

# How to Keep Your Computer and Phone Secure

David J. Malan

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Secure

passwords



1. 123456

1. 123456

2. 123456789

1. 123456
2. 123456789
3. qwerty

1. 123456
2. 123456789
3. qwerty
4. password



1. 123456
2. 123456789
3. qwerty
4. password
5. 1234567

1. 123456
2. 123456789
3. qwerty
4. password
5. 1234567
6. 12345678

1. 123456
2. 123456789
3. qwerty
4. password
5. 1234567
6. 12345678
7. 12345

1. 123456
2. 123456789
3. qwerty
4. password
5. 1234567
6. 12345678
7. 12345
8. iloveyou

1. 123456
2. 123456789
3. qwerty
4. password
5. 1234567
6. 12345678
7. 12345
8. iloveyou
9. 111111

1. 123456
2. 123456789
3. qwerty
4. password
5. 1234567
6. 12345678
7. 12345
8. iloveyou
9. 111111
10. 123123

brute-force  
attacks





4-digit passcode

$$10 \times 10 \times 10 \times 10$$

10,000

4-letter passcode

52 × 52 × 52 × 52

7,311,616

4-character passcode

94 × 94 × 94 × 94



78,074,896

8-character passcode

94 × 94 × 94 × 94 ×

94 × 94 × 94 × 94

6,095,689,385,410,816



9:41

Tuesday, July 24

**iPhone is disabled**

try again in 1 minute

Emergency



9:41

Tuesday, July 24

iPhone is disabled

try again in 1 minute

Emergency

9:41

Tuesday, July 24

iPhone is disabled

try again in 1 minute

Emergency

Google Fi

📶 🔋 60%



11:27

Thu, May 28 ☁️ 24°C

Too many attempts. Try again later.



Google Fi

📶 🔋 60%



11:27

Thu, May 28 ☁️ 24°C

Too many attempts. Try again later.



Too many attempts. Try again later.

two-factor  
authentication



## 2-step Verification

Use your device to sign in to your Google Account.



### Enter verification code

Get a verification code from the "Google Authenticator" app

Done

Don't ask again on this computer

password managers

1password.com

lastpass.com

...

encryption

https://



end-to-end  
encryption





<https://zoom.us/j/5551112222>

<https://zoom.us/j/5551112222?pwd=#####>

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