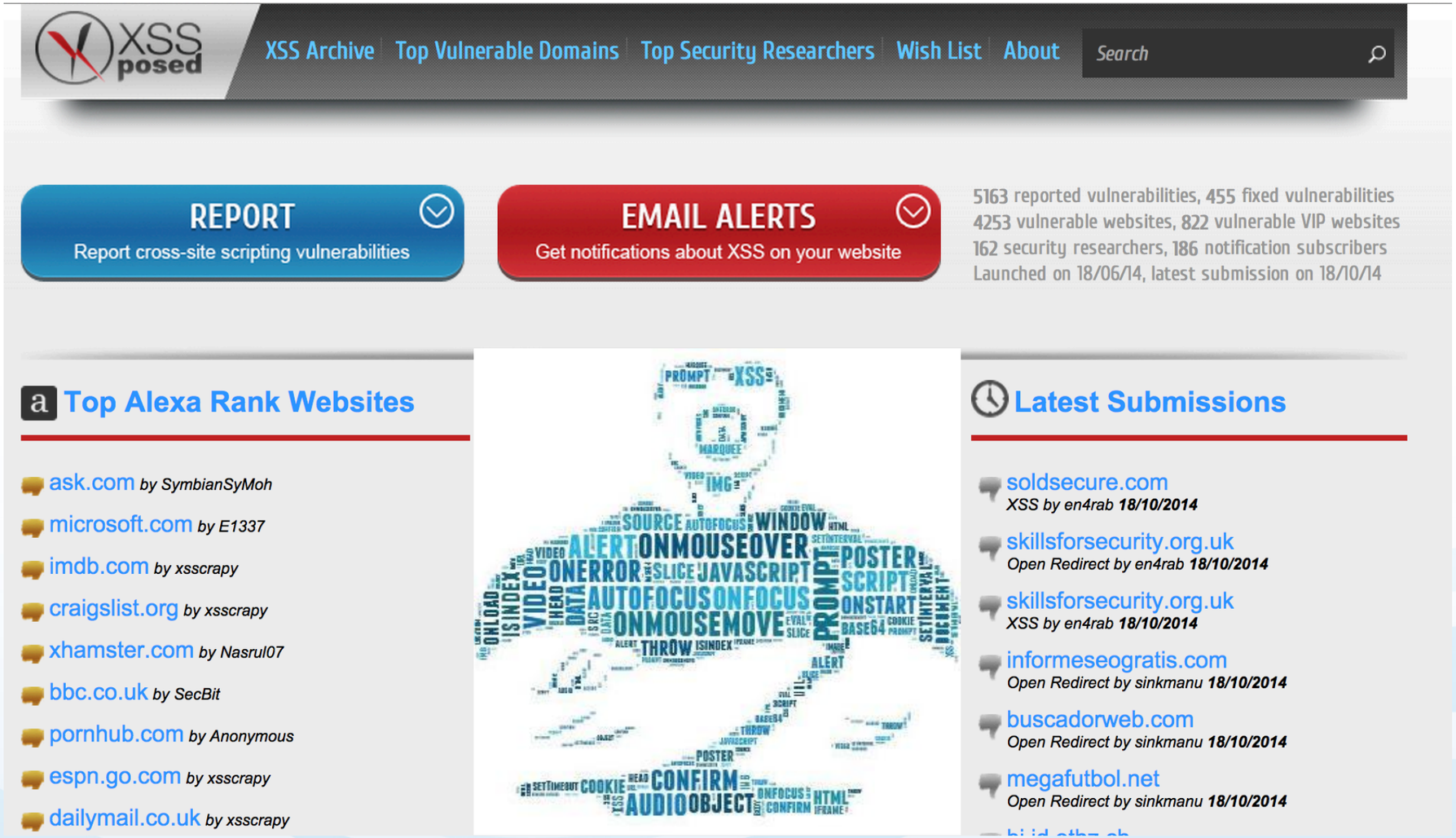
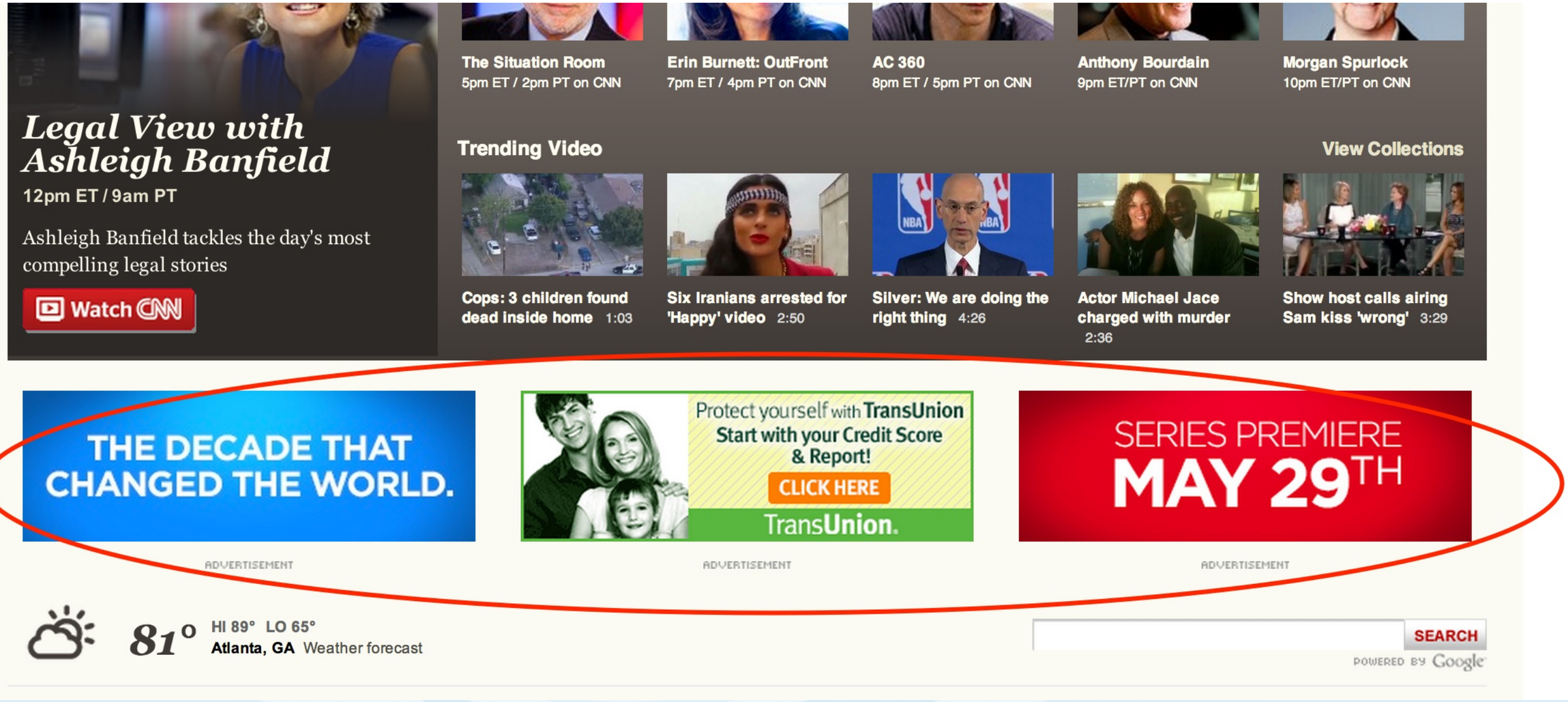


