

Designing Security

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Simply Secure

FOSDEM // 2 February 2019



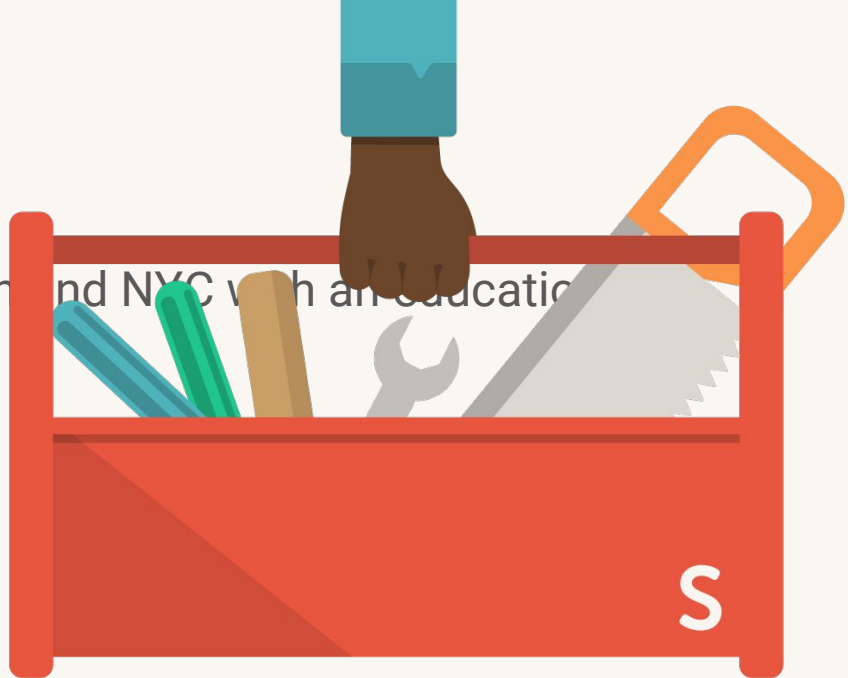
What we do

We are a small design nonprofit based in Berlin and NYC with an educational mission:

- Events and gatherings
- Writing and toolkits
- Research, design, and consulting

We work in:

- Open source
- Privacy and security
- Technology that helps people



Design and security...?

Is this secure?

BANK big46dog81
 ↑ checking
 PIN 4681
 look for me 46
 ↑ savings
 PIN 2000

EMAIL ~~greentea888~~

NEW → BLACKtea46

gmail:
 murphy4681

AMAZON big46dog81

What about this?

BANK

big 46 dog 81

checking

PIN 4681

look for me 46

savings

PIN 2000

EMAIL

~~greenTea888~~

BlackTea46

NEW →

gmail:
murphy 4681

What about this?

Checking
PIN 4681
look for me 46
↑ savings
PIN 2000

EMAIL ~~greenTea888~~

NEW → BLACKtea46

gmail:
murphy4681

AMAZON big46 dog81

iCloud nothing81special



We have some questions

- Is there a copy of this information anywhere else?
- Who else knows where it is?
- Is this information easy to relate to an individual?
- Is the information current?
- Is the information accurate?
- Is that a secret snack stash or a group snack box?

Security is context-dependent

BANK big46dog81
 ↑ checking
 PIN 4681
 look for me 46
 ↑ savings
 PIN 2000

EMAIL ~~greentea888~~

NEW → BLACKtea46

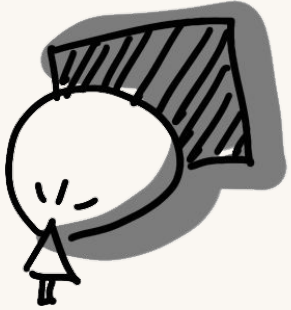
gmail:
 murphy4681

AMAZON big46dog81

Design is also context-dependent



Ingredients of design



Visuals



Words

Cryptostorm

[cryptostorm](#)[who](#)[privacy](#)[security](#)[benefits](#)[buy](#)[connect](#)[contact](#)

You are NOT connected to cryptostorm [Disable checking](#)

Your IP address is: 80.133.115.132

[sitemap](#)

The [OpenVPN](#) service provider for the truly paranoid

This website is also available as a [Tor hidden service](#) at [stormgm7blbk7odd.onion](#)
and a "v3" Tor hidden service at [stormwayszuh4juycoy4kwoww5gvcu2c4tdtpkup667pdwe4qenzwayd.onion](#)
and the [I2P eepsite](#) at [cryptostorm.i2p](#)

Privacy

Keep your online activities private



Security

Protect your internet traffic at public WiFi hotspots
or from ISP/government surveillance



Benefits

More security features than any other VPN provider



Mullvad

MULLVAD

Features

Blog

Guides

FAQ

Servers

Privacy policy

am.i.mullvad

Log in

Get account

Download app



Privacy is a universal right

It is fundamental to a well-functioning society. It allows norms, ethics, and laws to be safely discussed and challenged. A free and open society, therefore, cannot flourish and develop nor exist without privacy.

