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               1
---
> 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
```

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
```

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
```