Using Bash on Mac Terminal

Learning Objectives

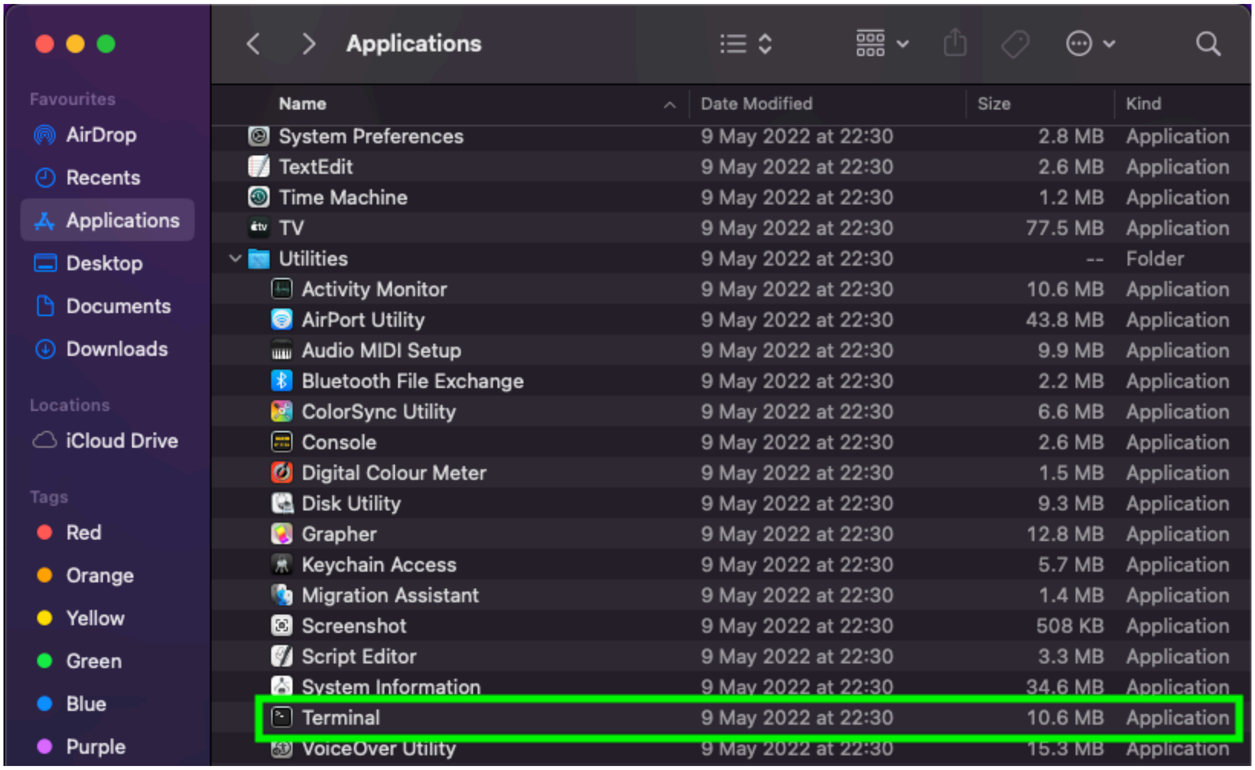
- Learners will understand how to open the command line - terminal on mac
- Learners will become familiar with the most common commands.

Mac Terminal

The Terminal on Mac can be open in one of three ways, Finder, Launch Pad and Spotlight.

