Introduction to the command line and scripting

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Outline

- Terminology
- Navigating the file system
- Common commands
- Specific command line applications
  - FFmpeg
  - ImageMagick
  - Pandoc

Terminology

- Graphical user interface (GUI)
- Command-line interface (CLI)
- Console vs. shell vs. terminal

Navigating the file system

- Absolute and relative locations
- Symbols
  - `/`
  - `~`
  - `. or ./`
  - `.. or ../`
  - `../..`

Common commands

- `ls`
- `mkdir directory_name`
- `cd location`
- `touch file_name`
- `help`
- `cp file_to_copy file_path`
- `mv file_to_move file_path`
- `rm -i file_to_permanently_delete`
- `echo`
- `nano`

FFmpeg

"A complete, cross-platform solution to record, convert and stream audio and video." (ffmpeg.org)

ffmpeg –i input.mp4 output.avi

ImageMagick

"ImageMagick® is a free, open-source software suite, used for editing and manipulating digital images. It can be used to create, edit, compose, or convert bitmap images, and supports a wide range of file formats, including JPEG, PNG, GIF, TIFF, and PDF." (imagemagick.org)

magick input.jpg output.png

Pandoc

"If you need to convert files from one markup format into another, pandoc is your swiss-army knife." (pandoc.org)

`pandoc input.docx -o output.txt --from docx --to plain`

`pandoc -o output.tex input.txt`

Related tools

- [FFmpeg Commander](#)
- [Try pandoc!](#)
- [explainshell.com](#)

Loops

```bash
#!/bin/bash

# This script loops through .txt files, returns the file name,
first line, and last line of the file

for file in *.txt

do

        echo $file

        head -n 1 $file

        tail -n 1 $file

done
```

Additional resources

- **Kaggle** (e.g., Intro to Programming)
- **Launch School**: Introduction to the Command Line
- **Library Carpentry**: The Unix Shell
- **Pandoc**: Demos

*As you learn to code, please be aware of the power you are gaining. As you work on projects, whether your own projects or those that are controlled by someone else, please focus on projects that share power. Please refuse to work on projects that consolidate power, especially for those who will use it against others. (**Coding is political**)*