

Designing Security

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Simply Secure

FOSDEM // 2 February 2019



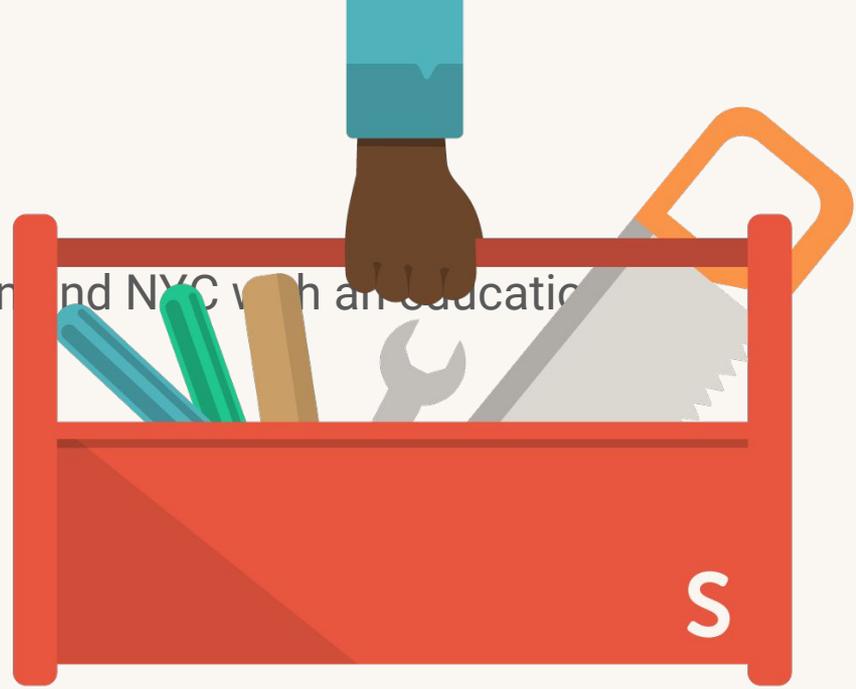
What we do

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 big46dog81
 ↳ checking
 PIN 4681
 look for me 46
 ↳ savings
 PIN 2000

EMAIL ~~greenTea888~~
 → BLACKtEa46
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gmail:
murphy4681

AMAZON big46 dog81

iCloud nothing81special



39E0301D
03 2019

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

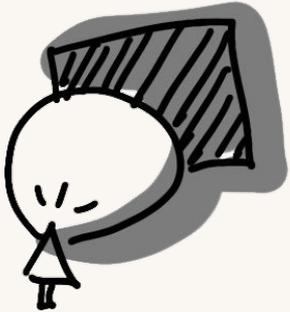
EMAIL ~~greentea888~~
 NEW → BLACKtea46
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 murphy4681

AMAZON big46dog81

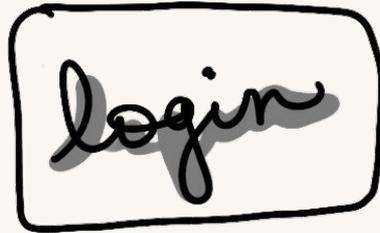
Design is also context-dependent



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.



