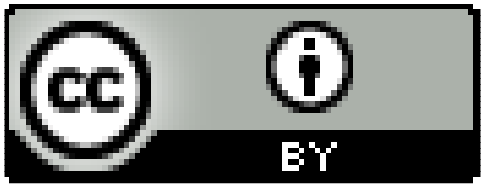
The Unix Shell

Creating and Deleting



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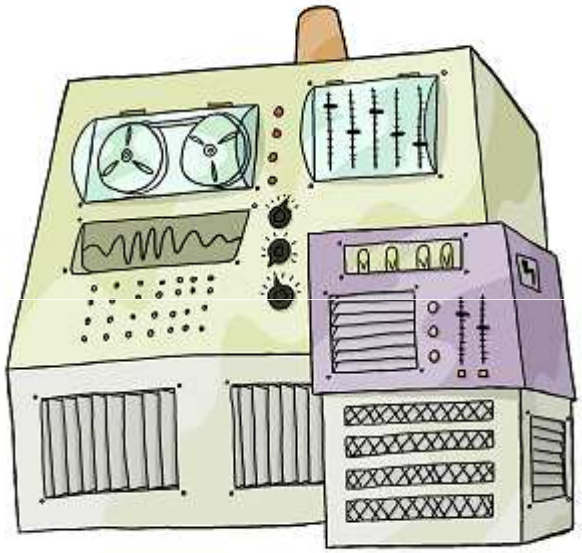
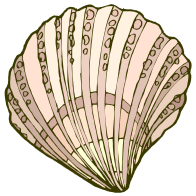
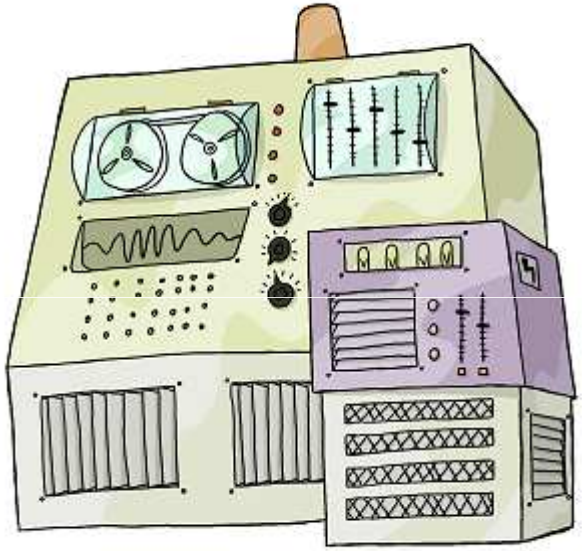
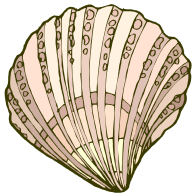




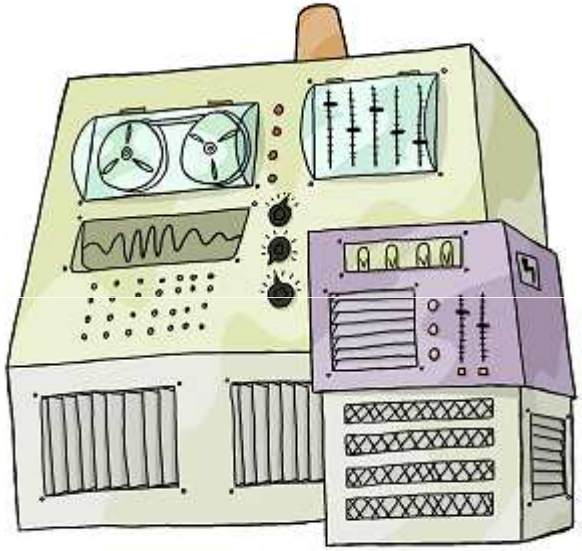
shell

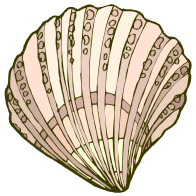




shell

`pwd`	print working directory
`cd`	change working directory
`ls`	listing
`.`	current directory
`..`	parent directory





