White-hat Google-Hacking MySQL

Sheeri Cabral

Senior DB Admin/Architect, Mozilla

@sheeri www.sheeri.com

What is White-Hat Google Hacking?

Hacking

Using Google

White-hat

Where to Start

Do some searching

http://johnny.ihackstuff.com/ghdb

Security Advisories

App and Web servers

Applications

Companies

Google's TOS

Under 18?

No automation

What's not in the TOS

https://www.google.com/accounts/TOS

- past versions

Password Hashes

Hash Dictionaries like http://hashash.in/

Password hash is
*13824B0ECE00B527531D2C716AD36C23AC11A30B

What is the password in plaintext?

How to Use Google

wildcards * .

Different media types

Boolean search

Google Basics

10 word limit

AND assumed

foo | bar

Operators

http://www.google.com/help/operators.html

/cheatsheet.html

Site matters

filetype: vs inurl:

Google Dork

site:www.sheeri.com inurl:?id=1..100000

Vulnerable Locations

Common paths

Open source = double-edged sword

Some To Try

inurl:config.php

inurl:php?

inurl:delete

inurl:delete.php?id=

link:private.yourcompany.com

numrange:

More To Try

site:sheeri.com filetype:php inurl:id

- Then test out injection

http://*:*@www.sheeri.com

intitle:Remote.Desktop.Web.Connection site:sheeri.com

Further study

http://bit.ly/ghacks0

http://bit.ly/ghacks1

www.securityvulns.com

Defensive Strategies

Validate/scrub input

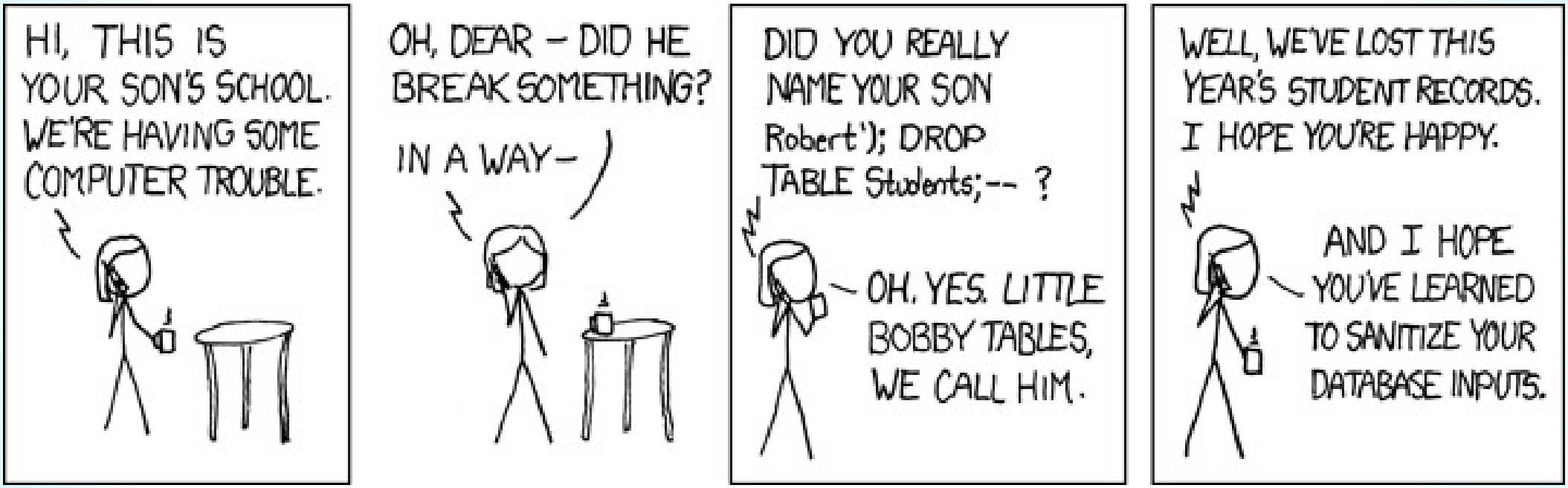
CSRF – Validate source

XSS

SQL Injection Cheat Sheet

- http://bit.ly/sqlinjcheat

SQL Injection



SQL Injection

- http://bit.ly/explainsqlinj

```
SELECT count(*) FROM users WHERE
  username='$user' and pass='$pass';

-- if count(*)>0, log in!
```

SQL Injection

- http://bit.ly/explainsqlinj

```
SELECT count(*) FROM users WHERE
  username='$user' and pass='$pass';
-- if count(*)>0, log in!
```

- Pass: hi' or 1=1

```
SELECT count(*) FROM users WHERE
  username='foo' and pass='hi' or 1=1';
```

Validate User Input

- Look for ; \g \G ' “ UNION
- HTML encoding
- NULL or char(0)
- VARCHAR and ' '

Validate User Input

- Save yourself time
- Buffer overflows
- CHARSET

Trusting GET or POST

- Only from certain pages
- cookies – even with valid session ids
- register_globals=off in PHP

When, Not If

How is application DB access stored?

As strong as your weakest link

No vaccine

Regression Testing Tools

http://sites.google.com/site/murfie/

- goolink
- crapscan
- goohosts

More Actions

Google Hacking Software

- http://code.google.com/p/googlehacks/

Google Hacks Honey Pot

- http://ghh.sourceforge.net/

Google honors robots.txt

Vulnerability Checking Tools

Goolag.org – GUI – old, but open source

Wikto/Nikto

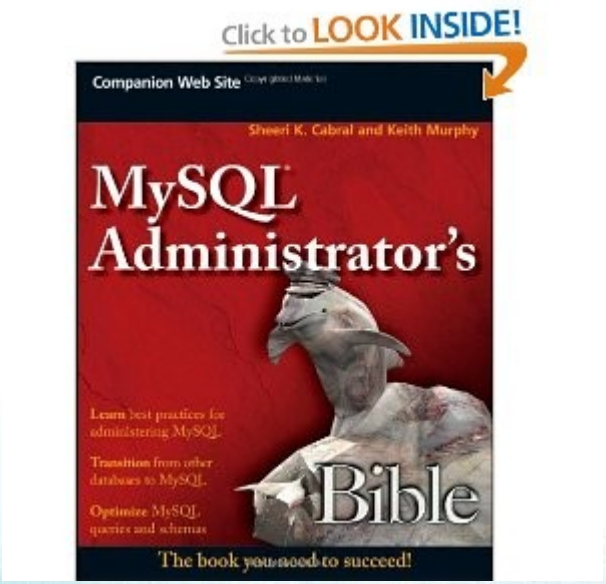
Questions? Comments?

