



# Welcome to Michigan CyberPatriot Session



# How to use this info



I will be short  
and concise:

Slides  
Videos  
Hands-on games



Use this to be

Safer online  
Maybe find a  
job/career



Ask questions!! We're here to  
help!







# Cybersecurity Jobs

<https://www.nist.gov/itl/applied-cybersecurity/nice/nice-cybersecurity-workforce-framework-resource-center>

Worldwide over 6  
Million Jobs open-  
can't find the talent

Cybercrime could cost  
6 Trillion by the end of  
this year

Over 200 Billion  
devices connected

## Salaries:

High School and Certificate 40K  
High School and 2 yr degree 48-60K  
High School and 4 yr degree 61-85K  
High School and Graduate or  
Experience 92-140K

*83% of jobs posted need 4yr degree or more*

## Centers of Excellence in Michigan:

EMU, Walsh Davenport, Ferris,  
Oakland,  
Baker, Henry Ford, Lansing CC,  
Delta CC, Macomb CC, Grand  
Rapids CC, and  
the University of Detroit Mercy





<https://www.youtube.com/watch?v=0tO5SF2kzvA>



# What is Cybersecurity?

“Cybersecurity is the protection of internet-connected systems, including hardware, software and data, from cyberattacks.” - Google

Basically, it’s the practice of making all your computers and data protected from unwanted people.

Threat map:

<https://threatmap.checkpoint.com>

5



# 200 Billion IOT (Internet of things)

- ▶ Smartphone
- ▶ Wireless home security system
- ▶ Smart lighting
- ▶ Smart speakers