shell

`pwd`	print working directory
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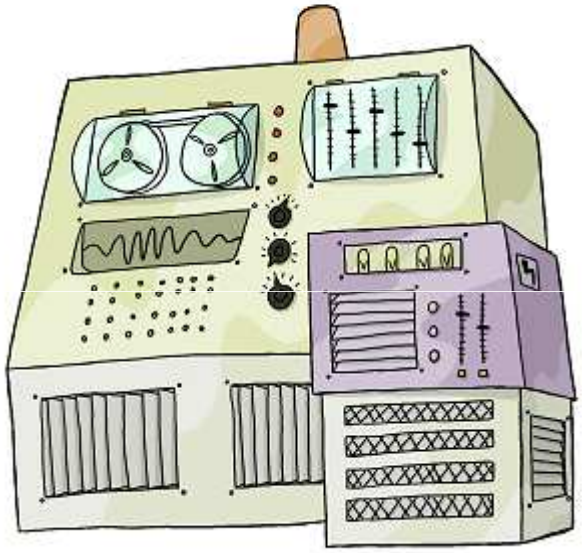


But how do we create things in the first place?

```
$ pwd
/users/vlad
$
```

```
$ pwd
/users/vlad
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/
$
```

```
$ pwd
/users/vlad
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/
$ mkdir tmp
```

```
$ pwd
/users/vlad
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/
$ mkdir tmp
```

make directory

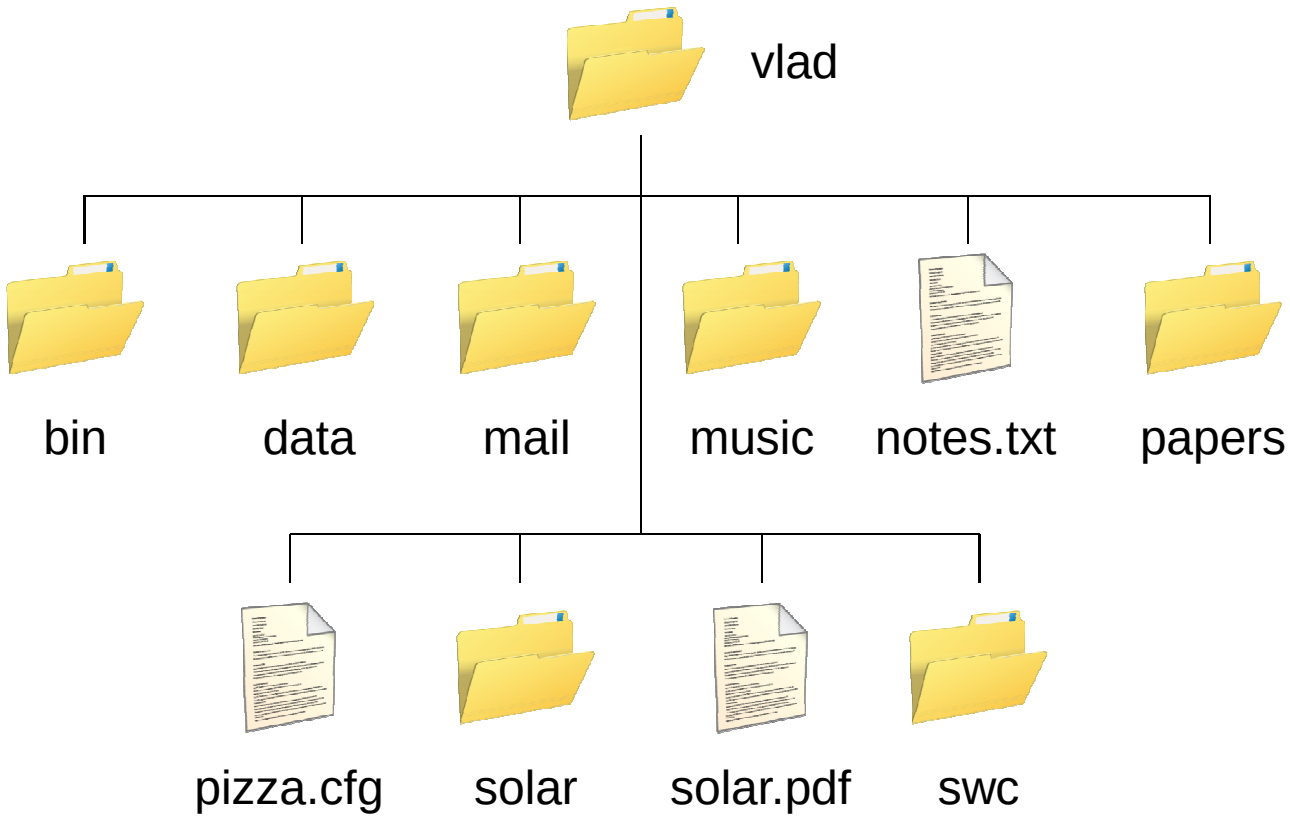
```
$ pwd
/users/vlad
$ ls -F
bin/          data/     mail/       music/
notes.txt     papers/   pizza.cfg   solar/
solar.pdf     swc/
$ mkdir tmp
```