3rd Party Content



3rd Party Content – s0.2mdn.net?

```
▶ <head>…</head>
▼ <body style="margin:0px;" marginwidth="0" marginheight="0">
  ▼ <div class="GoogleActiveViewClass" id="DfaVisibilityIdentifier_2502805388804862259" style="position: relative;">
    ▼ <a target="_blank" href="http://adclick.g.doubleclick.net/aclk?sa=L&ai=BPsuqUnJ_U9u3H9CNlAeW1YCY…
    urce%3D2095%26utm_medium%3Dbanner%26utm_campaign%3Ddr%26dclid%3D%25edclid!">
        <img src="http://s0.2mdn.net/viewad/2769103/ProtectYourself_NO_2_2014_300x100.gif" alt="Advertisement" border="0" width="300" height=
        "100">
      </a>
    </div>
    <script type="text/javascript" async src="//pagead2.googlesyndication.com/pagead/js/lidar.js"></script>
```

Robots.txt

- Intended to guide search engines
- Show directories/files to ***not*** index - Why?
- What will attackers look for?

Robots.txt

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- What will attackers look for?

- Auto-ban at WAF for following?
- Spider Trap

Unvalidated Redirect

Usage:

http://www.site.com/?goto=http://www.google.com

Unvalidated Redirect

Usage:

http://www.site.com/?goto=http://www.google.com

Example:

http://mysite.com/?goto=http://www.evilhackersite.com

Unvalidated Redirect

Usage:

http://www.site.com/?goto=http://www.google.com

Example:

http://mysite.com/rd/?dku=%68%74%74%70%3a%2f%2f1249763400

Unvalidated Redirect

Usage:

http://www.site.com/?goto=http://www.google.com

Example:

http://mysite.com/rd/?dku=%68%74%74%70%3a%2f%2f1249763400

PHISH!!

Cookies & Session Data

Use a plugin!

- **Firefox:** Cookie Manager, Edit Cookies
- **Chrome:** Edit this Cookie, Cookies – app for Chrome
- **Safari:** SafariCookieEditor
- Use a Proxy: Burp, ZAP
- Do it manually!

