FANTASTIC PASSWORDS

AND WHERE TO FIND THEM

@philnash

PHIL NASH

@philnash

@phil_nash

https://philna.sh

philnash@twilio.com

twilio

MY FIRST PASSWORD:

“nash”

“atom”

I GOT HACKED

@philnash

PASSWORDS ARE TERRIBLE

GUIDELINES

GUIDELINES

- Uppercase
- Lowercase
- Numbers
- Special characters

password

Password1!

GUIDELINES

Change passwords regularly

Password123!

PATTERNS

Password1!

ULLLLLLLLDS

AN EXAMPLE

WESTERN AUSTRALIA GOVERNMENT SECURITY AUDIT

234,000 passwords were assessed

1/4 of passwords were deemed "weak" passwords

1,464 passwords were "Password123"

(source)

WESTERN AUSTRALIA GOVERNMENT SECURITY AUDIT

No.	Password used	Accounts
1	Password123	1,464
2	Project10	994
3	support	866
4	password1	813
5	October2017	226
6	Monday01	225
7	Spring17	198
8	Sunday01	188
9	password	184
10	abcd1234	176

No.	Password used	Accounts
11	Spring2017	155
12	password2	142
13	August2017	141
14	sunday1	132
15	Welcome1	132
16	Password01	118
17	Summer01	102
18	Logitech1	98
19	support1	96
20	Summer17	96

Source: OAG

MY "BEST" PASSWORD

- 8 characters long
- Numbers and letters (uppercase only)
- Model number of my hi-fi

