PS5

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1.1

```
[ese-maizl@login01 ~]$ ln data_demo data_demo_link
ln: 'data_demo': hard link not allowed for directory
[ese-maizl@login01 ~]$ ln -s data_demo data_demo_link
[ese-maizl@login01 ~]$ ll
total 4
drwxr-xr-x 8 ese-maizl ese-ouycc 4096 Dec  3 16:39 data_demo
lrwxrwxrwx 1 ese-maizl ese-ouycc    9 Dec  4 10:33 data_demo_link -> data_demo
-rw-r--r-- 1 ese-maizl ese-ouycc    0 Dec  1 20:27 err.log
drwxr-xr-x 2 ese-maizl ese-ouycc 4096 Nov  2 18:47 exam
-rw-r--r-- 1 ese-maizl ese-ouycc 3637 Dec  1 20:27 job.log
-rw-r--r-- 1 ese-maizl ese-ouycc  380 Dec  1 19:55 job.sh
drwxr-xr-x 2 ese-maizl ese-ouycc 4096 Dec  3 17:55 mpi_demo
-rw-r--r-- 1 ese-maizl ese-ouycc   92 Dec  1 20:27 result.log
-rw-r--r-- 1 ese-maizl ese-ouycc  239 Dec  1 20:36 t1.py
```

1.2

```
[ese-maizl@login01 ~]$ pwd
/work/ese-maizl
[ese-maizl@login01 ~]$ echo $(pwd)
/work/ese-maizl
```

1.3

```
[ese-maizl@login01 molecules]$ ll
total 3
-rwxr-xr-x 1 ese-maizl ese-ouycc 1158 Nov 24 19:21 cubane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc  622 Nov 24 19:21 ethane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc  422 Nov 24 19:21 methane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc 1828 Nov 24 19:21 octane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc 1226 Nov 24 19:21 pentane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc  825 Nov 24 19:21 propane.pdb
[ese-maizl@login01 molecules]$ touch test.pdb
[ese-maizl@login01 molecules]$ ll
total 3
-rwxr-xr-x 1 ese-maizl ese-ouycc 1158 Nov 24 19:21 cubane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc  622 Nov 24 19:21 ethane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc  422 Nov 24 19:21 methane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc 1828 Nov 24 19:21 octane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc 1226 Nov 24 19:21 pentane.pdb
-rwxr-xr-x 1 ese-maizl ese-ouycc  825 Nov 24 19:21 propane.pdb
-rw-r--r-- 1 ese-maizl ese-ouycc    0 Dec  4 10:52 test.pdb
```

1.4

```
[ese-maizl@login01 ~]$ find /work/ese-maizl/data_demo/data/elements/ -type f -print | wc -w
103
```

1.5

```
[ese-maizl@login01 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-maizl@login01 data]$ grep "But she" LittleWomen.txt
"Oh, bless you, no!  But she let old Belsham rest, and when I ran back
small quaver in her voice, "I came to thank you, sir, for..." But she
than she went.  But she begged so hard, and Sallie had promised to take
    But she does not hunt as our darling did,
    But she only spits at the dogs our pet
    But she is not fair to see,
queer thing for her to do, she doesn't act a bit like herself.  But she
aspirant for fame, with philosophic composure. But she made a wry face
her.  But she can pet and comfort him after I'm gone, and so cure him
to see signs of hope in the faint color on Beth's cheeks.  But she
But she did not get it, for though he joined her and answered all her
sketchbook.  But she tucked it under her arm with a sharp...
Amy did any of these fond and foolish things.  But she certainly did
But she did show something better than brilliancy or skill, for she
grasshopper.  But she would have consented if he had proposed to sing a
```

1.7

```
[ese-maizl@login01 data]$ du
665      ./pdb
52       ./elements
1        ./animal-counts
976      .
```

