

1.1

```
[ese-wurx@login03 ~]$ ln -s data_demo data_demo_link
```

```
[ese-wurx@login03 ~]$ ll
total 2
drwxr-xr-x 7 ese-wurx ese-ouycc 4096 Dec  1 20:22 data_demo
lrwxrwxrwx 1 ese-wurx ese-ouycc    9 Dec  7 19:06 data_demo_link -> data_demo
drwxr-xr-x 2 ese-wurx ese-ouycc 4096 Nov  2 18:47 exam
drwxr-xr-x 2 ese-wurx ese-ouycc 4096 Dec  3 17:59 mpi_demo
```

1.2

```
[ese-wurx@login03 data_demo]$ echo $HOME
/work/ese-wurx
```

1.3

```
[ese-wurx@login03 ~]$ cd data_demo/molecules/
[ese-wurx@login03 molecules]$ pwd
/work/ese-wurx/data_demo/molecules
```

```
[ese-wurx@login03 molecules]$ touch test.pdb
[ese-wurx@login03 molecules]$ ll
total 3
-rwxr-xr-x 1 ese-wurx ese-ouycc 1158 Dec  1 19:41 cubane.pdb
-rwxr-xr-x 1 ese-wurx ese-ouycc  622 Dec  1 19:41 ethane.pdb
-rwxr-xr-x 1 ese-wurx ese-ouycc  422 Dec  1 19:41 methane.pdb
-rwxr-xr-x 1 ese-wurx ese-ouycc 1828 Dec  1 19:41 octane.pdb
-rwxr-xr-x 1 ese-wurx ese-ouycc 1226 Dec  1 19:41 pentane.pdb
-rwxr-xr-x 1 ese-wurx ese-ouycc  825 Dec  1 19:41 propane.pdb
-rw-r--r-- 1 ese-wurx ese-ouycc    0 Dec  7 19:15 test.pdb
```

1.4

```
[ese-wurx@login03 ~]$ cd data_demo/data/elements/
[ese-wurx@login03 elements]$ pwd
/work/ese-wurx/data_demo/data/elements
[ese-wurx@login03 elements]$ find . -type f -print | wc -l
103
```

1.5

```
[ese-wurx@login03 ~]$ cd data_demo/data/pdb/
[ese-wurx@login03 pdb]$ diff ethane.pdb ethanol.pdb
1,11c1,12
< COMPND          ETHANE
< AUTHOR          DAVE WOODCOCK  95 12 18
< ATOM            1  C              1    -0.752   0.001  -0.141   1.00   0.00
< ATOM            2  C              1     0.752  -0.001   0.141   1.00   0.00
< ATOM            3  H              1    -1.158   0.991   0.070   1.00   0.00
< ATOM            4  H              1    -1.240  -0.737   0.496   1.00   0.00
< ATOM            5  H              1    -0.924  -0.249  -1.188   1.00   0.00
< ATOM            6  H              1     1.158  -0.991  -0.070   1.00   0.00
< ATOM            7  H              1     0.924   0.249   1.188   1.00   0.00
< ATOM            8  H              1     1.240   0.737  -0.496   1.00   0.00
< TER             9
---
> COMPND          ETHANOL
> AUTHOR          DAVE WOODCOCK  96 01 03
> ATOM            1  C              1    -0.426  -0.115  -0.147   1.00   0.00
> ATOM            2  O              1    -0.599   1.244  -0.481   1.00   0.00
> ATOM            3  H              1    -0.750  -0.738  -0.981   1.00   0.00
> ATOM            4  H              1    -1.022  -0.351   0.735   1.00   0.00
> ATOM            5  H              1    -1.642   1.434  -0.689   1.00   0.00
> ATOM            6  C              1     1.047  -0.383   0.147   1.00   0.00
> ATOM            7  H              1     1.370   0.240   0.981   1.00   0.00
> ATOM            8  H              1     1.642  -0.147  -0.735   1.00   0.00
> ATOM            9  H              1     1.180  -1.434   0.405   1.00   0.00
> TER           10
```

1.6

```
[ese-wurx@login03 ~]$ cd data_demo/writing/data/
[ese-wurx@login03 data]$ grep -c 'But she' LittleWomen.txt
15
```

1.7

```
[ese-wurx@login03 data]$ du -sh
1.3M  .
[ese-wurx@login03 data]$ du -sh * | sort -n
1.2M  LittleWomen.txt
128K  two.txt
512   one.txt
```