OurSQL podcast

- www.oursql.com

MySQL Administrator's Bible

- tinyurl.com/mysqlbible



bit.ly/ghackmysql

kimtag.com/mysql

planet.mysql.com

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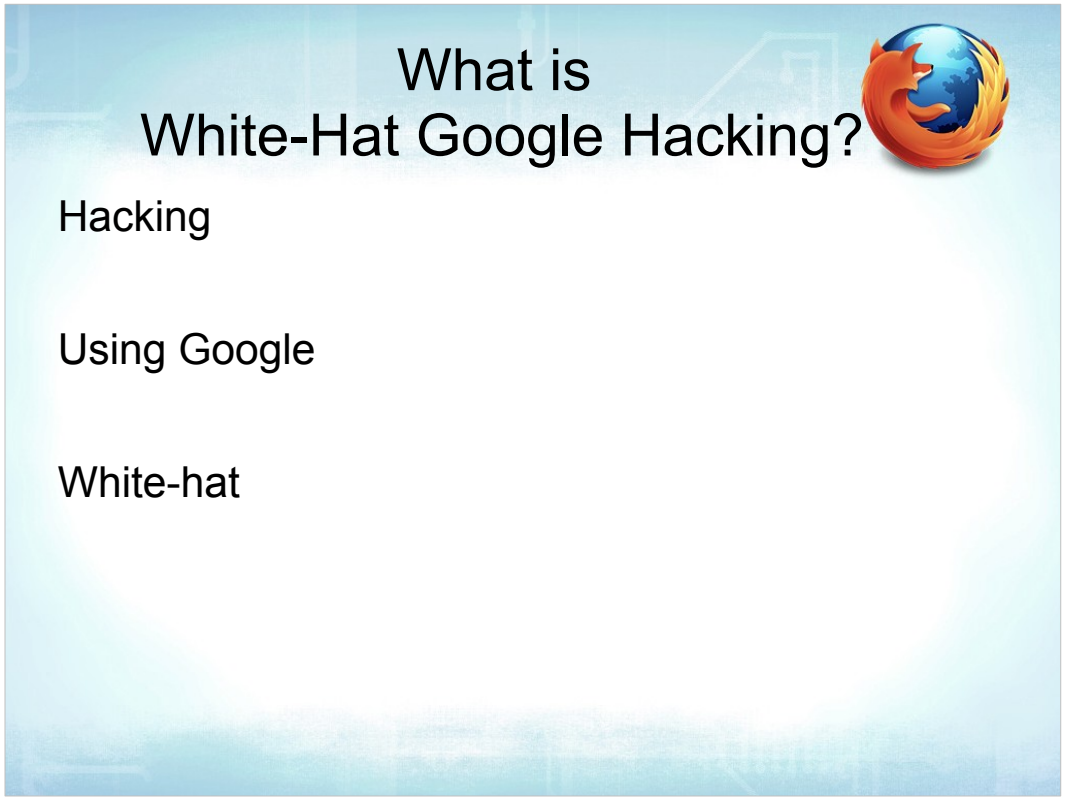


By “hacking” I mean poking around to see if your site has security vulnerabilities.

Google hacking uses Google to research. For instance, if your site runs “wordpress”, you can search for:

wordpress security vulnerability exploit

site:sheeri.com wordpress

White hat – meaning the good, legal kind.

Because Google caches pages too, you can find information. This also means that other archive sites can be useful. You may take “powered by wordpress off your site, but once you know about it....!” not images though.

Sometimes it helps to see what's already out there.

info:www.sheeri.com

Go to:
http://johnny.ihackstuff.com/ghdb/

click on “error messages”

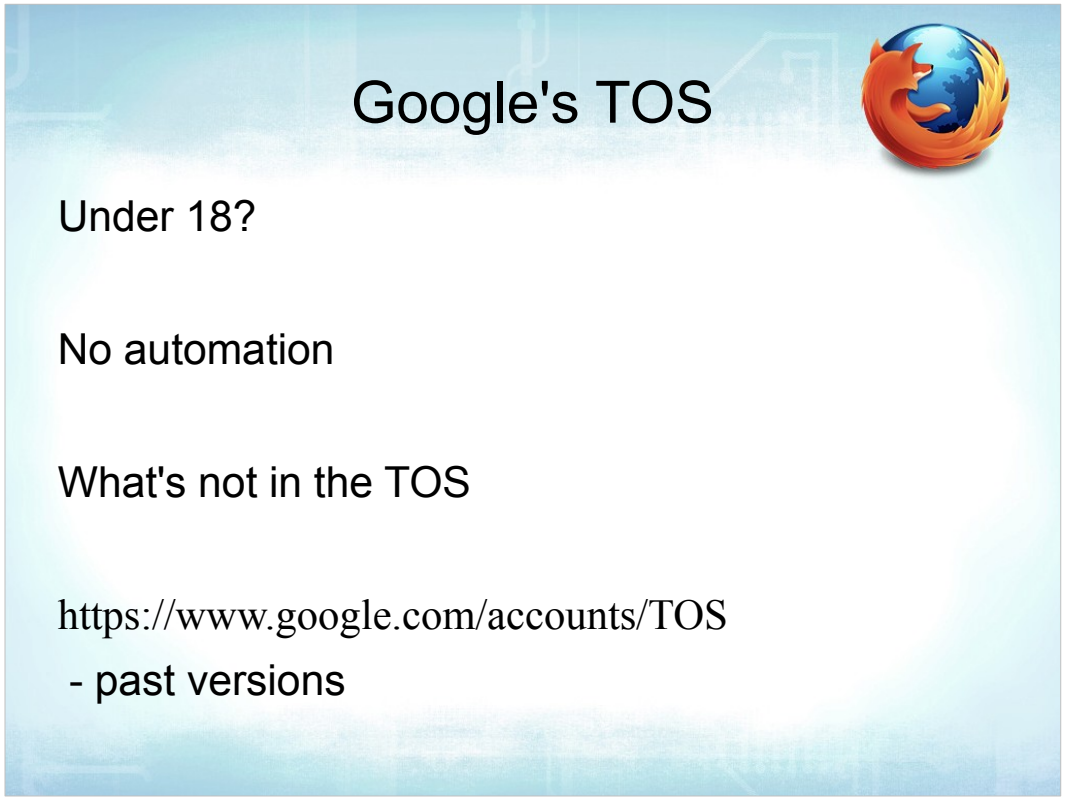
Show a few

for the impatient, search Google:
site:johnny.ihackstuff.com mysql

Note that you'll be searching your site only, but hackers will be searching for specific vulnerabilities.

site:sheeri.com "powered by wordpress"

site:www.sheeri.com MySQL.Error



https://www.google.com/accounts/TOS

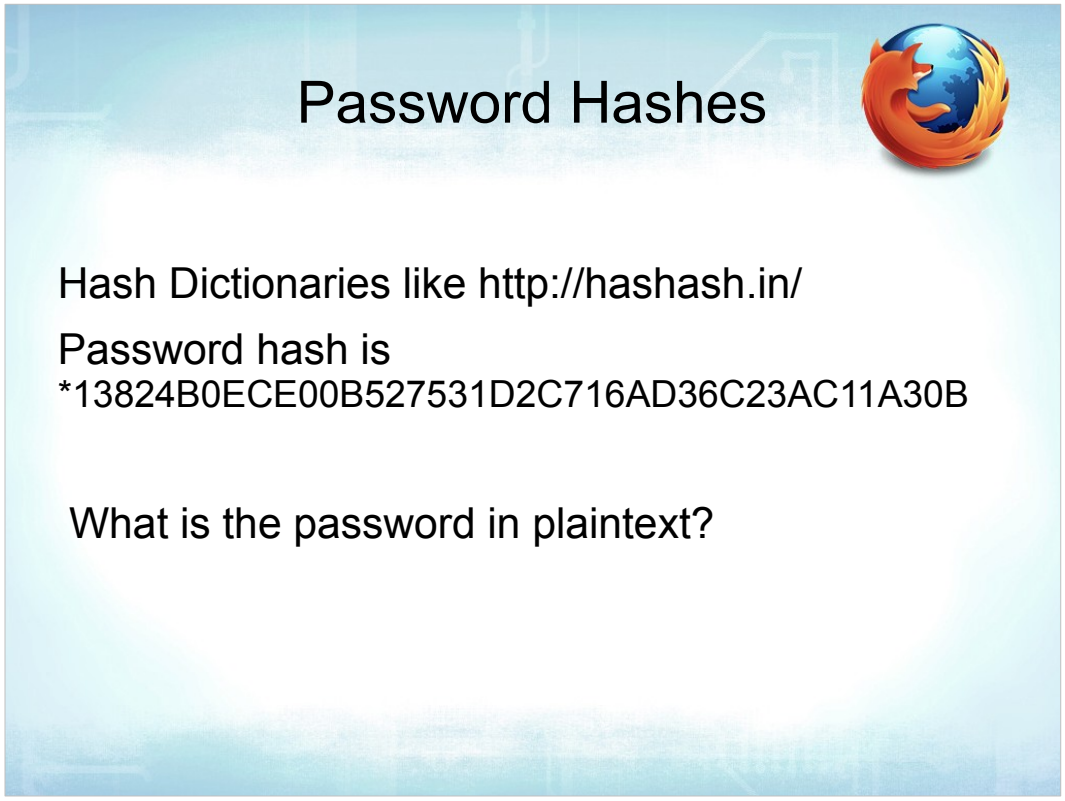
If you're under 18, please don't use Google. (although they have the magic clause 20.5 – if one part is bad the rest of the contract is still good)

Section 4.5 – number of transmissions or data storage – so if you're automating searches and retrievals, you want to throttle yourself

Section 5.3 -- don't even try to automate!

