CYBERSECURITY AVOIDING SCAMS STAYING SAFE ONLINE

LOS ALTOS HILLS TECHNOLOGY COMMITTEE

STAN MOK (COUNCIL LIAISON)

RAJIV BHATEJA (CHAIR)

AMEESH DIVATIA (VICE CHAIR)

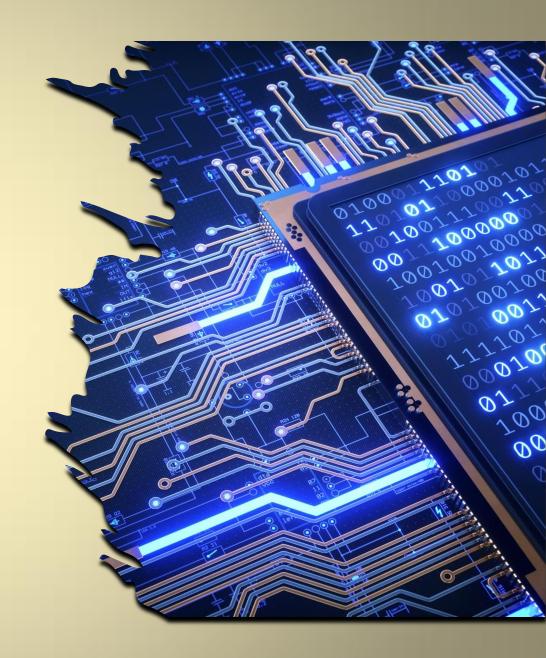
RON HALEY

LEW JAMISON ANNIE JU GEORGE LEE JOHN SWAN

JUNE 23, 2024

Agenda

- Introduction to Cybersecurity and Scams
- Reducing Risk and Password Safety
- Identifying and Avoiding Scams
- Protecting Accounts and Devices
- Recommendations and Additional Resources



Introduction to Cybersecurity and Scams

What is Cybersecurity

The term 'cybersecurity' refers to the practice of protecting systems, networks, and programs from digital attacks. These cyberattacks are usually aimed at accessing, changing, or destroying sensitive information; extorting money from users; or interrupting normal business processes.

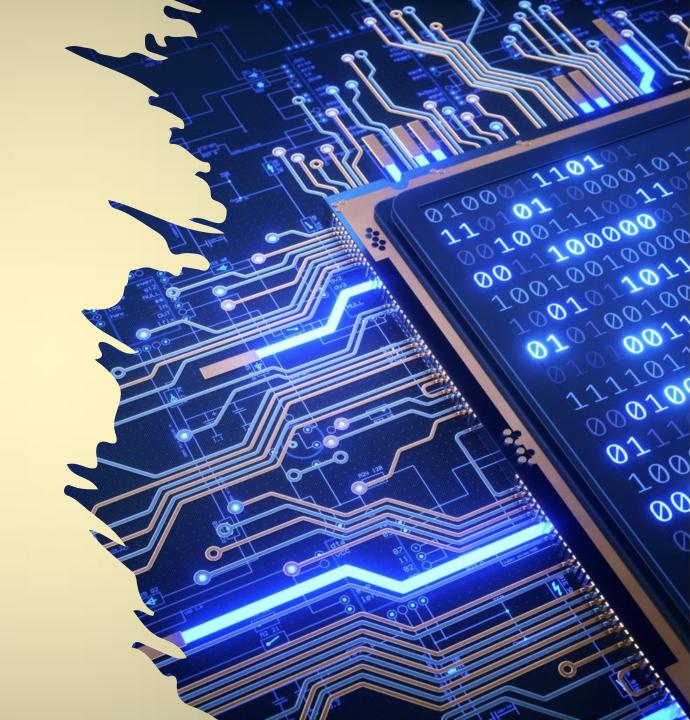
Implementing effective cybersecurity measures is particularly challenging today because there are more devices than people, and attackers are becoming more innovative.



What are Scams

Scams, often referred to in the context of cybersecurity, involve deceptive practices that aim to manipulate individuals into divulging confidential information, transferring money, or granting access to their systems.

Scams can take various forms, such as phishing emails, fake marketplaces, or advance payment frauds, and are designed to exploit the victims for financial gain or to disrupt normal business processes.