That is why we provide a VPN service that helps keep your online activity, identity, and location private for only €5/month.

We recommend that you pay anonymously, either with cash, Bitcoin, or Bitcoin Cash. We also accept credit card, bank wire, PayPal or Swish.



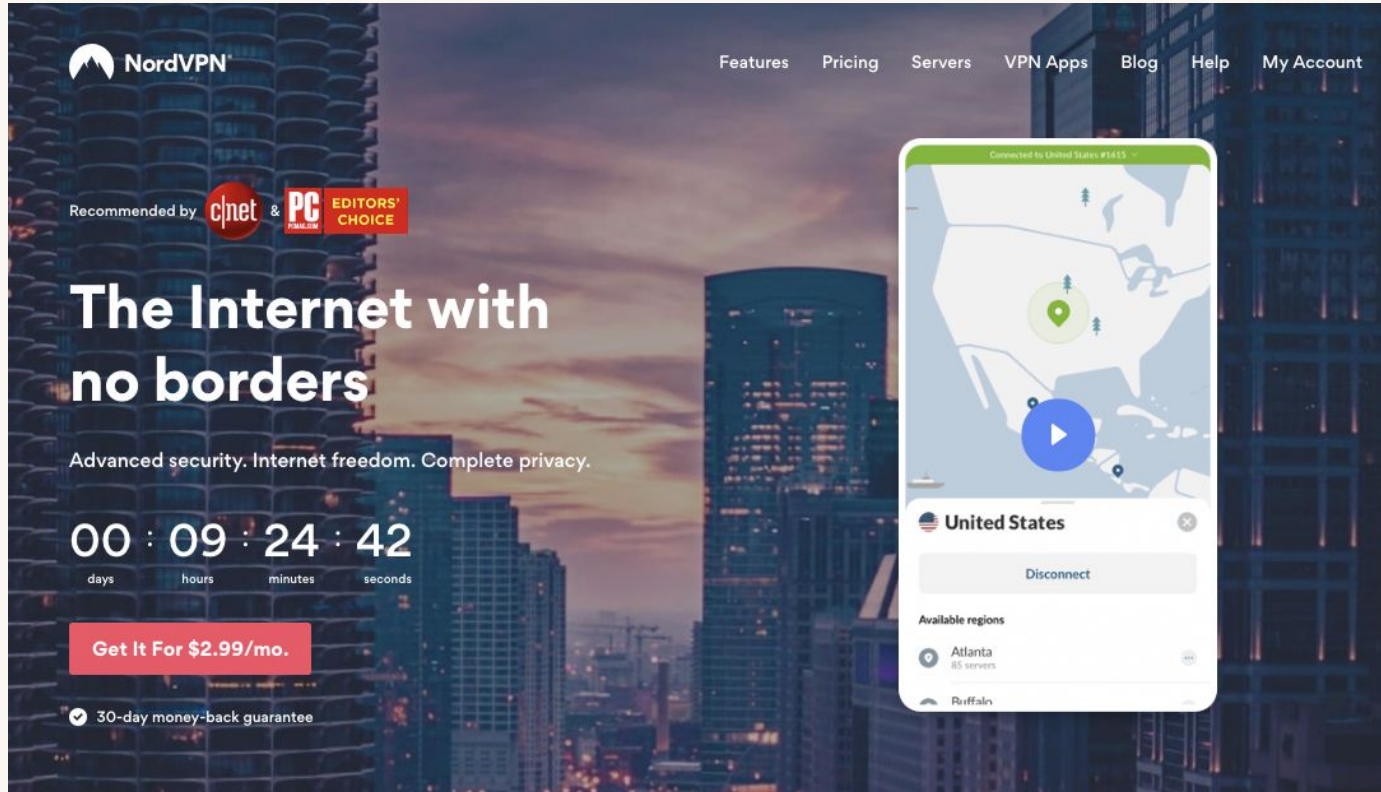
Certain versions of Mullvad will stop working on 22 March 2019. Update now!

