Filename: comptia-linuxxk0004-5-4-1-searching_with_grep
Show Name: CompTIA Linux+ (XK0-004)
Topic: Managing Files and Directories
Episode Name: Searching with grep
Description: In this episode, Zach and Don take a look at the grep command. They explain how grep can be used to search the contents of a file or to filter command output. They then spend some time demonstrating how to use regular expressions to build specific search criteria and to find specific data.

Searching with grep

[?] What are regular expressions and how do they work with grep?

- Regular Expressions (RegEx)

  - Collection of wildcards
  - Widely supported
  - Not very user friendly
  - Understanding Regular Expressions

[?] What do regular expressions look like?

- RegEx syntax
- `man 7 regex`

Wildcard	Description
[ ]	List of possible values
–	Range of values
.	Any single character
*	Any number of characters
^	Begining of line
$	End of line
\` \`	Or
( )	Sub-expression or slice
\	Escape character

[?] How do we use regular expressions to search for data?

- `grep`

  - **G**lobally Search a **R**egular **E**xpression and **P**rint
  - Searches files for a string
  - Two modes

    1. Fixed Strings (Default)

       - `grep -F`
       - `fgrep`

    2. Extended Regular Expression

       - `grep -E`
       - `egrep`

[?] Can you show us an example of searching with grep?

Lab File (cal-2019.txt)

```
01/01/2019 New Year's Day
07/04/2019 Independence Day
10/31/2019 Halloween
12/25/2019 Christmas
```

Searching for files containing Halloween

```
grep -r Halloween ~/
```

Searching for lines in a file containing Halloween

```
cat ~/cal-2019.txt | grep Halloween
```

[?] What if we want to search for more than one string, is that where regular expressions come in?

Searching for more than one string in a file

```
cat ~/cal-2019.txt | grep -E "Halloween|Christmas"
```

Searching for a range of values in a file

```
cat ~/cal-2019.txt | grep -E "^1[0-2]"
```

```
grep -r Halloween ~/
```

Searching for lines in a file containing Halloween

```
cat ~/cal-2019.txt | grep Halloween
```