What You Can Do

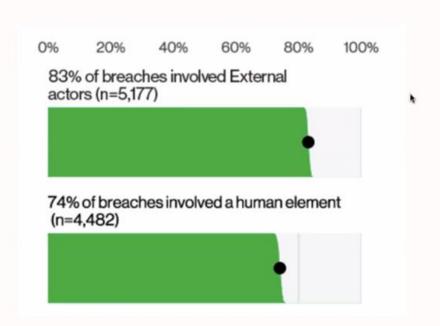
- > Be informed
 - > Types of scams
 - > Examples of online scams
 - Scammer tactics
- > Reduce your risk
 - > Safeguard your personal information
 - > Harden your accounts
 - ➤ Increase your awareness
 - Reduce the risk of being scammed
- ➤ If you're a victim:
 - ➤ Whom to contact
 - ➤ Where to get help





Growth of Scams

Year in Review



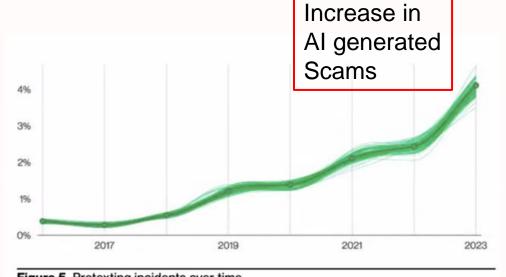


Figure 5. Pretexting incidents over time

DBIR 2023 (Verizon)

2023 Data Breach Investigations Report

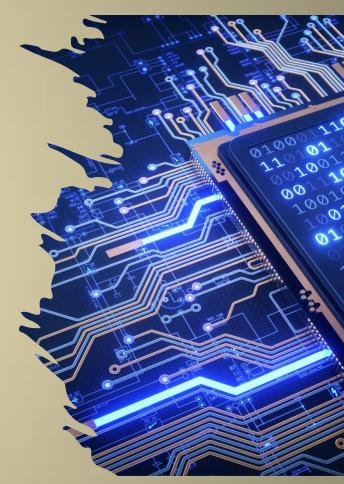
_____ is investigating whether a large trove of customer data was stolen from the company after information about the firm's clients was offered for sale on a cybercrime forum earlier this week.

October 2023

Attack: "Credential Stuffing"

Common Types of Scams

- Government agency (pretending to be: IRS, Customs, USPS...)
 - Example: https://www.irs.gov/newsroom/tax-scamsconsumer-alerts
- Corporations (pretending to be: UPS, Wal-Mart, Amazon, EBay, PayPal, AT&T, banks...)
 - > Example: https://corporate.walmart.com/privacy-security/fraud-alerts
- ➤ Call Centers / Technical Assistance (pretending to be: Microsoft, Norton, McAfee...)
 - > Example: https://bit.ly/microsoft-scams
- > Financial
 - Example: credit card cloning/skimming, phone hacking, email phishing
- Romance
 - > Search for "social catfish" on YouTube
- Family, friends, caregivers
 - Example: https://www.plano.gov/2125/Parent-Scam
- > Stolen / re-written paper checks
 - ➤ "You can buy checks on the internet for \$45, with a perfectly good signature. There is one website that offers a money-back guarantee. It's like Nordstrom."
 - John Ravita, Director of Business Development, SQN Banking Systems



Scammer Tactics

- AI-Powered Scams
- Phone Scams
- Text Scams
- Email Scams
- Student Loan Forgiveness Scams
- Creating a Sense of URGENCY, FEAR
- Building Rapport with Casual Talk
- Catching you at a busy time when you're distracted (soccer field, traveling, meeting, etc.): you make a hasty decision.



It's important to be aware of these tactics and to be cautious when dealing with unsolicited calls, emails, or messages.

If something seems too good to be true, it probably is.

Reducing Risk and Password Safety

Reducing Risk of Scams

Here are some ways of reducing risk:

- Be wary of phishing emails, fake online marketplaces, FAKE BILL PAYMENT!
- Don't click on links in emails. Hover your cursor or go to the site directly.
 - e.g, https://wellsfargo.com actually points to scam.com
- Avoid advance payment scams and protect against SIM swaps
- Be skeptical of beneficiary claims and grandchild in trouble scams
- Use password safety practices like Multi-Factor Authentication and password managers
- Set up alerts and credit freezes for financial accounts
- Protect your devices and accounts with strong security measures



Protect Your Passwords

Create strong, unique passwords

- Use at least 12 characters, the longer the better.
- Combine upper and lowercase letters, numbers, and special symbols.
- Avoid using personal information (names, birthdays, or addresses).
- Use a unique password for every account.
- Avoid using dictionary words or common phrases.

Enable Multi-Factor Authentication

Verification code from app or text message.