[Read more](#)

[Download the latest app version](#)

[Download new configuration files](#)

NordVPN



NordVPN

Features Pricing Servers VPN Apps Blog Help My Account

Recommended by **cnet** & **PC** **EDITORS' CHOICE**

The Internet with no borders

Advanced security. Internet freedom. Complete privacy.

00 : 09 : 24 : 42
days hours minutes seconds

Get It For \$2.99/mo.

✓ 30-day money-back guarantee

Connected to United States #1515

United States

Disconnect

Available regions

- Atlanta 85 servers
- Buffalo

Perfect Privacy

✕ Braunschweig, Germany · 80.133.115.132 · [More details »](#)

Deutsch



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Perfect Privacy

We encrypt and anonymize your Internet



TunnelBear

TunnelBear

Pricing

Teams

Download

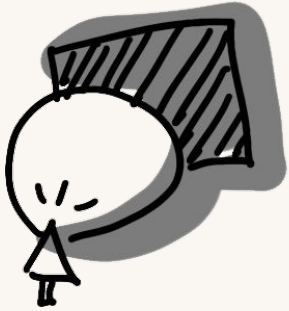
Log In

Simple, private, free access
to the open Internet you ♡

Get Started, It's Free



Ingredients of design



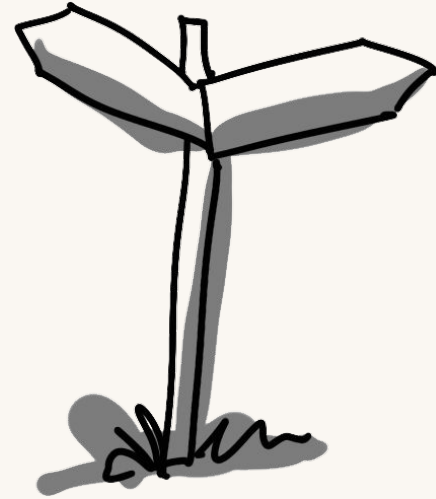
Visuals