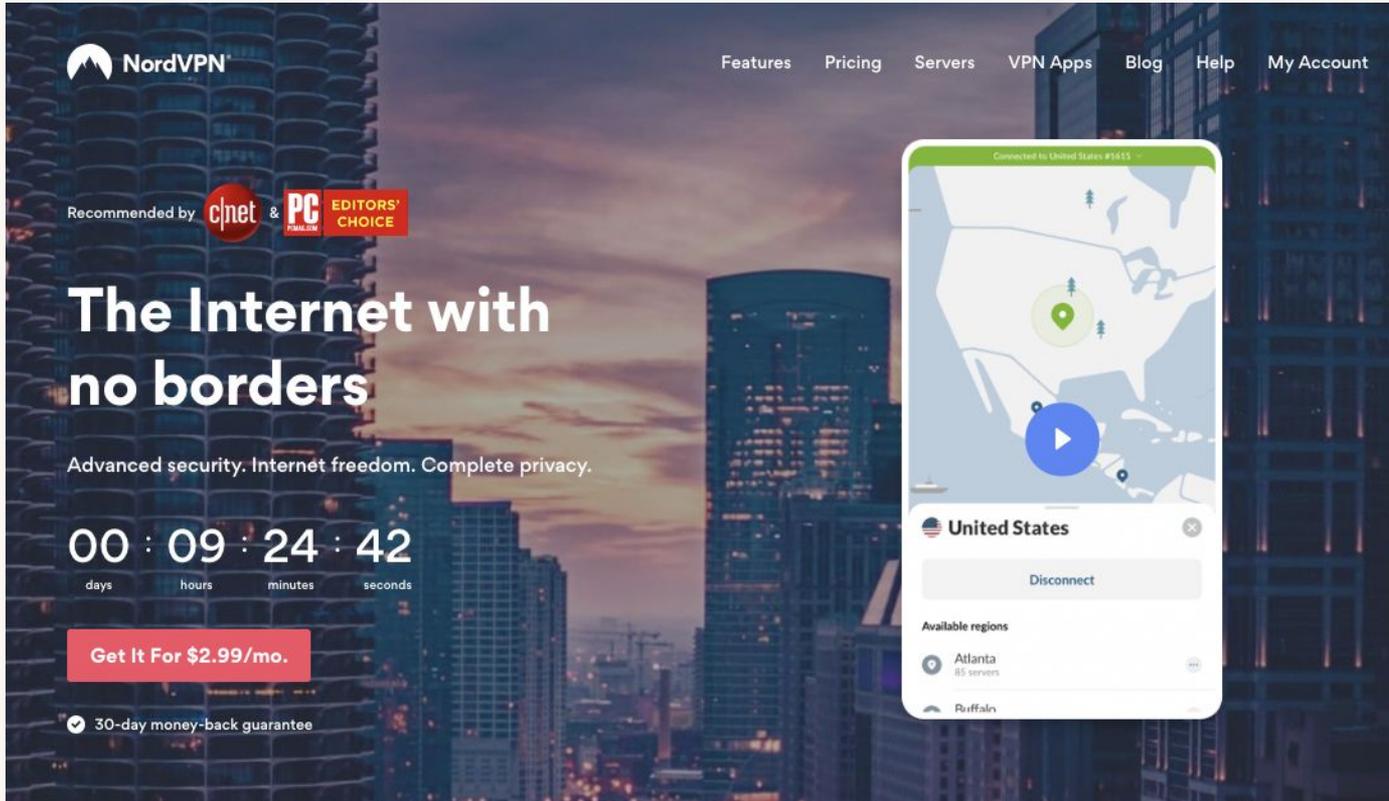
Certain versions of Mullvad will stop working on 22 March 2019. Update now!

[Read more](#)

[Download the latest app version](#)

[Download new configuration files](#)

NordVPN



The image shows the NordVPN website landing page. The background is a cityscape at dusk. The NordVPN logo is in the top left. Navigation links are in the top right. A navigation bar contains: Features, Pricing, Servers, VPN Apps, Blog, Help, My Account. A red badge says "Recommended by cnet & PC EDITORS' CHOICE". The main headline is "The Internet with no borders". Below it is the tagline "Advanced security. Internet freedom. Complete privacy." A timer shows "00 : 09 : 24 : 42" with labels "days", "hours", "minutes", "seconds". A red button says "Get It For \$2.99/mo.". A checkmark icon is next to "30-day money-back guarantee". On the right, a mobile app interface is shown with a map of the United States, a play button, and a list of available regions: Atlanta (85 servers) and Riffain.

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: #1511

United States

Disconnect

Available regions

- Atlanta
85 servers
- Riffain

Perfect Privacy

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

Deutsch



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[PRICES](#)

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[CHECKS](#)

[MEMBER](#)

