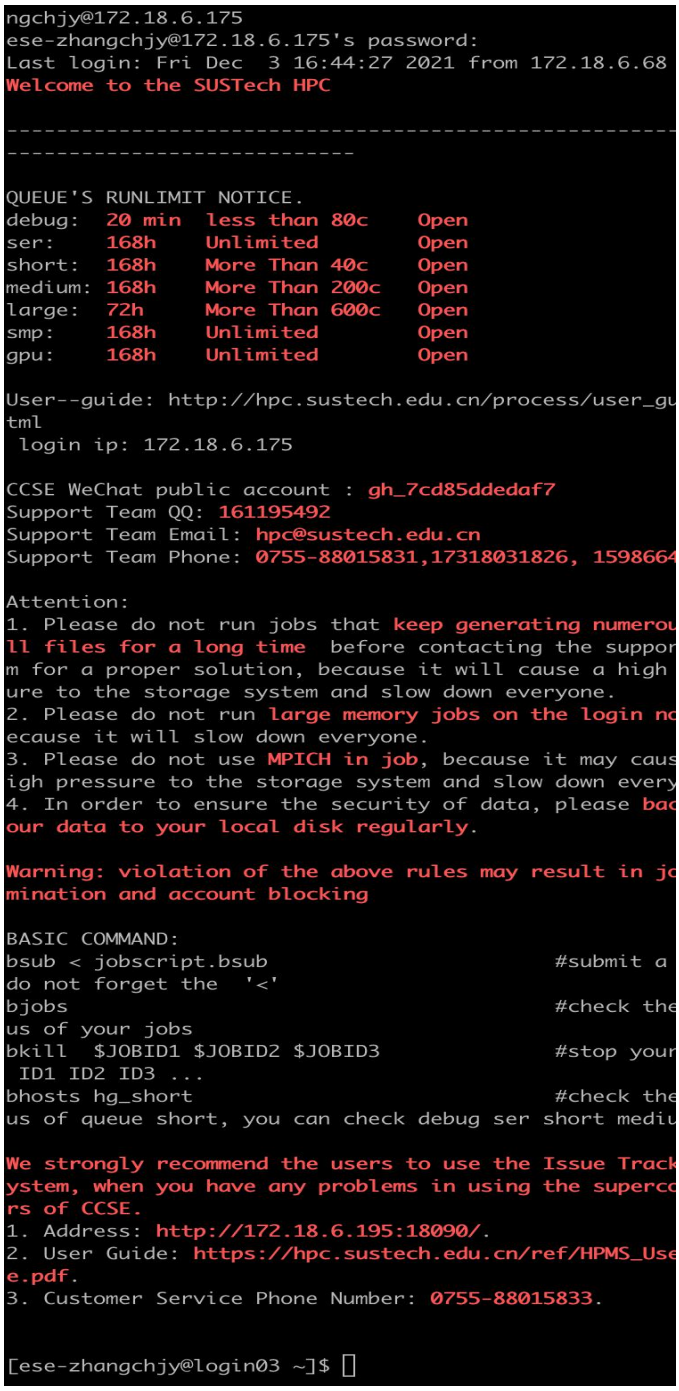
ZHANG Chengjiayi (张程嘉懿)'s TA report for assignment05
SID: 12132818
Github: https://github.com/zcjysustech/ESE5023_Assignments_12132818
Responsible TA: HUANG Hao
Grade: 30

Assignment 5

Great! Happy to see your improvement. Pls keep on

本节学习了 Linux 操作系统，学习了 Linux 操作指令。首先是通过 ssh 远程访问太乙账号 ese-zhangchjy@172.18.6.175



首先我们要知道 man 指令可以查询 Linux 的命令使用方法

1.1 [2 points] Make a link called `data_demo_link` to `data_demo` folder using `ln`.

```
[ese-zhangchjy@login03 ~]$ ls
data_demo       exam      mpi_demo    t1.py
data_demo_link  job.log   print.sh    t2.py
err.log         job.sh    result.log
```

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

```
[ese-zhangchjy@login03 ~]$ echo $HOME
/work/ese-zhangchjy
```

1.3 [2 points] Go to `data_demo/molecules/`, make an empty file `test.pdb` with `touch`

```
[ese-zhangchjy@login03 ~]$ cd data_demo/molecules/
[ese-zhangchjy@login03 molecules]$ touch test.pdb
[ese-zhangchjy@login03 molecules]$ ls
cubane.pdb  methane.pdb  pentane.pdb  test.pdb
ethane.pdb  octane.pdb   propane.pdb
```

1.4 [3 points] Find how many files in `data_demo/data/elements/` using `find`

```
[ese-zhangchjy@login03 ~]$ find data_demo/data/elements/ -n
ame "*.*"| wc -l
103
```

1.5 [2 points] Compare `data_demo/data/pdb/ethane.pdb` and `data_demo/data/pdb/ethanol.pdb` with `diff`.

```
[ese-zhangchjy@login03 ~]$ diff data_demo/data/pdb/ethane.pdb data_demo/da
ta/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 [3 points] Count how many `But she` string appears in `data_demo/writing/data/LittleWomen.txt` with `grep`.

