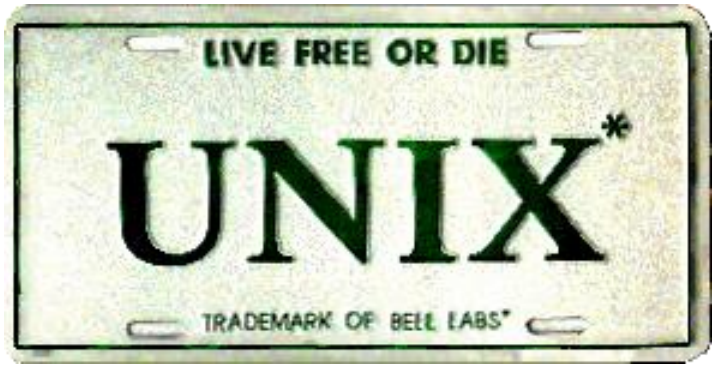


UNIX for Programmers and Users

“UNIX for Programmers and Users”
Third Edition, Prentice-Hall, GRAHAM GLASS, KING ABLES

Creating a file with cat

cat -n fileName

- The cat utility takes its input from standard input or from a list of files and displays them to standard output.
- The -n option adds line numbers to the output. cat is short for “concatenate” which means “to connect in a series of links.”
- By default, the standard input of a process is from the keyboard and the standard output is to the screen.

```
$ cat  > heart          --> store keyboard input into a file called “heart”.
I hear her breathing,
I’m  surrounded by the sound.
Floating in this secret place,
I never shall be found.
^D                      --> tell cat that the end of input has been reached.
$ _
```

Listing Contents of a Directory: ls

- The **ls** utility, which lists information about a file or a directory.

ls -adglsFR fileName or directoryName

- ls lists all of the files in the current working directory in alphabetical order, excluding files whose names start with a period.
- The -a option causes such files to be included in the listing.
- The -d option causes the details of the directories themselves to be listed, rather than their contents.
- The -g option list a file's group.
- The -l option generates a long listing, including permission flags, the file's owner, and the last modification time.

Listing Contents of a Directory

- The -s option causes the number of disk blocks that the file occupies to be included in the listing. (A block is typically between 512 and 4K bytes.)

- The -F option causes a character to be placed after the file's name to indicate the type of the file:
  - * means an executable file, / means a directory file,
  - @ means a symbolic link, and = means a socket.

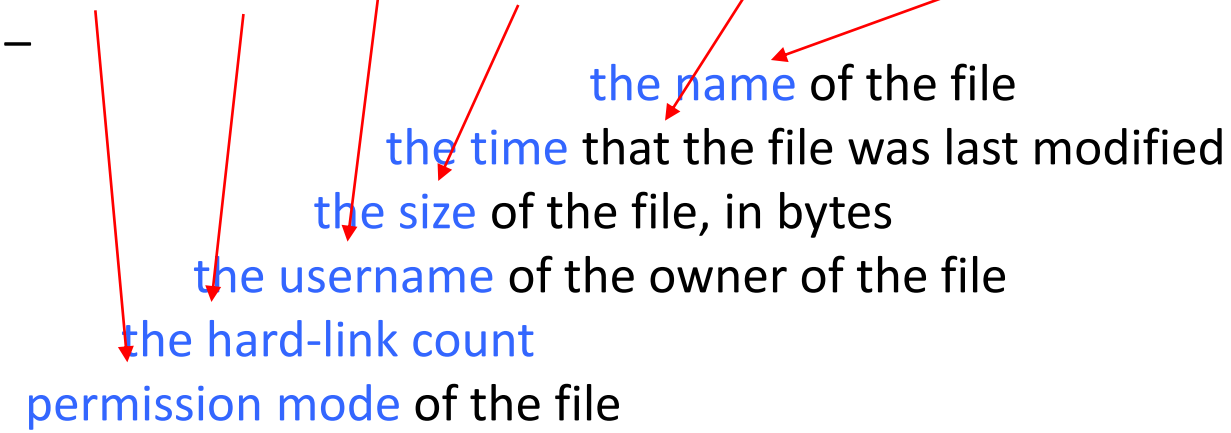
- The -R option recursively lists the contents of a directory and its subdirectories.

Directory Listing

- Here's an example of the use of ls :

```
$ ls                                --> list all files in current directory.
heart

$ ls  -l  heart                                  --> long listing of "heart."
-rw-r--r--    1    glass    106    Jan  30  19:46    heart
$ _
```



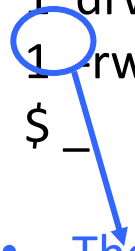
Directory Listing

Field #	Field value	Meaning
1	-rw-r--r--	the type and permission mode of the file, which indicates who can read, write, and execute the file
2	1	the hard-link count
3	glass	the username of the owner of the file
4	106	the size of the file, in bytes
5	Jan 30 19:46	the time that the file was last modified
6	heart	the name of the file

Listing Contents of a Directory

- You may obtain even more information by using additional options:

```
$ ls  -algFs          --> extra-long  listing of current dir
total  3              --> total number of blocks of storage.
1  drwxr-xr-x    3      glass    cs   512   Jan  30  22:52  ./
1  drwxr-xr-x   12      root     cs   1024  Jan  30  19:45  ../
1  -rw-r--r--    1      glass    cs   106   Jan  30  19:46  heart
$ _
```



- The -s option generates an extra first field, which tells you how many disk blocks the file occupies.

- On some UNIX systems, each disk block is 1024 bytes long, which implies that a 106-byte file actually takes up 1024 bytes of physical storage.

Displaying a File: cat

- cat with the name of the file that you wanted to display:

$ cat heart --> list the contents of the “heart” file.

I hear her breathing.

I’m surrounded by the sound.

Floating in this secret place,

I never shall be found.

$ _

- cat is good for listing the contents of small files, but it doesn’t pause between full screens of output.

Displaying a File: more

more -f +lineNumber fileName

- The more utility allows you to scroll a list of files, one page at a time.
- By default, each file is displayed starting at line 1, although the +option may be used to specify the starting line number.
- The -f option tells more not to fold (or wrap) long lines.

- After each page is displayed, more displays the message "--more--" to indicate that it's waiting for a command.

- To list the next page, press the space bar.
- To list the next line, press the Enter key.
- To quit from more, press the "q" key.
- ^B will display the previous page
- H will display help page

- Try:

$ ls –la /usr/bin > myLongFile

$ more myLongFile

Displaying a File: head and tail

head -n fileName

- The head utility displays the first n lines of a file. If n is not specified, it defaults to 10. If more than one file is specified, a small header identifying each file is displayed before its contents.

tail -n fileName

- The tail utility displays the last n lines of a file. If n is not specified, it defaults to 10. If more than one file is specified, a small header identifying each file is displayed before its contents.

- The first two lines and last two lines of my “heart” file.

```
$ head -2 heart                    -->  list the first two lines.
I hear her breathing,
I’m surrounded by the sound.
$ tail -2 heart                    -->  list the last two lines.
Floating in this secret place,
I never shall be found.
$ head -15 myLongFile              --> see what happens
```