Be wary of unsolicited phone calls and emails

- iPhones can silence calls from unknown numbers.
- Android can screen calls, and identify/ignore spam calls/texts

Password Length	All Characters	Only Lowercase
3 characters 4 characters 5 characters 6 characters 7 characters 8 characters 9 characters 10 characters 11 characters 12 characters 13 characters 14 characters	0.86 seconds 1.36 minutes 2.15 hours 8.51 days 2.21 years 2.10 centuries 20 millennia 1,899 millennia 180,365 millennia 17,184,705 millennia 1,627,797,068 millennia 154,640,721,434 millennia	0.02 seconds .046 seconds 11.9 seconds 5.15 minutes 2.23 hours 2.42 days 2.07 months 4.48 years 1.16 centuries 3.03 millennia 78.7 millennia

Password Process

1. Use UNIQUE passwords.

Never re-use important passwords

2. Use LONG passwords.

Use a password manager to generate strong passwords

3. Use MFA where available.

Multi-Factor Authentication: Authenticator App (preferred), or Text PIN

4. Have I been Pwned?

Is your password compromised?



New trend: Passkey

What is a Passkey? - Emerging Trend

- A passkey is a digital token stored on your device (usually your phone or computer)
 - Similar to GPG technology (private and public key encryption)
- "Your device IS your password"
- Your device needs to be protected by a screen lock (fingerprint, PIN, pattern, etc.)
- Advantages:
 - No passwords to remember,
 - No password to hack
- But:
 - Protect your devices
 - If someone gets access to your unlocked device...



Never Reuse Passwords

"How can I remember all those passwords?"







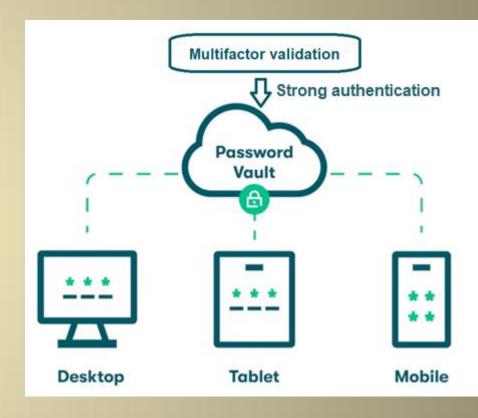
Password Managers

Independent Password Managers (in no particular order):

- ➤ NordPass
- > I Password
- Dashlane
- Keeper
- **Bitwarden**
- ▶ LastPass
- KeePass (actually a "password safe")

Browser-based password managers: "Remember this password?"

- ➢ Google Chrome
- ➤ Microsoft Edge
- > Apple Safari



Password managers ensure that you really are at the correct website before entering your credentials. Example: Your Yahoo credentials won't mistakenly be used at Yah00.com Password managers also advise you if your password has been hacked or is not secure. Password managers also suggest very strong passwords.

Why You Should Use a Password Manager

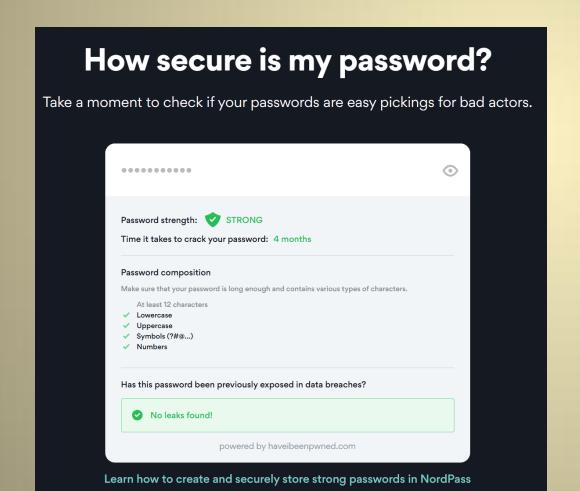
Smart Guessing Algorithm Cracks 87 Million Passwords In Under 60 Seconds

Password Manager suggested passwords are completely random and are harder to crack!

Password Strength Checker

Free Password Strength Checker:

www.nordpass.com/secure-password/





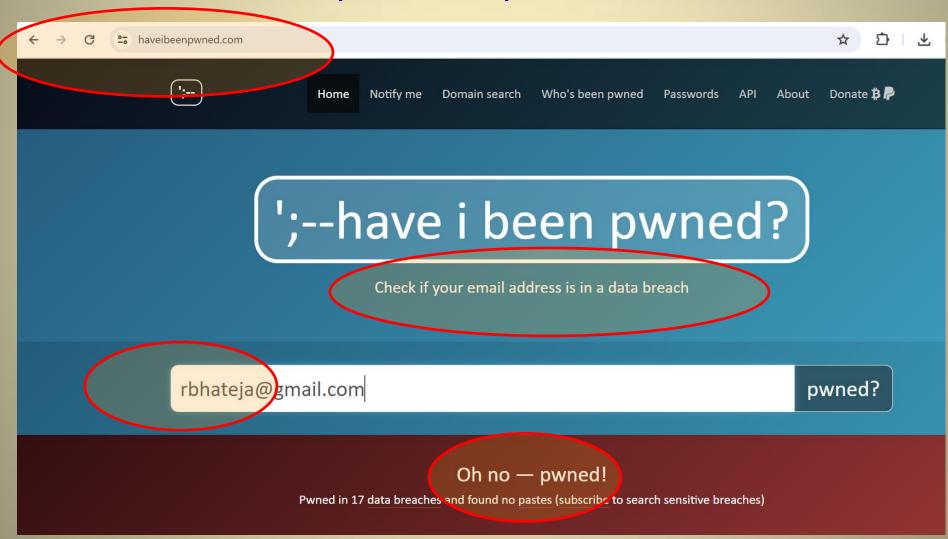
CAUTION:

Generally avoid checking your password with websites unless they're from a reputed company.

Password managers do this for you automatically.

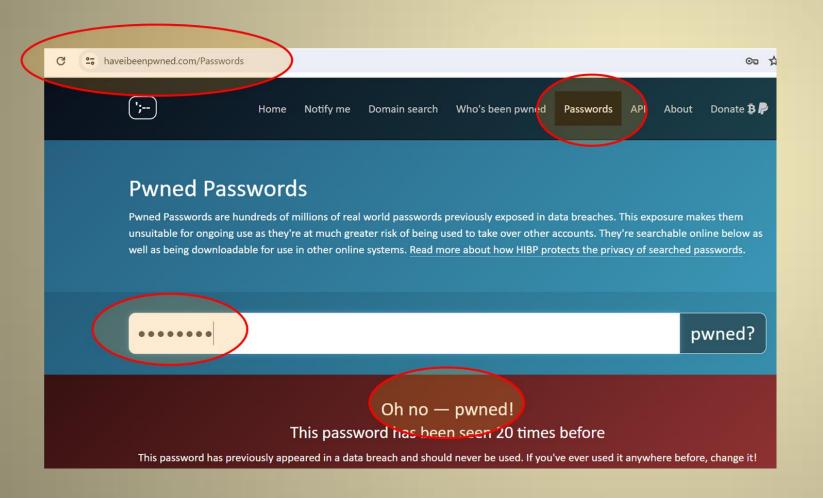
IS YOUR EMAIL IN DATA BREACHES?

https://haveibeenpwned.com



Does your Password Appear in Data Breaches?

https://haveibeenpwned.com





Weak Links

Unauthorized access to your computer, phone or email can lead to severe consequences. These are major weak links.

Make sure you **PROTECT**:

- Computers
 - > Be very careful about where you're downloading software from
 - > Don't give anyone access to your computers in-person or remotely
- Phones
 - ➤ Protect your phone with a SIM PIN (aka "number transfer PIN")
 - ➤ Robust screen lock (Fingerprint / PIN / Pattern) avoid facial recognition
 - Fast auto-lock timeout to lock screen
- > Email and critical accounts
 - ➤ Use MFA
 - ➤ Use a hardware key (like Yubikey) for extra security
 - ➤ Requires physical key (and optionally a PIN)





Identifying and Avoiding Scams

How to Spot Fake Emails

to me ▼

Your Account Prime Will-Be Removed Today D Spam x



Prime® <ConfirmationEmail.yqfp@diamant.motorfycle.com>



Dear Prime Costumer, Your Subscription has expired Fear, Anxiety

Your Subscription for Prime expired on Wed, 15 May-2024

We tried to renew subscription at the end of each biling cycle, but your monthly payment has failed. We therefore had to cancel your subscription. Obviously, we would love to ee you again. If you wish to renew your subscription click on the link below.

UPDATE MY PAYMENT DETAILS:

Subscription ID: 10663225828

Product: Prime

Wed,15 May-2024 **Expiration Date:**

Float cursor over button to display link

Prime® <ConfirmationEmail.ygfp@diamant.motorfycle.com>

https://www.amazon-prime-renew.com - FAKE!!

Verify My Account







How Easy is to Fake an Email?



Yahoo mail sent it to spam.

Gmail did not allow it go through at all.

Not all email providers are going to catch all fakes.

Solution: Confirm by other means if suspicious.