Words

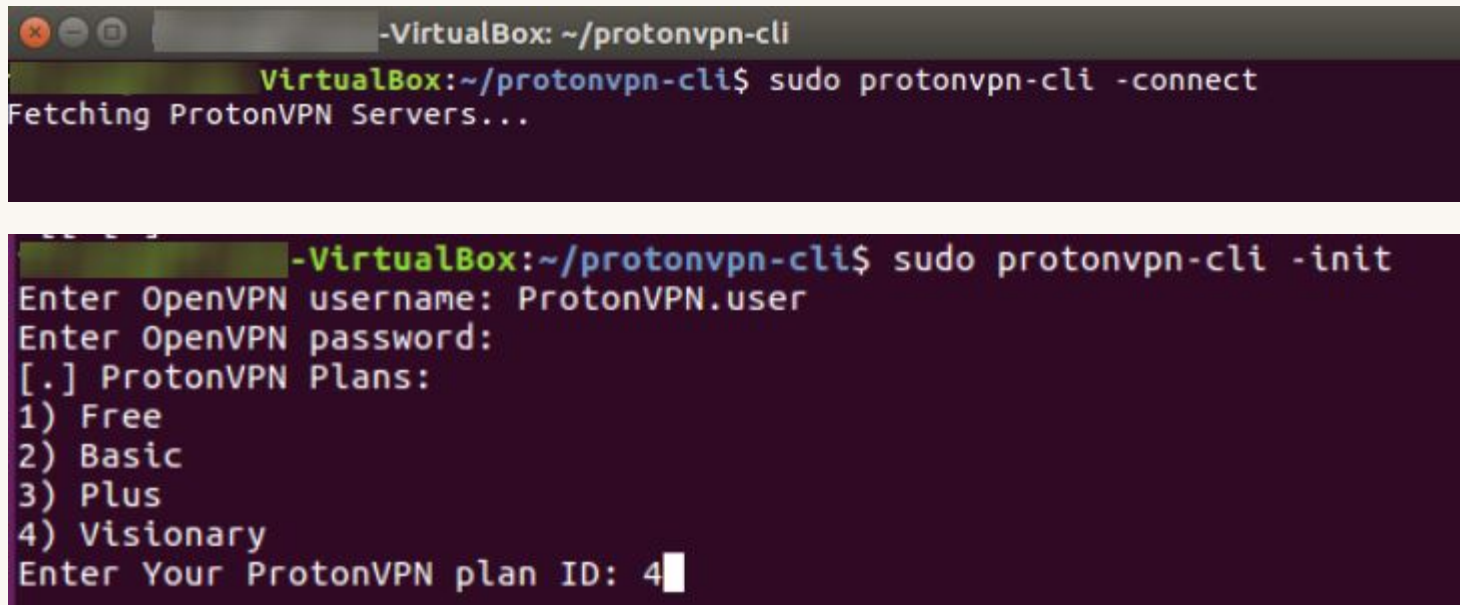


Organization



Choices

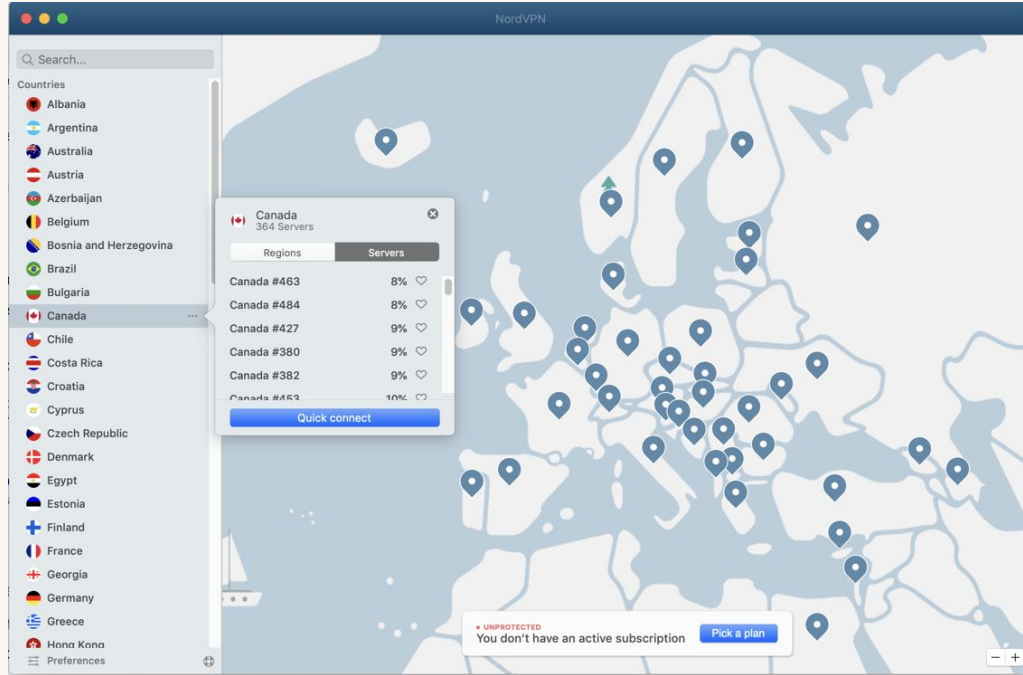
ProtonVPN



```
-VirtualBox: ~/protonvpn-cli  
VirtualBox:~/protonvpn-cli$ sudo protonvpn-cli -connect  
Fetching ProtonVPN Servers...  
  
-VirtualBox:~/protonvpn-cli$ sudo protonvpn-cli -init  
Enter OpenVPN username: ProtonVPN.user  
Enter OpenVPN password:  
[.] ProtonVPN Plans:  
1) Free  
2) Basic  
3) Plus  
4) Visionary  
Enter Your ProtonVPN plan ID: 4
```

Many choices – and you need a lot of background knowledge to even know what choices exist

NordVPN



Fewer choices, graphical representation of technical concept

TunnelBear



Minimal technical vocabulary, minimal choices

*Security design is **high-stakes design***

Design choices can harm security

- Confused or overwhelmed people create workarounds
- Preachy or excessive information makes people tune out and/or get annoyed
- People will do what it takes not to have to think about security