1.8

Copy:

```
[ese-wurx@login03 ~]$ cp -r data_demo/writing/ data_demo/writing_new/
[ese-wurx@login03 ~]$ cd data_demo
[ese-wurx@login03 data_demo]$ ll
total 135
drwxr-xr-x 2 ese-wurx ese-ouycc 4096 Dec  1 19:41 creatures
drwxr-xr-x 5 ese-wurx ese-ouycc 4096 Dec  1 19:41 data
-rw-r--r-- 1 ese-wurx ese-ouycc   0 Dec  1 20:22 err.log
-rw-r--r-- 1 ese-wurx ese-ouycc 1822 Dec  1 20:22 job.log
-rw-r--r-- 1 ese-wurx ese-ouycc  380 Dec  1 19:55 job.sh
drwxr-xr-x 2 ese-wurx ese-ouycc 4096 Dec  7 19:15 molecules
drwxr-xr-x 3 ese-wurx ese-ouycc 4096 Dec  1 19:41 north-pacific-gyre
-rwxr-xr-x 1 ese-wurx ese-ouycc   76 Dec  1 19:41 notes
-rwxr-xr-x 1 ese-wurx ese-ouycc   32 Dec  1 19:41 pizza.cfg
-rw-r--r-- 1 ese-wurx ese-ouycc   45 Dec  1 20:22 result.log
-rwxr-xr-x 1 ese-wurx ese-ouycc 21583 Dec  1 19:41 solar.pdf
-rw-r--r-- 1 ese-wurx ese-ouycc   222 Dec  1 19:52 t1.py
-rw-r--r-- 1 ese-wurx ese-ouycc    20 Dec  1 19:41 temp
drwxr-xr-x 5 ese-wurx ese-ouycc 4096 Dec  1 19:41 writing
drwxr-xr-x 5 ese-wurx ese-ouycc 4096 Dec  7 20:17 writing_new
```

Zip:

```
[ese-wurx@login03 data_demo]$ zip -r writing_new.zip *
```

```
[ese-wurx@login03 data_demo]$ ll
total 135
drwxr-xr-x 2 ese-wurx ese-ouycc 4096 Dec  1 19:41 creatures
drwxr-xr-x 5 ese-wurx ese-ouycc 4096 Dec  1 19:41 data
-rw-r--r-- 1 ese-wurx ese-ouycc   0 Dec  1 20:22 err.log
-rw-r--r-- 1 ese-wurx ese-ouycc 1822 Dec  1 20:22 job.log
-rw-r--r-- 1 ese-wurx ese-ouycc  380 Dec  1 19:55 job.sh
drwxr-xr-x 2 ese-wurx ese-ouycc 4096 Dec  7 19:15 molecules
drwxr-xr-x 3 ese-wurx ese-ouycc 4096 Dec  1 19:41 north-pacific-gyre
-rwxr-xr-x 1 ese-wurx ese-ouycc   76 Dec  1 19:41 notes
-rwxr-xr-x 1 ese-wurx ese-ouycc   32 Dec  1 19:41 pizza.cfg
-rw-r--r-- 1 ese-wurx ese-ouycc   45 Dec  1 20:22 result.log
-rwxr-xr-x 1 ese-wurx ese-ouycc 21583 Dec  1 19:41 solar.pdf
-rw-r--r-- 1 ese-wurx ese-ouycc   222 Dec  1 19:52 t1.py
-rw-r--r-- 1 ese-wurx ese-ouycc    20 Dec  1 19:41 temp
drwxr-xr-x 5 ese-wurx ese-ouycc 4096 Dec  1 19:41 writing
drwxr-xr-x 5 ese-wurx ese-ouycc 4096 Dec  7 20:17 writing_new
-rw-r--r-- 1 ese-wurx ese-ouycc 1000201 Dec  7 20:24 writing_new.zip
```

Unzip:

```
[ese-wurx@login03 data_demo]$ unzip -n writing_new.zip
Archive:  writing_new.zip
```

1.9

```
[ese-wurx@login03 data_demo]$ chmod 750 writing_new
```

```
drwxr-x--- 5 ese-wurx ese-ouycc 4096 Dec 7 20:17 writing_new
```

1.10

```
[ese-wurx@login03 data_demo]$ history 10
144  unzip -n writing_new.zip
145  ll
146  chmod drwxr-x--- writing_new
147  chmod d rwxr-x--- writing_new
148  ll
149  chmod 750 writing_new
150  ll
151  history -10
152  history -w -10
153  history 10
```

2.

#I got inspired by Zhou Yunqiu

```
[ese-wurx@login03 ~]$ cd data_demo/data/pdb/
[ese-wurx@login03 pdb]$ nano loop.sh
```

loop.sh:

```
for pdb in *.pdb
do
    du -a -h $pdb
done
```

```
[ese-wurx@login03 pdb]$ chmod 750 loop.sh
[ese-wurx@login03 pdb]$ ./loop.sh
```

Result:

```
512    aldrin.pdb
512    ammonia.pdb
512    ascorbic-acid.pdb
512    benzaldehyde.pdb
512    camphene.pdb
128K   cholesterol.pdb
512    cinnamaldehyde.pdb
512    citronellal.pdb
512    codeine.pdb
512    cubane.pdb
512    cyclobutane.pdb
512    cyclohexanol.pdb
512    cyclopropane.pdb
512    ethane.pdb
512    ethanol.pdb
512    ethylcyclohexane.pdb
512    glycol.pdb
128K   heme.pdb
512    lactic-acid.pdb
512    lactose.pdb
128K   lanoxin.pdb
512    lsd.pdb
512    maltose.pdb
512    menthol.pdb
512    methane.pdb
512    methanol.pdb
512    mint.pdb
512    morphine.pdb
512    mustard.pdb
512    nerol.pdb
512    norethindrone.pdb
512    octane.pdb
512    pentane.pdb
512    piperine.pdb
512    propane.pdb
```

```
512    pyridoxal.pdb
512    quinine.pdb
512    strychnine.pdb
512    styrene.pdb
512    sucrose.pdb
512    testosterone.pdb
512    thiamine.pdb
512    tnt.pdb
512    tuberin.pdb
512    tyrian-purple.pdb
512    vanillin.pdb
512    vinyl-chloride.pdb
512    vitamin-a.pdb
```