To: bhateja@yahoo.com

Subject: Check out my fake email to you

From: "Stanley Mok" <stanmok@losaltoshills.ca.gov>

X-Priority: 3 (Normal) Importance: Normal

Errors-To: stanmok@losaltoshills.ca.gov
Reply-To: stanmok@losaltoshills.ca.gov

Content-Type: text/plain; charset=utf-8

Message-Id:

20240612223911.0A2AD1D7C@emkei.cz

Date: Thu, 13 Jun 2024 00:39:11 +0200 (CEST)

Content-Length: 54

Hi Rajiv,

How do you like them fakes?

Cheers,

Stan

Marketplace Fraud

- > Account hijacking
 - □ Solution: Protect your credentials, use Multi-Factor Authentication
- > Phishing for identify info
 - ☐ Solution: Don't share your DOB, SSN, etc. with marketplaces
 [But be aware: that info could be out there already]
- Delivery redirection
 - □ Solution: Watch out for email notifications of address/phone number change
- Inaccurate/misleading listing / Too good to be true
 - ☐ Solution: READ CAREFULLY. Only use well-reputed sites
- Use trusted sites and payment methods
 - ☐ Solution: Use credit cards or **protected payment methods**
 - Not Western Union, Giftcards, Zelle, etc.
 - ☐ Stay within a protected marketplace
 - AirBnB host suggests offline transaction DECLINE





Example of a Phone Scam

Call from AT&T Free iPhones !!!



Check AT&T website: Number checks out!!



Bill & account

800.331.0500

M - F, 7 a.m. - 9 p.m. CT Sa - Su, 8 a.m. - 9 p.m. CT 3 weeks later...

No iPhones

Account is hacked



It's a SCAM!

But HOW ??

The scammer called YOU.
They spoofed the AT&T phone

number.

Solution:
Tell them you'll call
THEM at the verified
AT&T number.

Avoiding Phone Scams

RULE:

1. "Don't call me. I'll call you."

2. "Let me call back at the verified number."

SIM Swapping



Attacker collects data on victim (through social media, phishing, etc.)





Now, thief gets incoming calls and texts meant for the victim — including account access codes.



Thief calls phone service provider, impersonates victim.





Thief tricks carrier into switching victim's mobile number to SIM card on thief's phone.



CAUTION:

If you share your confidential information with a scammer, banks may not reimburse you.

SIM Swapping: one of the most pernicious of all scams

- Lose access to your phone number
- Scammer can reset your passwords over email
- Scammer can intercept text one time passwords
- > Two factor authentication is useless

How To Prevent SIM Swapping

- Add a "number porting" PIN to your cellular service provider account
- Be super attentive to emails and texts from your cellular service provider
- Use authenticator apps whenever possible
- Never share codes for two-factor authentication with anyone

Man in the Middle Attack

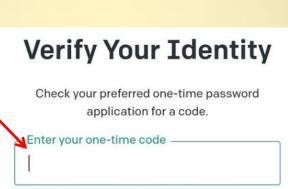
Step I: Scammer tricks you into thinking you're on a bank site: bankofamer1ca.com (replace i with 1). **Scammer can see what you enter on this site.**

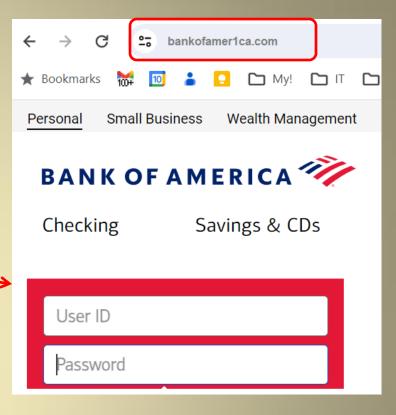
Step 2: You enter your username and password.

Scammer enters your credentials on the REAL BofA site

Step 3: BofA texts you a **one time code** or you enter code from **your authenticator app.**

You enter the code on the fake BofA web page Scammer now has your one time code.





Step 4: Scammer enters your code and gets into your account.

SOLUTION: Make sure you're on the right website.



Avoiding Man in the Middle Attack

RULE:

Make sure you're on the <u>real website</u>.

<u>Don't click on a link</u> in an email or text.

Go to your bookmarked link or type it in yourself.

Protecting Accounts and Devices

Protect Your Phone

Face ID unlock has inherent weaknesses

- Can be faked with Al
- Phone can quickly be held up to your face and unlocked

Is your phone unlocked when within range of your watch?