Finder

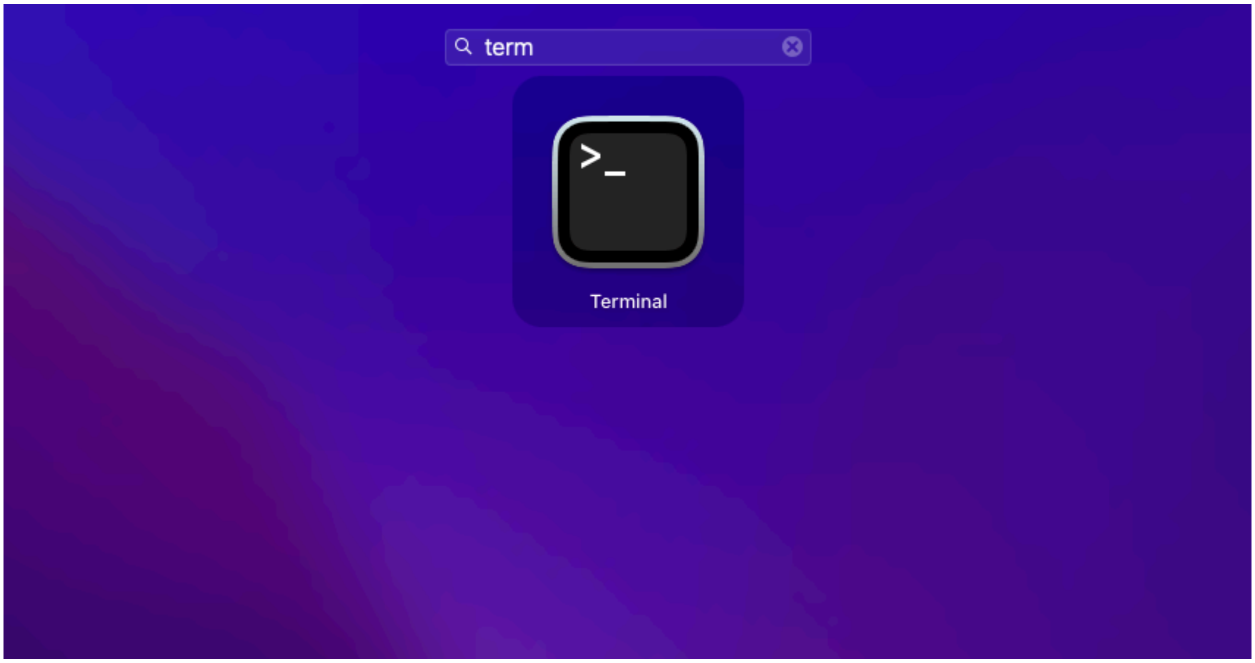
1. Scroll to the bottom on your desktop and click on the Finder icon
2. Click on Applications on the left hand side
3. Locate the folder called Utilities and expand it
4. The Terminal app should be visible, click it to open



Name	Date Modified	Size	Kind
System Preferences	9 May 2022 at 22:30	2.8 MB	Application
TextEdit	9 May 2022 at 22:30	2.6 MB	Application
Time Machine	9 May 2022 at 22:30	1.2 MB	Application
TV	9 May 2022 at 22:30	77.5 MB	Application
Utilities	9 May 2022 at 22:30	--	Folder
Activity Monitor	9 May 2022 at 22:30	10.6 MB	Application
AirPort Utility	9 May 2022 at 22:30	43.8 MB	Application
Audio MIDI Setup	9 May 2022 at 22:30	9.9 MB	Application
Bluetooth File Exchange	9 May 2022 at 22:30	2.2 MB	Application
ColorSync Utility	9 May 2022 at 22:30	6.6 MB	Application
Console	9 May 2022 at 22:30	2.6 MB	Application
Digital Colour Meter	9 May 2022 at 22:30	1.5 MB	Application
Disk Utility	9 May 2022 at 22:30	9.3 MB	Application
Grapher	9 May 2022 at 22:30	12.8 MB	Application
Keychain Access	9 May 2022 at 22:30	5.7 MB	Application
Migration Assistant	9 May 2022 at 22:30	1.4 MB	Application
Screenshot	9 May 2022 at 22:30	508 KB	Application
Script Editor	9 May 2022 at 22:30	3.3 MB	Application
System Information	9 May 2022 at 22:30	34.6 MB	Application
Terminal	9 May 2022 at 22:30	10.6 MB	Application
VoiceOver Utility	9 May 2022 at 22:30	15.3 MB	Application

