

Safe Computing

User Authentication

- *Authentication* is based on one or more of the following factors:
 - Knowledge – something you know, like a password.
 - Possession – something you have.
 - Inherence – something that you are (biometric data).

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User Authentication

- Passwords
 - Strong passwords are long.
 - Switching case is helpful.
 - That's it – more characters means more possibilities for bad actors to deal with.
 - You will see contradictory advice on this...

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User Authentication

STRONG PASSWORD TIPS

YOU SHOULD KNOW



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User Authentication

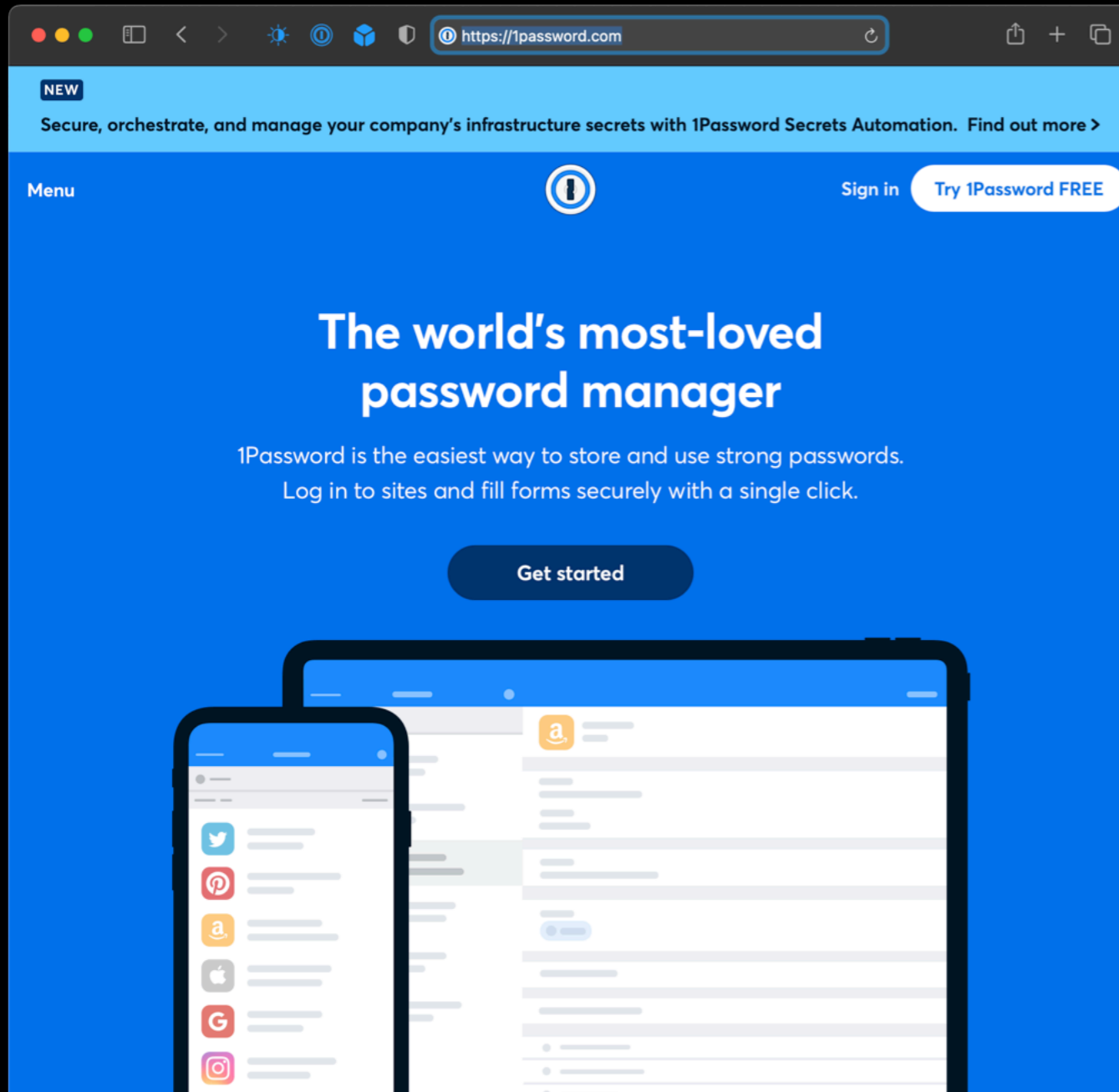
- How are passwords found by bad actors?
 - Educated guesses
 - Knowledge you have shared on social media
 - Brute force (trying all possible combinations)
 - Stuffing (get credentials for one site, use on another)
 - Phishing

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- How to avoid problems with your passwords?
 - Use a password manager!
 - No, really.
 - Use a password manager.
 - iCloud Keychain across Apple platforms
 - 1Password is an amazing password manager.
 - And a Canadian company! 🇨🇦
 - Nordpass

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A screenshot of the 1Password website homepage. The browser address bar shows <https://1password.com>. The page has a blue header with a "NEW" badge, a navigation menu, and a "Sign in" button with a "Try 1Password FREE" call to action. The main content area features the headline "The world's most-loved password manager" and a sub-headline "1Password is the easiest way to store and use strong passwords. Log in to sites and fill forms securely with a single click." Below this is a "Get started" button and an illustration of a smartphone and a tablet displaying the 1Password interface.


NEW
Secure, orchestrate, and manage your company's infrastructure secrets with 1Password Secrets Automation. Find out more >

Menu  Sign in [Try 1Password FREE](#)


The world's most-loved password manager

1Password is the easiest way to store and use strong passwords.
Log in to sites and fill forms securely with a single click.

