

CSE 374: Programming Concepts and Tools

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Lecture 6: (e)grep

Administrivia

- Homework 1: Now using late days
- Homework 2: Out now
- Sorry about brief klaatu outage on Wed night
- Thursday office hours (1:15-2:15): too early to be helpful? Do people care?
- Next Tues (4/11): I won't have office hours at 11, I'll be gone. If needed email me for appt.

Where we are

- Bash is weird
- We're starting to get the hang of it
- We can use it to call weirder programs

Describing Strings

- left, left, left
- right, left, left
- straight, right, right
- left, straight, left
- right, right, left
- left, right, straight

<Every valid phone number>

- strawberry
- blueberry
- blackberry
- pinkberry
- marionberry
- lingonberry
- mulberry
- raspberry
- ...berry

Regular Expressions

- Clean, clear, simple theory
 - (Don't worry, still kinda ugly in practice)
- Regular expression is a pattern p , which matches 0 or more strings
 - a matches character 'a'
 - p_1p_2 matches first then second
 - $p_1 | p_2$ matches first or second
 - p^* matches p 0 or more times (for 0, matches empty string)

Regular Expressions

- Everything below is not core, just nice to have
- p^+ is pp^* (match one or more times)
- $p?$ is $p | \varepsilon$ (match 0 or 1 times)
- $[zd-h]$ is $z | d | e | f | g | h$
- $[\^a-z]$ is everything but $[a-z]$
- $.$ matches any single character
- $p\{n\}$ is p repeated n times
- $p\{n,\}$ is $p\{n\}p^*$
- $p\{n,m\}$ is p repeated anywhere from n through m times

Regular Expressions

- By default (e)grep for pattern p matches `.*p.*`
- You can anchor beginning of line with `^` and end with `$`
- You can surround a piece of your pattern in `()`. this will capture the pattern, then reference with number (`\1` or `\3`). Only works first 9 times per regex.
- e.g. Double words: `'^([a-zA-Z]*)\1$'`

How to run

- In this class we just use `egrep`
 - this is equivalent to `grep -E`
- Simpler, better syntax than `grep`
- For fun, we have `/usr/share/dict/words` on `klaatu`

WHENEVER I LEARN A NEW SKILL I CONCOCT ELABORATE FANTASY SCENARIOS WHERE IT LETS ME SAVE THE DAY.

OH NO! THE KILLER MUST HAVE FOLLOWED HER ON VACATION!



BUT TO FIND THEM WE'D HAVE TO SEARCH THROUGH 200 MB OF EMAILS LOOKING FOR SOMETHING FORMATTED LIKE AN ADDRESS!

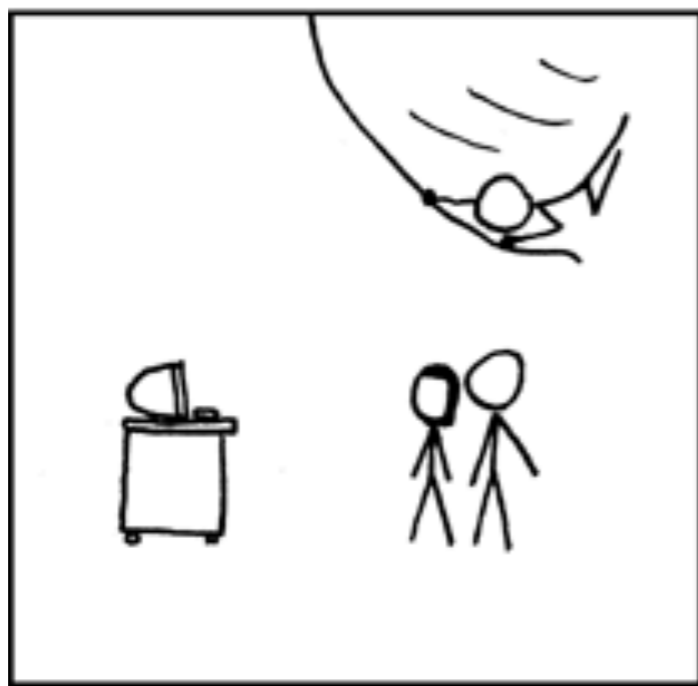



IT'S HOPELESS!

EVERYBODY STAND BACK.



I KNOW REGULAR EXPRESSIONS.



ssh-keygen

- Typing a password every time kinda sucks
 - especially long ones
- We can use public/private keys to make things easier and more secure