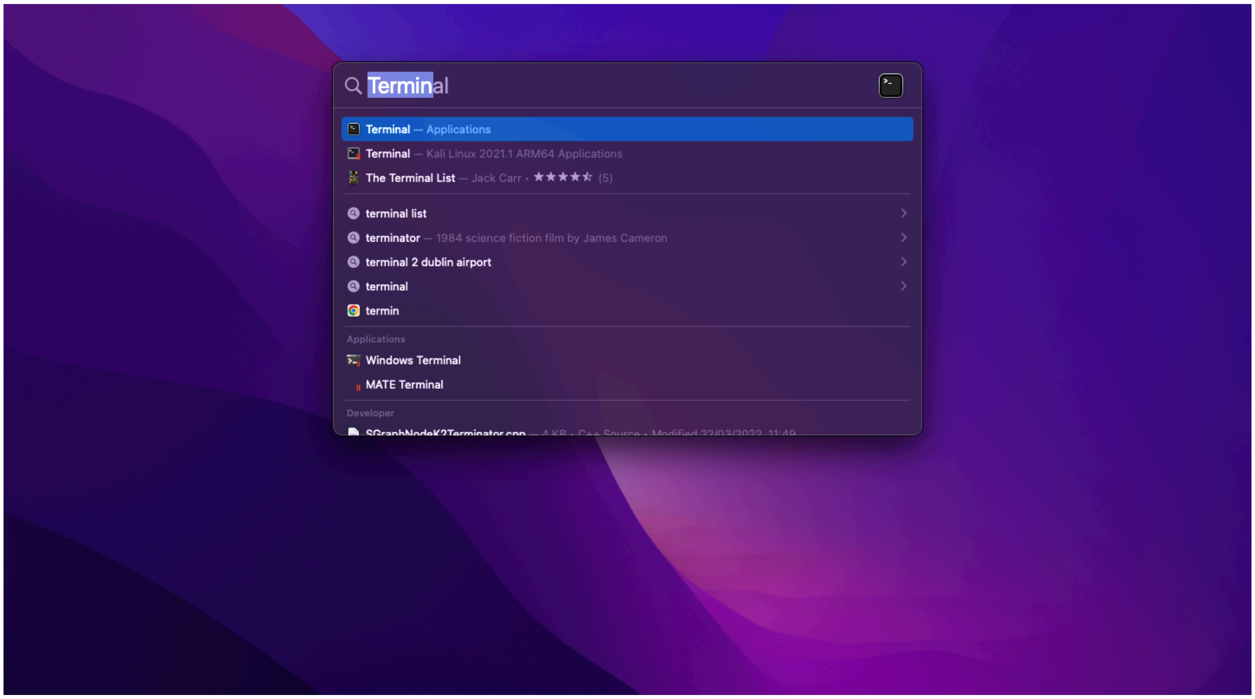
Launch Pad

1. Press the F4 command
2. Launch Pad view will appear
3. In the search bar, click it and type the word Term - short for terminal
4. The Terminal icon will appear on screen
5. Click to open



Spotlight

1. Press the Command Key and the Space Bar
2. The Spotlight modal will appear
3. Type in the word Terminal or Term for short
4. The Terminal icon will appear
5. Click to open


Terminal
Terminal — Applications
Terminal — Kali Linux 2021.1 ARM64 Applications
The Terminal List — Jack Carr · ★★★★☆ (5)
terminal list
terminator — 1984 science fiction film by James Cameron
terminal 2 dublin airport
terminal
termin
Applications
Windows Terminal
MATE Terminal
Developer
SGraphNodeK2Terminator.cpp — 4 KB · C++ Source · Modified 22/03/2022, 11:49

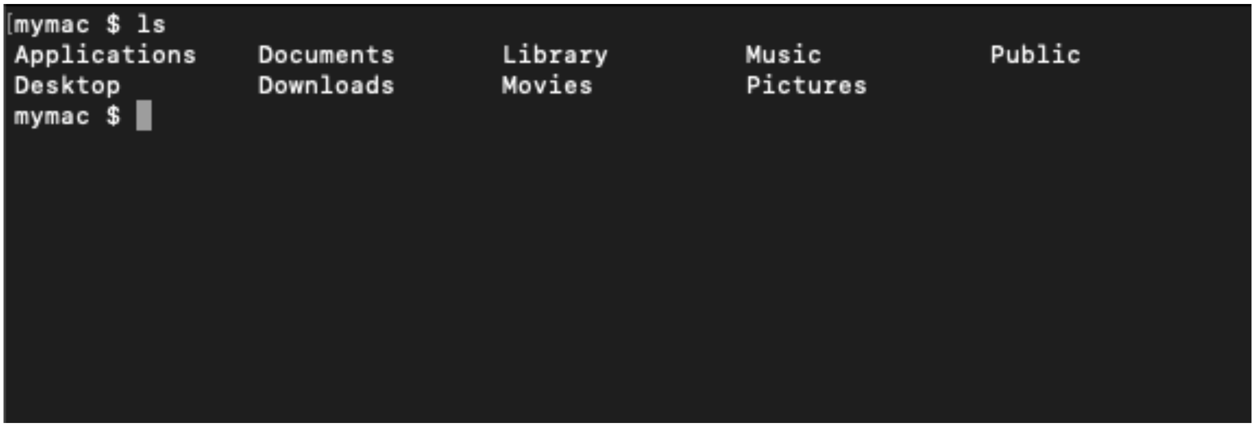
Bash commands

Bash provides a list of commands that helps you navigate through files, view contents of files and also edit features to change or update the contents of a file. Below is a list of the most common commands:

Comman d	Used for
cd	Change Directory
ls	List command used for showing the content of a directory.
rm	Remove command used for removing a file or a directory
mv	Used to move files or folders to another location
touch	Allows creating of a new empty file or to upate a timestamp on a file
cp	Used to make a copy of a file or foldler
mkdir	Make a new directory
pwd	Print work directory, shows the current location in the shell
cat	Allows reading or concatenation of a file
less	Displays the contents of a file one page at a time.
grep	Global regular expression, allows for searching contents of files or folders

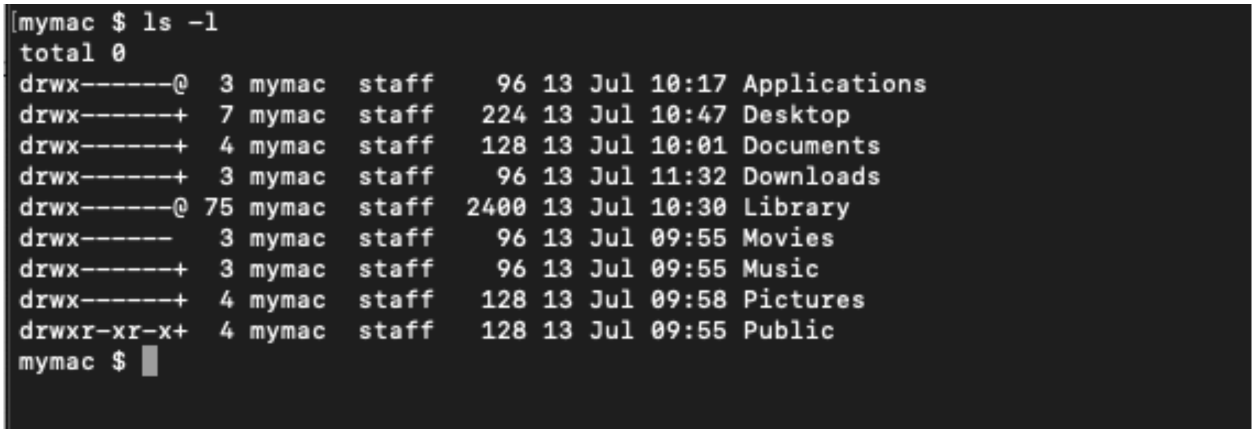
Flags

Every bash command has flags which will allow you to change the output of the command itself. For example, the **ls** command is used to print out the list of contents inside a directory. If we wanted to show the list in a different view, we simply need to add a flag such as **-l**.



```
[mymac $ ls
 Applications    Documents       Library         Music           Public
 Desktop         Downloads       Movies          Pictures
 mymac $
```