What's not in the TOS -- “don't break laws using Google's services”. That being said....don't!

13.3 (B) Google is required to do so by law (for example, where the provision of the Services to you is, or becomes, unlawful);



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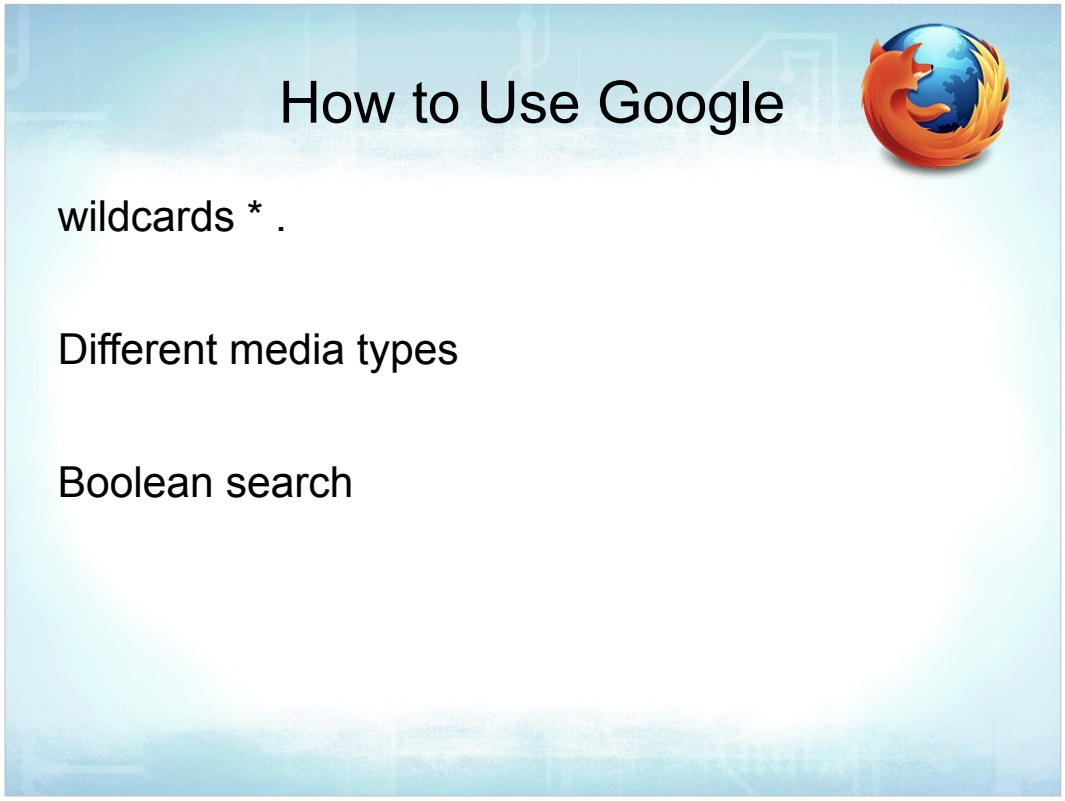
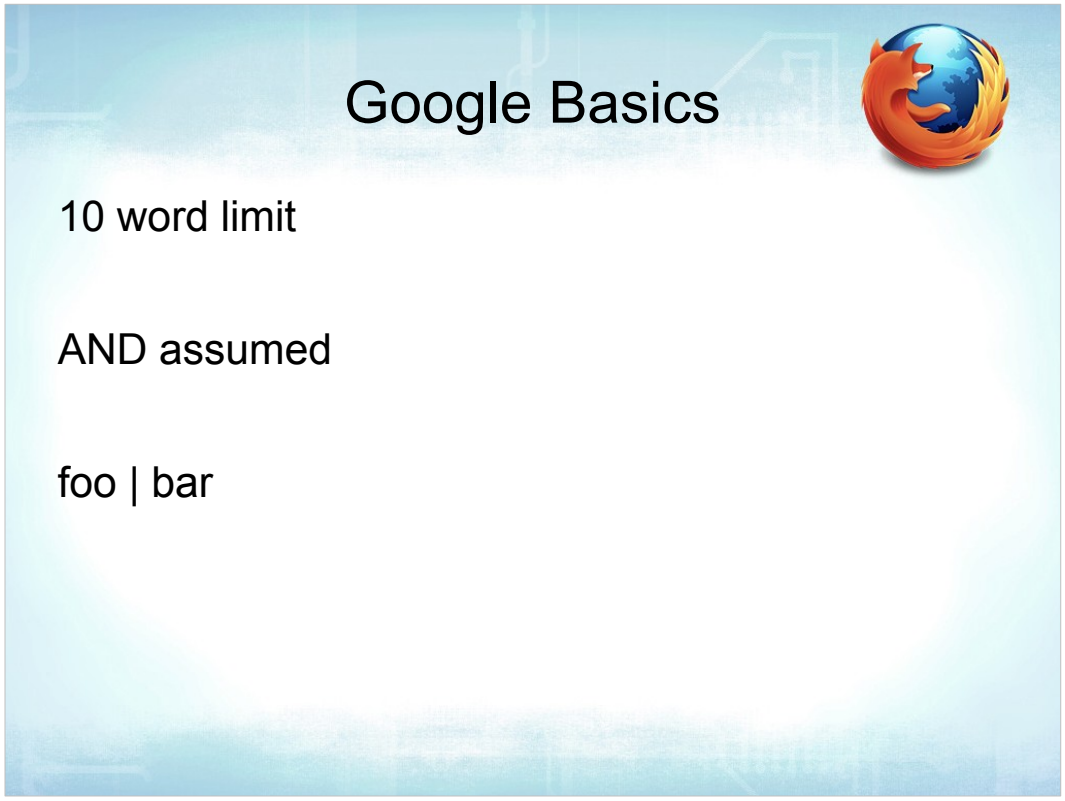


* is 1 word missing, . Is 1 character.

Not bad, because Google automatically does the stemming you want (ie, database vs databases)

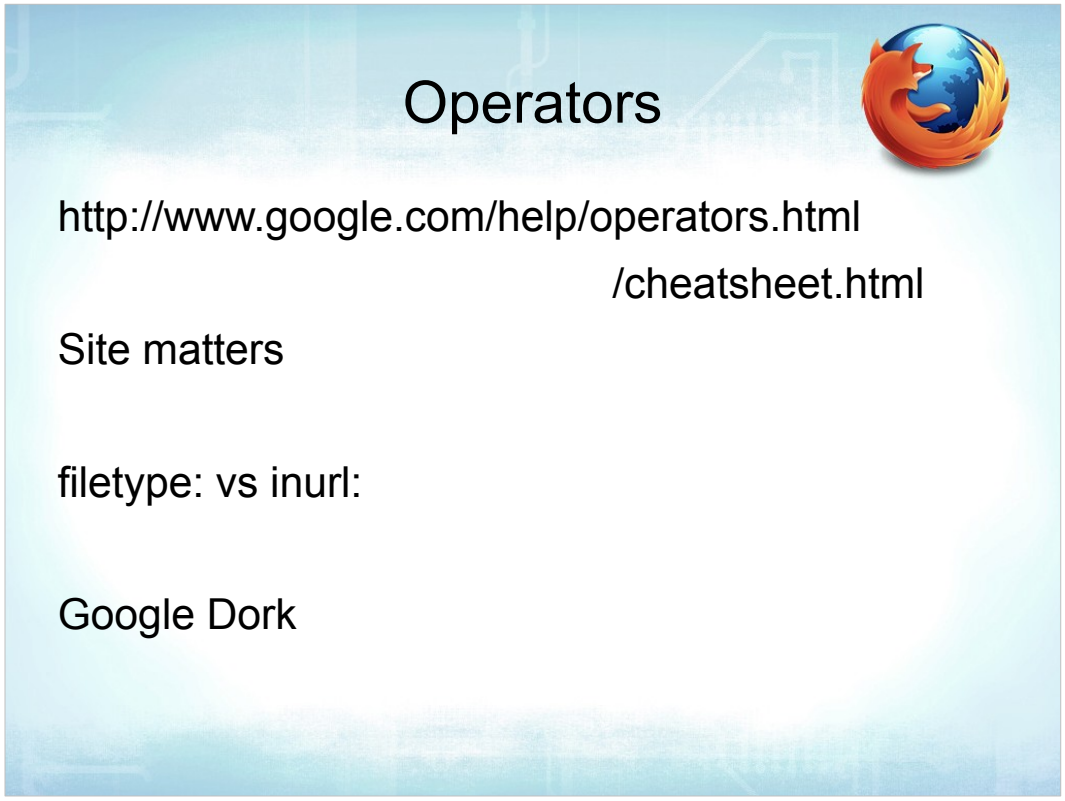
different media types – blog search vs. news search, etc.

