

## Assignment 5

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### Q1

**1.1 [2 points] Make a link called data\_demo\_link to data\_demo folder using ln .**

Script: `ln -s ./data_demo ./data_demo_link`

```
[ese-xurm@login02 ~]$ cp -r /work/ese-ouycc/data_demo .  
[ese-xurm@login02 ~]$ ls  
data_demo exam  
[ese-xurm@login02 ~]$ ln -s ./data_demo ./data_demo_link  
[ese-xurm@login02 ~]$ ls  
data_demo data_demo_link exam  
[ese-xurm@login02 ~]$
```

**1.2 [2 points] Print your home directory using echo .**

Script: `echo ~`

```
[data_demo data_demo_link exam  
[ese-xurm@login02 ~]$ echo ~  
/work/ese-xurm  
[ese-xurm@login02 ~]$
```

**1.3 [2 points] Go to data\_demo/molecules/ , make an empty file test.pdb with touch .**

Script:

`cd ./data_demo/molecules/`

`touch test.pdb`

```
[ese-xurm@login02 ~]$  
[ese-xurm@login02 ~]$ cd ./data_demo/molecules/  
[ese-xurm@login02 molecules]$ touch test.pdb  
[ese-xurm@login02 molecules]$ ls  
cubane.pdb ethane.pdb methane.pdb octane.pdb pentane.pdb propane.pdb test.pdb  
[ese-xurm@login02 molecules]$
```

**1.4 [3 points] Find how many files in data\_demo/data/elements/ using find .**

Script: `find ./data_demo/data/elements/ -type f | wc -l`

```
[ese-xurm@login02 ~]$  
[ese-xurm@login02 ~]$ find ./data_demo/data/elements/ -type f | wc -l  
103
```

**1.5 [2 points] Compare data\_demo/data/pdb/ethane.pdb and data\_demo/data/pdb/ethanol.pdb with diff .**

Script: `diff ./data_demo/data/pdb/ethane.pdb ./data_demo/data/pdb/ethanol.pdb`

```
[ese-xurm@login02 ~]$ diff ./data_demo/data/pdb/ethane.pdb ./data_demo/data/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
[ese-xurm@login02 ~]$
```

**1.6 [3 points] Count how many But she string appears in data\_demo/writing/data/LittleWomen.txt with grep .**

Script: `grep -c "But she" ./data_demo/writing/data/LittleWoman.txt`

```
[ese-xurm@login02 ~]$ grep -c "But she" ./data_demo/writing/data/LittleWomen.txt
15
[ese-xurm@login02 ~]$
```

**1.7 [2 points] Check the total file size of the data\_demo/data/ folder using du .**

Script: `du -c ./data_demo/data/`

```
[ese-xurm@login02 ~]$ du -c ./data_demo/data/
409    ./data_demo/data/pdb
52     ./data_demo/data/elements
1      ./data_demo/data/animal-counts
721    ./data_demo/data/
721    总用量
```

**1.8 [3 points] Copy the data\_demo/writing/ folder to data\_demo/writing\_new/ , compress data\_demo/writing\_new/ using zip , and decompress the .zip file with unzip .**