Cookies & Session Data

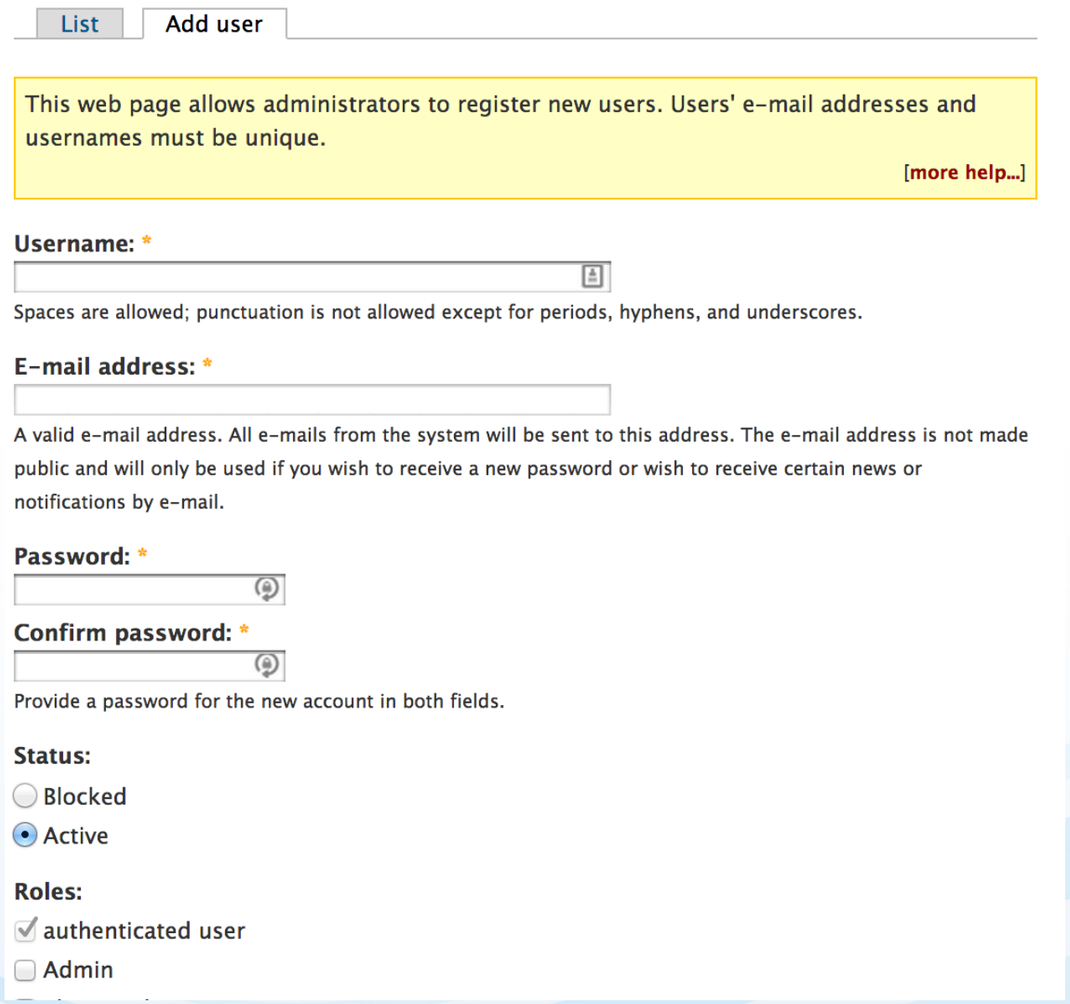
Session replays and Authentication Bypass

Secure flag set?

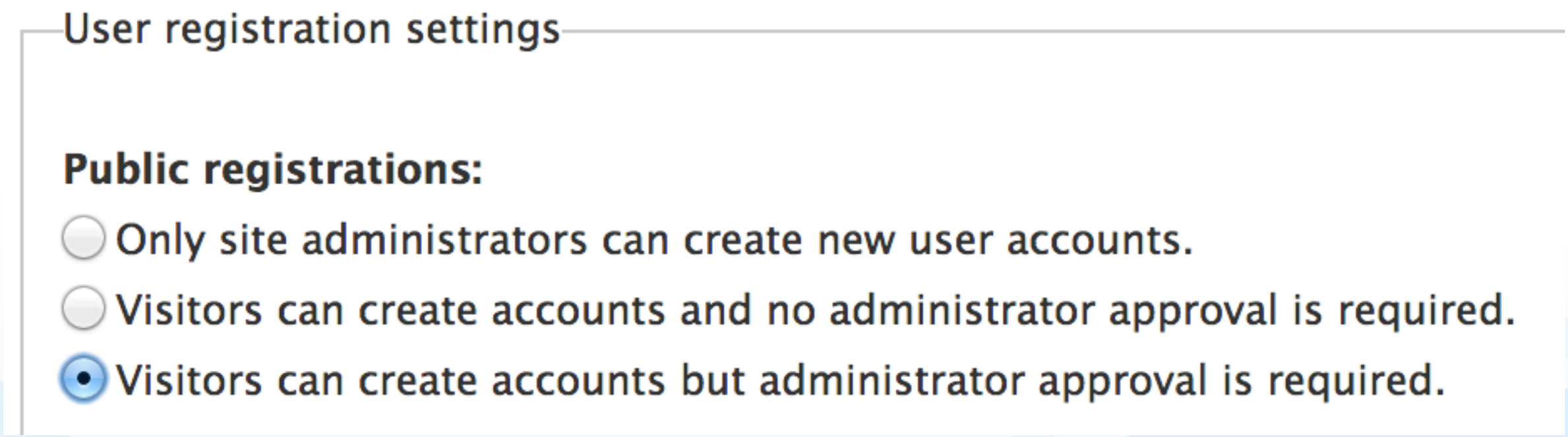
Ars Technica: “Unsafe cookies leave WordPress accounts open to hijacking, 2-factor bypass” – May 26, 2014