+ will force a result, if you want a common word like “a” - will force no result with that. Also, quotes around things do to exact matches.



Foo bar searches for “foo” and “Bar”

but foo | bar searches for either or. UNION of results.
Similar likely because Google weighs relevance....



http://www.google.com/help/operators.html

we already mentioned site:

site:sheeri.com viagra

site:www.sheeri.com viagra

site:sheeri.net viagra (same)

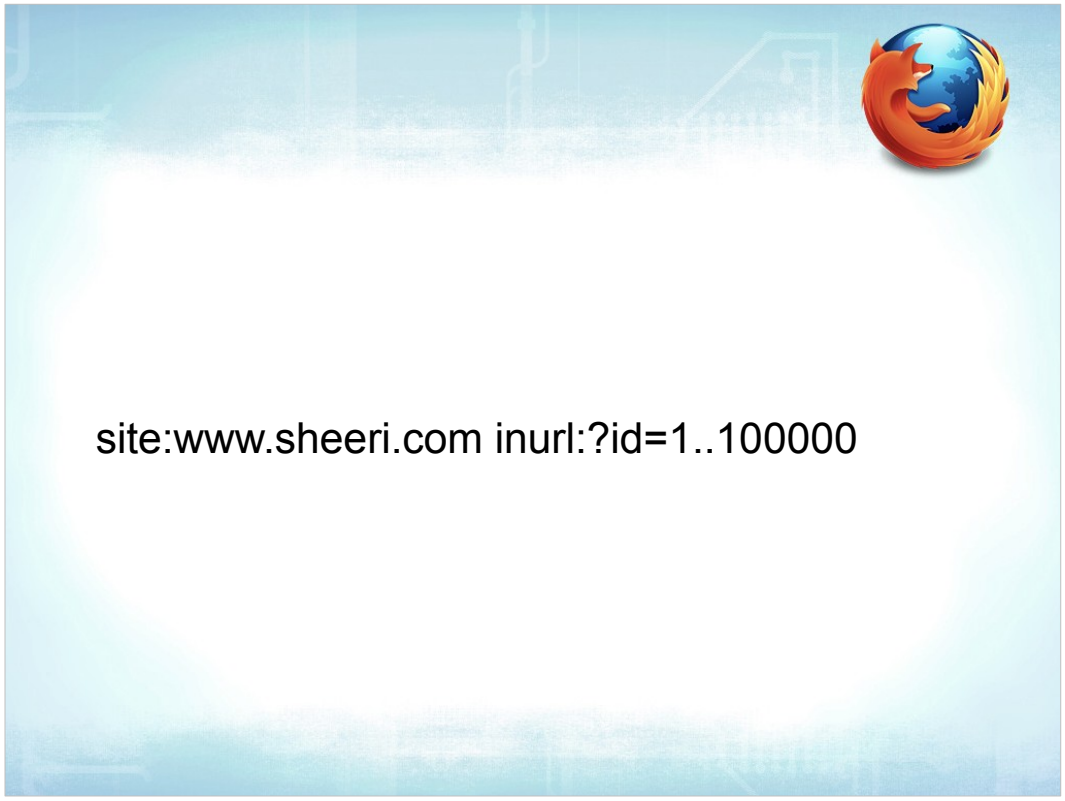
site: sheeri.org viagra

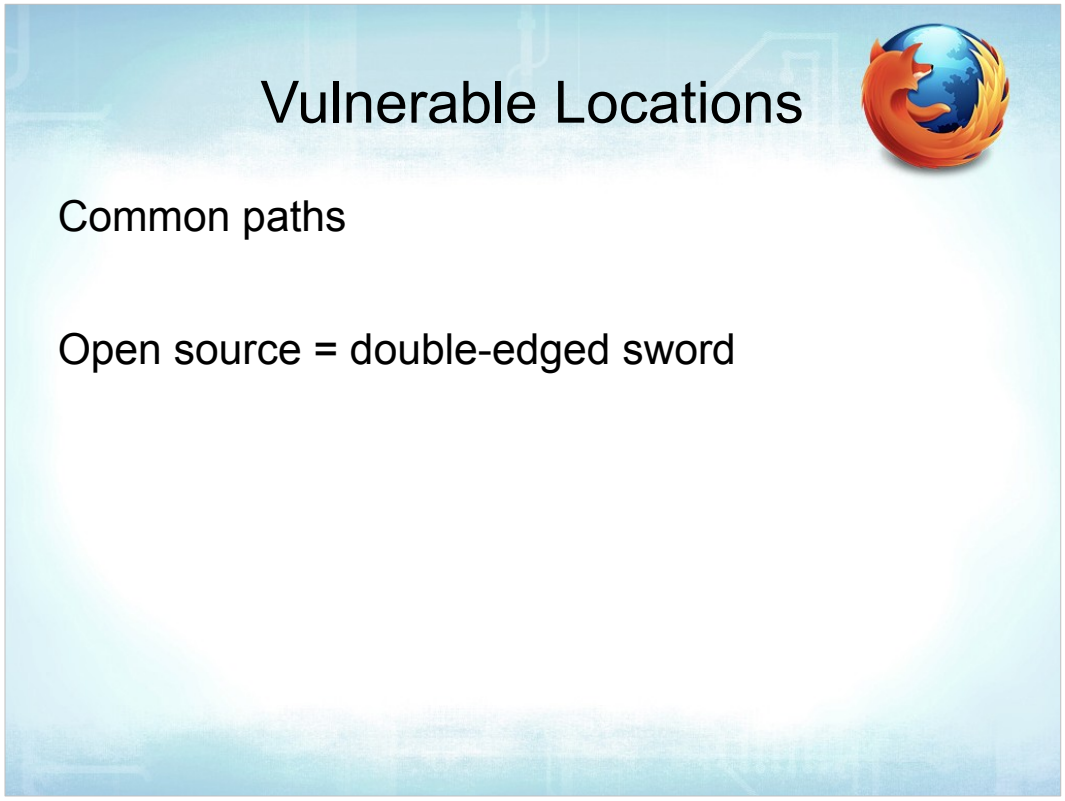
So try out all your domains -- I can't use “inurl:sheeri”

