Spring 2022 courses

IN PROGRESS os quiz 5

Settings

- A question has only ONE right answer unless otherwise noted
- This quiz covers the last few DataCamp assignments (Introduction to Shell) only
- After the first play, the quiz will be opened for unlimited play
- Let me know if you have any comments or corrections

What is the relationship between the shell and the operating system (OS)?

More than one answer possible.

TRUE:

- The shell exposes OS services to humans or other programs
- The shell gives OS access through a command-line (CLI) or a graphical user interface (GUI)

FALSE:

- The shell is part of the OS kernel program
- The shell contains the OS kernel program

Every file in the OS file system can be reached via an absolute or a relative path

TRUE

Feedback: pwd returns the absolute path to your current location. With cd you can change directory to any location using relative or absolute paths though access may be blocked if you don't have the suitable rights. As super-user (sudo) you have access absolutely everywhere.

Commands like `cp` and `mv` will overwrite files by default but you can force them to interact with you with the `-i` flag

TRUE

Feedback: Not all commands offer this option, and the option can be overridden by others, e.g. the command `rm -if file` will remove `file` because `-f` invokes the force option, and the command is evaluated in a pipeline from left to right - that is FORCE beats INTERACTIVE because it comes last.

A directory is not a file.

TRUE

Feedback: To make a directory, or to delete it, you use different commands. Even so, directories are more like files than any other structure, and they appear identical if you don't ask for their properties (consider the difference between `ls` and `ls -l`

What is "tab completion"?

More than one answer possible.

TRUE:

- The shell tries to auto-complete the path to a file
- Emacs tries to auto-complete commands after `M-x`

FALSE:

- The shell looks through all files to find the file you want
- When pressing the TAB key, an invisible TAB character is inserted

When you press TAB on the command line without anything, all possible commands will be displayed.

TRUE

Feedback: Just try it in your $HOME directory. Works in Emacs too: open eshell with `M-x eshell` and press the TAB key at the prompt.

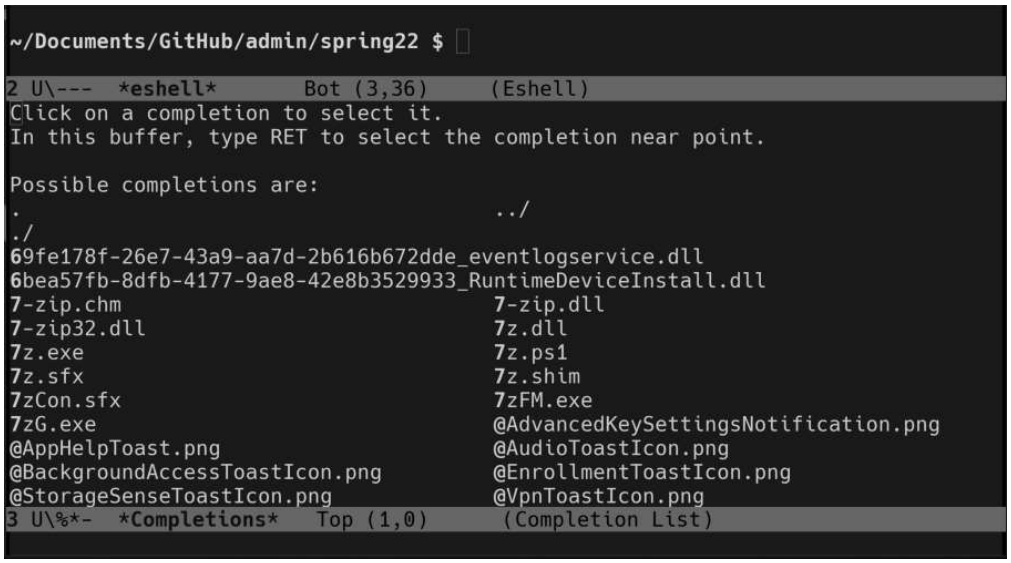

Figure 1: TAB in Emacs **eshell**

The order of command and option is not relevant.

That is, `head -n 10 file` works just as well as `-n 10 head file`

FALSE

Feedback: The order is significant because the shell operates a pipeline from left to right: if the first characters after the prompt are `-n` then the shell will look for (and not find) a program called `-n`. The order of the options themselves in the option block (between command and target) is also not irrelevant: e.g. `rm -if file` removes file, while `rm -fi file` asks for confirmation!

Be the shell (1)

The text file `text.csv` has 10 columns. Select columns 2,4 and 6.

TRUE:

- `cut -f 2,4,6 -d , text.csv`

FALSE:

- `head -n 2-6 text.txt`
- `cut -f 2 | -f 4 | -f 6 text.csv`
- `sort text.csv | head -n 2,4,6`

Feedback: the shell pipeline goes from left to right. Each part follows the recipe [command] [options] [file]. The column selection command is `cut`. To select columns, use `-f` followed by the column numbers.

Be the shell (2)

The text file `text.csv` has 10 columns. Select columns 1,3 and 5, and print out the number of words in the selection.

TRUE:

- `cut -f 1,3,5 -d , text.csv | wc -w`

FALSE:

- `wc -wc | cut -f 1,3,5 text.csv`
- `text.csv | grep "2,4,6"`
- `cut -f 2,4,6 -d , text.csv | head -n wc -w`

Feedback: the shell pipeline goes from left to right. Each part follows the recipe [command] [options] [file]. The column selection command is `cut`. To select columns, use `-f` followed by the column numbers. The word counting program is `wc`. To count words, use the option `-w`. `|` between them is used to pipe the result of the first operation into the second (= use stdout of the first result as stdin of the second operation).

Be the shell (3)

The text file `text.csv` has 10 columns. Select columns 1 through 5, print out the number of words in the first two lines of these columns.

TRUE:

- `cut -f1-5 -d , text.csv | head -n 2 | wc -w`

FALSE:

- `cut -f1-5 -d , text | head -n 2 | wc -w`
- `cut -f1-5 -d , text.csv | wc -w | head -n 2`
- `cut -f6-10 -d , text.csv | head -n 2 | wc -w`

Feedback: the shell pipeline goes from left to right. Each part follows the recipe [command] [options] [file]. The column selection command is `cut`. To select columns, use `-f` followed by the column numbers. Followed by `|`

redirects the output (stdout) of the first operation into input (stdin) of the second operation. This is `head`, which filters `-n` lines from its input. Finally, another pipe leads to `wc` which counts the words with `-w`.

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