Perfect Privacy

We encrypt and anonymize your Internet



TunnelBear

TunnelBear

Pricing

Teams

Download

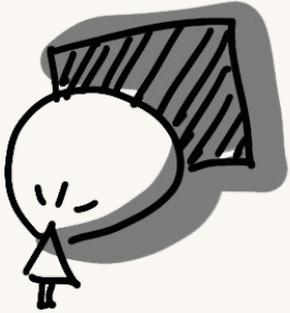
Log In

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

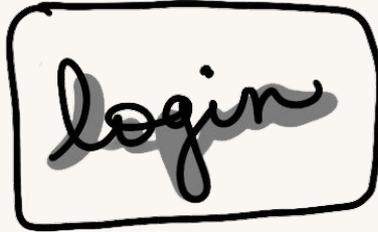
Get Started, It's Free



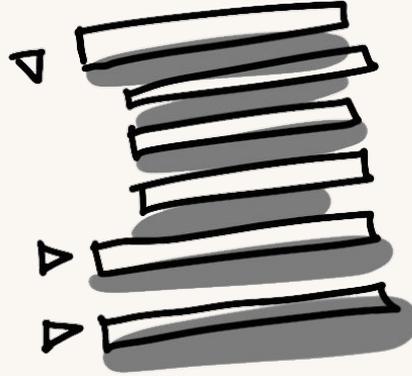
Ingredients of design



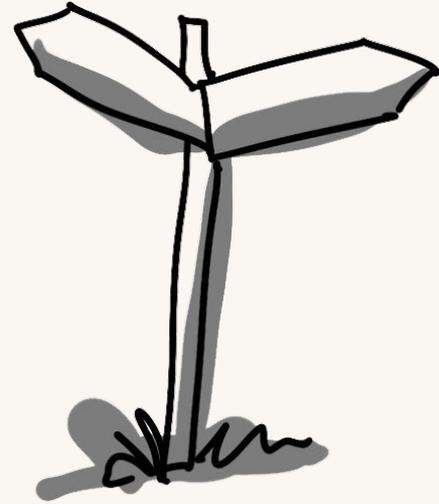
Visuals



Words



Organization



Choices

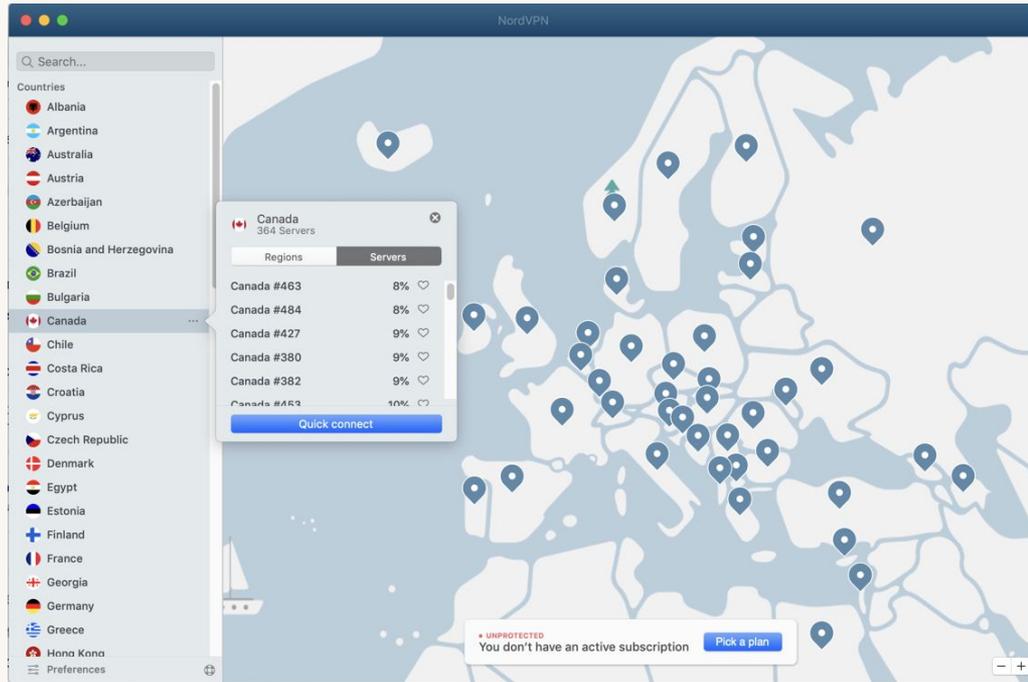
ProtonVPN

```
-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



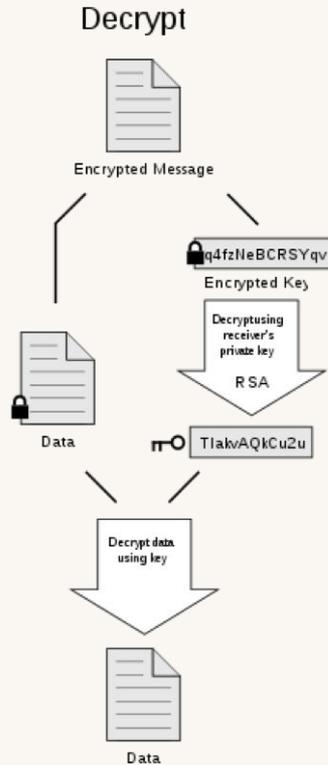
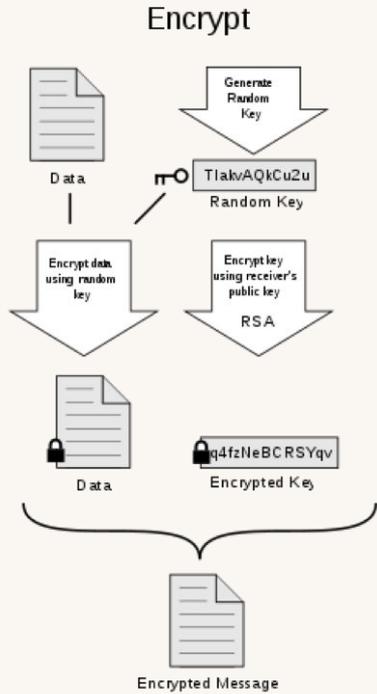