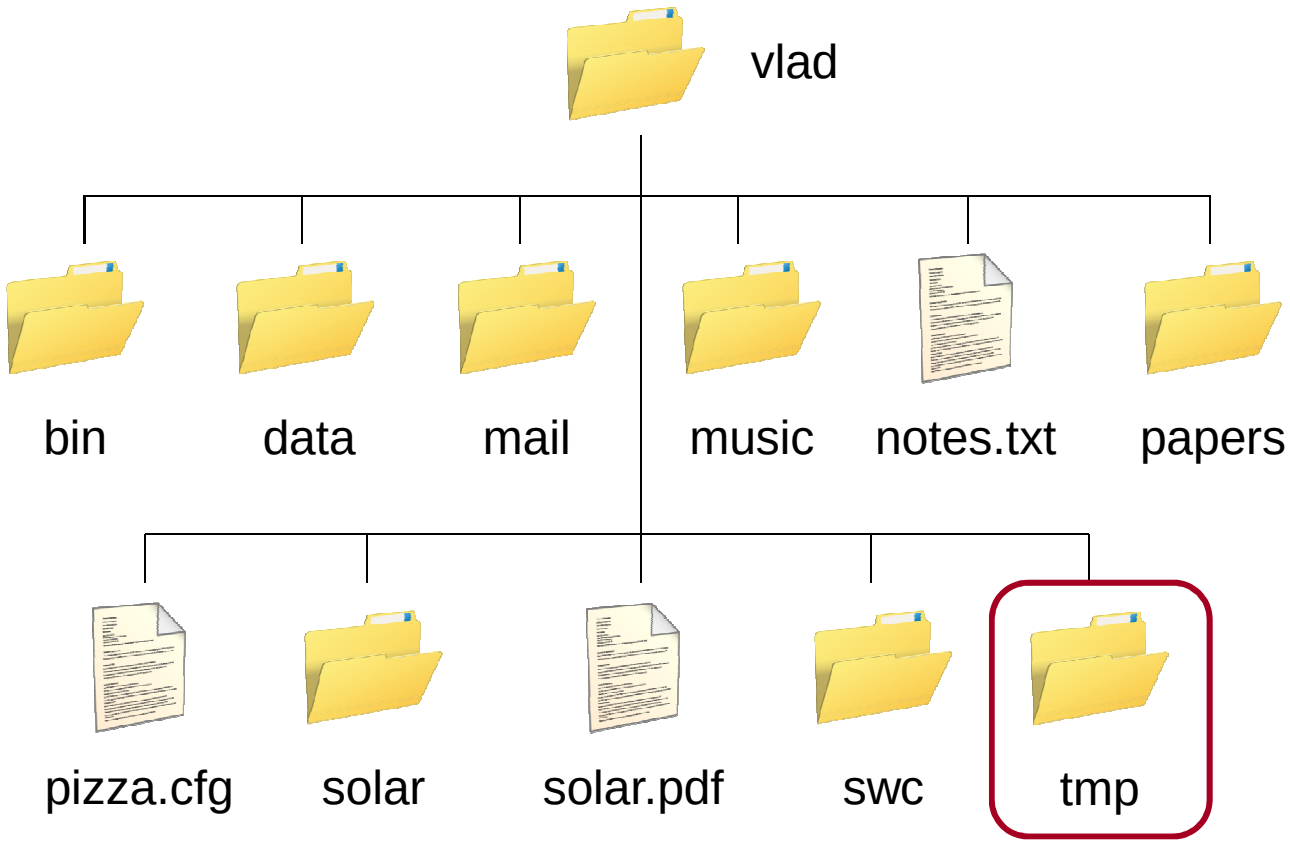
make directory

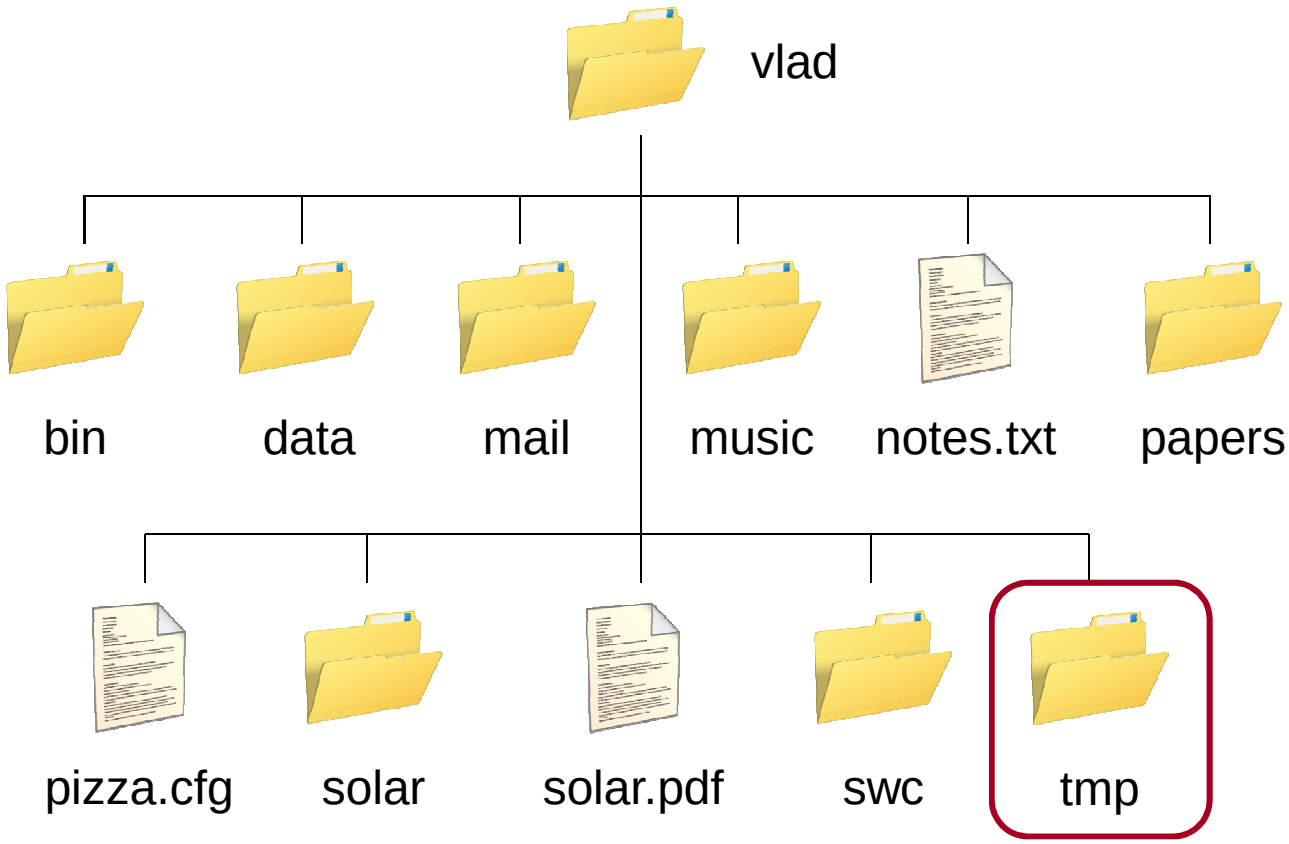
a relative path, so the new directory is made below the current one

```
$ pwd
/users/vlad
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/
$ mkdir tmp
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/      tmp/
$
```

```
$ pwd
/users/vlad
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/
$ mkdir tmp
$ ls -F
bin/          data/     mail/      music/
notes.txt     papers/   pizza.cfg  solar/
solar.pdf     swc/      tmp/
$
```


vlad
bin
data
mail
music
notes.txt
papers
pizza.cfg
solar
solar.pdf
swc


vlad
bin
data
mail
music
notes.txt
papers
pizza.cfg
solar
solar.pdf
swc
tmp



nothing below it yet

```
$ pwd
/users/vlad
$
```

```
$ pwd
/users/vlad
$ ls tmp
$
```

```
$ pwd
/users/vlad
$ ls tmp
$
```

no output

```
$ pwd
/users/vlad
$ ls tmp
$ ls -a tmp
.               ..
$
```

```
$ pwd
/users/vlad
$ ls tmp
$ ls -a tmp
.               ..
```