Original Research: https://zyan.scripts.mit.edu/blog/wordpress-fail/

Administrator Area



Administrator Area



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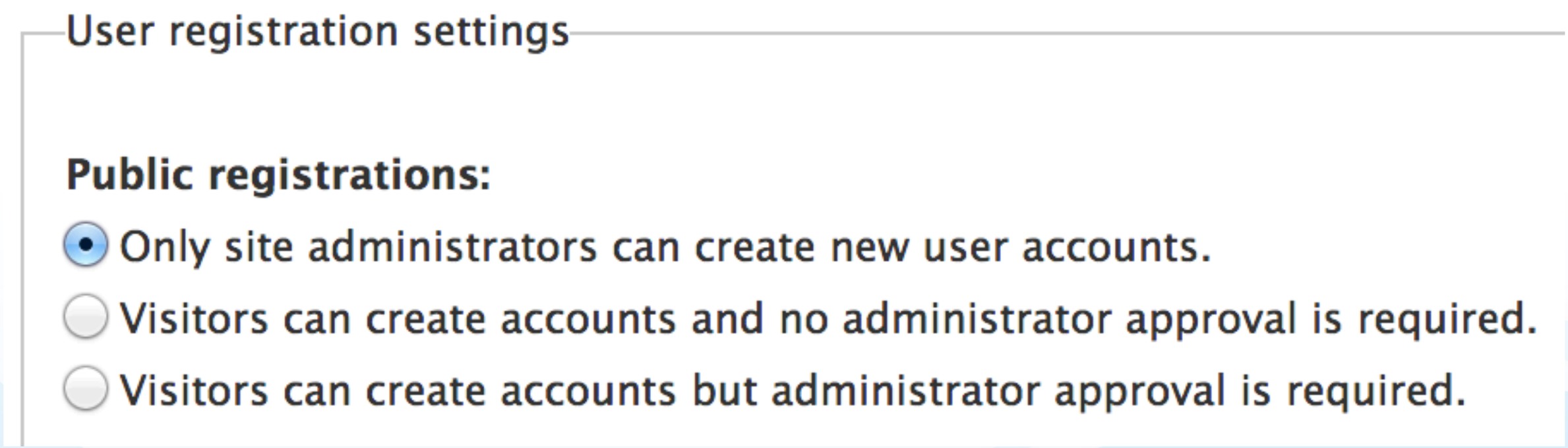
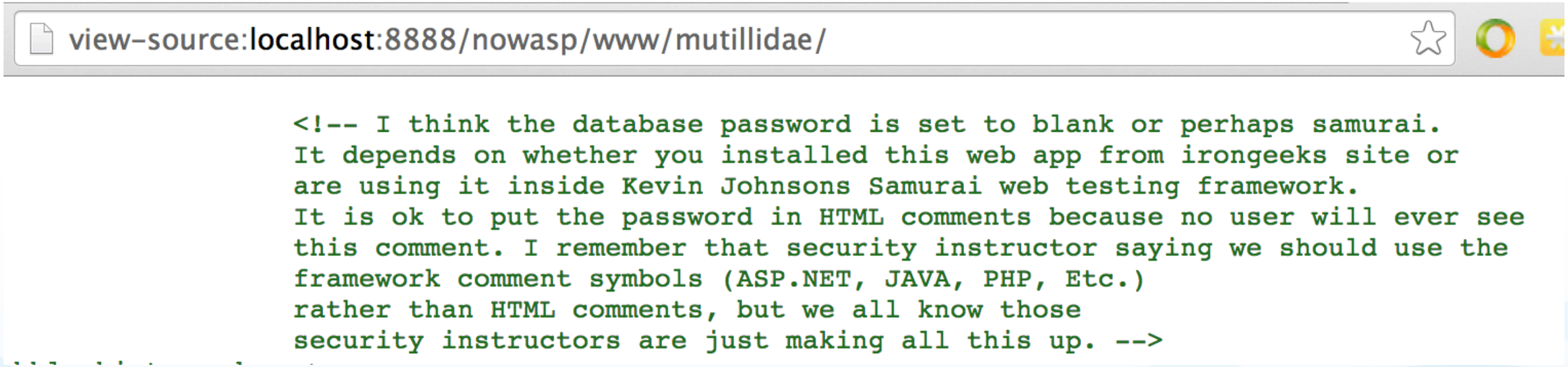