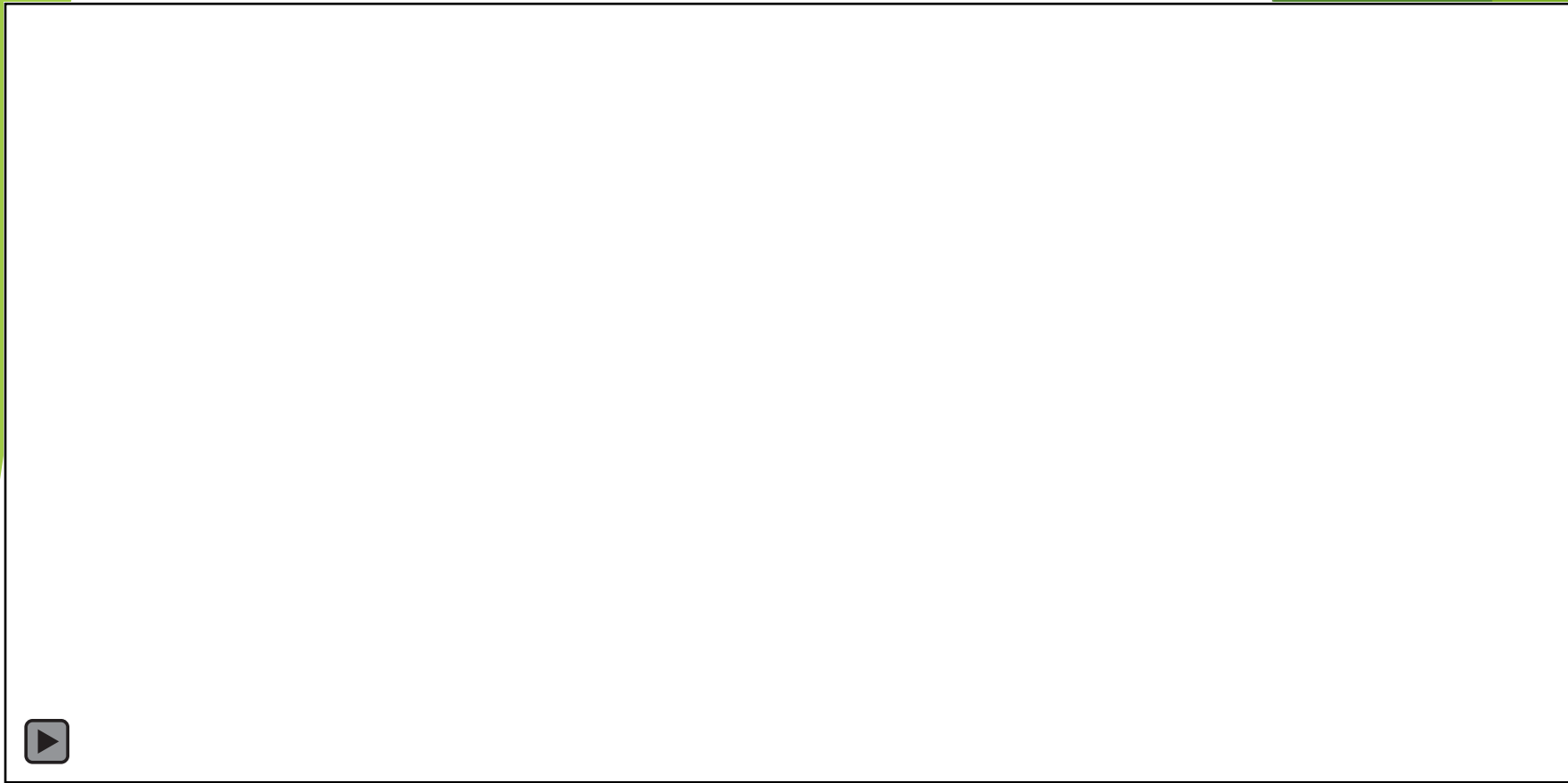


# What is CyberPatriot

**CyberPatriot is the National Youth Cyber Education Program created by the Air Force Association (AFA) to inspire K-12 students toward careers in cybersecurity or other science, technology, engineering, and mathematics (STEM) disciplines critical to our nation's future.**

**The CyberPatriot Programs are: The Middle School and High School Competition, the K-5 Game Program, the CyberGenerations Program and the Literature Series**





◇ CyberPatriot

<https://www.youtube.com/watch?v=o159up56-XM&t=72s>





# What is CyberPatriot Competition

- ▶ You are given a scenario in which you are a system administrator in a corporation
- ▶ Secure a set of virtual operating systems
  - ▶ Linux
  - ▶ Windows
- ▶ Secure the network itself, which links those operating systems (Cisco)
- ▶ Find critical vulnerabilities while maintaining critical services
- ▶ Top teams: PAID TRIPS to Maryland (and you get to ditch school for a bit)
  - ▶ It's super litty
  - ▶ And free merch + lots and lotsssss of cyber shirts



What  
does it  
take to  
play?

2-5 Students per team  
1 coach for every 5 teams  
mentor(s) from Industry  
3-5 PCs with 64 Bit with enough  
memory to run VmWare





## How does it work?



Find and fix cybersecurity vulnerabilities in virtual operating systems.

Using a proprietary competition system, teams are scored on how secure they make the system.

Top teams advance through the online round of competition, and the best of the best advance to the in-person National Finals Competition.