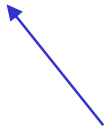
```
/users/vlad/tmp
```

```
$ pwd
/users/vlad
$ ls tmp
$ ls -a tmp
.               ..
```

/users/vlad

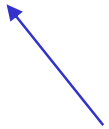
```
$ cd tmp
$ nano junk
```

```
$ cd tmp
$ nano junk
```



a text editor only a programmer could love

```
$ cd tmp
$ nano junk
```



a text editor only a programmer could love

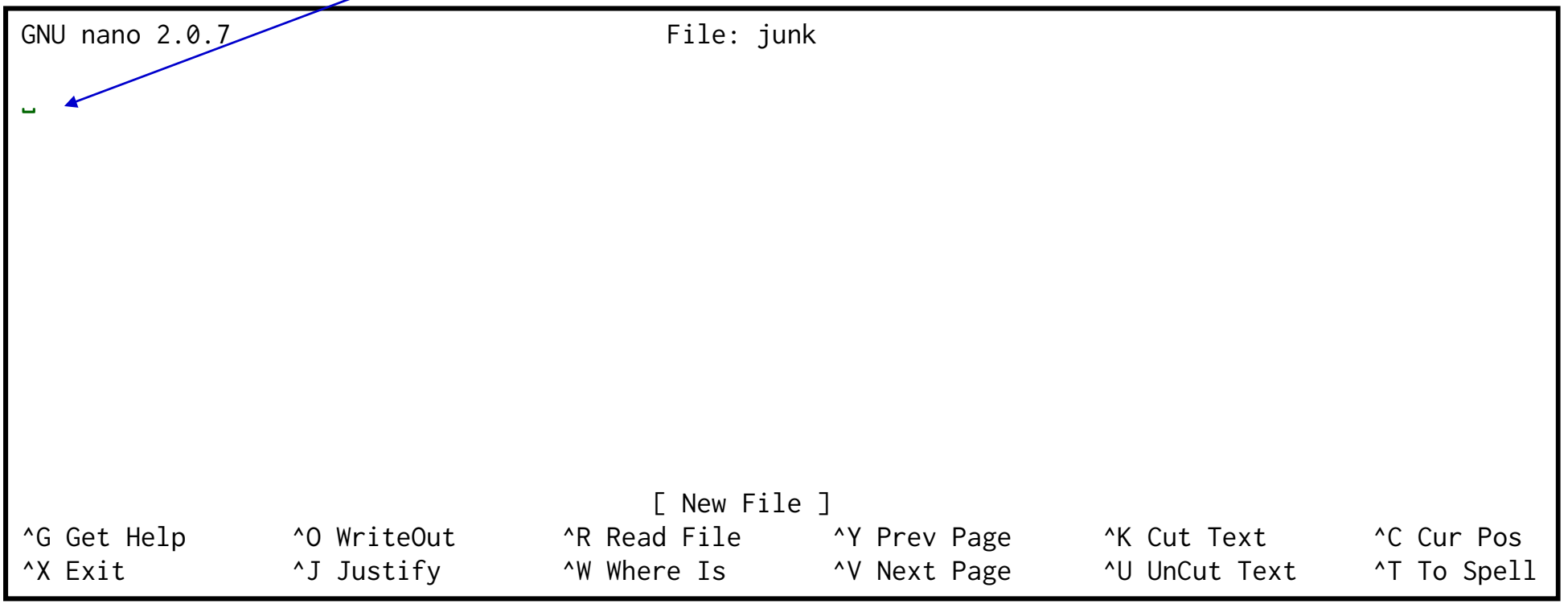
really do mean "text"...

```
$ cd tmp
$ nano junk
```

```
GNU nano 2.0.7                          File: junk

                                       [ New File ]
^G Get Help       ^O WriteOut       ^R Read File      ^Y Prev Page      ^K Cut Text       ^C Cur Pos
^X Exit           ^J Justify        ^W Where Is       ^V Next Page      ^U UnCut Text     ^T To Spell
```

```
$ cd tmp
$ nano junk
```