1.8

```
[ese-maizl@login01 data_demo]$ cp -r writting/ ./writting_new
[ese-maizl@login01 data_demo]$ ll
total 134
drwxr-xr-x 2 ese-maizl ese-ouycc  4096 Nov 24 19:21 creatures
drwxr-xr-x 5 ese-maizl ese-ouycc  4096 Nov 24 19:21 data
-rw-r--r-- 1 ese-maizl ese-ouycc   100 Dec  3 16:40 log1
-rw-r--r-- 1 ese-maizl ese-ouycc   200 Dec  3 16:39 log2
drwxr-xr-x 2 ese-maizl ese-ouycc  4096 Dec  4 10:52 molecules
drwxr-xr-x 3 ese-maizl ese-ouycc  4096 Nov 24 19:21 north-pacific-gyre
-rwxr-xr-x 1 ese-maizl ese-ouycc    69 Nov 24 19:21 notes
-rwxr-xr-x 1 ese-maizl ese-ouycc    32 Nov 24 19:21 pizza.cfg
-rwxr-xr-x 1 ese-maizl ese-ouycc 21583 Nov 24 19:21 solar.pdf
drwxr-xr-x 2 ese-maizl ese-ouycc  4096 Nov 24 20:19 test
drwxr-xr-x 5 ese-maizl ese-ouycc  4096 Nov 24 19:21 writting
drwxr-xr-x 5 ese-maizl ese-ouycc  4096 Dec  4 12:54 writting_new
[ese-maizl@login01 data_demo]$ zip -q -r writting_new.zip ./writting_new/
[ese-maizl@login01 data_demo]$ ll
total 134
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 19:21 creatures
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 data
-rw-r--r-- 1 ese-maizl ese-ouycc    100 Dec  3 16:40 log1
-rw-r--r-- 1 ese-maizl ese-ouycc    200 Dec  3 16:39 log2
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Dec  4 10:52 molecules
drwxr-xr-x 3 ese-maizl ese-ouycc   4096 Nov 24 19:21 north-pacific-gyre
-rwxr-xr-x 1 ese-maizl ese-ouycc     69 Nov 24 19:21 notes
-rwxr-xr-x 1 ese-maizl ese-ouycc     32 Nov 24 19:21 pizza.cfg
-rwxr-xr-x 1 ese-maizl ese-ouycc  21583 Nov 24 19:21 solar.pdf
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 20:19 test
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 writting
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Dec  4 12:54 writting_new
-rw-r--r-- 1 ese-maizl ese-ouycc 422610 Dec  4 12:55 writting_new.zip
[ese-maizl@login01 data_demo]$ unzip -q -o writting_new.zip
[ese-maizl@login01 data_demo]$ ll
total 646
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 19:21 creatures
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 data
-rw-r--r-- 1 ese-maizl ese-ouycc    100 Dec  3 16:40 log1
-rw-r--r-- 1 ese-maizl ese-ouycc    200 Dec  3 16:39 log2
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Dec  4 10:52 molecules
drwxr-xr-x 3 ese-maizl ese-ouycc   4096 Nov 24 19:21 north-pacific-gyre
-rwxr-xr-x 1 ese-maizl ese-ouycc     69 Nov 24 19:21 notes
-rwxr-xr-x 1 ese-maizl ese-ouycc     32 Nov 24 19:21 pizza.cfg
-rwxr-xr-x 1 ese-maizl ese-ouycc  21583 Nov 24 19:21 solar.pdf
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 20:19 test
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 writting
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Dec  4 12:56 writting_new
-rw-r--r-- 1 ese-maizl ese-ouycc 422610 Dec  4 12:55 writting_new.zip
```

1.9

```
[ese-maizl@login01 data_demo]$ ll
total 646
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 19:21 creatures
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 data
-rw-r--r-- 1 ese-maizl ese-ouycc    100 Dec  3 16:40 log1
-rw-r--r-- 1 ese-maizl ese-ouycc    200 Dec  3 16:39 log2
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Dec  4 10:52 molecules
drwxr-xr-x 3 ese-maizl ese-ouycc   4096 Nov 24 19:21 north-pacific-gyre
-rwxr-xr-x 1 ese-maizl ese-ouycc     69 Nov 24 19:21 notes
-rwxr-xr-x 1 ese-maizl ese-ouycc     32 Nov 24 19:21 pizza.cfg
-rwxr-xr-x 1 ese-maizl ese-ouycc  21583 Nov 24 19:21 solar.pdf
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 20:19 test
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 writting
d-wx--x--x 5 ese-maizl ese-ouycc   4096 Dec  4 12:56 writting_new
-rw-r--r-- 1 ese-maizl ese-ouycc 422610 Dec  4 12:55 writting_new.zip
[ese-maizl@login01 data_demo]$ chmod 750 writting_new
[ese-maizl@login01 data_demo]$ ll
total 646
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 19:21 creatures
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 data
-rw-r--r-- 1 ese-maizl ese-ouycc    100 Dec  3 16:40 log1
-rw-r--r-- 1 ese-maizl ese-ouycc    200 Dec  3 16:39 log2
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Dec  4 10:52 molecules
drwxr-xr-x 3 ese-maizl ese-ouycc   4096 Nov 24 19:21 north-pacific-gyre
-rwxr-xr-x 1 ese-maizl ese-ouycc     69 Nov 24 19:21 notes
-rwxr-xr-x 1 ese-maizl ese-ouycc     32 Nov 24 19:21 pizza.cfg
-rwxr-xr-x 1 ese-maizl ese-ouycc  21583 Nov 24 19:21 solar.pdf
drwxr-xr-x 2 ese-maizl ese-ouycc   4096 Nov 24 20:19 test
drwxr-xr-x 5 ese-maizl ese-ouycc   4096 Nov 24 19:21 writting
drwxr-x--- 5 ese-maizl ese-ouycc   4096 Dec  4 12:56 writting_new
-rw-r--r-- 1 ese-maizl ese-ouycc 422610 Dec  4 12:55 writting_new.zip
```

1.10

```
[ese-maizl@login01 data_demo]$ history 10
  624  pwd
  625  man history
  626  cd data_demo/data/
  627  cd ..
  628  cd writting
  629  ll
  630  cd .
  631  cd ..
  632  history |tail 10
  633  history 10
```

2.0

```
  GNU nano 2.3.1              File: printfile.sh

for file in $(find /work/ese-maizl/data_demo/data/pdb/ -name "*.pdb")
do
        du -b $file
done
```

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