

day 5

*Why would it not be accurate to describe
HTML as a programming language?*

*What does CSS allow you to do
that HTML alone does not?*

2:35pm versus 3:15pm

cs50.harvard.edu/mba/syllabus/

*If I do 'view page source' of CS50 for MBAs website, I see html code that I can more or less understand now. Why is the content of Google home page's 'view page source' SO long and complex?
What is included in the code?*

I was unable to access the CS50 website again this afternoon. I received the same message from my Chrome browser as I did on the first day, saying the DNS server had an issue. Luckily, I had just learned how to manually change my DNS server to Google's public version, and I did so and am now happy be using the site to send this message. I assume this was a test, Professor Malan...very clever.

I'm trying to get my new web page to search the weather web page. I can get to a page where you type in a zipcode to the box, but when I press the button, nothing happens. My code looks as below. Any sense of what is wrong?

```
<body>
```

```
.....
```

```
<form actions="http://www.wunderground.com" method="get">
```

```
<input name="q" type="text"/>
```

```
<br/>
```

```
<input type="submit" value="Let's see"/>
```

```
</form>
```

```
</body>
```



Vault-Hide SMS, Pics & Videos

NQ Mobile Security (NYSE:NQ) - April 3, 2015

Business

Install



Add to Wishlist

Offers in-app purchases

★★★★☆ (👤 467,035)



+347036 Recommend this on Google

Do you worry about private data or secrets on your smart phone falling into the wrong hands? Vault makes it easy for you to fully control your privacy or secrets. Keep your pictures, videos, SMS, contacts, even Facebook messages private, and hide them from prying eyes. Protect your apps with a password or camouflage them for maximum privacy.

Top features of Vault

☆**Photos & videos protection:** All files will be stored in a safe place and can only be viewed in Vault after entering the correct password.

Users and the press love Vault:

- ★ The most popular app with over 30 million users worldwide
- ★ CTIA - "The Best App of CTIA by the Techlicious 2012 Best of CTIA Awards"
- ★ PC Magazine - "PC Magazine Best Apps"
- ★ TRUSTe - Received "TRUSTe Privacy Seal"
- ★ Global Mobile Internet Conference App Space - "A top 50 app"

How I cracked NQ Vault's "encryption"

ninjadoge24.github.io


```
0000000: 8950 4e47 0d0a 1a0a 0000 000d 4948 4452 .PNG.....IHDR
0000010: 0000 0001 0000 0001 0802 0000 0090 7753 .....WS
0000020: de00 0000 0970 4859 7300 0003 b100 0003 .....pHYs.....
0000030: b101 f583 ed49 0000 0007 7449 4d45 07df .....I...tIME..
0000040: 0401 0319 3a3d ca0b 0c00 0000 0c69 5458 .....:=.....iTX
0000050: 7443 6f6d 6d65 6e74 0000 0000 00bc aeb2 tComment.....
0000060: 9900 0000 0f49 4441 5408 1d01 0400 fbff .....IDAT.....
0000070: 00ff 0000 0301 0100 c706 926f 0000 0000 .....o.....
0000080: 4945 4e44 ae42 6082 4e49 4e4a 4144 4f47 IEND.B`.NINJADOG
0000090: 4532 340a E24.
```