2 case studies



Key handling



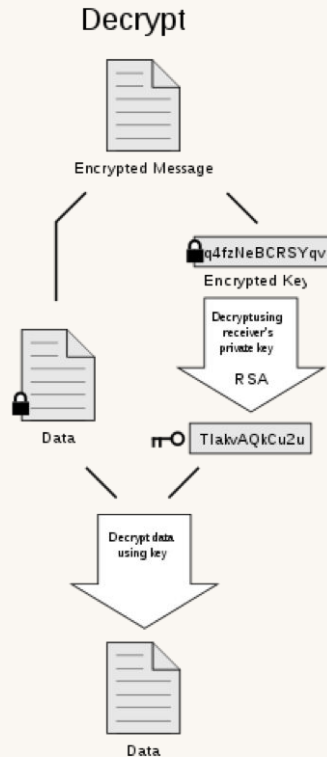
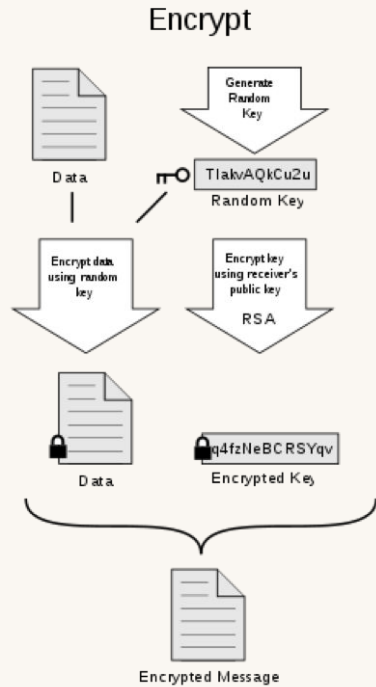
Password management



Key handling



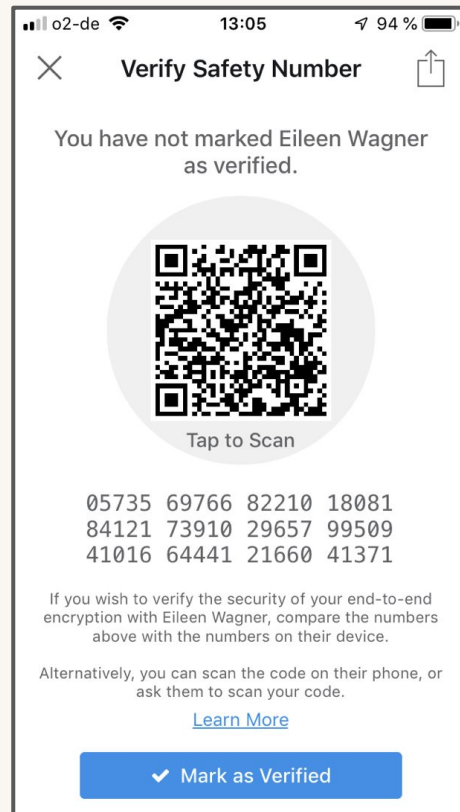
Does everyone need to know this?



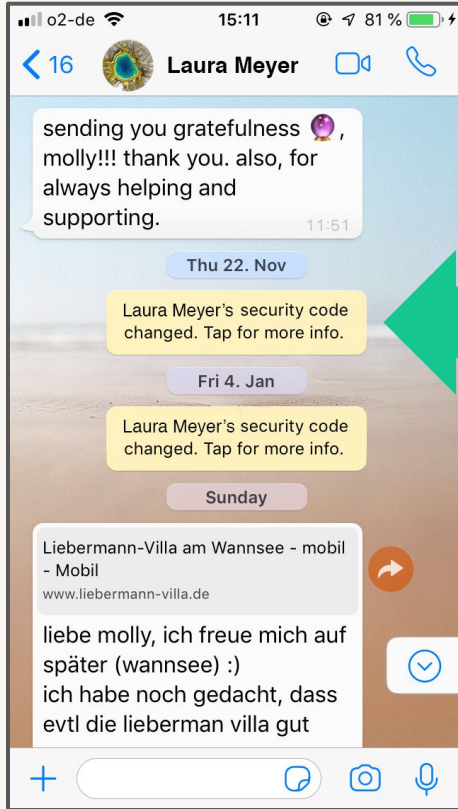
Signal



"Your safety number with Eileen has changed"



WhatsApp



“Laura’s security code has changed”



Password management



In-browser password management

facebook


Email or Phone
mcwilson@post.harvard.edu

Password
mcwilson@post.harvard.edu
From this site
Suggest New Password...
Other Passwords...

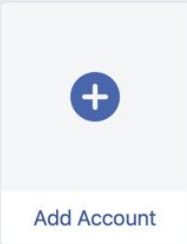
Log In

Recent Logins

Click your picture or add an account.



Molly



Add Account

Create a New Account

It's free and always will be.