```
[ese-zhangchjy@login03 ~]$ grep "But she" data_demo/writing/data/LittleWom
en.txt -o | wc -l
15
```

1.7 [2 points] Check the total file size of the `data_demo/data/` folder using `du`.

```
[ese-zhangchjy@login03 ~]$ du data_demo/data/ -c
408     data_demo/data/pdb
52      data_demo/data/elements
1       data_demo/data/animal-counts
720     data_demo/data/
720     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`.

```
[ese-zhangchjy@login03 ~]$ cp -rf data_demo/writing data_demo/writing_new/
[ese-zhangchjy@login03 ~]$ cd data_demo
[ese-zhangchjy@login03 data_demo]$ ls
creatures  log2       north-pacific-gyre  solar.pdf  writing_new
data       logl       notes               test
log1       molecules  pizza.cfg           writing
```

```
[ese-zhangchjy@login03 data_demo]$ zip -rq zipfile.zip writing_new/
[ese-zhangchjy@login03 data_demo]$ ls
creatures  log2       north-pacific-gyre  solar.pdf  writing_new
data       logl       notes               test       zipfile.zip
log1       molecules  pizza.cfg           writing
[ese-zhangchjy@login03 data_demo]$ rm -r writing_new/
[ese-zhangchjy@login03 data_demo]$ ls
creatures  log2       north-pacific-gyre  solar.pdf  zipfile.zip
data       logl       notes               test
log1       molecules  pizza.cfg           writing
```

```
[ese-zhangchjy@login03 data_demo]$ unzip -q zipfile.zip
[ese-zhangchjy@login03 data_demo]$ ls
creatures  log2       north-pacific-gyre  solar.pdf  writing_new
data       logl       notes               test       zipfile.zip
log1       molecules  pizza.cfg           writing
```

1.9 [3 points] Change the file permissions flags on `writing_new` to `drwxr-x---` using `chmod`.

```
[ese-zhangchjy@login03 data_demo]$ chmod 750 writing_new/
[ese-zhangchjy@login03 data_demo]$ ll
总用量 646
drwxr-xr-x 2 ese-zhangchjy ese-ouycc   4096 11月 24 19:23 creatures
drwxr-xr-x 5 ese-zhangchjy ese-ouycc   4096 11月 24 19:23 data
-rw-r--r-- 1 ese-zhangchjy ese-ouycc    636 12月  3 16:40 log1
-rw-r--r-- 1 ese-zhangchjy ese-ouycc    300 12月  3 16:34 log2
-rw-r--r-- 1 ese-zhangchjy ese-ouycc    100 12月  3 16:33 logl
drwxr-xr-x 2 ese-zhangchjy ese-ouycc   4096 12月  7 21:23 molecules
drwxr-xr-x 3 ese-zhangchjy ese-ouycc   4096 11月 24 19:23 north-pacific-
gyre
-rwxr-xr-x 1 ese-zhangchjy ese-ouycc     69 11月 24 19:24 notes
-rwxr-xr-x 1 ese-zhangchjy ese-ouycc     32 11月 24 19:24 pizza.cfg
-rwxr-xr-x 1 ese-zhangchjy ese-ouycc  21583 11月 24 19:24 solar.pdf
drwxr-xr-x 2 ese-zhangchjy ese-ouycc   4096 11月 24 19:52 test
drwxr-xr-x 5 ese-zhangchjy ese-ouycc   4096 11月 24 19:23 writing
drwxr-x--- 5 ese-zhangchjy ese-ouycc   4096 12月  7 21:40 writing_new
-rw-r--r-- 1 ese-zhangchjy ese-ouycc 422584 12月  7 21:42 zipfile.zip
```

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

```
[ese-zhangchjy@login03 data_demo]$ history | tail -10
  247  ls
  248  zip -rq zipfile.zip writing_new/
  249  ls
  250  rm -r writing_new/
  251  ls
  252  unzip -q zipfile.zip
  253  ls
  254  chmod 750 writing_new/
  255  ll
  256  history | tail -10
```

2. BASH `for` Loop

[5 分]编写 shell 脚本，逐行打印 data_demo/data/pdb/中每个*.pdb 文件的文件大小（以字节为单位）

```
[ese-zhangchjy@login03 ~]$ nano loop.sh
[ese-zhangchjy@login03 ~]$ chmod 750 loop.sh
[ese-zhangchjy@login03 ~]$ ./loop.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
```