That's your cursor

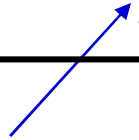


```
$ cd tmp
$ nano junk
```

```
GNU nano 2.0.7                          File: junk

Make everything as simple as possible,
but no simpler.

                                    [ New File ]
^G Get Help       ^O WriteOut       ^R Read File      ^Y Prev Page      ^K Cut Text       ^C Cur Pos
^X Exit           ^J Justify        ^W Where Is       ^V Next Page      ^U UnCut Text     ^T To Spell
```

```
$ cd tmp
$ nano junk
```

```
GNU nano 2.0.7                    File: junk

Make everything as simple as possible,
but no simpler.

                                [ New File ]
^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text     ^C Cur Pos
^X Exit          ^J Justify      ^W Where Is     ^V Next Page    ^U UnCut Text   ^T To Spell
```



^O means "Control + O" (to save changes)

```
$ cd tmp
$ nano junk
```

```
GNU nano 2.0.7                          File: junk

Make everything as simple as possible,
but no simpler.

                                    [ New File ]
^G Get Help       ^O WriteOut       ^R Read File      ^Y Prev Page      ^K Cut Text       ^C Cur Pos
^X Exit           ^J Justify        ^W Where Is       ^V Next Page      ^U UnCut Text     ^T To Spell
```

^X to exit back to the shell

```
$ cd tmp
$ nano junk
$
```

nano doesn't leave any output on the screen after it exits

```
$ cd tmp
$ nano junk
$ ls
junk
$
```

but it has created the file

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$
```

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$
```

use `-s` to show sizes

reported in disk blocks

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$
```

use `-s` to show sizes

reported in disk blocks

a less helpful default

may have been possible...

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$ ls -s -h
 512  junk
$
```


use `-h` for human-friendly output

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$ ls -s -h
 512  junk
$
```


use `-h` for human-friendly output

number of bytes

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$ ls -s -h
 512  junk
$
```

use `-h` for human-friendly output

number of bytes

rounded up because computer stores

things on disk using blocks of 512 bytes

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$ ls -s -h
 512  junk
$ rm junk
$
```


remove (delete) file

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$ ls -s -h
 512  junk
$ rm junk
$
```


remove (delete) file

there is no (easy) un-delete!

```
$ cd tmp
$ nano junk
$ ls
junk
$ ls -s
   1  junk
$ ls -s -h
 512  junk
$ rm junk
$ ls
$
```


check that it's gone

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$
```

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$
```


change working directory to `/users/vlad`

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$ rm tmp
rm: cannot remove ‘tmp’: Is a directory
$
```

`rm` only works on files

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$ rm tmp
rm: cannot remove ‘tmp’: Is a directory
$ rmdir tmp
```

use `rmdir` to remove directories

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$ rm tmp
rm: cannot remove ‘tmp’: Is a directory
$ rmdir tmp
rmdir: failed to remove ‘tmp’: Directory not empty
$
```

but it only works when the directory is empty

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$ rm tmp
rm: cannot remove ‘tmp’: Is a directory
$ rmdir tmp
rmdir: failed to remove ‘tmp’: Directory not empty
$
```

but it only works when the directory is empty (safety feature)

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$ rm tmp
rm: cannot remove ‘tmp’: Is a directory
$ rmdir tmp
rmdir: failed to remove ‘tmp’: Directory not empty
$ rm tmp/junk
$
```

so get rid of the directory's contents...

```
$ pwd
/users/vlad/tmp
$ nano junk
$ ls
junk
$ cd ..
$ rm tmp
rm: cannot remove ‘tmp’: Is a directory
$ rmdir tmp
rmdir: failed to remove ‘tmp’: Directory not empty
$ rm tmp/junk
$ rmdir tmp
$
```

…then get rid of the directory

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$
```

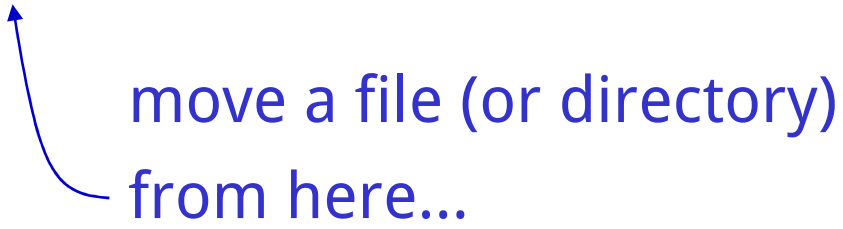
```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$
```

