

1、

- (1) 软链接: (文件本体删除后, 创建的软链接也失效)

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

硬链接: (相当于创建文件的副本)

```
[ese-caikzh@login03 data_demo]$ ln data_demo_link data_demo
```

- (2) Echo 命令

```
[ese-caikzh@login03 ~]$ echo *
data_demo exam
```

You need to print the home directory, not the file names within home directory. Accordingly, 1 point was deducted.
You can do that by: echo \$HOME.

- (3) Touch 命令

```
[ese-caikzh@login03 molecules]$ touch test.pdb
[ese-caikzh@login03 molecules]$ ls
cubane.pdb  methane.pdb  pentane.pdb  test.pdb
ethane.pdb  octane.pdb   propane.pdb
```

- (4) Find 命令

```
[ese-caikzh@login03 elements]$ find . -type f -print | wc -l
103
```

- (5) Diff 命令

```
[ese-caikzh@login03 ~]$ cd data_demo/data/pdb
[ese-caikzh@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, 11c1, 12 含义: 第一个文件中的第[1,11]行(闭合区间, 包括第 1 行和第 11 行)需要做出修改才能与第二个文件中的[1,12]行相匹配。

- (6) Grep 命令

```
[ese-caikzh@login03 data]$ grep -c 'But she' *.txt  
15
```

- (7) Du 命令

Using 'du -h -c data_demo/data/' would be better

```
[ese-caikzh@login03 data]$ du  
1281 .
```

- (8) Zip 命令

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

```
[ese-caikzh@login03 data_demo]$ ls  
creatures  data_demo_link  north-pacific-gyre  solar.pdf  writing_new  
data       draft.txt        notes               thesis     writing_new.zip  
data_demo  molecules        pizza.cfg           writing
```

Unzip 命令

```
[ese-caikzh@login03 data_demo]$ unzip writing_new.zip  
Archive:  writing_new.zip  
replace creatures/basilisk.dat? [y]es, [n]o, [A]ll, [N]one, [r]ename:
```

- (9) Chmod 命令

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

```
drwxr-x--- 5 ese-caikzh ese-ouycc 4096 Nov 25 11:53 writing_new
```

- (10) History 命令

```
[ese-caikzh@login03 data_demo]$ history | tail -n 10  
256  rm writing_new.zip  
257  ls  
258  chmod drwxr-x--- writing_new  
259  chmod --help  
260  chmod 750 writing_new  
261  ls  
262  writing_new  
263  ls -l  
264  history  
265  history | tail -n 10
```

2、BASH for Loop

```
[ese-caikzh@login01 pdb]$ for file in *.pdb
> do
> du -b $file
> done
1516   aldrin.pdb
306    ammonia.pdb
1444   ascorbic-acid.pdb
1030   benzaldehyde.pdb
1830   camphene.pdb
5049   cholesterol.pdb
1090   cinnamaldehyde.pdb
1694   citronellal.pdb
2452   codeine.pdb
1158   cubane.pdb
895    cyclobutane.pdb
1384   cyclohexanol.pdb
695    cyclopropane.pdb
622    ethane.pdb
690    ethanol.pdb
2396   ethylcyclohexane.pdb
765    glycol.pdb
4209   heme.pdb
1064   lactic-acid.pdb
2562   lactose.pdb
11193  lanoxin.pdb
3395   lsd.pdb
2562   maltose.pdb
2164   menthol.pdb
422    methane.pdb
490    methanol.pdb
1869   mint.pdb
2288   morphine.pdb
2123   mustard.pdb
1680   nerol.pdb
2729   norethindrone.pdb
1828   octane.pdb
1226   pentane.pdb
2287   piperine.pdb
825    propane.pdb
1256   pyridoxal.pdb
3303   quinine.pdb
2675   strychnine.pdb
1159   styrene.pdb
2562   sucrose.pdb
2787   testosterone.pdb
2196   thiamine.pdb
1508   tnt.pdb
2395   tuberin.pdb
2103   tyrian-purple.pdb
1361   vanillin.pdb
423    vinyl-chloride.pdb
2894   vitamin-a.pdb
```