I GOT HACKED

@philnash

REPETITION

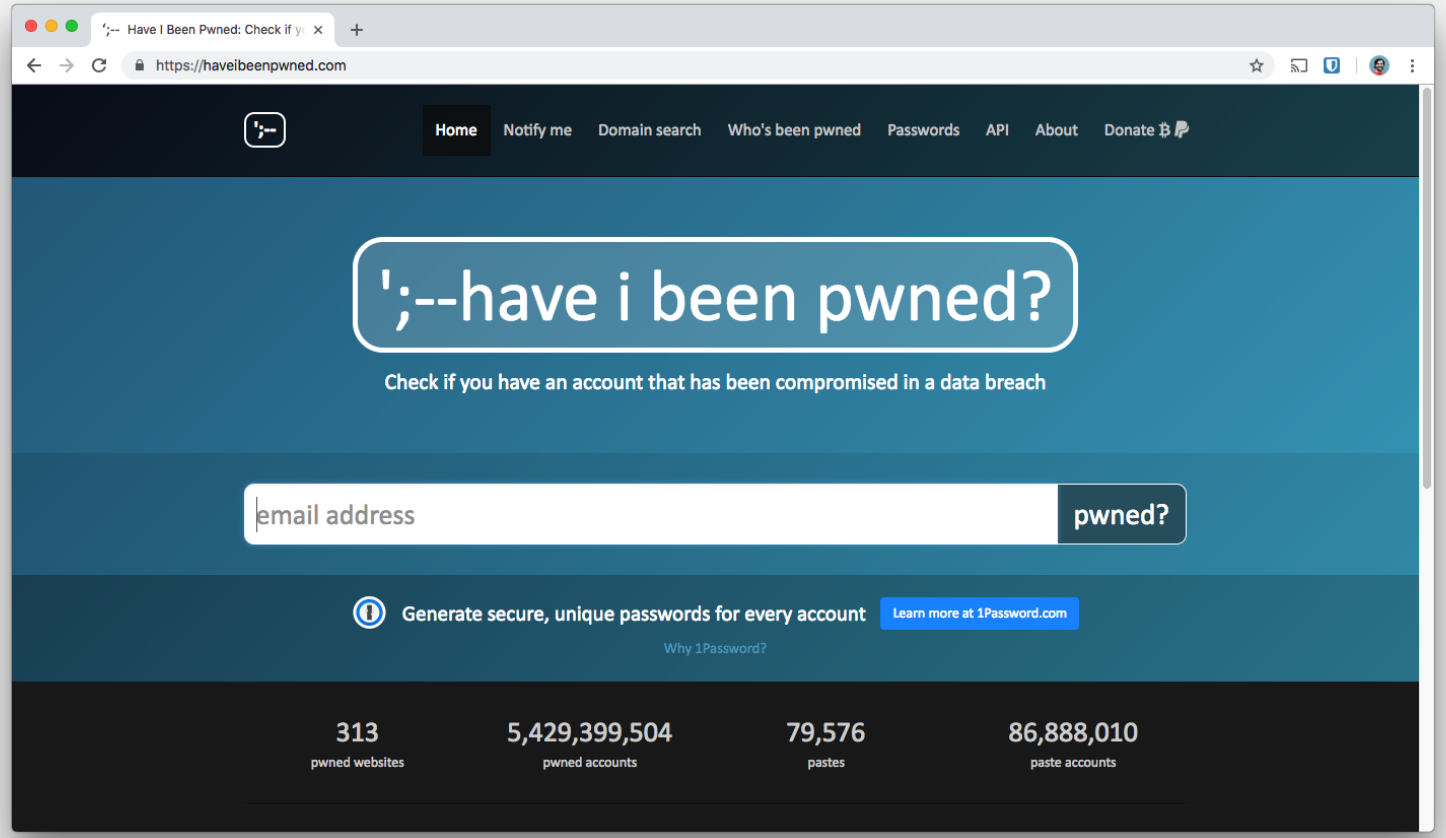
last.fm

BREACHES

DISQUS

bitly

tumblr.


';-- Have I Been Pwned: Check if y
https://haveibeenpwned.com
Home
Notify me
Domain search
Who's been pwned
Passwords
API
About
Donate
';--have i been pwned?
Check if you have an account that has been compromised in a data breach
email address
pwned?
Generate secure, unique passwords for every account
Learn more at 1Password.com
Why 1Password?
313
pwned websites
5,429,399,504
pwned accounts
79,576
pastes
86,888,010
paste accounts

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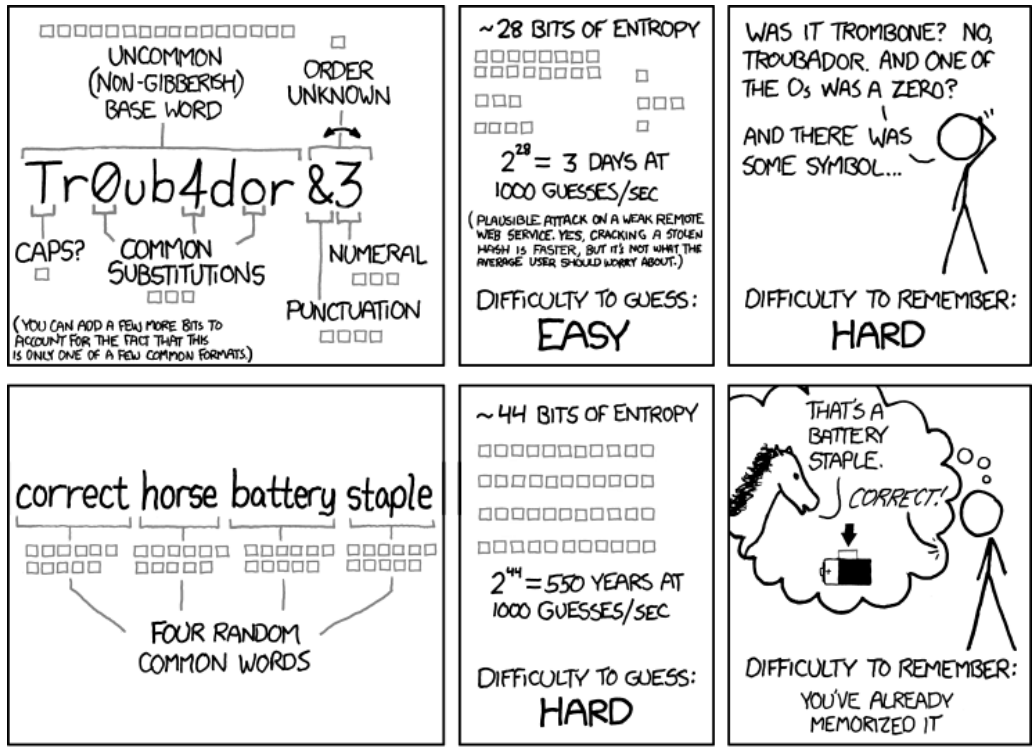
HOW DO WE FIX THIS?