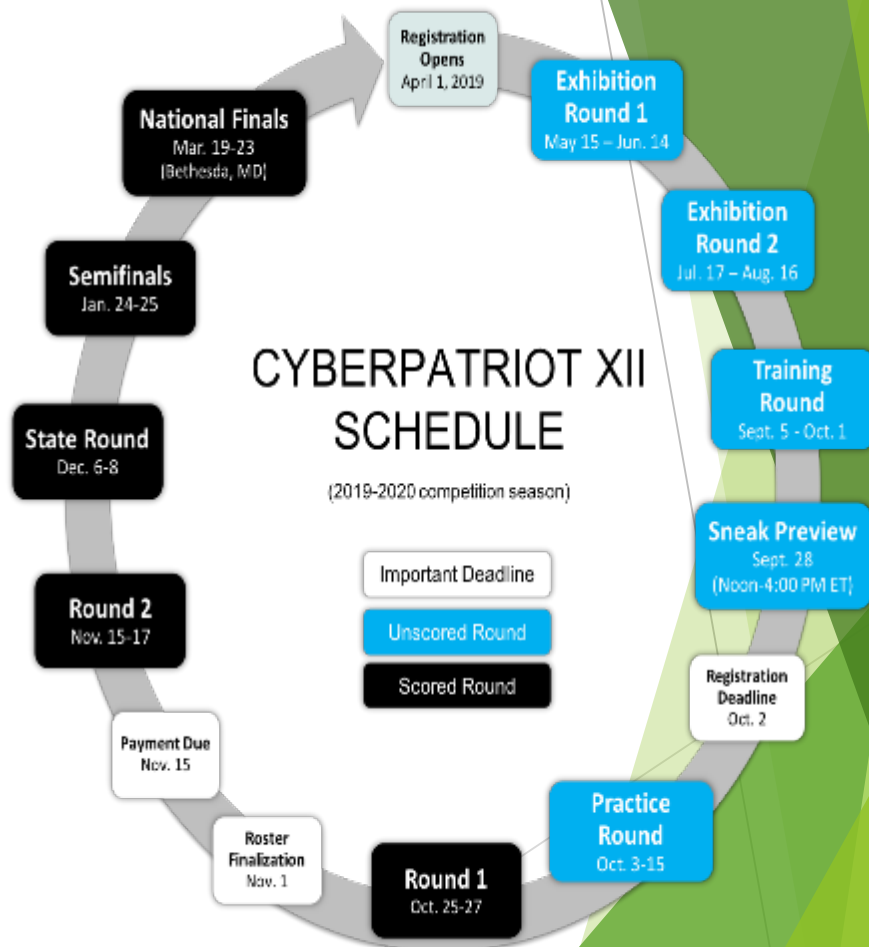


In April you can sign-up for the next season & start practicing

June or July the schedule is online & Summer Camps begin

First week in Oct registration closes

[www.uscyberpariot.org](http://www.uscyberpariot.org)



# Cyber Ethics - Just because you can do-should you?

Do not use	a computer to harm other people.
Don't interfere	with other people's computer work.
Don't snoop around	in other people's computer files.
Don't use	a computer to steal.
Don't use	a computer to bear false witness.
Don't copy or use	proprietary software for which you have not paid.
Don't use	other people's computer resources without authorization or proper compensation.
Don't appropriate	other people's intellectual output.
Think about	the social consequences of the program you are writing or the system you are designing.
Use	always use a computer in ways that ensure consideration and respect for your fellow humans.