HTML Source Comments



NerdyData **Or use NerdyData.com: search “ToDo:”**

Weak/Default Passwords

http://www.cirt.net/passwords

http://resources.infosecinstitute.com/10-popular-password-cracking-tools/

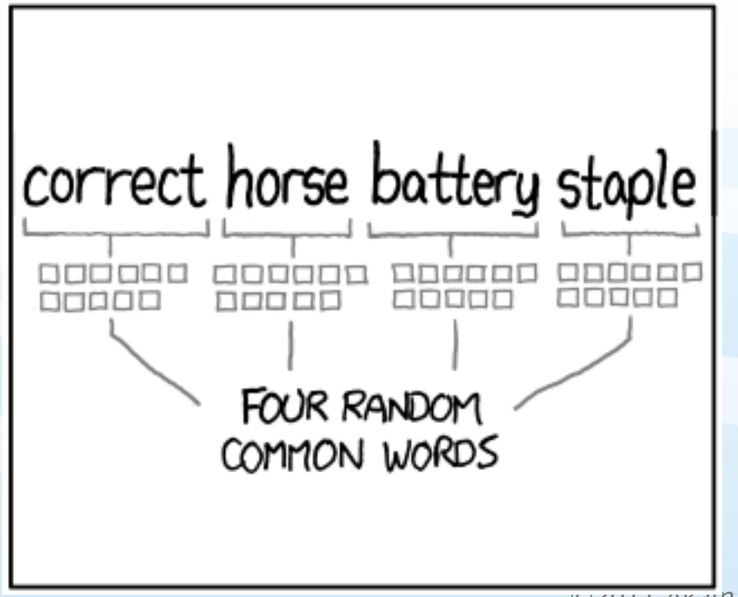
Complex and Long > Length > Complexity

Keyspace ^ length = total # possibilities

http://arstechnica.com/security/2012/12/25-gpu-cluster-cracks-every-standard-windows-password-in-6-hours/

95^8 in just 5 ½ hours, 350B guesses per second

Length of 6, cracks in 2 seconds



Weak/Broken Secure Communications

- Outdated SSL can be broken (http://www.poodletest.com)
- Every secure page must be served via SSL
  - sslstrip by Moxie Marlinspike
- Files requiring authentication must force authentication

Old Versions of Site

File extensions like .old, .bak, .tmp, .svn, .tar, .gz, .git

Example: index.php.old

http://pen-testing.sans.org/blog/pen-testing/2012/12/06/all-your-svn-are-belong-to-us

https://www.google.co.in/search?q=filetype%3Asql+site%3Acom+and+%22insert+into%22+admin+%222014%22&oq=filetype%3Asql+site%3Acom+and+%22insert+into%22+admin+%222014%22&aqs=chrome..69i57j69i58.237j0j9&sourceid=chrome&es_sm=91&ie=UTF-8

File Uploads

- Usually intended to upload attachments, images, etc.
- Specific file type intended

Problems:

- Other file types allowed?
- Executable file types?
- End user control where file goes?

Business Logic Flaws

- Not scannable
- Know how site should work
- Usually due to unvalidated user input

