Week 9: Grep++

Becoming grep experts. (grexperts)

By: Jeremeow(Jeremy) Wang and Ameow(Amy) Liu

07-131

Paw-nouncements

- Extratation: product
  development/management

Review of last week!

Class	Matches
[abc]	a or b or c
[a-z]	a lowercase letter
\s	whitespace
\d	digit
\w	alphanumeric char
.	any single character
[^abc]	Not any of a, b or c
[^A-Za-z]	Not a character
\S	Not a whitespace
\D	Any non-digit
\W	Any non-alphanumeric char
\.	Just a period

Quantifier	Matches
a?	Zero or one (ie. optional)
a*	Zero or more
a+	One or more
a{3}	Exactly 3
a{3,}	3 or more
a{3,6}	Between 3 and 6 (inclusive)

Other expressions	Matches
^(start)	"start" at the beginning of line/string
(end)$	"end" at the end of the line/string
(this|that)	"this" or "that"

GREP

- Bash terminal command!
- **G**lobal **R**egular **E**xpression **P**rint
- Usage: $ grep [flags] 'pattern' [file…]

GREP

- Bash terminal command!
- **G**lobal **R**egular **E**xpression **P**rint
- Usage: $ grep [flags] 'pattern' [file...]
- **$ grep 'needle' haystack.txt**
  - Searches haystack.txt for "needle"s.

GREP

- Bash terminal command!
- **G**lobal **R**egular **E**xpression **P**rint
- Usage: $ grep [flags] 'pattern' [file...]
- **$ grep 'needle' haystack.txt**
    - Searches haystack.txt for "needle"s.
- **$ grep -r 'boba' path/to/directory**
    - Searches recursively for "boba"s.

GREP

- Bash terminal command!
- **G**lobal **R**egular **E**xpression **P**rint
- Usage: $ grep [flags] 'pattern' [file...]
- **$ grep 'needle' haystack.txt**
  - Searches haystack.txt for "needle"s.
- **$ grep -r 'boba' path/to/directory**
  - Searches recursively for "boba"s.
- grep is fast for theoretical reasons you will learn in the future

most ambitious crossover in history?

use regex for the pattern...

... and globs for the filename(s).

$ grep [flags] 'pattern' file

(a glob of kittens)

wrap the pattern with quotes!!

flags 🏳️

http://linuxcommand.org/lc3_man_pages/grep1.html

-l to print filenames

-i (ignores case when searching)

-c (counts up the number lines that contains a match)

-v (inverse; print out lines that do NOT match)

-n (also print out the line numbers)

-E (use extended regex)

Matching multiple patterns/files

(escaped) pipe to match patterns

Bracket notation to match file names

$ grep "pattern1\|pattern2\|pattern3" {file1, file2, file3}

equivalent to

$ grep -E "pattern1|pattern2|pattern3" {file1, file2, file3}
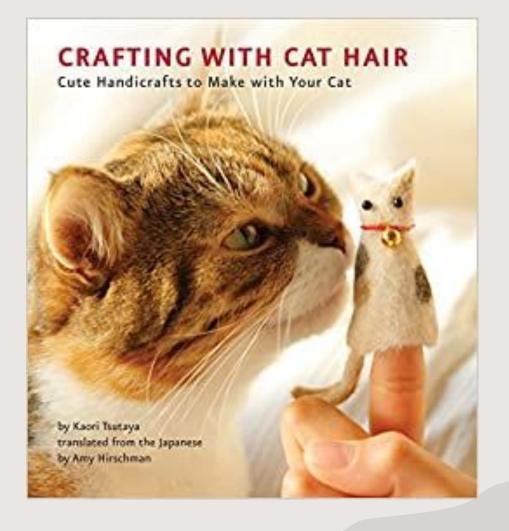(-E flag if you don't want to use '\')

Globfield

Pregex

Igreprus

cat hair

CRAFTING WITH CAT HAIR

Cute Handicrafts to Make with Your Cat

by Kaori Tsutaya
translated from the Japanese
by Amy Hirschman

we want to make cat hair crafts

- we want to ~~grep~~grab it quickly (in one go) so we can start crafting

- All cat hair is labeled with the cat's name

  - **$ grep "Globfield" catsBeanBag**

  - **$ grep "Pregex" catsBeanBag**

globfield's cousin?

