

Course Wrap-Up

Where we've been, and where you could go next...

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CSCI 476 - Computer Security
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So what ~~are we doing~~ *have we done* this semester? *The 30,000' View*

Introduction & Security Overview/Basics

- Basic concepts
- Linux security basics

Software Security

- Classics Attacks: Set-UID attacks, env. variable attacks, buffer overflow attacks, format string attacks
- Recent Issues in SW: return-oriented programming, Shellshock attack

Network & Web Security

- SQL injection attacks
- sniffing & spoofing
- network attacks (e.g., TCP/IP)

Crypto

- symmetric & asymmetric cryptography
- encryption & decryption
- digital signatures

System Security / Recent Topics

- Side-channel attacks

What's Next?

- Hone your skillz...
 - **OverTheWire** (games for learning security concepts) - <https://overthewire.org/wargames/>
 - **Hack The Box** (Pen-Testing Labs) - <https://www.hackthebox.eu/login>
 - **CRYPTOHACK** (puzzles and challenges for learning modern cryptography) - <https://cryptohack.org>
 - And so many more: **VulnHub** (<https://www.vulnhub.com>), **CTF Time** (<https://ctftime.org/ctf-wtf/>), **Root Me** (<https://www.root-me.org/?lang=en>), **WebGoat** (<https://owasp.org/www-project-webgoat/>), ...
- Become familiar with popular standards/authorities and frameworks
 - Anything/Everything **OWASP** - <https://owasp.org>
 - MITRE's **ATT&CK** Matrix - <https://attack.mitre.org>
 - **NIST** (National Institute of Standards & Technology) & **FIPS** (Federal Information Processing Standards)
 - <https://www.nist.gov>
 - <https://www.nist.gov/itl/fips-general-information>
- Study other chapters from our textbook, find (open source) projects to work on, follow big names in cybersecurity, attend workshops/conferences, apply to internships/jobs, explore research opportunities with Travis... ;-)

Thank YOU!