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$
```

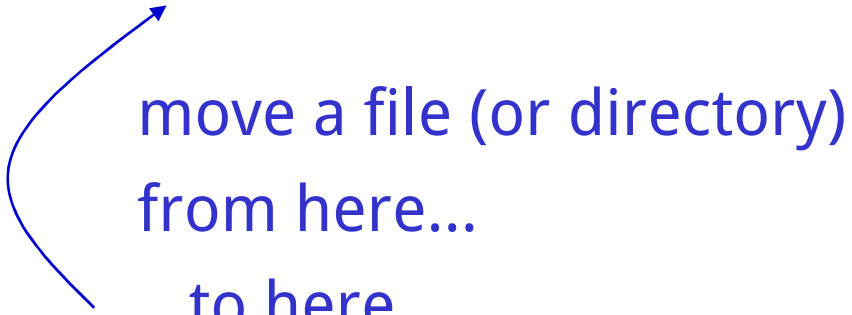
```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$
```

move a file (or directory)

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$
```



```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$
```



```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$
```

move a file (or directory)

from here...

...to here

renames the file!

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$
```

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$ mv tmp/quotes.txt .
$
```

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$ mv tmp/quotes.txt .
$
```

← current working directory

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$ mv tmp/quotes.txt .
$
```

move /users/vlad/tmp/quotes.txt to /users/vlad/quotes.txt

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$ mv tmp/quotes.txt .
$ ls tmp
$
```

nothing left in `tmp`

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$ mv tmp/quotes.txt .
$ ls tmp
$ ls quotes.txt
quotes.txt
```

`quotes.txt` now in this directory

```
$ pwd
/users/vlad/tmp
$ mkdir tmp
$ nano tmp/junk
$ ls tmp
junk
$ mv tmp/junk tmp/quotes.txt
$ ls tmp
quotes.txt
$ mv tmp/quotes.txt .
$ ls tmp
$ ls quotes.txt
quotes.txt
```

`ls` with a file or directory argument lists that file or directory

```
$ cp quotes.txt tmp/quotations.txt
$
```

copy a file

```
$ cp quotes.txt tmp/quotations.txt
$ ls quotes.txt tmp/quotations.txt
quotes.txt   tmp/quotations.txt
$
```

```
$ cp quotes.txt tmp/quotations.txt
$ ls quotes.txt tmp/quotations.txt
quotes.txt   tmp/quotations.txt
$ rm quotes.txt
$
```

```
$ cp quotes.txt tmp/quotations.txt
$ ls quotes.txt tmp/quotations.txt
quotes.txt   tmp/quotations.txt
$ rm quotes.txt
$ ls quotes.txt tmp/quotations.txt
ls: cannot access quotes.txt: No such file or directory
tmp/quotations.txt
$
```

```
$ cp quotes.txt tmp/quotations.txt
$ ls quotes.txt tmp/quotations.txt
quotes.txt   tmp/quotations.txt
$ rm quotes.txt
$ ls quotes.txt tmp/quotations.txt
ls: cannot access quotes.txt: No such file or directory
tmp/quotations.txt
$ cp tmp/quotations.txt .
$ ls quotations.txt
quotations.txt
$
```

```
$ cp quotes.txt tmp/quotations.txt
$ ls quotes.txt tmp/quotations.txt
quotes.txt   tmp/quotations.txt
$ rm quotes.txt
$ ls quotes.txt tmp/quotations.txt
ls: cannot access quotes.txt: No such file or directory
tmp/quotations.txt
$ cp tmp/quotations.txt .
$ ls quotations.txt
quotations.txt
$
```

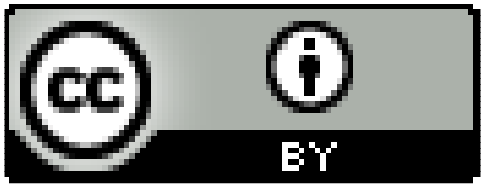
this is a directory, so the copy has the same name as the original file

`pwd`	print working directory
`cd`	change working directory
`ls`	listing
`.`	current directory
`..`	parent directory
`mkdir`	make a directory
`nano`	text editor
`rm`	remove (delete) a file
`rmdir`	remove (delete) a directory
`mv`	move (rename) a file or directory
`cp`	copy a file

created by

Greg Wilson

August 2010



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