inurl:sheeri viagra

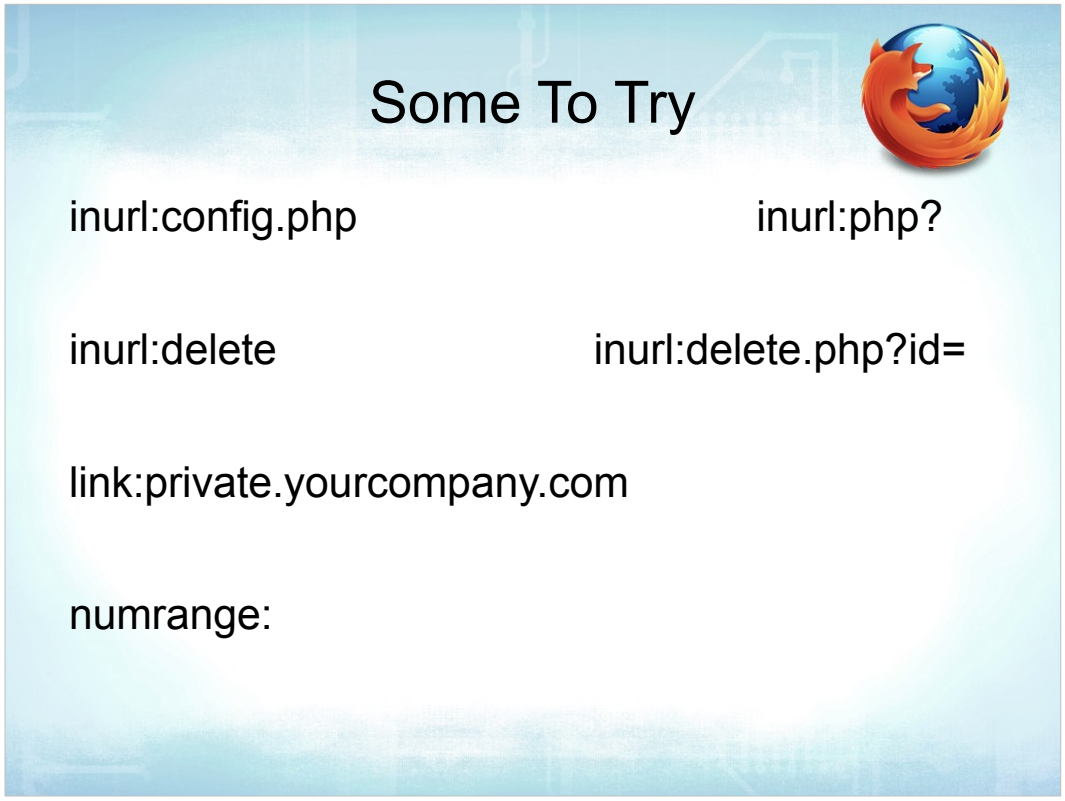
You can do “Filetype:” for php files, html, jsp, etc but can also use “inurl”

intitle:index.of site:www.sheeri.com for dir listings


site:www.sheeri.com inurl:?id=1..100000



site:sheeri.com inurl:admin



site:www.sheeri.com inurl:config.php
site:www.sheeri.com inurl:admin.php

site:www.sheeri.com inurl:"php?"

shows variables

inurl:delete – if you're sending the actions with a GET variable, that's bad!
There's also delete.php

is there a site that is linking where it shouldn't?

credit card – number ranges

5) "site:<your site> filetype:php inurl:id" - By searching for files of type php, you can sometimes find applications that are accepting parameters by looking for "id" in the URL. Then, use a trick I got from Erratasec, replace the fields with ' and find many SQL injection vulnerabilities.

: is for user:pass

5) "site:<your site> filetype:php inurl:id" - By searching for files of type php, you can sometimes find applications that are accepting parameters by looking for "id" in the URL. Then, use a trick I got from Erratasec, replace the fields with ' and find many SQL injection vulnerabilities.

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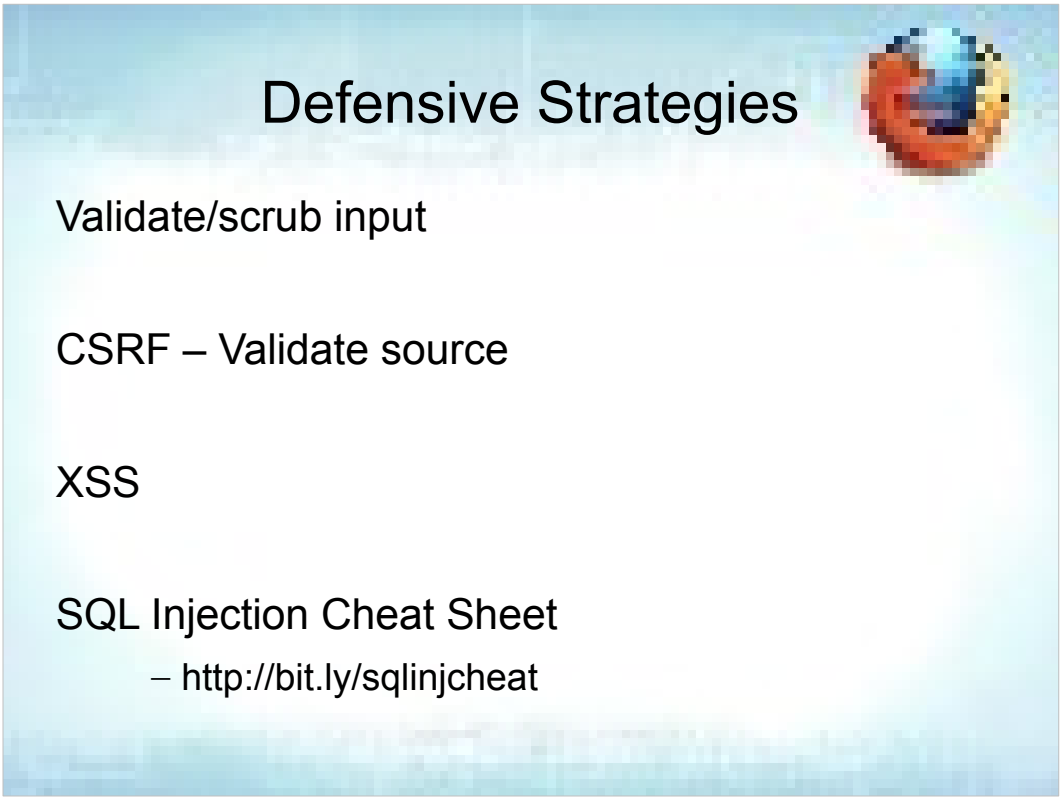


Only use what's needed, to avoid query injection, and use prepared statements when possible, you can also now use them in conjunction with stored procedures so the query is handled by the db code, instead of having the developers write code.

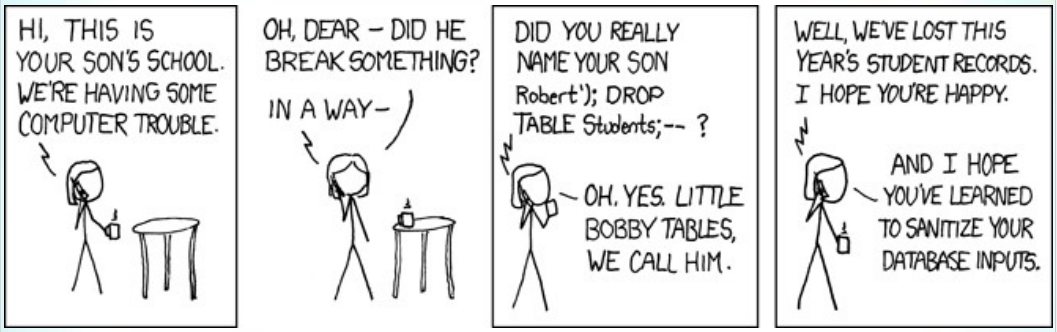
This doesn't help when someone goes through and pulls up account information for customer 1, customer 2, etc (or deletes them). That is CSRF – Cross Site Request Forgery -- uses completely valid requests.

