



HACKSUMMER 21

A large, semi-transparent purple silhouette of Tux the penguin is centered in the background. The penguin is facing forward with its characteristic beak and eyes.

Session 4

Shell Scripting

Putting it All Together

- Shell scripts are a kind of programming!
- Automating common/complicated tasks
- Shell scripts can use many shells as interpreters
- The **shebang**: `#!`
 - Indicates which interpreter to use
- Most common is bash, but others are available

The Bourne Again SHell

- Part of GNU
- Originally released in 1989
- Still default on most Linux distros
- Because of its prevalence, most shell scripts are still written in Bash, despite its...idiosyncrasies





Syntax Basics

The 4 Fundamental Structures



- Variables:
 - **x=test; echo \$test**
 - Spaces matter!
- Conditionals:
 - **if [-f /etc/passwd]; then cat /etc/passwd; fi**
- Loops:
 - **for i in `seq 1 10`; do echo \$i; done**
- Functions:
 - **x(){ echo \$1 }; x hi**

Other Shells

- C shell (csh)
- Z Shell (zsh)
- Fish
- Xonsh
- All are scriptable, but for universality, it's kinda bash
- OR





Hot Take Incoming



Write Shell Scripts in Python



- Even more universal than Bash
- Better at data handling
- Saner syntax
- There's actually an even better language than Python for shell scripting, but it fell out of favor
- Ruby



Quotes



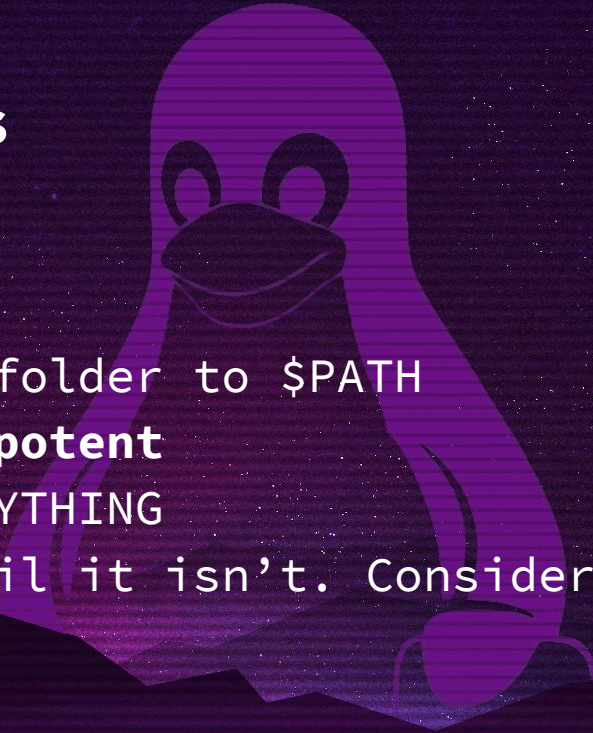
Script Examples



Scheduling Stuff

Script Pro Tips

- Save your stuff
 - Use Git!
- Add your scripts folder to \$PATH
- Make scripts **idempotent**
- Safety check EVERYTHING
- Text is great until it isn't. Consider edge cases!





The Bible

<https://tldp.org/LDP/abs/html/>





Next Time: Containers