# Basis Cybersecurity

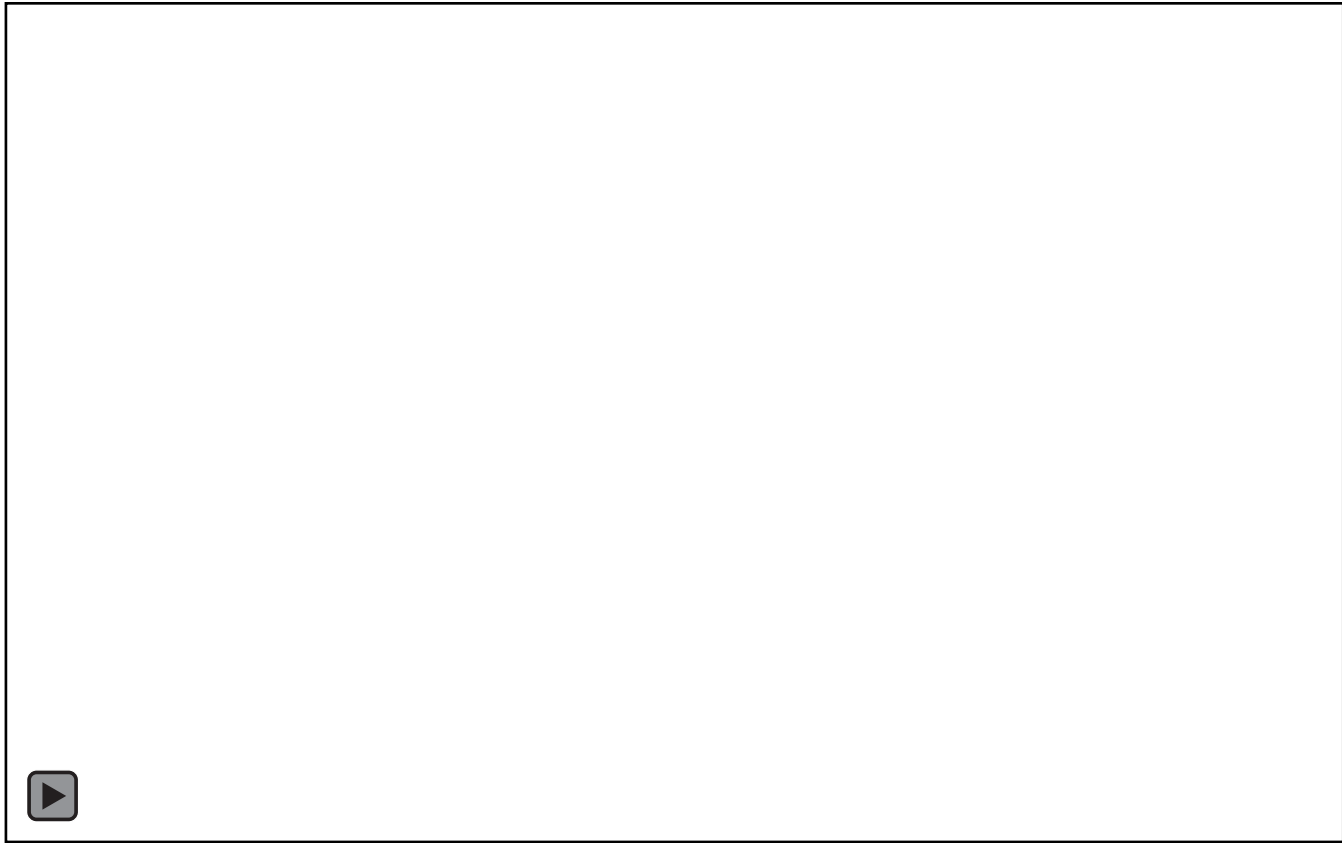


# CIA Triad



- ▶ Primary goals of Cybersecurity
  - ▶ Confidentiality
  - ▶ Integrity
  - ▶ Availability
- ▶ Every cybersecurity solution must address all three
  - ▶ Cybersecurity cannot exist without all three





# Passwords!



**Here are some tips to create a secure password!**

Do not reuse the same password for different sites

Have at least 8-14 characters

Use different symbols and numbers in your password to increase complexity

Pick something easy to remember but difficult to guess

Use an algorithm!