Database Structure

Browse Data

Edit Pragmas

Execute SQL

Table:  hideimagevideo

	_id	password_id ▼	file_path_from	file_name_from	file_path_new
	Filter	Filter	Filter	Filter	Filter
1	2	1541124	/mnt/sdcard/test.png	test.png	/mnt/sdcard/SystemAndroid/Data/MTU0MTEyNA==/.image/1427858907181.png
2	1	-2106889990	/data/data/com.netqin.ps/files/loginr/tmplr.jpg	tmplr.jpg	/mnt/sdcard/SystemAndroid/Data/LTixMDY4ODk5OTA==/.image/1427858871651.jpg

```
0000000: 8d54 4a43 090e 1e0e 0404 0409 4d4c 4056 .TJC.....ML@V
0000010: 0404 0405 0404 0405 0c06 0404 0494 7357 .....SW
0000020: da04 0404 0d74 4c5d 7704 0407 b504 0407 .....tL]w.....
0000030: b505 f187 e94d 0404 0403 704d 4941 03db .....M...pMIA..
0000040: 0005 071d 3e39 ce0f 0804 0404 086d 505c .....>9.....mP\
0000050: 7047 6b69 6961 6a70 0404 0404 04b8 aab6 pGkiajp.....
0000060: 9d04 0404 0b4d 4045 500c 1905 0004 fffb .....M@EP.....
0000070: 04fb 0404 0705 0504 c302 966b 0404 0404 .....k....
0000080: 4945 4e44 ae42 6082 4e49 4e4a 4144 4f47 IEND.B`.NINJADOG
0000090: 4532 340a E24.
```

```
0000000: 8950 4e47 0d0a 1a0a 0000 000d 4948 4452 .PNG.....IHDR
0000010: 0000 0001 0000 0001 0802 0000 0090 7753 .....WS
0000020: de00 0000 0970 4859 7300 0003 b100 0003 .....pHYs.....
0000030: b101 f583 ed49 0000 0007 7449 4d45 07df .....I...tIME..
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0000070: 00ff 0000 0301 0100 c706 926f 0000 0000 .....o.....
0000080: 4945 4e44 ae42 6082 4e49 4e4a 4144 4f47 IEND.B`.NINJADOG
0000090: 4532 340a E24.
```


89 50 4E 47 0D 0A 1A 0A 00 00 00 0D 49

XOR

8D 54 4A 43 09 0E 1E 0E 04 04 04 09 4D

=

04 04 04 04 04 04 04 04 04 04 04 04 04

```
0000000: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000010: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000020: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000030: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000040: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000050: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000060: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000070: cccc cccc cccc cccc cccc cccc cccc cccc .....
0000080: 0000 0000 0000 0000 0000 0000 0000 0000 .....
0000090: 0000 0000 0000 0000 0000 0000 0000 0000 .....
00000a0: 0000 0000 0000 0000 0000 0000 0000 0000 .....
00000b0: 0000 0000 0000 0000 0000 0000 0000 0000 .....

          -- snip --

0000590: 0000 0000 0000 0000 0000 0000 0000 0000 .....
00005a0: 0000 0000 0000 0000 0000 0000 0000 0000 .....
00005b0: 0000 0000 0000 0000 0000 0000 0000 0000 .....
00005c0: 0000 0000 0000 0000 0000 0000 0000 0000 .....
00005d0: 0000 0000 0000 0000 0000 0000 0a
```

password	key
000	30
001	31
002	32
003	33
004	34
...	
010	4f
011	50
012	51
...	
2424	04
4815162342	cc

```
#!/bin/sh
for i in `seq 0 255`; do
    ./vault-crack $1 $i > $1.decrypted
    if [ `file $1.decrypted --brief --mime-type` != "application/octet-stream" ]
    then
        echo "Key = $i" && exit
    fi
done
```

when  clicked

say hello, world!

say hello, world!

say

hello, world!

statements

```
say hello, world!
```

functions

A Scratch 'say' block, which is a purple block with a notch on the left side. It contains the text 'say' in a white font on the left and 'hello, world!' in a black font on the right, enclosed in a white box.

`say` hello, world!



loops





mouse down?

Boolean expressions



mouse down?