Script:

```
cp -r ./data_demo/writing/ ./data_demo/writing_new/
zip -r ./data_demo/writing_new.zip ./data_demo/writing_new/
unzip ./data_demo/writing_new.zip

[ese-xurm@login02 ~]$ cp -r ./data_demo/writing/ ./data_demo/writing_new/
[ese-xurm@login02 ~]$ zip -r ./data_demo/writing_new.zip ./data_demo/writing_new/
  adding: data_demo/writing_new/ (stored 0%)
  adding: data_demo/writing_new/haiku.txt (deflated 29%)
  adding: data_demo/writing_new/tools/ (stored 0%)
  adding: data_demo/writing_new/tools/stats (stored 0%)
  adding: data_demo/writing_new/tools/old/ (stored 0%)
  adding: data_demo/writing_new/tools/old/oldtool (stored 0%)
  adding: data_demo/writing_new/tools/format (deflated 13%)
  adding: data_demo/writing_new/data/ (stored 0%)
  adding: data_demo/writing_new/data/one.txt (deflated 53%)
  adding: data_demo/writing_new/data/LittleWomen.txt (deflated 61%)
  adding: data_demo/writing_new/data/two.txt (deflated 59%)
  adding: data_demo/writing_new/thesis/ (stored 0%)
  adding: data_demo/writing_new/thesis/empty-draft.md (stored 0%)
[ese-xurm@login02 ~]$ unzip ./data_demo/writing_new.zip
Archive: ./data_demo/writing_new.zip
replace data_demo/writing_new/haiku.txt? [y]es, [n]o, [A]ll, [N]one, [r]ename: y
  inflating: data_demo/writing_new/haiku.txt
replace data_demo/writing_new/tools/stats? [y]es, [n]o, [A]ll, [N]one, [r]ename: A
  extracting: data_demo/writing_new/tools/stats
  extracting: data_demo/writing_new/tools/old/oldtool
  inflating: data_demo/writing_new/tools/format
  inflating: data_demo/writing_new/data/one.txt
  inflating: data_demo/writing_new/data/LittleWomen.txt
  inflating: data_demo/writing_new/data/two.txt
  extracting: data_demo/writing_new/thesis/empty-draft.md
[ese-xurm@login02 ~]$
```

**1.9 [3 points] Change the file permissions flags on writing\_new to drwxr-x-- using chmod .**

Script: `chmod 750 ./data_demo/writing_new`

```
[ese-xurm@login02 ~]$
[ese-xurm@login02 ~]$ chmod 750 ./data_demo/writing_new
[ese-xurm@login02 ~]$ ls -l ./data_demo/
总用量 646
drwxr-xr-x 2 ese-xurm ese-ouycc 4096 11月 24 19:25 creatures
drwxr-xr-x 5 ese-xurm ese-ouycc 4096 12月 8 13:31 data
-rw-r--r-- 1 ese-xurm ese-ouycc 637 12月 8 13:31 log1
-rw-r--r-- 1 ese-xurm ese-ouycc 1274 12月 8 13:31 log2
drwxr-xr-x 2 ese-xurm ese-ouycc 4096 12月 8 13:38 molecules
drwxr-xr-x 3 ese-xurm ese-ouycc 4096 11月 24 19:25 north-pacific-gyre
-rwxr-xr-x 1 ese-xurm ese-ouycc 76 12月 8 13:31 notes
-rwxr-xr-x 1 ese-xurm ese-ouycc 32 12月 8 13:31 pizza.cfg
-rwxr-xr-x 1 ese-xurm ese-ouycc 21583 12月 8 13:31 solar.pdf
-rw-r--r-- 1 ese-xurm ese-ouycc 20 12月 8 13:31 temp
drwxr-xr-x 2 ese-xurm ese-ouycc 4096 11月 24 19:57 thesis
drwxr-xr-x 5 ese-xurm ese-ouycc 4096 11月 24 19:25 writing
drwxr-x-- 5 ese-xurm ese-ouycc 4096 12月 8 13:50 writing_new
-rw-r--r-- 1 ese-xurm ese-ouycc 422844 12月 8 13:48 writing_new.zip
[ese-xurm@login02 ~]$
```

### 1.10 [3 points] Print the last 10 commands you made using history .

Script: history 10

```
[ese-xurm@login02 ~]$  
[ese-xurm@login02 ~]$  
[ese-xurm@login02 ~]$ history 10  
 82 diff ./data_demo/data/pdb/ethane.pdb ./data_demo/data/pdb/ethanol.pdb  
 83 grep -c "But she" ./data_demo/writing/data/LittleWoman.txt  
 84 grep -c "But she" ./data_demo/writing/data/LittleWomen.txt  
 85 du -c ./data_demo/data/  
 86 cp -r ./data_demo/writing/ ./data_demo/writing_new/  
 87 zip -r ./data_demo/writing_new.zip ./data_demo/writing_new/  
 88 unzip ./data_demo/writing_new.zip  
 89 chmod 750 ./data_demo/writing_new  
 90 ls -l ./data_demo/  
 91 history 10  
[ese-xurm@login02 ~]$
```