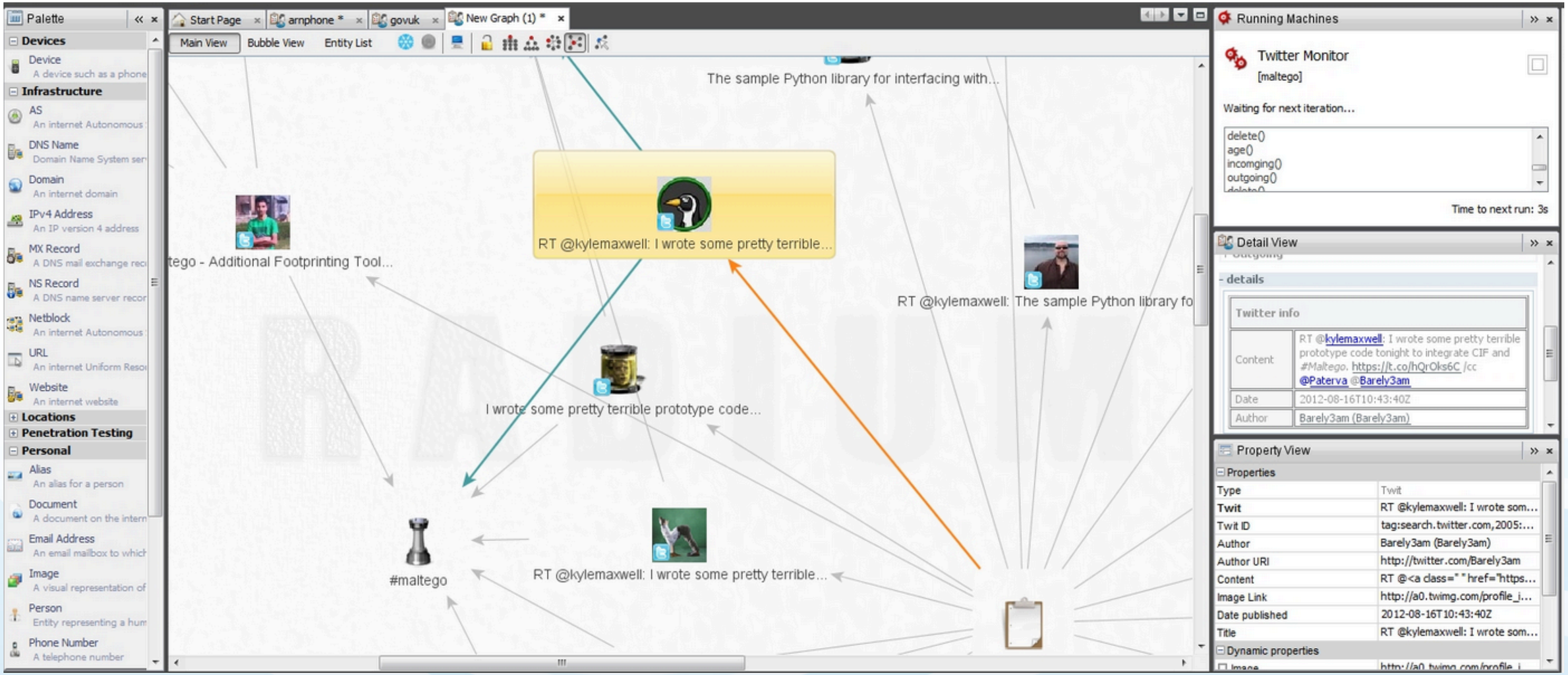
CMS Frameworks

- Wordpress, Drupal, Joomla
- Set it and forget it
- Easy to set up, requires frequent maintenance/updates
- Plugins/modules/custom code
- Templates/themes
- Oct 15, 2014: https://www.drupal.org/SA-CORE-2014-005

Company/Employee Information

- Phone book
- Organizational Chart
- OSINT
- Facebook/Twitter/Blogs/Cat pages
- Maltego
- Social Engineering!

Company/Employee Information



Outdated Operating System

http://www.exploit-db.com

http://www.cvedetails.com/

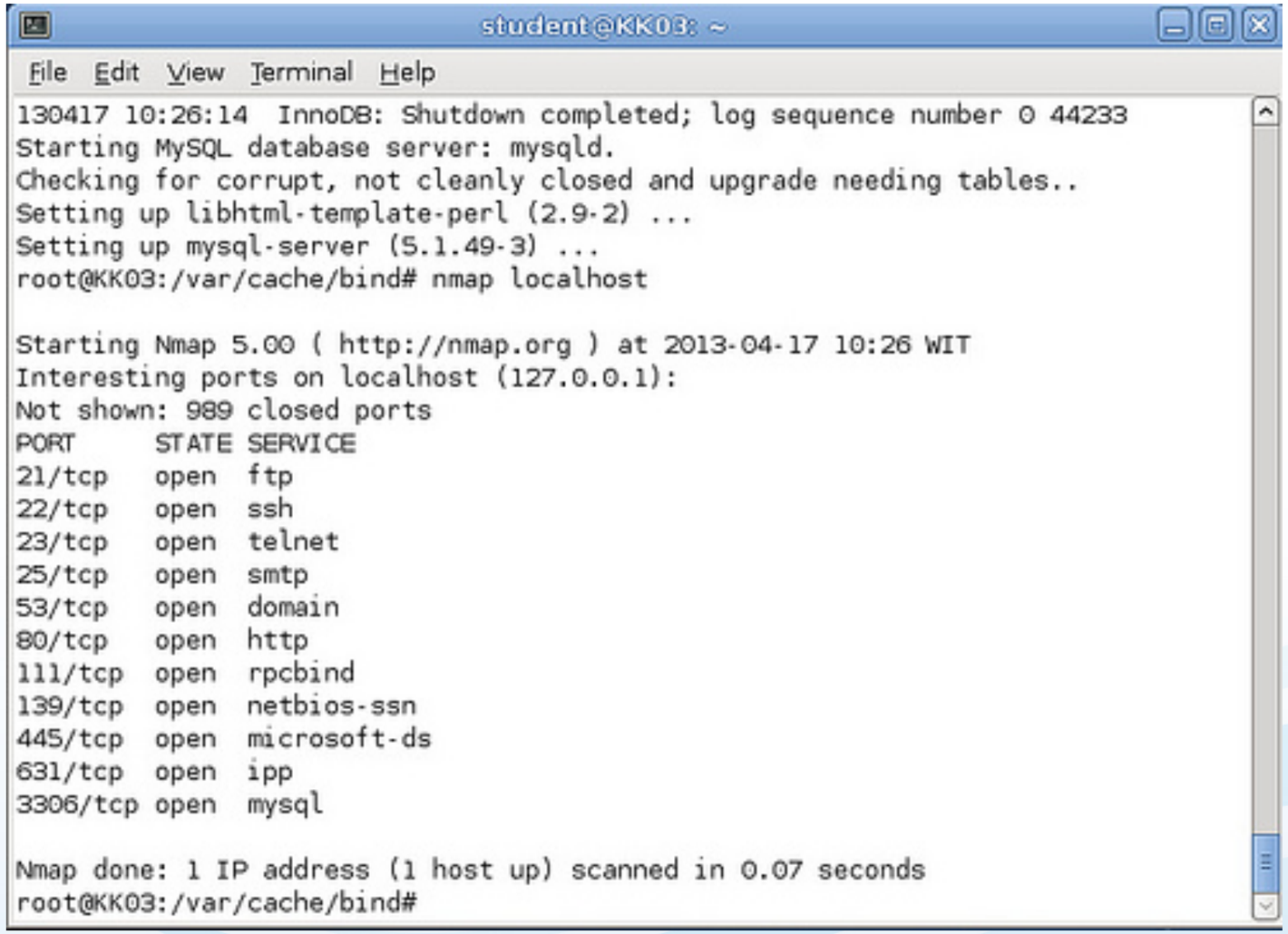
Many others!