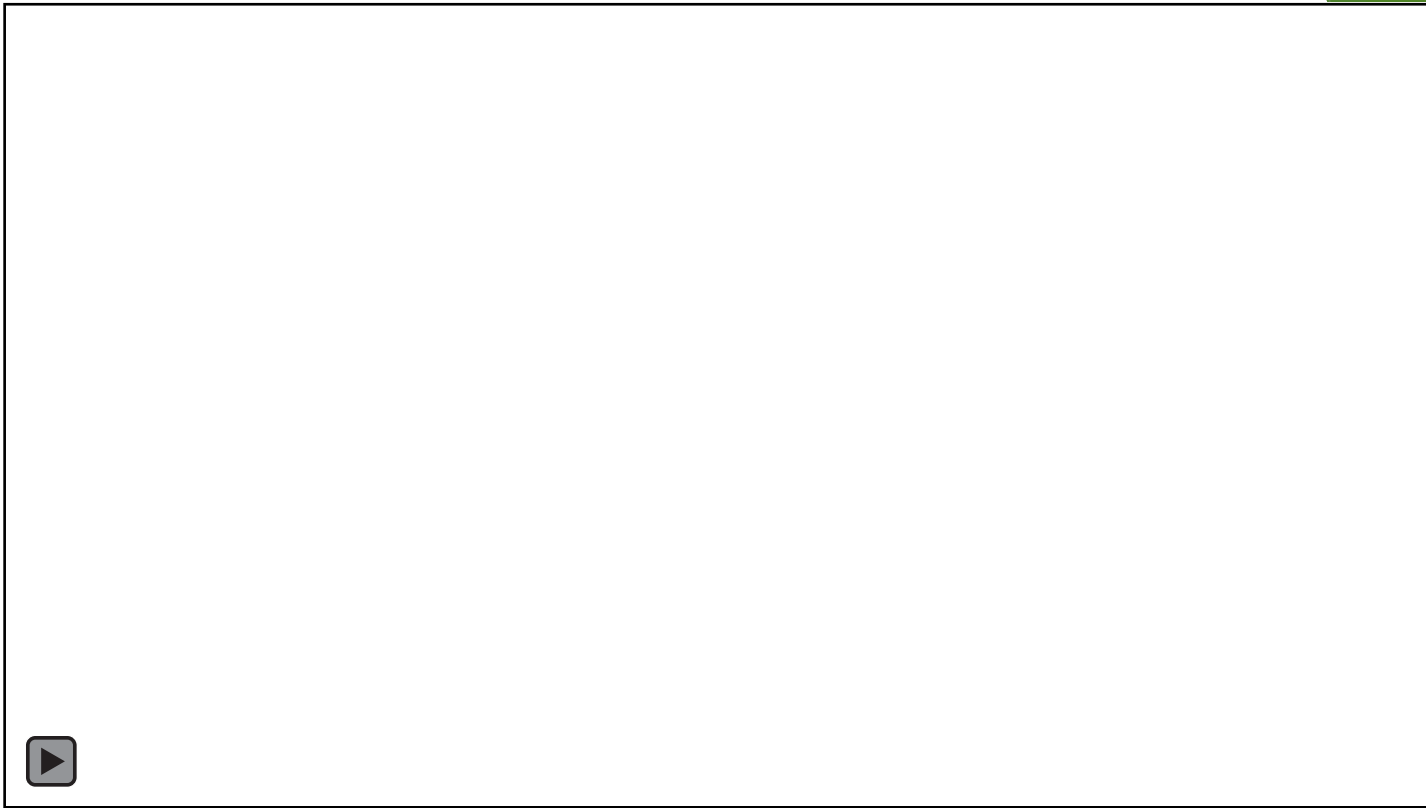
**Activity Time!!**

Test your password out on [howsecureismypassword.net](https://www.howsecureismypassword.net)

Let's see who can make the most secure password

- Spend 3 minutes to create a secure password you can memorize





[https://www.youtube.com/watch?v=Srh\\_TV\\_J144](https://www.youtube.com/watch?v=Srh_TV_J144)

# Where to save those passwords





# Internet Safety

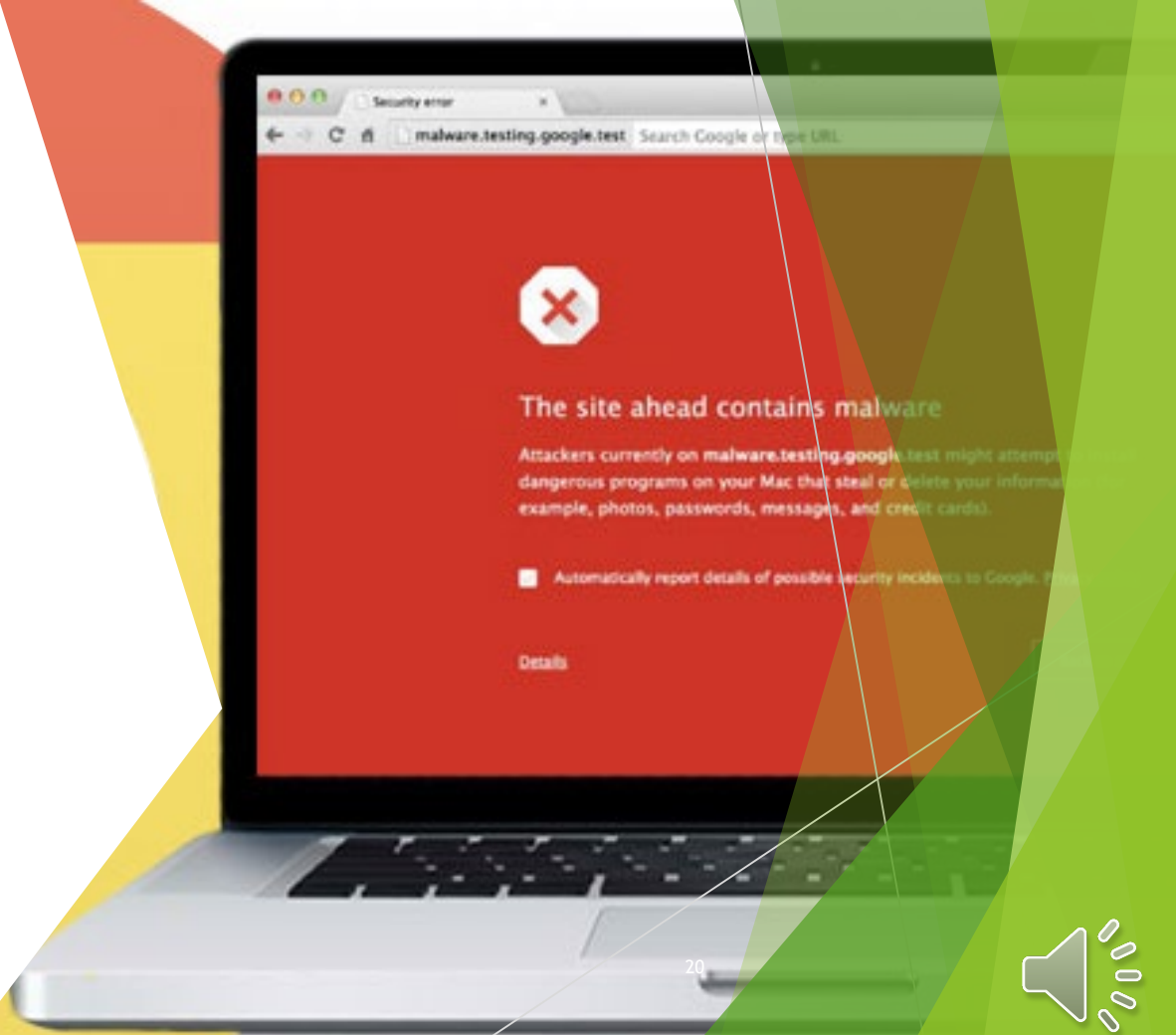
- ▶ Only communicate with trusted individuals
- ▶ Don't share your personal info on the internet
  - ▶ Passwords
  - ▶ Credit card info
  - ▶ Address
- ▶ Always log out of your computer if you are not using it
  - ▶ Or else I will find it and change your profile picture to a bonobo





