

#2.1

```
[ese-dingc@login03 ~]$ ln -s data_demo data_demo_link
[ese-dingc@login03 ~]$ pwd
/work/ese-dingc
[ese-dingc@login03 ~]$ ls
billing_report data_demo data_demo_link exam job.sh test
```

#2.2

```
[ese-dingc@login03 ~]$ cd data_demo
[ese-dingc@login03 data_demo]$ ls
creatures  log      north-pacific-gyre  solar.pdf      writing
data       log1     notes.txt           thesis
file2      molecules pizza.cfg           thesis_backup
[ese-dingc@login03 data_demo]$ cd data
[ese-dingc@login03 data]$ touch planets.txt_1st
[ese-dingc@login03 data]$ ls
amino-acids.txt  elements  pdb          salmon.txt
animal-counts    log.txt   planets.txt   sunspot.txt
animals.txt      morse.txt planets.txt_1st
```

#2.3

```
[ese-dingc@login03 data]$ echo -n home
home[ese-dingc@login03 data]$ echo ~
/work/ese-dingc
```

#2.4

```
[ese-dingc@login03 data]$ cd pdb
[ese-dingc@login03 pdb]$ find . -type f | wc -l
50
```

#2.5

```
[ese-dingc@login03 pdb]$ grep C tnt.pdb
COMPND      2,4,6-TRINITROTOLUENE
AUTHOR      DAVE WOODCOCK  96 07 05
ATOM        1  C          1      1.183 -0.757 -0.174  1.00  0.00
ATOM        2  C          1      1.212  0.643 -0.175  1.00  0.00
ATOM        3  C          1      0.015  1.368 -0.204  1.00  0.00
ATOM        4  C          1     -1.211  0.693 -0.232  1.00  0.00
ATOM        5  C          1     -1.240 -0.706 -0.231  1.00  0.00
ATOM        6  C          1     -0.043 -1.431 -0.201  1.00  0.00
ATOM       16  C          1      0.047  2.894 -0.206  1.00  0.00
[ese-dingc@login03 pdb]$ grep -o C tnt.pdb | wc -l
10
```

#2.6

```
[ese-dingc@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
```

#2.7

```
[ese-dingc@login03 data_demo]$ cd ~
[ese-dingc@login03 ~]$ cd data_demo
[ese-dingc@login03 data_demo]$ du
4      ./molecules
1      ./writing/tools/old
2      ./writing/tools
1281   ./writing/data
1      ./writing/thesis
1285   ./writing
2050   ./north-pacific-gyre/2012-07-03
2051   ./north-pacific-gyre
2      ./creatures
1      ./thesis_backup
408    ./data/pdb
52     ./data/elements
1      ./data/animal-counts
720    ./data
1      ./thesis
4194   .
```

#2.8

```
[ese-dingc@login03 ~]$ cp -r data_demo data_demo_new
[ese-dingc@login03 ~]$ ls
billing_report  data_demo  data_demo_link  data_demo_new  exam  job.sh  test
[ese-dingc@login03 ~]$ zip -r data_demo_new.zip data_demo_new
adding: data_demo_new/ (stored 0%)
adding: data_demo_new/molecules/ (stored 0%)
adding: data_demo_new/molecules/methane.pdb (deflated 66%)
adding: data_demo_new/molecules/pentane.pdb (deflated 74%)
adding: data_demo_new/molecules/cubane.pdb (deflated 73%)
adding: data_demo_new/molecules/ethane.pdb (deflated 70%)
adding: data_demo_new/molecules/propane.pdb (deflated 71%)
adding: data_demo_new/molecules/octane.pdb (deflated 75%)
adding: data_demo_new/solar.pdf (deflated 9%)
adding: data_demo_new/data_demo/ (stored 0%)
adding: data_demo_new/data_demo/molecules/ (stored 0%)
```

```

adding: data_demo_new/data/animal-counts/ (stored 0%)
adding: data_demo_new/data/animal-counts/animals.txt (deflated
adding: data_demo_new/data/planets.txt (deflated 67%)
adding: data_demo_new/.bash_profile (deflated 31%)
adding: data_demo_new/thesis/ (stored 0%)
adding: data_demo_new/thesis/my_paper.txt (stored 0%)
[ese-dingc@login03 ~]$ ls
billing_report  data_demo_link  data_demo_new.zip  job.sh
data_demo      data_demo_new   exam               test

[ese-dingc@login03 ~]$ unzip data_demo_new .zip
Archive:  data_demo_new.zip
caution: filename not matched:  .zip
[ese-dingc@login03 ~]$

```

#2.9

```

[ese-dingc@login03 ~]$ chmod 750 data_demo_new
[ese-dingc@login03 ~]$ ll
total 1156
drwxr-xr-x  2 root      root          4096 Sep 26 15:19 billing_report
drwxr-xr-x  9 ese-dingc ese-ouycc     4096 Nov 24 19:42 data_demo
lrwxrwxrwx  1 ese-dingc ese-ouycc       9 Dec  1 22:12 data_demo_link -> data_demo
drwxr-x--- 10 ese-dingc ese-ouycc     4096 Dec  1 22:34 data_demo_new
-rw-r--r--  1 ese-dingc ese-ouycc 1172904 Dec  1 22:29 data_demo_new.zip
drwxr-xr-x  2 ese-dingc ese-ouycc     4096 Sep 12 11:01 exam
-rw-r--r--  1 ese-dingc ese-ouycc      312 Nov 26 19:51 job.sh
drwxr-x---  2 ese-dingc ese-ouycc     4096 Nov 24 20:00 test

```

#2.10

```

[ese-dingc@login03 ~]$ history 10
204  cp -r data_demo data_demo_new
205  ls
206  zip -r data_demo_new.zip data_demo_new
207  ls
208  unzip data_demo_new .zip
209  ls
210  unzip data_demo_new.zip
211  chmod 750 data_demo_new
212  ll
213  history 10

```