DNS Hijacking

Set locks at two levels:

- Client
  - ClientTransferProhibited
  - ClientDeleteProhibited
  - ClientUpdateProhibited
- Server
  - ServerTransferProhibited
  - ServerDeleteProhibited
  - ServerUpdateProhibited

Running Unnecessary Services



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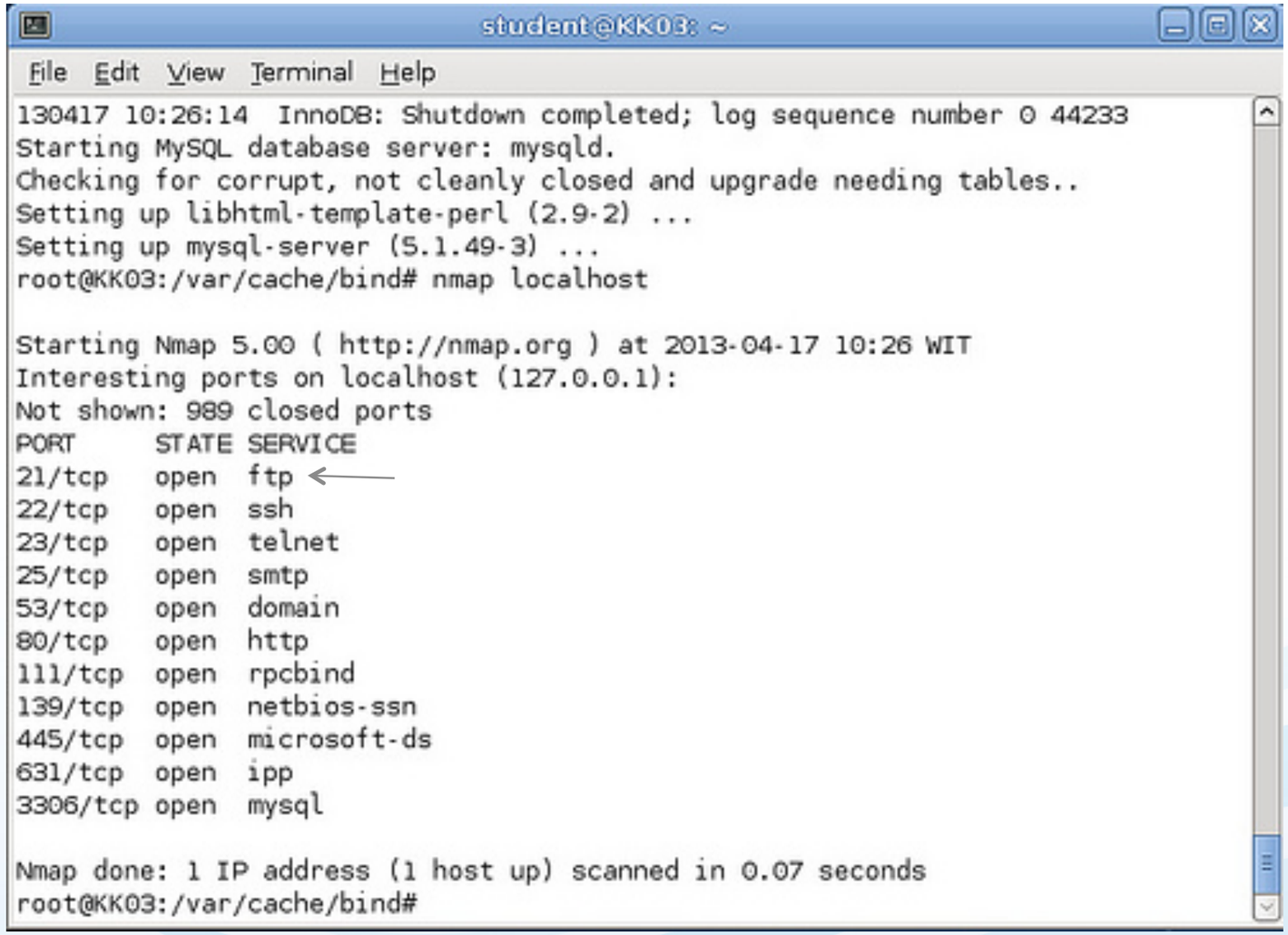