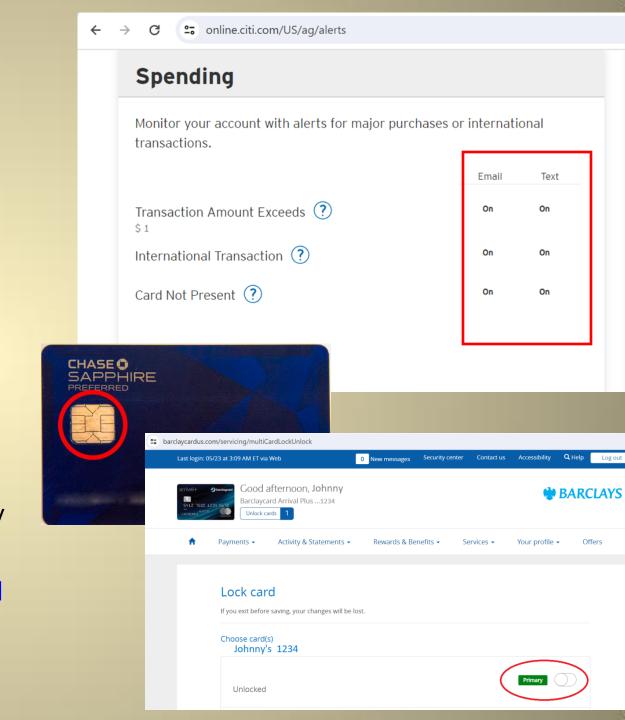
- Phone can stay unlocked within range of your watch
- > Recommend: Use a fingerprint, PIN or pattern (rather than facial recognition) to unlock your phone

Public WiFi / Hotspots

- Using a public WiFi or hotspot allows attackers to sneak malicious software (malware) into your device, display infected ads or using a phishing form to steal passwords.
- ➤ Recommend: If using a public WiFi network, use <u>VPN from a reputed vendor</u> to protect your phone from malicious software. Or use mobile data.
- Some cellular service providers automatically use VPN when using WiFi or hotspots

Protect Credit Card & Financial Accounts

- > Setup text/email alerts for your credit cards
- Same with your bank, investment accounts
- Bank ATMs are more secure than retail ATMs
- Be careful of devices with skimmers
 - Inspect device before using your card
- Cards with EMV chips are harder to clone
 - Use a chip reader or tap rather than swiping
- Promptly notify your credit card company of any unrecognized charges
- If concerned about card security, LOCK your card
- Set up PINs for IRS and FTB accounts to prevent scammers filing for a refund on your accounts



Credit Freeze – Prevent Others from Opening an Account in Your Name

What Should You Do if Your Information is Compromised?

Call each of the credit bureaus and put a hold on your credit that requires your authorization to unfreeze

- TransUnion
- Equifax
- Experian









Credit Freezes are free! [Locks are not free but freezes are effective]

- Limits access to your credit to those you currently have accounts with
- Prevents anyone from opening an account in your name
- Unfreeze temporarily to open a new account