First name

Last name

Mobile number or email

New password

Birthday
Jan 30 1994
[Why do I need to provide my birthday?](#)
☐ Female ☐ Male

By clicking Sign Up, you agree to our [Terms](#). Learn how we collect, use and share your data in our [Data Policy](#) and how we use cookies and similar technology in our [Cookies Policy](#). You may receive SMS Notifications from us and can opt out any time.

Sign Up

[Create a Page](#) for a celebrity, band or business.





Chrome password manager: passwords are NOT editable

www.airbnb.com
www.airbnb.fr

mollyclare@gmail.com

.....





Delete

www.airbnb.de

mollyclare@gmail.com

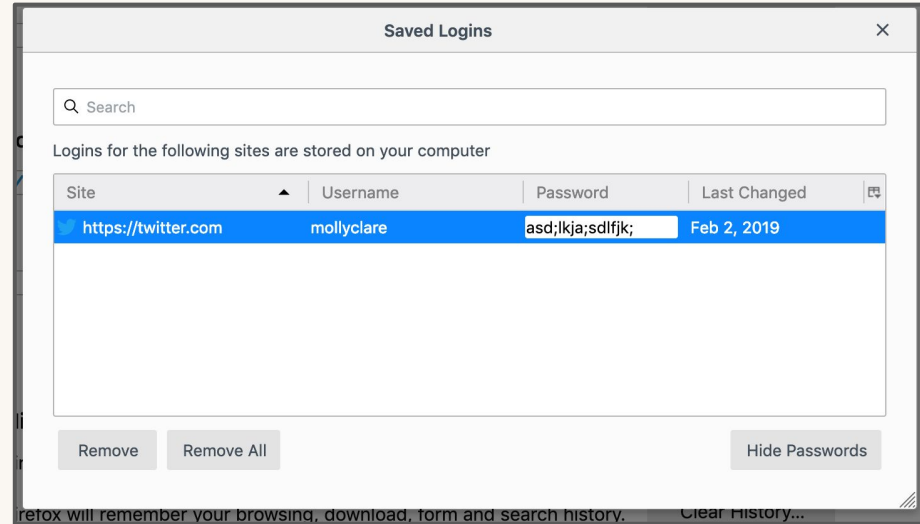
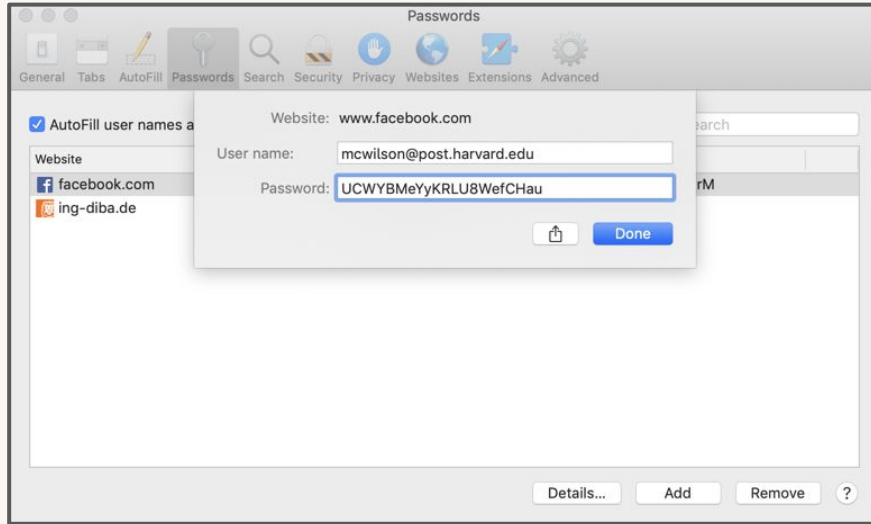
.....



Delete

Safari & Firefox password managers:

Passwords ARE editable



*“Frictionless” design:
helpful or harmful?*

The secret sauce: design research

Yes, you can do this
remotely!

Yes, you can do this in a
way that preserves
people's agency and
privacy!



Ask about mental models

“How do you think encrypted messaging works?”

“What do you think a password manager is?”

Image: Molly Wilson



Watch someone use your tool

“What does this do?”

“What do you think it
does?”

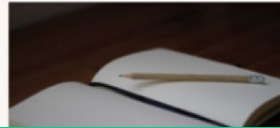




Security and privacy aren't just for some



Topics from the Knowledge Base



simplysecure.org/knowledge-base