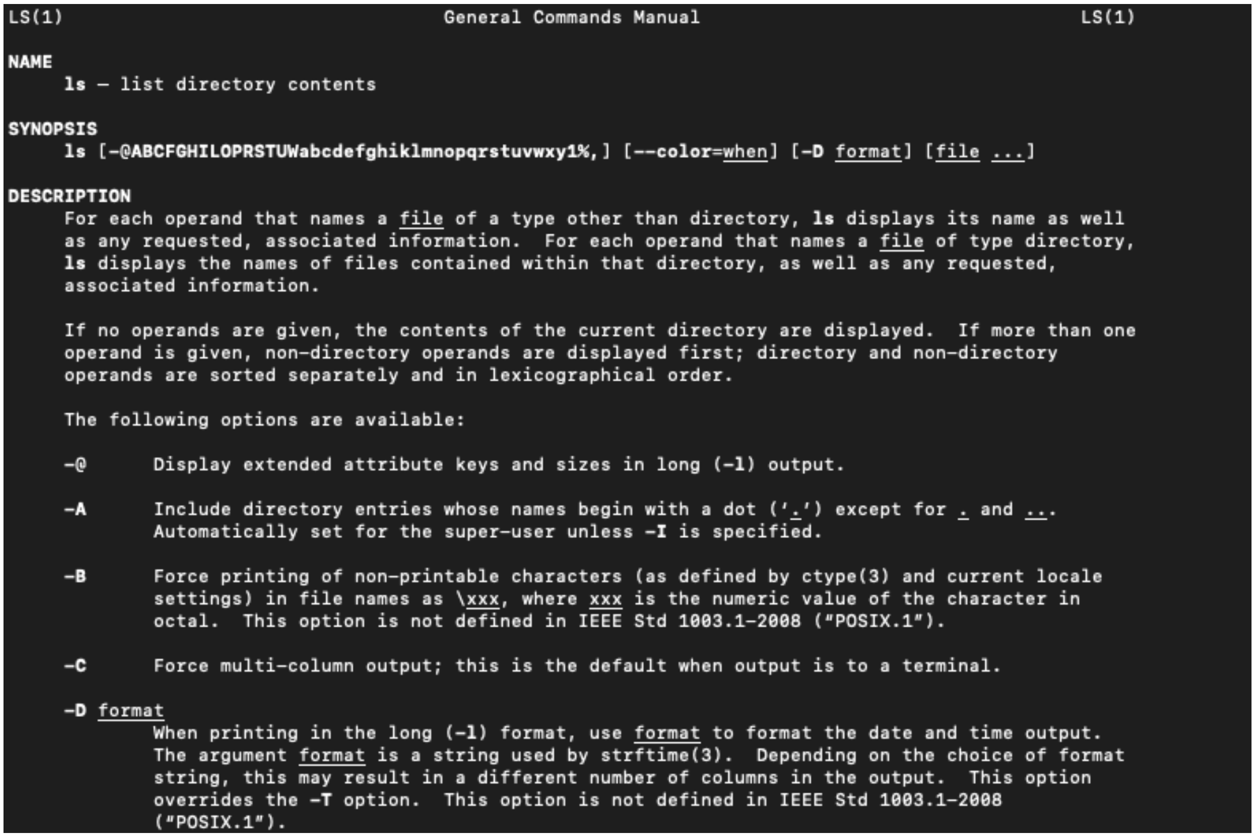
When the flag of **-l** is passed it will show the output in a different way:



```
[mymac $ ls -l
 total 0
 drwx------@  3 mymac  staff    96 13 Jul 10:17 Applications
 drwx------+  7 mymac  staff   224 13 Jul 10:47 Desktop
 drwx------+  4 mymac  staff   128 13 Jul 10:01 Documents
 drwx------+  3 mymac  staff    96 13 Jul 11:32 Downloads
 drwx------@ 75 mymac  staff  2400 13 Jul 10:30 Library
 drwx------   3 mymac  staff    96 13 Jul 09:55 Movies
 drwx------+  3 mymac  staff    96 13 Jul 09:55 Music
 drwx------+  4 mymac  staff   128 13 Jul 09:58 Pictures
 drwxr-xr-x+  4 mymac  staff   128 13 Jul 09:55 Public
 mymac $
```

Man Pages

When first starting to learn commands from bash it can feel a bit dauting. Luckily every command comes with its own manual or man pages for short. The man page will list all the flags and options that a particular command has to offer. Again, lets use the **ls** command to demonstrate this. Type the following:



```
LS(1)                        General Commands Manual                        LS(1)

NAME
     ls – list directory contents

SYNOPSIS
     ls [-@ABCFGHILOPRSTUWabcdefghiklmnopqrstuvwxy1%,] [--color=when] [-D format] [file ...]

DESCRIPTION
     For each operand that names a file of a type other than directory, ls displays its name as well
     as any requested, associated information.  For each operand that names a file of type directory,
     ls displays the names of files contained within that directory, as well as any requested,
     associated information.

     If no operands are given, the contents of the current directory are displayed.  If more than one
     operand is given, non-directory operands are displayed first; directory and non-directory
     operands are sorted separately and in lexicographical order.

     The following options are available:

     -@      Display extended attribute keys and sizes in long (-l) output.

     -A      Include directory entries whose names begin with a dot (‘.’) except for . and ...
             Automatically set for the super-user unless -I is specified.

     -B      Force printing of non-printable characters (as defined by ctype(3) and current locale
             settings) in file names as \xxx, where xxx is the numeric value of the character in
             octal.  This option is not defined in IEEE Std 1003.1-2008 (“POSIX.1”).

     -C      Force multi-column output; this is the default when output is to a terminal.

     -D format
             When printing in the long (-l) format, use format to format the date and time output.
             The argument format is a string used by strftime(3).  Depending on the choice of format
             string, this may result in a different number of columns in the output.  This option
             overrides the -T option.  This option is not defined in IEEE Std 1003.1-2008
             (“POSIX.1”).
```

The man pages are a great way to recall the different flags that are available and a great tool in your arsenal to becoming more fluent in bash.

Editing

To edit files in bash you have quiet a few options. The most common though is usually VI or Vim. VI stands for visual editor and it allows you to make edits and changes to a file and save them. Its very similar to what you may have used in applications like word. VIM is a better version of VI with some improvements - hense its name visual editor improved. Learning the different commands in Vim will feel a bit different coming from GUI applications but once you practice it will feel like second nature. Vim uses modes to determine the commands you can work with:

- Normal mode: Default mode
- Insert mode: Allows the contents of the files to be edited.
- Command line mode: Normal commands begin with **:**