Credit Security Freeze – How To

https://www.equifax.com/personal/credit-report-services/credit-freeze/

https://www.transunion.com/credit-freeze

https://www.experian.com/freeze/center.html

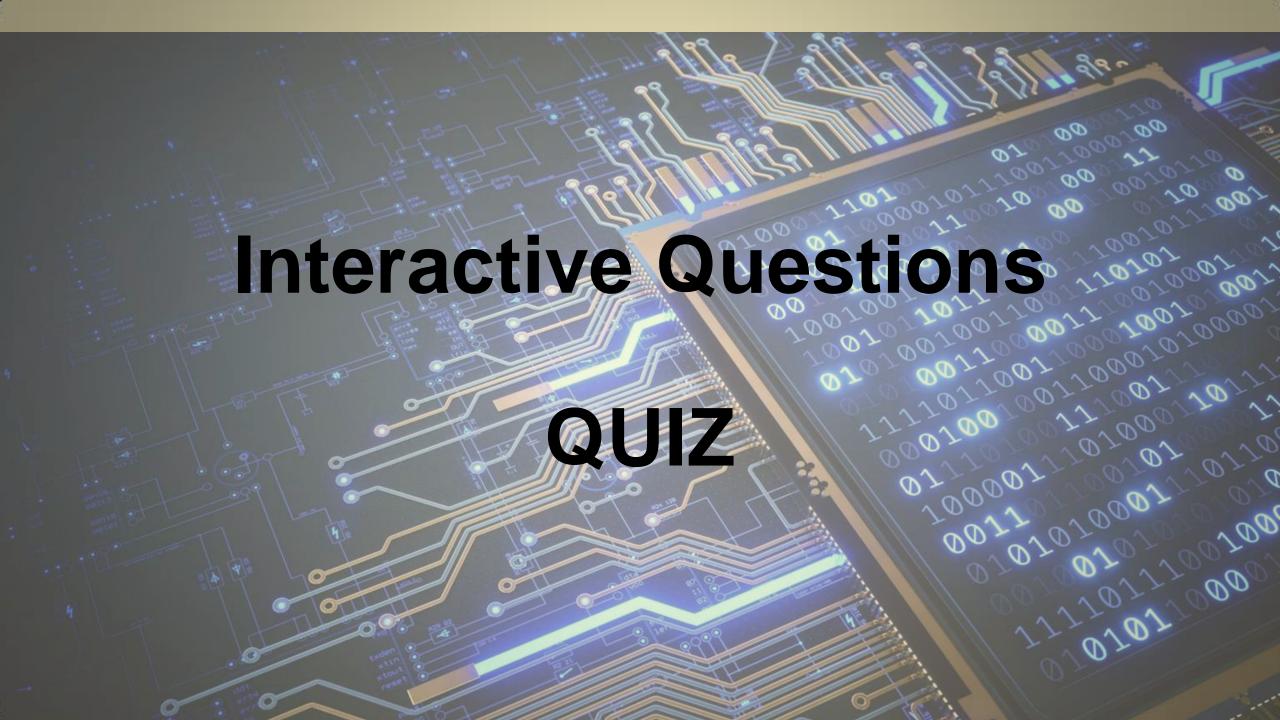
- > FREEZES are FREE. Locks are not. A freeze is all you need.
- > A freeze can be permanent (recommended), or temporary.
- You can temporarily LIFT a freeze if/when you apply for an account
 - Lift can be scheduled to last for 1-30 days
 - > Freeze automatically reinstated after the temporary lift

Security Freeze Placing, temporarily lifting, or removing a security freeze is free. PLACE A SECURITY FREEZE MANAGE A FREEZE

t's get started
d some of your information first. have an account? Sign in here
SSN or ITIN (XXX-XXXXXX)
₽
Your Social Security number helps us locate your credit report and verify your identity.
Mobile number (XXX-XXX-XXXX)
0

You have **temporarily lifted** your Equifax credit report freeze through **06/16/2024**.

MANAGE A FREEZE



Question: Safe Links

Scenario: You receive an email from your bank. Which link is safer to click?

- Option A: "Click here to verify your account details: www.bank-secure-login.com"
- Option B: "Visit our website and log in to your account: http://www.bankofamerica.com"

Answer: Neither.

The link text can be misleading and obscure a fraudulent link. Use a bookmark you've previously saved, or type in the official bank URL into the browser.

Question: Strong Password

Scenario: Which of the following is a stronger password?

- . Option A: "Password 123"
- . **Option B:** "T3x!7K\$z#9Qw"
- . Option C: "workHard79"

Answer: B

B is longer and includes upper/lower case letters, numbers and special characters.

Question: Phishing Email

Scenario: You receive an email claiming you've won a prize. What should you do?

- . Option A: Click the link in the email to claim your prize.
- . Option B: Verify the sender's email address and contact the company directly through their official website.
- . **Option C:** Check if the company is legitimate before you go to their website or enter personal information.

Answer: Most such emails are scams.

But if you really must follow through, Option C is best.

Do not click any links or download attachments.

Question: Public Wi-Fi Safety

Scenario: You're at a coffee shop and need to check your bank account. What's the safest way to do this?

- Option A: Use the coffee shop's free Wi-Fi to log in to your bank account.
- Option B: Use your mobile data or a VPN (Virtual Private Network) to access your bank account.

Answer: B

Public Wi-Fi networks are often insecure and can expose your personal information to hackers. Using mobile data or a VPN ensures a more secure connection to your bank account.

Question: Software Updates

Scenario: You receive a notification that there is a software update available for your device. What should you do?

- . Option A: Continue using your device.
- Option B: Install the update as soon as possible to ensure your device is secure.

Answer: B

Software updates often include important security patches that protect your device from vulnerabilities and enhance overall performance.

Question: Social Media Privacy

Scenario: You want to share a vacation photo on social media. What is the best practice?

- . Option A: Share the photo publicly.
- Option B: Share the photo with a select group of friends using privacy settings.

Answer: B

Consider posting photos after your trip to avoid revealing your current location and travel schedule.

You can enjoy sharing your vacation memories while maintaining your privacy and security.

Question: Two-Factor Authentication (2FA)

Scenario: Which of the following provides better security for your online accounts?