THE GUIDELINES WERE WRONG



THROUGH 20 YEARS OF EFFORT, WE'VE SUCCESSFULLY TRAINED EVERYONE TO USE PASSWORDS THAT ARE HARD FOR HUMANS TO REMEMBER, BUT EASY FOR COMPUTERS TO GUESS.

NEW GUIDELINES

From the ACSC, the NCSC and NIST

- At least 13 characters
- Accept all characters
- Don't allow insecure passwords
    - Dictionary words
    - Repeated or sequential characters (e.g. ‘aaaaaa’, ‘1234abcd’)
    - Context specific words (e.g. username, email, app name)
    - Passwords that have been in a breach

IN RUBY?

DEVISE

```
config.password_length = 6..128
```

AUTHLOGIC

```
01. validates :password,
02.   confirmation: { if: require_password? },
03.   length: {
04.     minimum: 8,
05.     if: require_password?
06.   }
```

CLEARANCE

```
# Nothing
```

SUGGESTIONS

```
validates :password, length: { minimum: 14 }
```

nobspw

strong_password

zxcvbn

NOBSPW

```
01. pwc = NOBSPW::PasswordChecker.new password: 'philnashrules',
02.   name: 'Phil Nash',
03.   username: 'philnash',
04.   email: 'philnash@twilio.com'
05. pwc.strong?
06. pwc.weak?
07. pwd.weak_password_reasons
```

ZXCVBN

```
01. test = Zxcvbn.test("philnashrules", ["philnash"])
02. test.score
03. test.feedback.suggestions
```

DEMO

INSECURE PASSWORDS?

PWNED PASSWORDS

@philnash

PWNED PASSWORDS

572,611,621 passwords previously exposed in data breaches

PWNED PASSWORDS API

⚠️ Don't worry ⚠️

PWNED PASSWORDS API

1. Get the SHA1 hash of the password
2. Take the first 5 characters of the hash
3. `https://api.pwnedpasswords.com/range/#{prefix}`
4. Check if the remainder of the hash is in the result

PWNED GEM

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DEMO

PWNED

https://github.com/philnash/pwned

devise-pwned_password

NEXT LEVEL

TWO FACTOR AUTHENTICATION

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PASSWORDS ARE TERRIBLE

PASSWORD GUIDELINES ARE WORSE

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MAKE PASSWORDS LONGER

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CHECK AGAINST BREACHES

AND

DICTIONARIES

IMPLEMENT TWO FACTOR AUTHENTICATION

@philnash

THANKS!

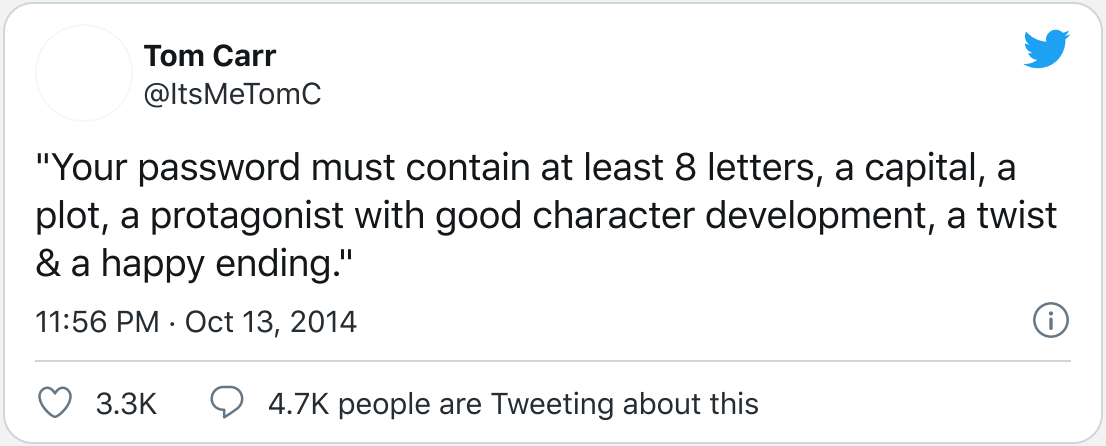
@philnash

@phil_nash

https://philna.sh

philnash@twilio.com

twilio


Tom Carr
@ItsMeTomC
"Your password must contain at least 8 letters, a capital, a plot, a protagonist with good character development, a twist & a happy ending."
11:56 PM · Oct 13, 2014
3.3K
4.7K people are Tweeting about this