macOS Terminal Cheat Sheet

A comprehensive cheat sheet covering macOS Terminal commands, shortcuts, configurations, and tips for efficient command-line usage.

Basic Navigation & File Management

Navigation Commands

`pwd`	Print working directory (shows the current directory path).
`ls`	List directory contents. Use `ls -l` for detailed list, `ls -a` to show hidden files, `ls -t` to sort by modification time.
`cd directory`	Change directory. Use `cd ..` to go up one level, `cd ~` to go to the home directory, `cd -` to return to the previous directory.
`open .`	Opens the current directory in Finder.
`pushd directory`	Push current directory onto stack and change to new directory.
`popd`	Pop directory off the stack and change to it.

File Operations

`mkdir directory`	Create a new directory.
`touch file`	Create an empty file or update the access and modification times of an existing file.
`cp source destination`	Copy a file or directory. Use `cp -r` for recursive copying of directories.
`mv source destination`	Move or rename a file or directory.
`rm file`	Remove a file. Use `rm -r directory` to remove a directory and its contents recursively. Use `rm -f` to force removal (be careful!).
`rmdir directory`	Remove an empty directory.

File Viewing

`cat file`	Display the entire file content.
`less file`	View file content page by page. Use space to go to the next page, `b` to go back, `q` to quit.
`head file`	Display the first few lines of a file (default 10 lines). Use `head -n [number]` to specify the number of lines.
`tail file`	Display the last few lines of a file (default 10 lines). Use `tail -n [number]` to specify the number of lines. `tail -f file` to follow the file in real time.
`open file`	Opens the file with its default application.
`file file`	Determine file type.

Searching & Text Manipulation

Searching

`grep pattern file`	Search for a pattern in a file. Use `grep -i` for case-insensitive search, `grep -r` for recursive search in directories, `grep -v` to invert the match.
`find directory -name filename`	Find files by name within a directory. For example, `find . -name "*.txt"`.
`mdfind query`	Spotlight search from the command line. For example, `mdfind "text content"`.
`locate filename`	Find files by name using a pre-built database. You may need to run `sudo /usr/libexec/locate.updatedb` to update the database first.

Text Manipulation

`sed 's/old/new/g' file`	Replace all occurrences of 'old' with 'new' in a file. The `g` flag means global replacement. Use `sed -i` to modify the file in-place.
`awk '{print $1}' file`	Print the first column of each line in a file. `$1`, `$2`, etc. refer to the columns, and `$0` refers to the entire line.
`sort file`	Sort the lines in a file. Use `sort -n` for numerical sorting, `sort -r` for reverse order.
`uniq file`	Remove duplicate lines from a sorted file. Use `uniq -c` to count occurrences.
`tr 'a-z' 'A-Z' < file`	Convert lowercase characters to uppercase.
`cut -d ',' -f 1 file`	Cut out sections of each line. `-d` specifies the delimiter, and `-f` specifies the field to extract.

System & Process Management

System Information

`uname -a`	Display system information (kernel name, network node hostname, kernel release, kernel version, machine hardware name, and operating system).
`sw_vers`	Display macOS software version information.
`system_profiler SPSoftwareDataType`	Detailed system software information.
`df -h`	Display disk space usage in a human-readable format.
`du -sh directory`	Display the disk usage of a directory in a human-readable format.
`top`	Display a dynamic real-time view of running processes.

Process Management

`ps aux`	Display all running processes.
`kill pid`	Terminate a process by its process ID (PID). Use `kill -9 pid` to forcefully terminate a process.
`killall process name`	Terminate all processes with the given name.
`bg`	Move a process to the background.
`fg`	Move a process to the foreground.
`jobs`	List active jobs.

Networking

`ping hostname`	Test network connectivity to a host.
`ifconfig`	Display network interface configuration.
`netstat`	Display network connections, routing tables, interface statistics, masquerade connections, and multicast memberships.
`traceroute hostname`	Trace the route packets take to a host.
`nslookup hostname`	Query DNS servers to obtain domain name or IP address information.

Terminal Configuration & Shortcuts

Terminal Configuration

Modify `.zshrc` or `.bash_profile` (depending on your shell) to customize your terminal environment.

Common configurations:
- **Aliases:** `alias shortcut='long command'`
- **Environment variables:** `export VARIABLE_NAME=value`
- **Prompt customization:** Modifying the `PS1` variable.

To apply changes, run `source ~/.zshrc` or `source ~/.bash_profile`.

Keyboard Shortcuts

`Ctrl+A`	Move cursor to the beginning of the line.
`Ctrl+E`	Move cursor to the end of the line.
`Ctrl+K`	Cut the line from the cursor to the end.
`Ctrl+U`	Cut the line from the cursor to the beginning.
`Ctrl+Y`	Paste the last thing that was cut.
`Ctrl+R`	Reverse search through command history.
`Ctrl+D`	Close the terminal or exit the current shell.
`Ctrl+C`	Interrupt the current process.

Shell Customization

macOS uses Zsh as the default shell. You can change the default shell using `chsh -s /bin/bash` (for Bash) or `chsh -s /bin/zsh` (for Zsh).

Oh My Zsh is a popular framework for managing Zsh configurations. Install it with `sh -c "$(curl -fsSL https://raw.githubusercontent.com/ohmyzsh/ohmyzsh/master/tools/install.sh)"`