```
Ctrl + A  Go to the beginning of the line you're currently typing on

Ctrl + E     Go to the end of the line you're currently typing on

Ctrl + U     Clear the line before the cursor

Ctrl + K     Clear the line after the cursor

Ctrl + W     Delete the word before the cursor

Ctrl + T     Swap the last two characters before the cursor

Esc + T      Swap the last two words before the cursor

Ctrl + L     Clear the screen

Ctrl + C     Kill whatever you're running

Ctrl + D     Exit the current shell

Option + →   Move cursor one word forward

Option + ←   Move cursor one word backward

Ctrl + F     Move cursor one character forward

Ctrl + B     Move cursor one character backward

Ctrl + Y     Paste whatever was cut by the last command

Ctrl + Z     Puts whatever you're running into a suspended background process

Ctrl + _     Undo the last command
```

```
Basics


/ (Forward Slash)    Top level directory

. (Single Period)    Current directory

.. (Double Period)   Parent directory

~ (Tilde)             Home directory

sudo [command]       Run command with the security privileges of the super user

nano [file]          Opens the Terminal editor

open [file]          Opens a file

[command] -h         Get help about a command

man [command]        Show the help manual of the command




Change Directory


cd         Home directory

cd         [folder]  Change directory, e.g. cd Documents

cd ~       Home directory

cd/        Root of the drive

cd -       Previous directory or folder you last browsed

pwd        Show your working directory

cd..       Move up to the parent directory

cd../..    Move up two levels
```

List Directory Contents

ls   Display the name of files and subdirectories in the directory

ls -C   Force multi-column output of the listing

ls -a   List all entries including those with .(period) and ..(double period)

ls -1   Output the list of files in one entry per line format

ls -F   Display a / (slash) immediately after each path that is a directory, * (asterisk) after executable programs or scripts, and @ after a symbolic link

ls -S   Sort files or entries by size

ls -l   List in a long format. Includes file mode, owner and group name, date and time file was modified, pathname, and more

ls -lt List the files sorted by time modified (most recent first)

ls -lh Long listing with human readable file sizes in KB, MB, or GB

ls -lo List the file names with size, owner, and flags

ls -la List detailed directory contents, including hidden files

File Size and Disk Space

du   List usage for each subdirectory and its contents

du -sh [folder] Human readable output of all files in a directory

du -s   Display an entry for each specified file

du -sk* | sort -nr   List files and folders, totaling the size including the subfolders. Replace sk* with sm* to list directories in MB

df -h   Calculate your system's free disk space

df -H   Calculate free disk space in powers of 1,000 (as opposed to 1,024)

```
File and Directory Management


mkdir <dir>                               Create new folder named <dir>

mkdir -p <dir>/<dir>                       Create nested folders

mkdir <dir1> <dir2> <dir3>             Create several folders at once

mkdir "<dir>"                          Create a folder with a space in the
filename
rmdir <dir>                             Delete a folder (only works on empty
folders)
rm -R <dir>                             Delete a folder and its contents

touch <file>                           Create a new file without any extension

cp <file> <dir>                           Copy a file to the folder

cp <file> <newfile>                     Copy a file to the current folder

cp <file>~/<dir>/<newfile>             Copy a file to the folder and rename the
copied file
cp -R <dir> <"new dir">                  Copy a folder to a new folder with
spaces in the filename
cp -i <file><dir>                         Prompts you before copying a file with
a warning overwrite message
cp <file1> <file2> <file3>/Users/<dir>  Copy multiple files to a folder

rm <file>                                 Delete a file (This deletes the file
permanently; use with caution.)
rm -i <file>                           Delete a file only when you give
confirmation
rm -f <file>                           Force removal without confirmation

rm <file1> <file2> <file3>             Delete multiple files without any
confirmation
mv <file> <newfilename>                   Move/rename

mv <file> <dir>                           Move a file to the folder, possibly
by overwriting an existing file
mv -i <file> <dir>                      Optional -i flag to warn you before
overwriting the file
mv *.png ~/<dir>                          Move all PNG files from current folder
to a different folder
```

```
Command History


Ctrl + R       Search through previously used commands

history n      Shows the previous commands you've typed. Add a number to limit
to the last n items
![value]       Execute the last command typed that starts with a value

!!             Execute the last command typed



Permissions


ls -ld                            Display the default permission for a home
directory
ls -ld/<dir>                      Display the read, write, and access permission
of a particular folder
chmod 755 <file>                    Change the permission of a file to 755

chmod -R 600 <dir>                Change the permission of a folder (and its
contents) to 600
chown <user>:<group> <file>          Change the ownership of a file to user
and group. Add -R to include folder contents



Processes

ps -ax Output currently running processes. Here, a shows processes from all
users and x shows processes that are not connected with the Terminal
ps -aux      Shows all the processes with %cpu, %mem, page in, PID, and command

top    Display live information about currently running processes

top -ocpu -s 5      Display processes sorted by CPU usage, updating every 5
seconds
top -o rsize  Sort top by memory usage

kill PID      Quit process with ID <PID>. You'll see PID as a column in the
Activity Monitor
ps -ax | grep <appname>    Find a process by name or PID
```

Network

ping <host>   Ping host and display status

whois <domain>   Output whois info for a domain

curl -O <url/to/file>   Download file via HTTP, HTTPS, or FTP

ssh <username>@<host>   Establish SSH connection to <host> with user
<username>

scp <file><user>@<host>:/remote/path   Copy <file> to a remote <host>

Homebrew

brew doctor   Check brew for potential problems

brew install <formula>   Install a formula

brew uninstall <formula>   Uninstall a formula

brew list   List all the installed formulas

brew search   Display available formulas for brewing

brew upgrade Upgrade all outdated and unpinned brews

brew update   Fetch latest version of homebrew and formula

brew cleanup Remove older version of installed formula

brew tap homebrew/cask   Tap the cask repository from GitHub

brew cask list   List all installed casks

brew cask install <cask>   Install the given cask

brew cask uninstall <cask> Uninstall the given cask

Search

find <dir> -name <"file"> Find all files named <file> inside <dir>. Use
wildcards (*) to search for parts of filenames

grep "<text>" <file>   Output all occurrences of <text> inside <file> (add
-i for case insensitivity)

grep -rl "<text>" <dir>   Search for all files containing <text> inside <dir>

```
Output

cat <file>    Output the content of <file>

less <file>   Output the contents of <file> using the less command that supports
pagination and more
head <file>   Output the first 10 lines of <file>

<cmd> > > <file>    Appends the output of <cmd> to <file>

<cmd> > <file>      Direct the output of <cmd> into <file>

<cmd1> | <cmd2>     Direct the output of <cmd1> to <cmd2>
```