## Q2

Script:

```
allpdb=$(ls ./data_demo/data/pdb/*.pdb)
for pdb in $allpdb
do
  wc -c $pdb
done
```

```
[[ese-xurm@login02 ~]]$
[[ese-xurm@login02 ~]]$ nano q2.sh
[[ese-xurm@login02 ~]]$ chmod 777 q2.sh
[[ese-xurm@login02 ~]]$ ./q2.sh
1516 ./data_demo/data/pdb/aldrin.pdb
306 ./data_demo/data/pdb/ammonia.pdb
1444 ./data_demo/data/pdb/ascorbic-acid.pdb
1030 ./data_demo/data/pdb/benzaldehyde.pdb
1830 ./data_demo/data/pdb/camphene.pdb
5049 ./data_demo/data/pdb/cholesterol.pdb
1090 ./data_demo/data/pdb/cinnamaldehyde.pdb
1694 ./data_demo/data/pdb/citronellal.pdb
2452 ./data_demo/data/pdb/codeine.pdb
1158 ./data_demo/data/pdb/cubane.pdb
895 ./data_demo/data/pdb/cyclobutane.pdb
1384 ./data_demo/data/pdb/cyclohexanol.pdb
695 ./data_demo/data/pdb/cyclopropane.pdb
622 ./data_demo/data/pdb/ethane.pdb
690 ./data_demo/data/pdb/ethanol.pdb
2396 ./data_demo/data/pdb/ethylcyclohexane.pdb
765 ./data_demo/data/pdb/glycol.pdb
4209 ./data_demo/data/pdb/heme.pdb
1064 ./data_demo/data/pdb/lactic-acid.pdb
2562 ./data_demo/data/pdb/lactose.pdb
11193 ./data_demo/data/pdb/lanoxin.pdb
3395 ./data_demo/data/pdb/lsd.pdb
2562 ./data_demo/data/pdb/maltose.pdb
2164 ./data_demo/data/pdb/menthol.pdb
422 ./data_demo/data/pdb/methane.pdb
490 ./data_demo/data/pdb/methanol.pdb
1869 ./data_demo/data/pdb/mint.pdb
2288 ./data_demo/data/pdb/morphine.pdb
2123 ./data_demo/data/pdb/mustard.pdb
1680 ./data_demo/data/pdb/nerol.pdb
2729 ./data_demo/data/pdb/norethindrone.pdb
1828 ./data_demo/data/pdb/octane.pdb
1226 ./data_demo/data/pdb/pentane.pdb
2287 ./data_demo/data/pdb/piperine.pdb
825 ./data_demo/data/pdb/propane.pdb
1256 ./data_demo/data/pdb/pyridoxal.pdb
3303 ./data_demo/data/pdb/quinine.pdb
2675 ./data_demo/data/pdb/strychnine.pdb
1159 ./data_demo/data/pdb/styrene.pdb
2562 ./data_demo/data/pdb/sucrose.pdb
2787 ./data_demo/data/pdb/testosterone.pdb
2196 ./data_demo/data/pdb/thiamine.pdb
1508 ./data_demo/data/pdb/tnt.pdb
2395 ./data_demo/data/pdb/tuberin.pdb
2103 ./data_demo/data/pdb/tyrian-purple.pdb
1361 ./data_demo/data/pdb/vanillin.pdb
423 ./data_demo/data/pdb/vinyl-chloride.pdb
2894 ./data_demo/data/pdb/vitamin-a.pdb
[[ese-xurm@login02 ~]]$ █
```