we want to make cat hair crafts

- we want to ~~grep~~grab it quickly (in one go) so we can start crafting

- All cat hair is labeled with the cat's name

  - **$ grep "Globfield" catsBeanBag**

  - **$ grep "Pregex" catsBeanBag**

- We want to get all the cat hair at once

globfield's cousin?

we want to make cat hair crafts

- we want to ~~grep~~grab it quickly (in one go) so we can start crafting

- All cat hair is labeled with the cat's name

  - **$ grep "Globfield" catsBeanBag**

  - **$ grep "Pregex" catsBeanBag**

- We want to get all the cat hair at once

  - **$ grep "Globfield\|Pregex\|Igreprus" catsBeanBag**

  - **$ grep -E "Globfield|Pregex|Igreprus" catsBeanBag**

globfield's cousin?

we want to make cat hair crafts

- There's a lot more hair throughout the apartment...
- To split the work of collecting cat hair, and we need a list of all the rooms(files) that have cat hair and we'll each take an equal amount of rooms.
  - $ grep -IE "Globfield|Pregex|Igreprus" apartment/*

we want to make cat hair crafts

- There's a lot more hair throughout the apartment...
- To split the work of collecting cat hair, and we need a <u>list of all the rooms(files)</u> that have cat hair and we'll each take an equal amount of rooms.
  - **$ grep -lE "Globfield|Pregex|lgreprus" apartment/***
- Jeremy's responsible for the living room and bedroom! He wants to know exactly where each line each tuft of hair is located.
  - ?

we want to make cat hair crafts

- There's a lot more hair throughout the apartment…
- To split the work of collecting cat hair, and we need a <u>list of all the rooms(files)</u> that have cat hair and we'll each take an equal amount of rooms.
  - **$ grep -lE "Globfield|Pregex|lgreprus" apartment/***
- Jeremy's responsible for the living room and bedroom! He wants to know exactly where each line each tuft of hair is located.
  - **$ grep -nE "Globfield|Pregex|lgreprus" apartment/{livingRoom,bedRoom}**
- Note how we use globs for directory!

we want to make cat hair crafts

- Friends are coming over, and they might not like to sit on cat hair
  - **$ grep -v "Globfield|Pregex|Igreprus" apartment/livingRoom**

Igre prus'
own hair

we want to make cat hair crafts

- Friends are coming over, and they might not like to sit on cat hair
  - $ grep -v "Globfield|Pregex|Igreprus" apartment/livingRoom
- Turns out they are allergic, so we want to know which room(file)(s) don't have cat hair

Igre prus'
own hair

we want to make cat hair crafts

- Friends are coming over, and they might not like to sit on cat hair
  - **$ grep -v "Globfield|Pregex|Igreprus" apartment/livingRoom**
- Turns out they are allergic, so we want to know which room(file)(s) don't have cat hair
  - hmm.. let's try $ grep -vl "Globfield\|Pregex\|Igreprus" apartment/*

Igre prus'
own hair

we want to make cat hair crafts

- Friends are coming over, and they might not like to sit on cat hair
  - **$ grep -v "Globfield|Pregex|Igreprus" apartment/livingRoom**
- Turns out they are allergic, so we want to know which room(file)(s) don't have cat hair
  - hmm.. let's try $ grep -vl "Globfield\|Pregex\|Igreprus" apartment/* … not quite
  - http://linuxcommand.org/lc3_man_pages/grep1.html

Igre prus' own hair

we want to make cat hair crafts

- Friends are coming over, and they might not like to sit on cat hair
  - **$ grep -v "Globfield|Pregex|Igreprus" apartment/livingRoom**
- Turns out they are allergic, so we want to know which room(file)(s) don't have cat hair
  - hmm.. let's try $ grep -vl "Globfield\|Pregex\|Igreprus" apartment/* … not quite
  - http://linuxcommand.org/lc3_man_pages/grep1.html
  - **$ grep -L "Globfield\|Pregex\|Igreprus" apartment/***

HauntLab tips

- Remember to put quotes around regex patterns!

- Don't forget to give the script executable permissions!

- Experiment with running some commands you think will work at the command line first. Then, when you think you've got an answer that will work, transfer it to your script.

Rawr!

I'M SCARY