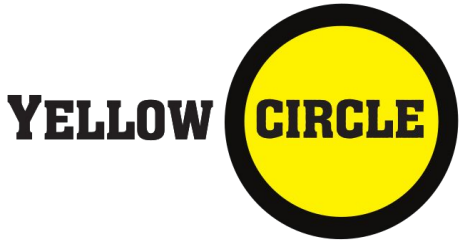


TECHNOLOGY CAMP

Physical, Web, & Network Security

Day 1 : Session 4

Introductions

Instructors

- Name
- Job / Company
- Industry Experience
- Something interesting

Volunteers

- Name
- Job / School
- Something interesting

Session Overview

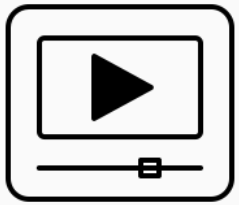
YELLOW CIRCLE

Physical, Web, Network Security

- Controlling access to building
- Secure web and OS application
- Network level security
- Layers of security mechanisms
- Ultimate goal is to keep bad guys out
- Allow access to good folks

Physical Security at Google Data Center

- Lets watch it:
  - *https://www.youtube.com/watch?v=XZmGGAbHqa0*
  - *Teacher materials: video-1.4.1*

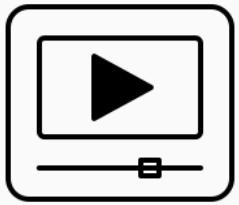


Physical Security

- House without door does not provide security
- Physical security includes:
  - *Vault doors*
  - *Concrete walls*
  - *Biometrics*
  - *Others*
- Physical security is as important as cyber security.
- Laptop in a house with front door open is not secure

Physical locks are secure?

- Door locks can be hacked quickly
- Lets watch it:
  - *https://www.youtube.com/watch?v=Mz5IOFK38nU*
  - *Teacher materials: video-1.4.2*



Student Activity

How secure is your home?

- Pass student worksheet
- Work in teams
- What makes your home secure?
- Create a list of items, tools, tech.
- Only physical security

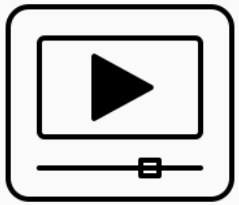
Student Activity

How secure is your home?

- Teacher / Classroom discussion
- What are the common tools, items?

Web Application Security / HTTP vs HTTPS

- Google Security Engineers
- Lets watch it:
  - *https://www.youtube.com/watch?v=kBzbKUirOFk*
  - *Teacher materials: video-1.4.3*



Common security tools (free)

- Tools used:
  - *Kali Linux*
  - *Nessus Scanner*
  - *What Web*
- Open-source / FREE

Securing Web, Applications and Systems

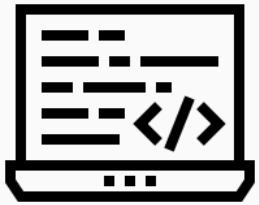
- Websites being hacked / defaced
- Applications with security holes
- Unpatched systems / greater risk to all
- Virtual keyloggers

Computer virus / malicious software

- Malware
- Ransomware
- What is anti-virus?
- Email security, read before clicking a link!
- Why are you installing that program?

Web security / coding

- HTTP vs HTTPS
- Why is it important to code securely?



Windows Application Security

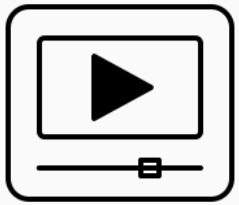
- Pass student worksheet
- Work in teams
- Research security applications
- Only focus on Microsoft Windows
- Students can use SmartPhones
- Examples: McAfee, Norton

Windows Application Security

- Teacher / Classroom discussion
- What are the common programs?

What is a firewall

- Lets watch it:
  - *https://www.youtube.com/watch?v=x1YLj06c3hM*
  - *Teacher materials: video-1.4.4*
- Classroom discussion on firewalls



Firewalls

- What does a firewall do?
- Why is it called firewall?
- Keep good in / bad out!

More FIREWALLS!

- Hardware firewalls
- Software / Virtual firewalls
- Extended features:
  - *Spyware protection*
  - *Zero-day defense*
  - *Malware protection*

Student Activity (Optional)

Lab: CEO of social media start-up

- Students to use NOVA LAB on laptops
- https://www.pbs.org/wgbh/nova/labs/lab/cyber/research#/newuser
- Stop after one round of attacks

Closing / Wrap-up

What we learned...

- Physical Security
- Web / Application Security
- Network security

What's next...

End of session 4

- Head back to cafeteria for pickup