# Safe Browsing

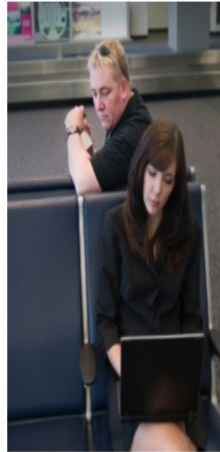
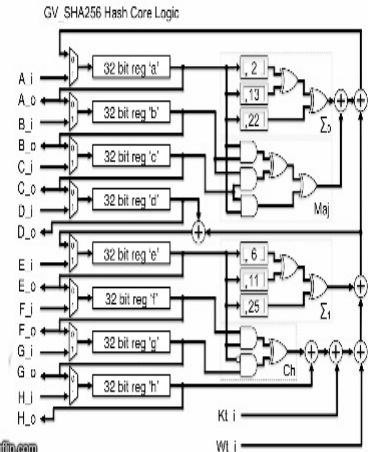
- ▶ Check for a lock, which signifies “https”
- ▶ Don’t fall for scams  
eNtEr yoUr CreDiT cArD NuMbEr to WIN a frEE PriZe
- ▶ Make sure the site can be trusted before giving your PII  
Amazon.com? Yes  
winprizesonline.com? No
- ▶ Use safety features in your browser  
Pop-up blockers, anti-spyware, etc  
Don’t save your password



# WHO WOULD WIN?

## ADVANCED HASHING ALGORITHMS

## ONE SNEAKY BOI



# Physical Security

## Threats:

- ▶ Dumpster Diving
- ▶ Shoulder Surfing
- ▶ Theft

## How protect:

- ▶ Lock your computer
- ▶ Shield your keyboard when typing passwords
- ▶ Don't let strangers touch your computer
- ▶ Always have passwords on your devices