- . Option A: Password only.
- . Option B: Password and a verification code sent to your phone.
- . Option C: Password and a code from an authenticator app.
- . Option D: Password, a code and a hardware key.

Answer: D

This option combines multiple layers of security, including something you know (the password), something you have (the code), and something you possess (the hardware key).

Question: Suspicious Attachments

Scenario: You receive an email with an attachment from an unknown sender. What should you do?

- . Option A: Open the attachment to see what it is.
- Option B: Delete the email or mark it as spam without opening the attachment.

Answer: B

Attachments from unknown senders can contain malware or viruses. It's safest to delete the email or mark it as spam to protect your device and personal information.

Question: Password Management

Scenario: How should you manage your passwords for different accounts?

- . Option A: Use one password for all accounts to make it easier to remember.
- . **Option B:** Use a password manager to generate and store unique passwords for each account.
- Option C: Use a variation of a "root" password slightly modified for different accounts.

Answer: B

Using a password manager ensures that each of your accounts has a strong, unique password, reducing the risk of security breaches. It also simplifies the process of managing multiple passwords, as you only need to remember one master password for the password manager.

Question: Safe Browsing

Scenario: You come across a website offering a free download of a popular software program. What should you check before downloading?

- . Option A: Download the software to take advantage of the offer.
- . Option B: Verify the legitimacy of the website and check for reviews or official sources before downloading.

Answer: B

Look for official or well-known sources like the software's official website or reputable download sites. (Game software is particularly risky.)

Recommendations and Additional Resources

Recommendations

- ➤ Never re-use passwords.
 - Use a password manager
 - Use Multi-Factor Authentication and/or a hardware key to secure key accounts
 - Authenticator app is safer than one-time PIN
 - > NEVER share a one-time PIN with anyone else
- Protect against SIM Swapping
 - Add a "number transfer PIN" or other credential to your cellular service provider account
- > Set up and monitor alerts from your bank, credit card company, cell provider, brokerage
- > Avoid clicking on links in emails/texts
- Protect your phone: robust screen lock
- > "Don't call me, I'll call you" phone numbers can be hacked
- > Place a credit freeze with all three credit reporting agencies
- > Be wary of acting in haste in response to an unverified call or text



More Good Practices

- Use VPN when using public WiFi
- Avoid clicking on links in your email or text messages convenient but could take you to an imitation website
 - If you do click on a link, check the web address (URL)
- Avoid calling an 800 number listed in your email or text messages.
 - If you do, check to make sure the number is listed on the organization's website
 - Alternatively, call the organization's regular phone number (from their website)
- Do NOT use public charging cords or chargers. These chargers can be compromised.
 - Use your own charging adapter.
- Be aware of messages from your cell phone service provider ("SIM swapping")
 - https://www.businessinsider.com/credit-card-phone-theft-sim-swap-identity-theft-investigation-2023-4
- Don't leave your AirDrop (iOS) or Nearby Share (Android) enabled

IF YOU ARE A VICTIM

IF YOU ARE A VICTIM

- If you believe you are a victim of a Cybercrime, you should take the following steps:
 - > Gather information
 - > Report the incident
 - > Change passwords
 - Contact your financial institution(s)
 - > Report the incident to your local police: Santa Clara County Sheriff
 - > FTC at reportfraud.ftc.gov
 - ➤ Call the AARP Fraud Watch Network Helpline 877-908-3360
 - > Spread the word about fraud

Additional Articles

- ➤ The Day I Put \$50,000 in a Shoe Box and Handed It to a Stranger
 - > https://www.thecut.com/article/amazon-scam-call-ftc-arrest-warrants.html
- My phone, my credit card, my hacker, and me
 - > https://www.businessinsider.com/credit-card-phone-theft-sim-swap-identity-theft-investigation-2023-4
- > A former White House scientist was scammed out of \$655,000. Then came the IRS.
 - https://www.washingtonpost.com/dc-md-va/2023/12/14/cyber-crime-scams-irs-taxes/
- Finance worker pays out \$25 million after video call with deepfake 'chief financial officer'
 - https://www.cnn.com/2024/02/04/asia/deepfake-cfo-scam-hong-kong-intl-hnk/index.html
- 'I had fun': Alleged scammer takes credit for Graceland foreclosure upheaval
 - https://www.latimes.com/entertainment-arts/story/2024-05-29/nigerian-scammer-graceland-sale#
- Fake Obama created using AI video tool BBC News
 - ➤ https://www.youtube.com/watch?v=AmUC4m6w1wo



QUESTIONS?