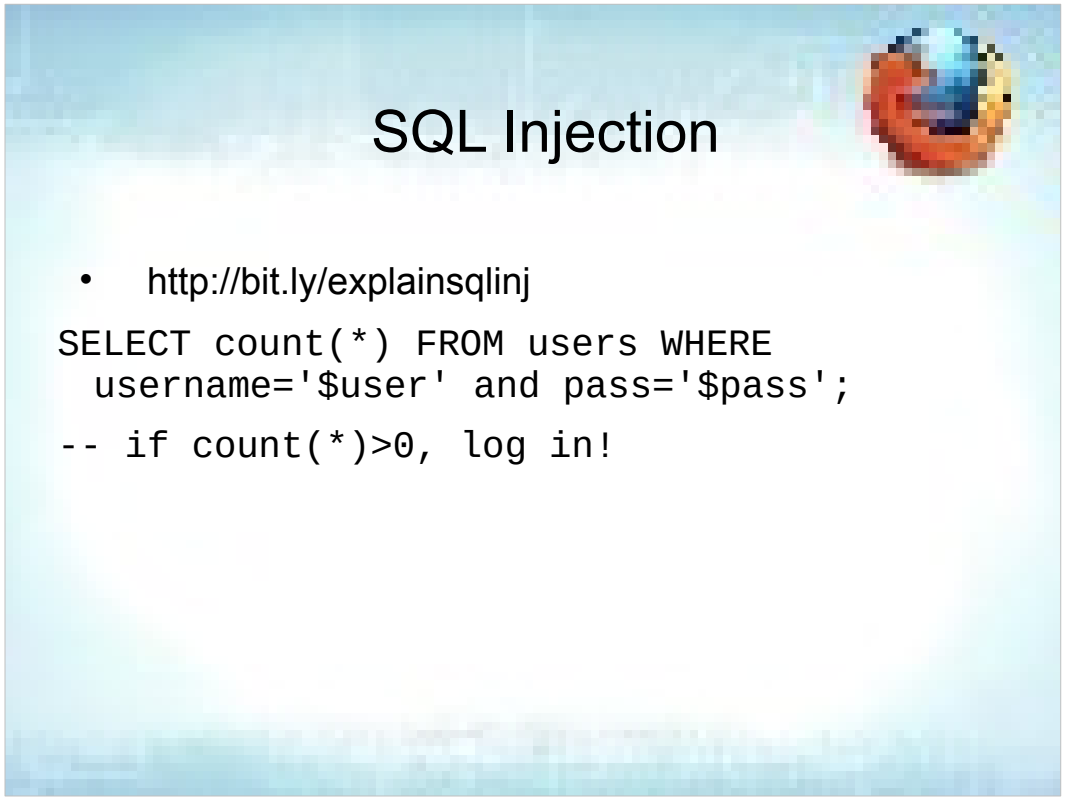
To defend against that, referer checking (hackable) or validation tokens (for site and for permission—do not think "if they got to this page they can execute the code"—re-validate if necessary)

XSS = cross-site scripting, ie using a form for SQL injection.

SQL Injection Cheatsheet: http://ferruh.mavituna.com/makale/sql-injection-cheatsheet/

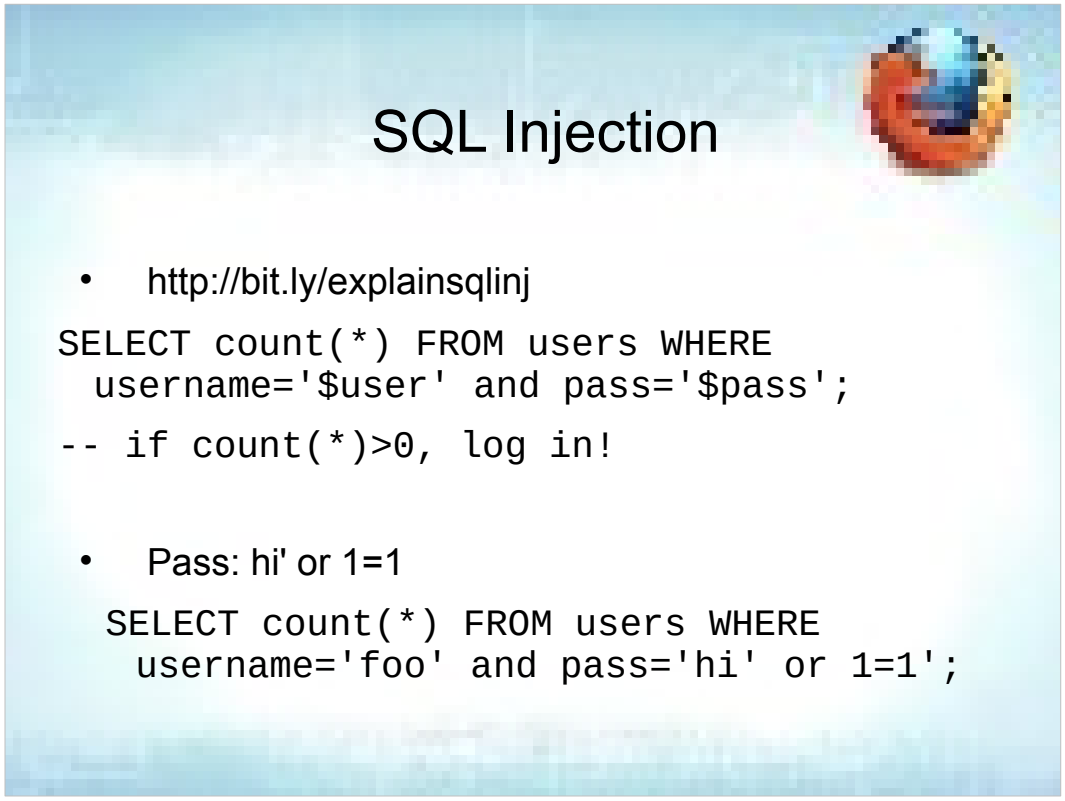
SQL Injection





I'm not going to talk much about SQL injection, but I'll give an overview:

Let's say you put in your password



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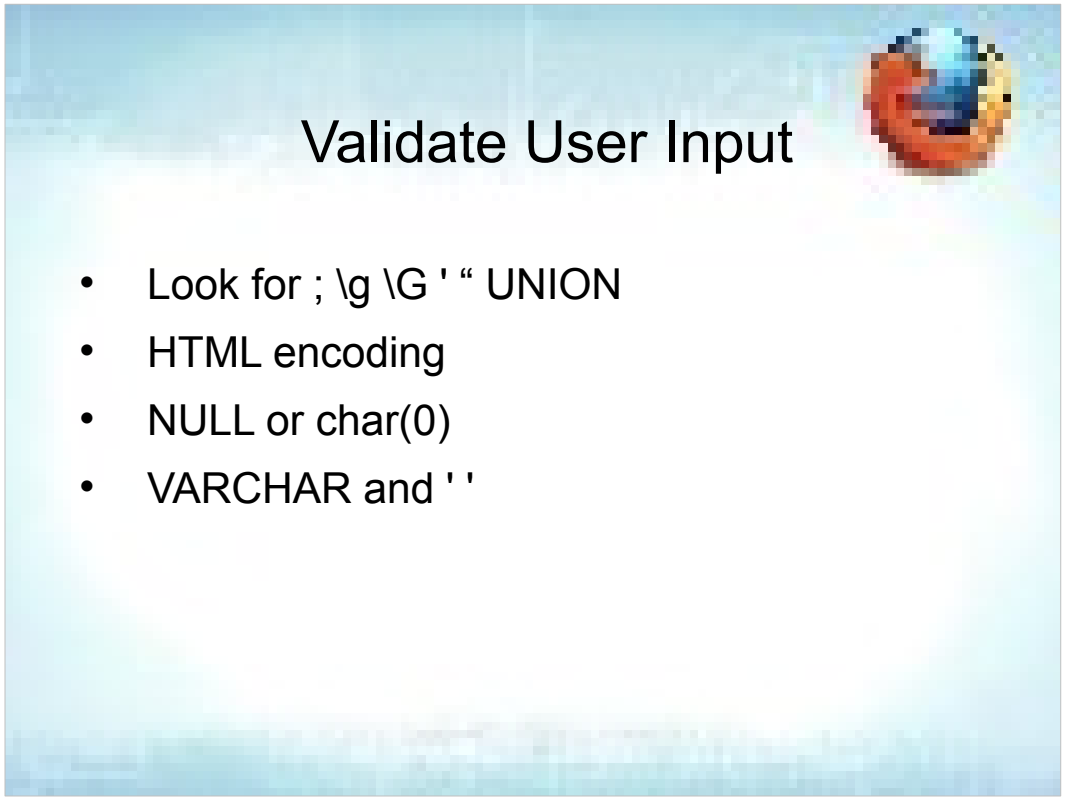


Disallow or escape ; \g \G “ ' UNION (; won't always help, check if multi_query is allowed)

XSS - Do you allow HTML in stored forms? Including javascript? Personal ad and <G> in form renders weird. Not to mention <SCRIPT .... folks put links to their pay-per-click ads, whenever their page is clicked...