Password management



Key handling



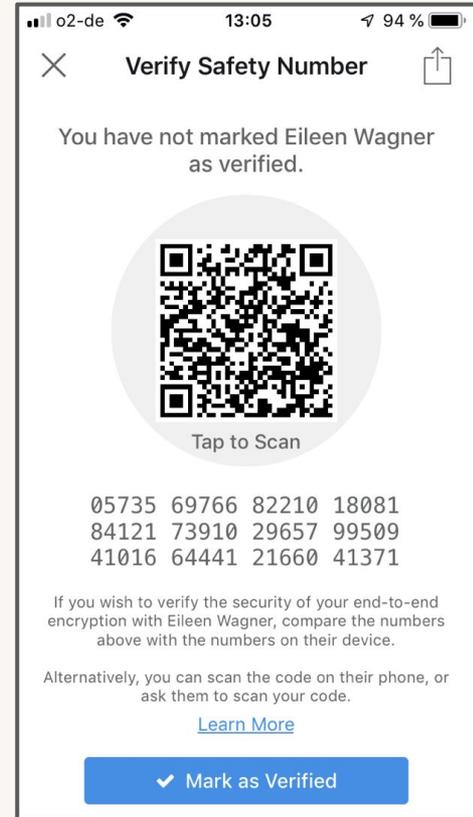
Does everyone need to know this?



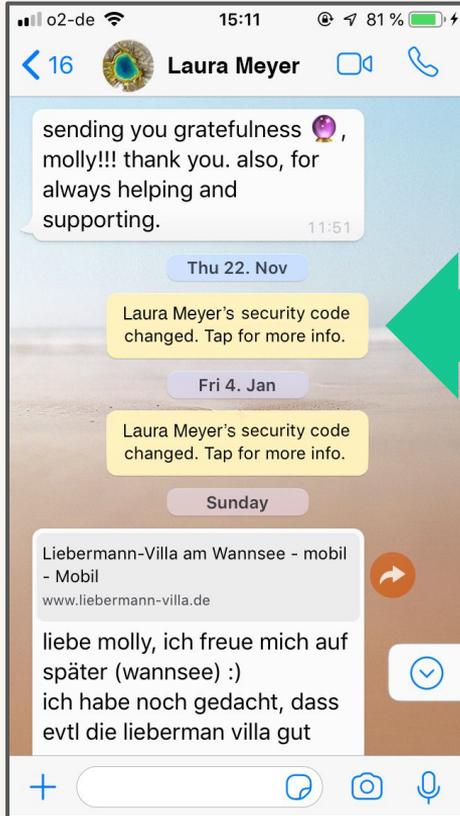
Signal



“Your safety number with Eileen has changed”



WhatsApp



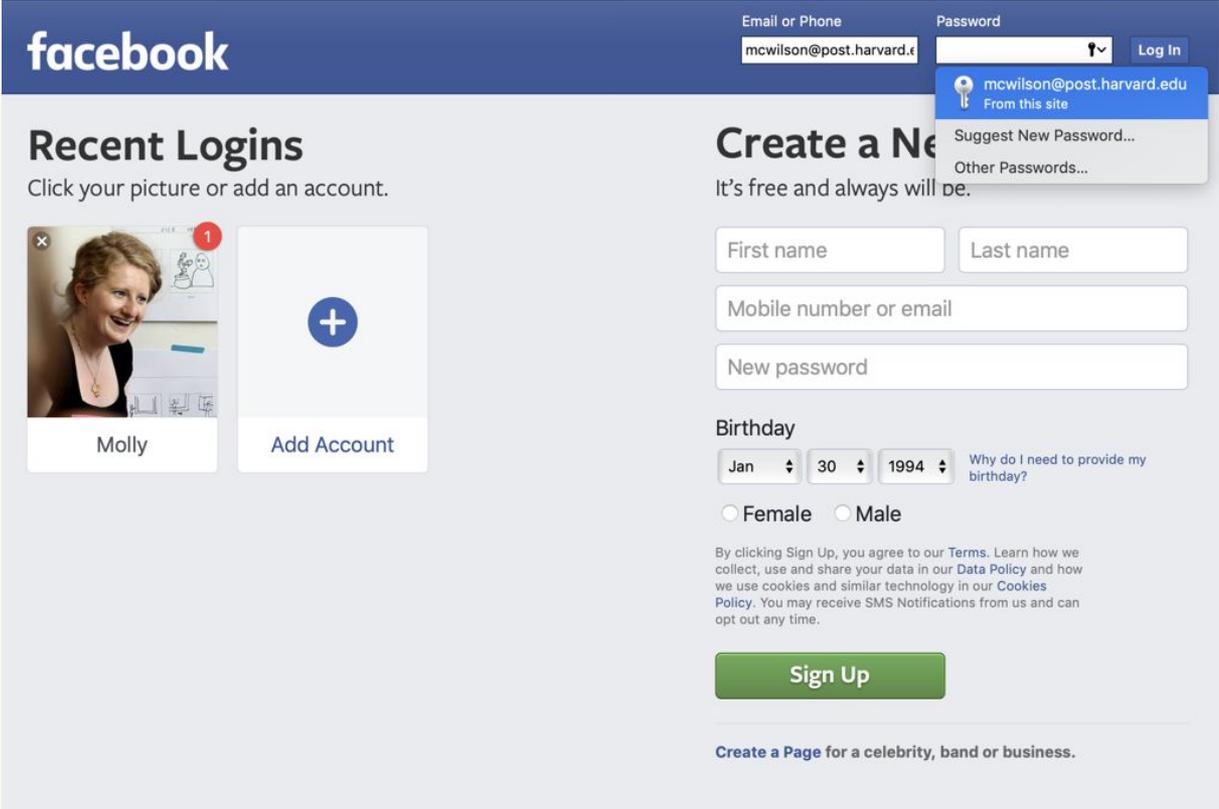
“Laura’s security code has changed”



Password management



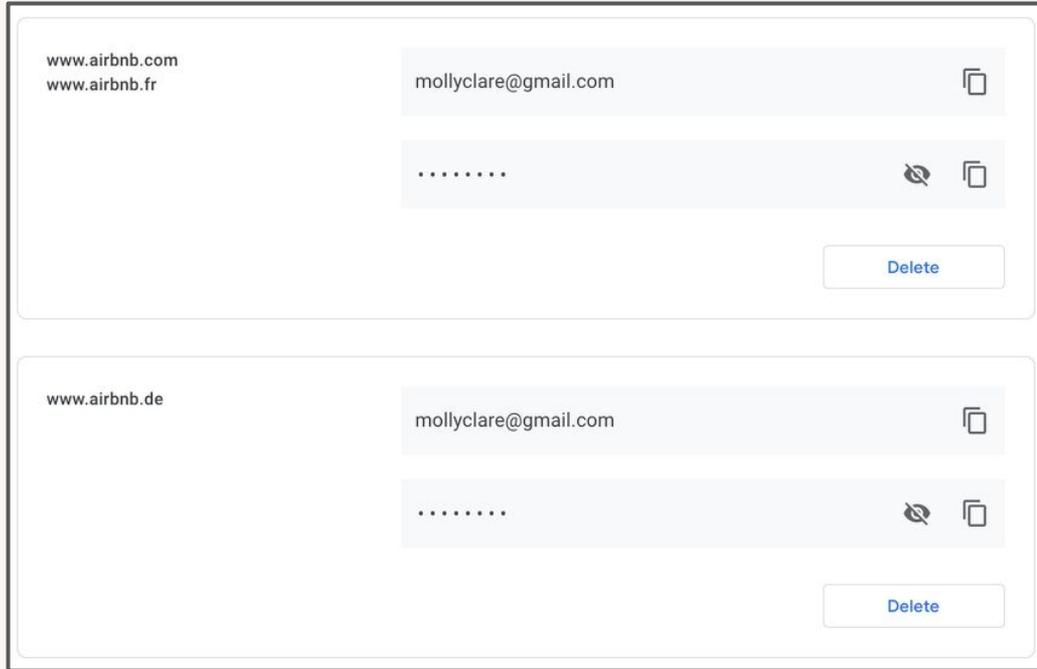
In-browser password management



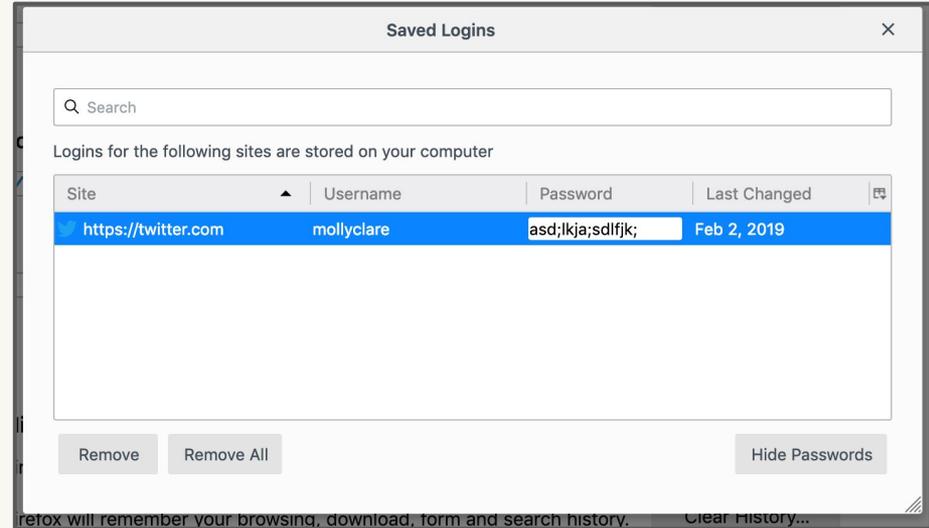
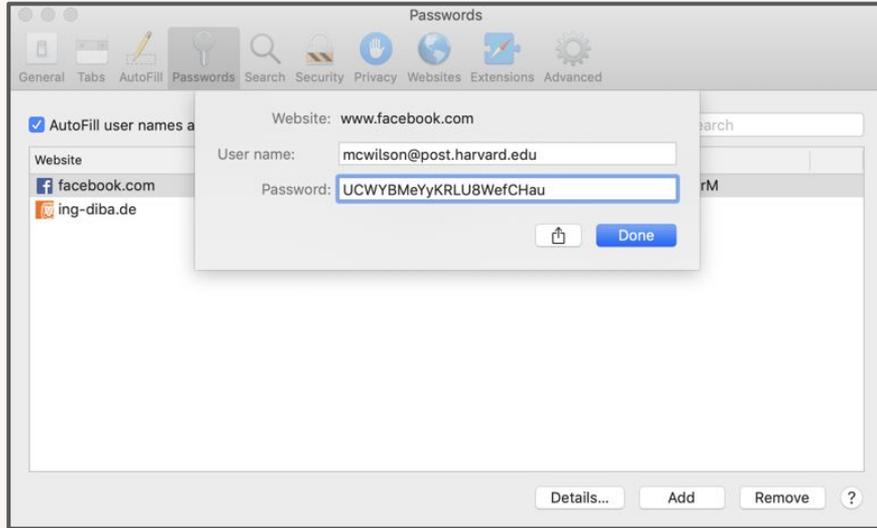
The image shows a screenshot of the Facebook login page. At the top left is the Facebook logo. To its right are two input fields: "Email or Phone" containing "mcwilson@post.harvard.edu" and "Password". A "Log In" button is to the right of the password field. A dropdown menu is open from the password field, showing a key icon, the email address "mcwilson@post.harvard.edu" with "From this site" below it, and two options: "Suggest New Password..." and "Other Passwords...". Below the login fields is the "Create a New Account" section, which includes a "Sign Up" button and a "Log In" button. The "Sign Up" button is highlighted in green. Below this are input fields for "First name", "Last name", "Mobile number or email", and "New password". The "Birthday" section has dropdowns for month (Jan), day (30), and year (1994), with a link "Why do I need to provide my birthday?". There are radio buttons for "Female" and "Male". At the bottom, there is a "Sign Up" button and a link "Create a Page for a celebrity, band or business."



Chrome password manager: passwords are NOT editable



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?”



Watch someone use your tool

“What does this do?”

“What do you think it
does?”

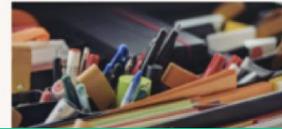




Security and privacy aren't just for some



Topics from the Knowledge Base



simplysecure.org/knowledge-base