[Get started](#)



A screenshot of the NordPass website homepage. The browser address bar shows nordpass.com. The page has a dark theme with the NordPass logo in the top left. The main headline is "Full-featured password security" with the tagline "Built with ❤️ to simplify your online life." Below this is a section titled "Manage passwords and passkeys hassle-free" which includes two illustrations: one for saving a password for Facebook.com and another for saving a password for Google.com.

 NordPass 

Full-featured password security

Built with ❤️ to simplify your online life.

Manage passwords and passkeys hassle-free

Save password for Facebook.com?  [Save](#)

Password 
 john.smith@gmail.com
Google.com 

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- Passkeys
 - *Passwords* are problematic, despite the existence of password managers
 - Passkeys are a new, cross-platform, cross-vendor standard
 - Passkeys are an implementation of the WebAuthentication or WebAuthn standard, which uses public-key cryptography to secure accounts
 - No need to remember passwords; uses information inherent to who you are for authentication (biometrics via another device)
 - Here is a [good overview of what passkeys are and how to use them](#)

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Passkeys

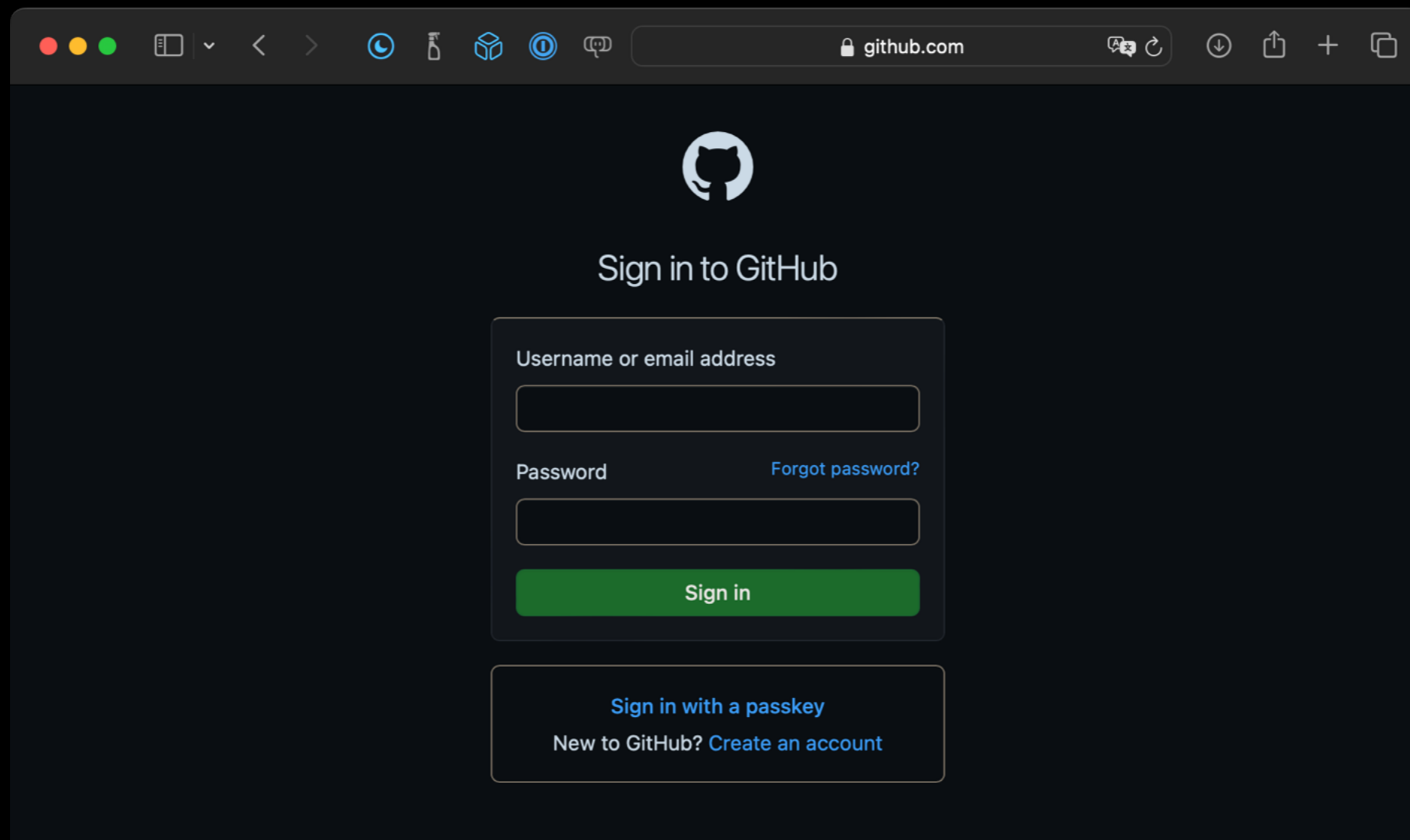
EXPLAINED

iOS/Mac Android Windows Web

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User Authentication

- Passkeys demo
 - GitHub login



The image shows a screenshot of the GitHub login page. The browser's address bar displays 'github.com'. The page features the GitHub logo at the top center, followed by the text 'Sign in to GitHub'. Below this is a form with two input fields: 'Username or email address' and 'Password'. A 'Forgot password?' link is located to the right of the password field. A green 'Sign in' button is positioned below the password field. At the bottom of the form, there is a section with the text 'Sign in with a passkey' and a link 'New to GitHub? Create an account'.