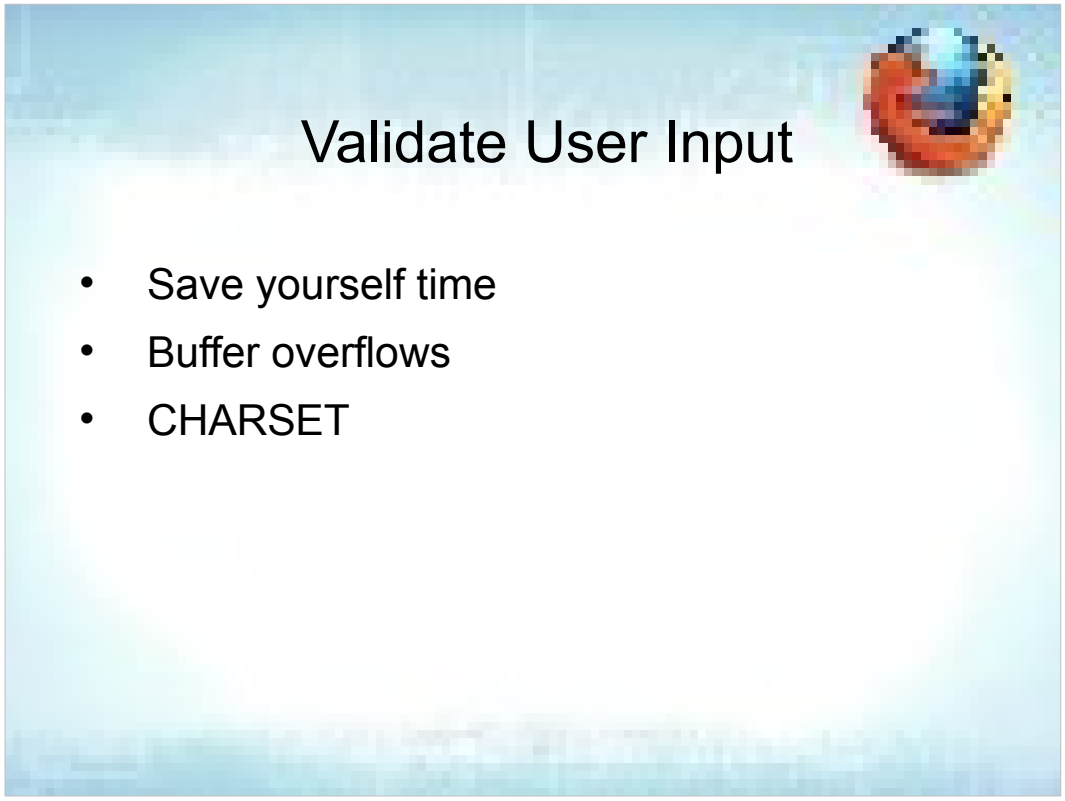
Type 0 XSS -- ?? page's client-side script, ie javascript, access URL request and uses info on that page for something in the current page, can be exploited – can put in another script.

Type 1 XSS – server gets data from client, client can put scripts in there. Reason to strip out HTML

Type 2 XSS – when this stuff is stored.

NULL / char(0) (mysql_query("/*".chr(0)."*/ SELECT * FROM table");)

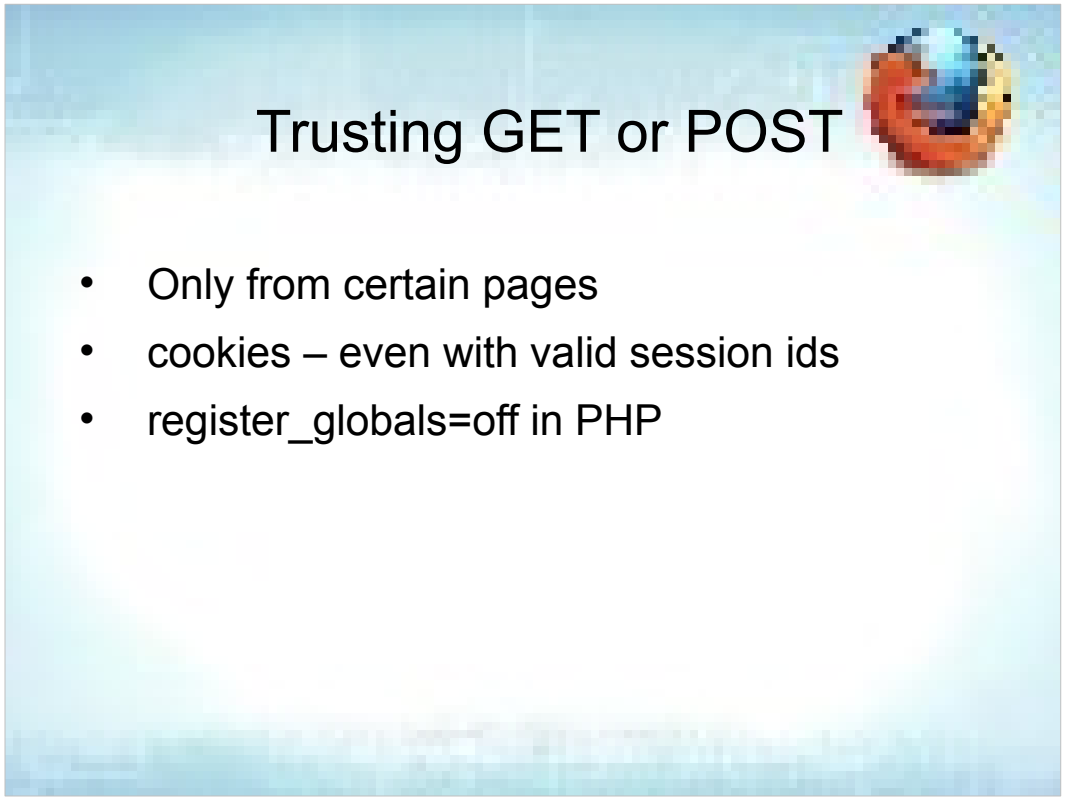
' ' and varchar



Save yourself time, include e-mail checks if you can (php checkdnsrr)

Buffer overflows

What's your CHARSET? (length of INPUT TYPE=TEXT != # of bytes!)



Easy to copy your web form and send it

HIDDEN fields too all you have to do is view source!

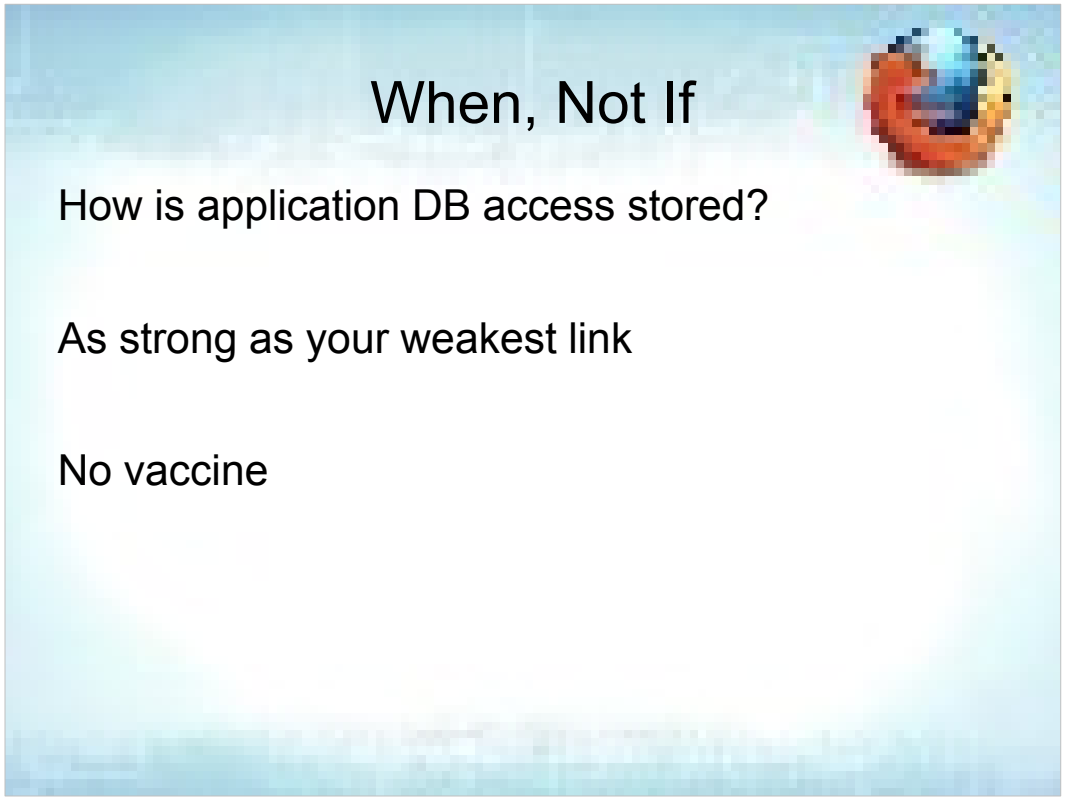
Valid user can do bad stuff, so even with a session ID don't trust unless it's your site

register_globals off in php to avoid POST params in GET context

index.php?$auth=true

Buffer overflows

What's your CHARSET?