**Scammer**

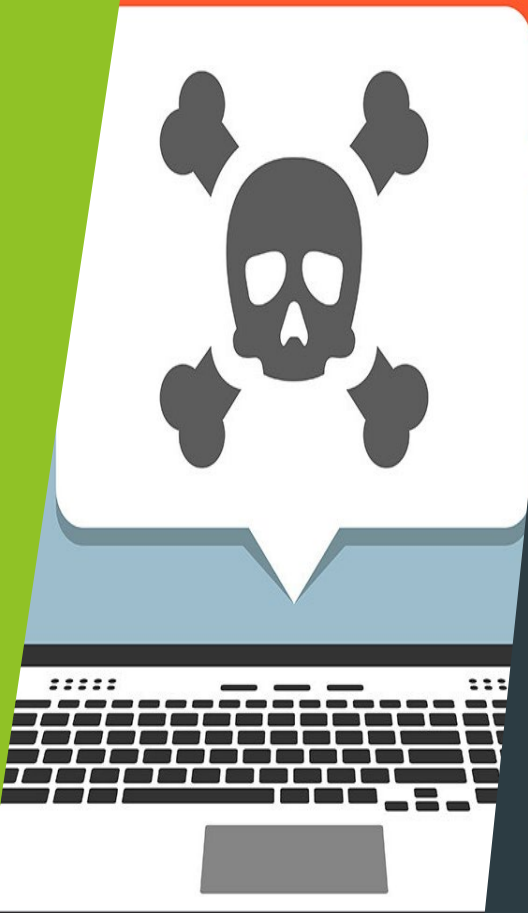


**You**

# Phishing

- ▶ When you get those emails from your friendly neighborhood Nigerian prince
- ▶ How protect
  - ▶ Verify that it is from a legitimate sender/site
  - ▶ Common sense and a healthy sense of skepticism
  - ▶ Check for any obvious typos
  - ▶ Go to the source





# Malware

- ▶ Malware = malicious software
- ▶ What does it do?
  - ▶ Steal info
  - ▶ Spy
  - ▶ Take over computers
  - ▶ Destroy data
- ▶ Types
  - ▶ Viruses + worms + Trojans
  - ▶ Zombies + botnets + Backdoors
  - ▶ Keyloggers + Ransomware
  - ▶ Logic Bomb + Spyware





# Other Attacks

- ▶ Replay
- ▶ Man in the Middle (MITM)
- ▶ Denial of Service (DoS)
- ▶ Distributed Denial of Service (DDoS)
- ▶ Brute Force
- ▶

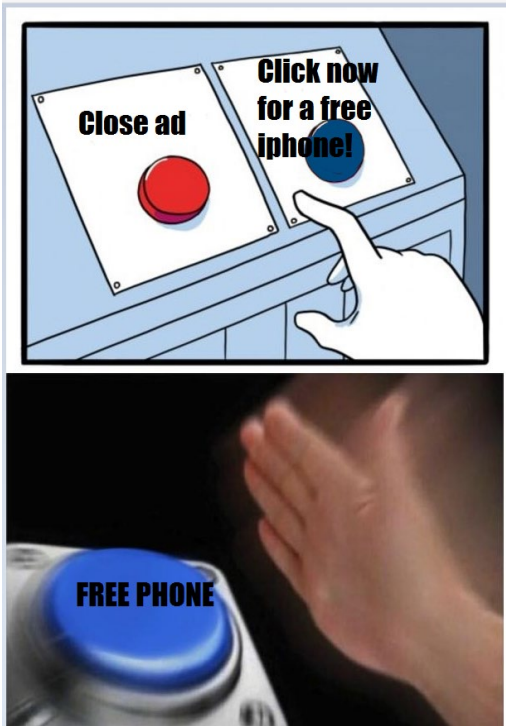


DOS



DDOS





## How Not To Get Malware

- ▶ Always UPDATE
- ▶ Anti-virus
- ▶ Keep backups
  - ▶ External hard drive
  - ▶ Cloud
- ▶ Be skeptical of sketchy phishing scams
- ▶ When downloading something, pay attention to which download button you use





# Game Time!

<http://targetedattacks.trendmicro.com/>

<https://it.tamu.edu/security/cybersecurity-games/index.php>

<https://it.tamu.edu/cybercircus/>

<https://fightback.tamu.edu/>

<http://www.carnegiecyberacademy.com/funstuff.html#games>





Thanks for  
attending

If you want more info on  
Summer Camps, or  
starting a CyberPatriot  
team go to

[www.micyberpatriot.com](http://www.micyberpatriot.com)

Or email:  
TamaraShoe@gmail.com