conditions



conditions





source code

source code



interpreter

source code



interpreter



CPU



when  clicked

say



```
if __name__ == "__main__":  
    print("hello, world")
```

functions

```
say hello, world
```

functions



`say` `hello, world`

```
print("hello, world")
```


loops



loops



```
while True:  
    print("hello, world")
```

loops



loops



```
for i in range(10):  
    print("hello, world")
```

variables



variables



```
counter = 0
while True:
    print(counter)
    counter += 1
```

Boolean expressions

$x < y$

$x < y$ and $y < z$

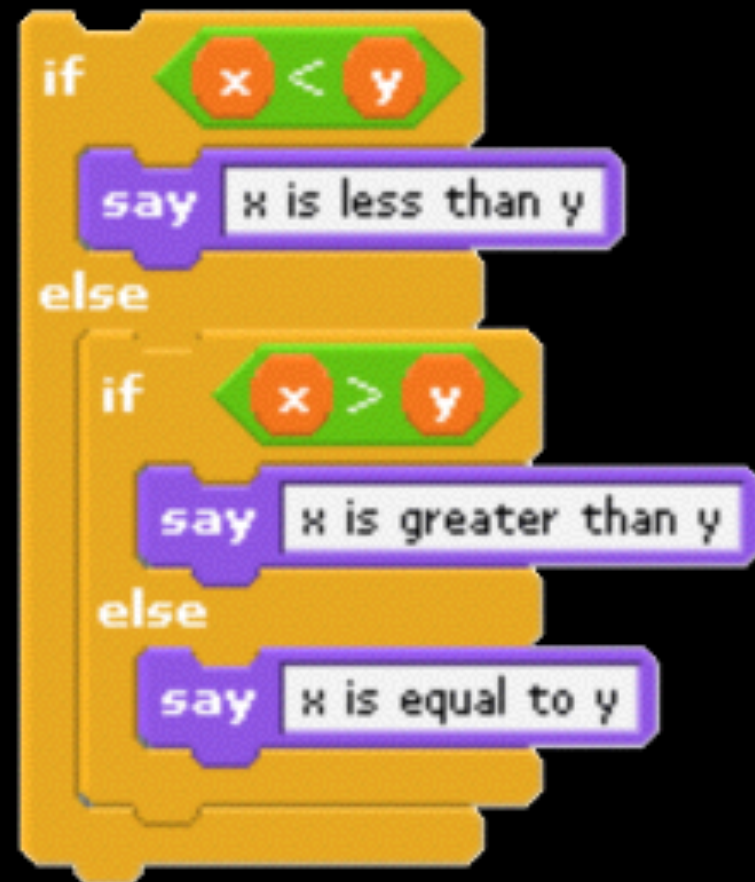
$x < y$ and $y < z$

Boolean expressions



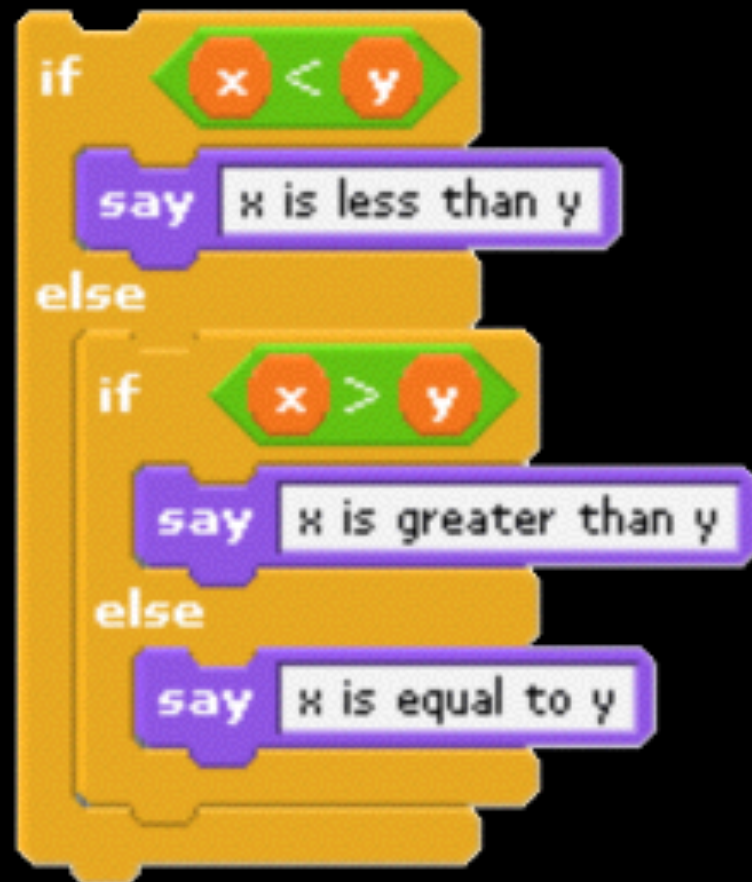
$x < y$
 $(x < y) \text{ and } (y < z)$

conditions



say x is equal to y

conditions



```
if x < y:  
    print("x is less than y")  
elif x > y:  
    print("x is greater than y")  
else:  
    print("x is equal to y")
```

lists



```
inventory = []  
inventory.append("Orange")
```

```
python hello.py
```

./hello

```
#!/usr/bin/env python
```

`import`

assignment 5

due by 10:00am on Tue 4/7

to be continued