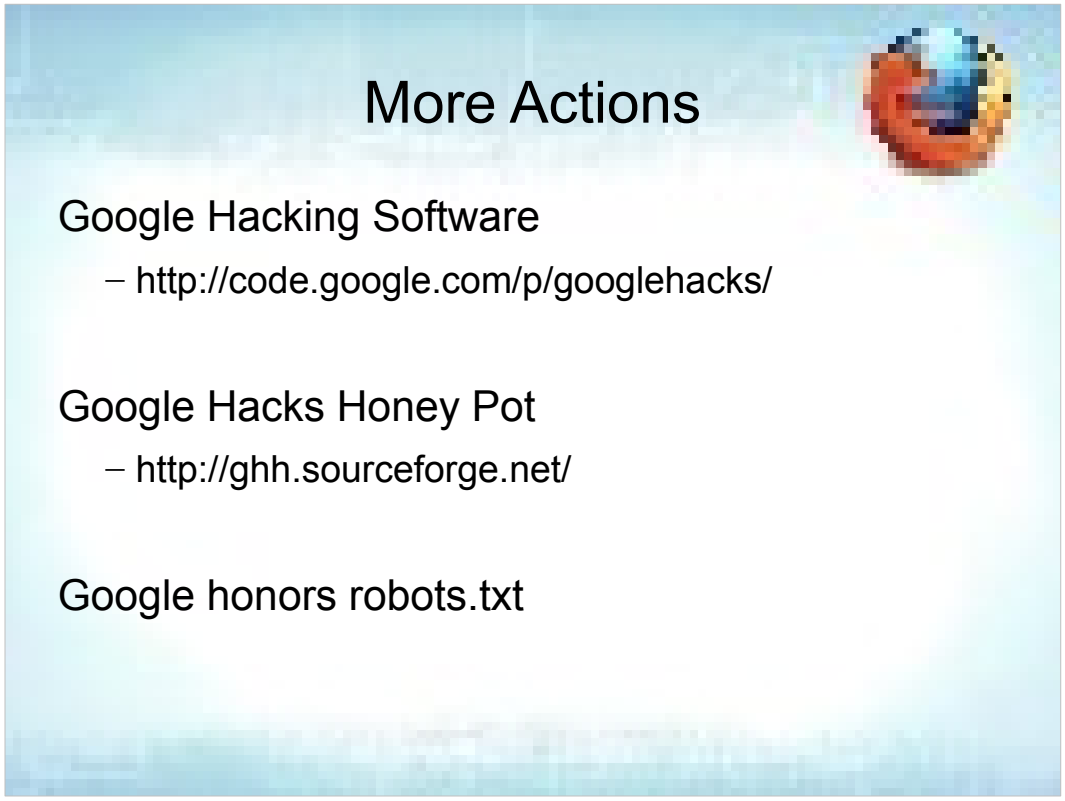
And that weak link might be someone putting passwords on an intranet wiki they didn't realize was being searched by google!

There is no vaccine – if you're using old software, you have to upgrade. Just like viruses and worms resurface, because of the nature of the web it's not like people are going to "forget" vulnerabilities.

Goolink -- parse all the hyperlinks in a saved google search results page so they can be downloaded with 1 command (wget -i results.html) or they can be used with other scripts (hostlookup etc..)

Crapscan – searches for certain files in a URL tree. You can customize the files, like “apache_log” -- for regression testing

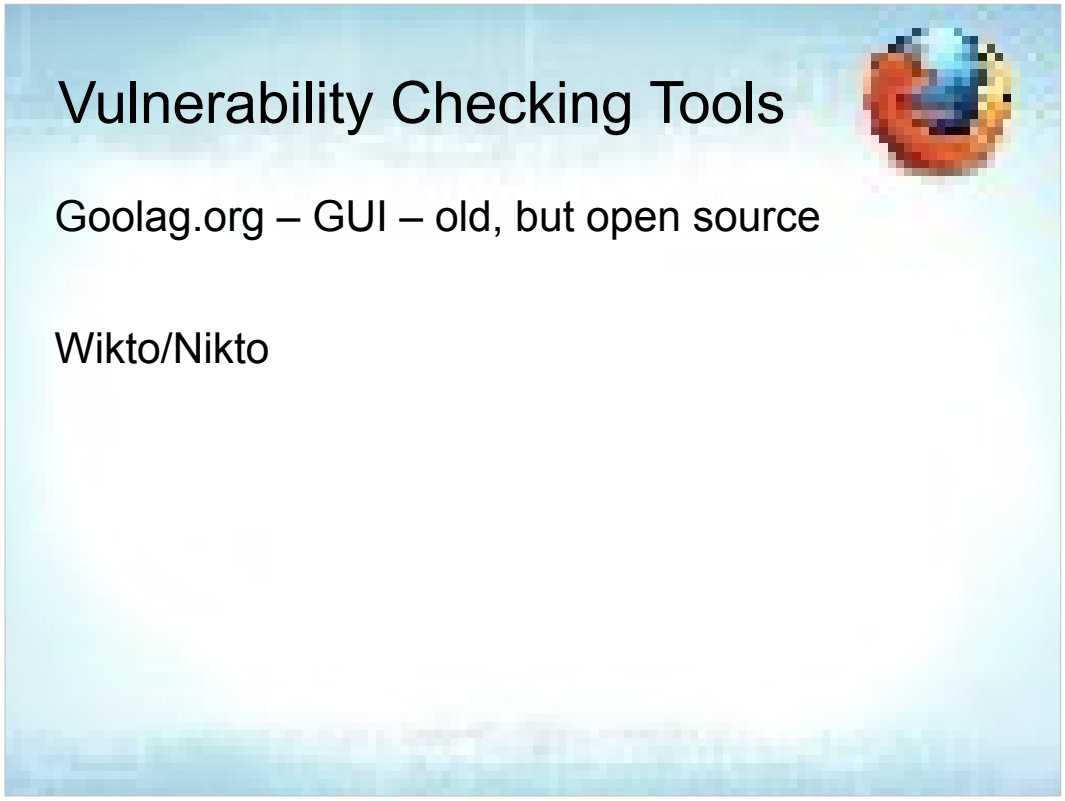
goohosts – check webserver header response – cygwin version, did a quick check and couldn't find the original, don't know if it's linux or what.



....

use the honey pot to trap people and find them if you have the time.

You can have your pages removed from Google, and Google honors the robots.txt, but most of us don't want that. www.robotstxt.org



http://www.goolag.org/specifications.html

Windows, .NET framework. GUI-based, type in a host and a list of things to check. When I installed it voices came up, so be prepared. 10 dorks or less to scan, it doesn't warn, otherwise it does.

Scan for “powered by wordpress” on www.sheeri.com

Web server assessment tools.

http://www.sensepost.com/research/wikto/

http://www.cirt.net/nikto2

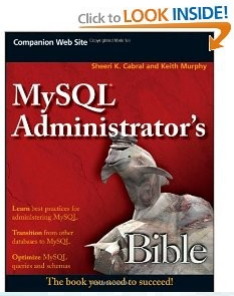
Questions? Comments?

OurSQL podcast

- www.oursql.com

MySQL Administrator's Bible

- tinyurl.com/mysqlbible



bit.ly/ghackmysql

kimtag.com/mysql

planet.mysql.com