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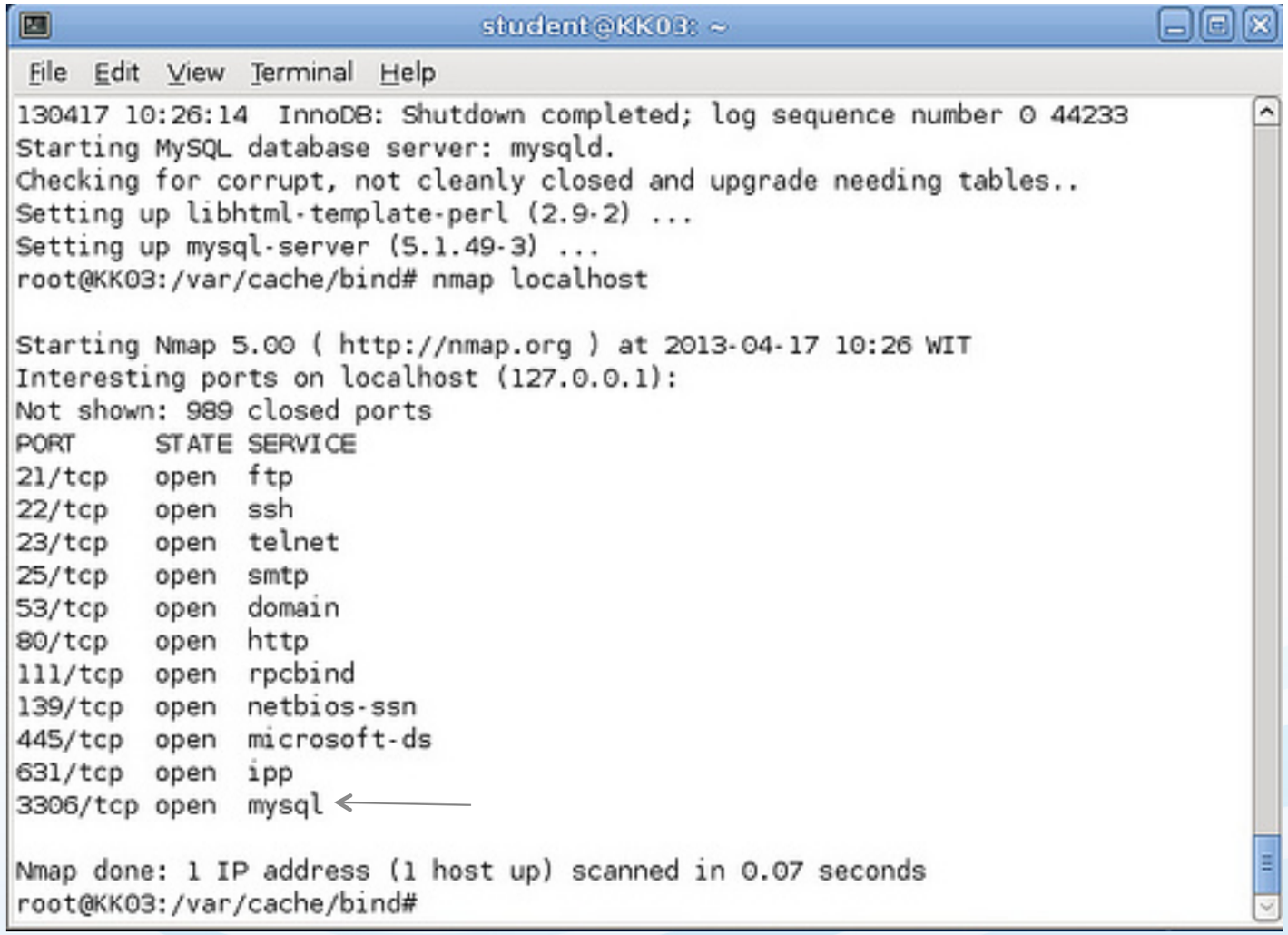

Scanners!

“Web Application Vulnerability Scanners are the automated tools that scan web applications to look for known security vulnerabilities such as cross-site scripting, SQL injection, command execution, directory traversal and insecure server configuration.”

- https://www.owasp.org/index.php/Category:Vulnerability_Scanning_Tools

Examples:

- Acunetix
- Nikto
- Nessus
- NTOSpider
- AppScan
- WebInspect

Questions?

Oh and…

https://goo.gl/25jV8d

Contact:

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